

**Towards A Re-Interpreting of How We Understand
Dynamic Regional Forager Resiliency**

BY

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THESIS

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LIST OF ABBREVIATIONS

GIS	Geographic Information Systems
GPS	Global Positioning System
DNA	Deoxyribonucleic Acid
NCIP	National Commission for Indigenous Peoples
RT	Resiliency Theory
NPA	New People's Army
SES	Social-Ecological Systems
IFCR	Indigenous Forager Cultural Resiliency
DEM	Digital Elevation Map
TIN	Triangulated Irregular Network
SRTM	Shuttle Radar Topography Mission
DBF	Database File
UTM	Universal Transverse Mercator
WGS	World Geodetic System
MXD	Map Exchange Document

SUMMARY

This dissertation applies ethnoarchaeological, archaeological, GIS, and historical methodologies, to a smaller, forager indigenous population located on Negros Island in the Central Philippines, known as the Ata, a term often interchangeable with “Negritos”, to analyze long and short- term forager histories, proposing a more sophisticated scenario of complex forms of forager decision-making and agency and contestation of the traditional reification of ‘forager’ and ‘farmer’ dichotomies (Junker and Smith, 2017; Morrison, 2002; Smith and Junker, 2014; Tuck-Po, 2013; Turner, 2013).

The fundamental argument of this dissertation is that the reinterpretation of foragers must now be one of multi-facetedness where foragers are agents of change, resiliency, dynamicism, variance, while still maintaining unique cultural characteristics and identity. The cultural resiliency of foragers, in this case the ‘Negritos’ or Ata, must be understood as having always been enmeshed in multi-faceted matrices of networks highly influenced by time, place, the environment, political structures, social-cultural ideologies, group decision-making, and independent agency, at both the macro and microscopic levels. Resiliency must be redefined as economic, political, geographic, ecological, environmental, political and socio-cultural strategies that conjointly can resist change, adapt radically to new circumstances, slightly modify practices according to circumstances, adopt hybridized practices, and even volte-face, strategically returning to traditional practices, ultimately, redefining foragers and their histories as part of durable, long-standing, complex social matrices. This dissertation constitutes a voice for Ata yesterday and today in the Philippines, emphasizing indigenous forager cultural resilience and calling for an epistemological shift in re-interpreting forager histories.

1. INTRODUCTION

1.1 Background

Forager societies have long been an area of sustained ethnographic study in island Southeast Asia due to the complexity of their social landscapes within a highly diverse tropical ecosystem. These social landscapes invariably include intense interactions with largely agricultural societies ranging from small-scale sedentary farming groups to socially stratified, politically centralized polities of the past that have coalesced into modern states. Ethnographic, ethnohistoric, and archaeological work on Southeast Asian foragers over the last half century has been significant in dispelling 19th century and early 20th century myths of foragers as largely unchanging cloistered throwbacks or debased remnants of pre-agricultural societies (Barker and Richards, 2013; Griffin and Griffin, 1997; Headland and Reid, 1991; Hutterer et al., 1976; Hutterer, 1983; Junker, 2002a; Junker and Smith, 2017; Morrison, 2002; Smith and Junker, 2014; Smith, 2020; Turner, 2013). Using historical sources and oral accounts, recent ethnographic works have aimed to document the dynamic responses of foragers to physical displacement, loss of elements of economic livelihood, the disintegration of long-term social formations and networks, the lack of voice as they are integrated into the politics of multi-ethnic states, and the general erosion of language and cultural practices that occurred in the 20th and early 21st centuries (Baumgartner, 1975; Bonanno, 2004; Estioko-Griffin and Griffin, 1975a; Headland and Headland, 1997; Major et al., 2018; Peterson, 1978a; Peterson, 1978b; Reid, 2013; Tuck-Po, 2013; Yacobaccio et al., 2017).

We might refer to these as “short-term” histories of foragers that have begun largely within the modern nation-state era. These histories are basically an accounting of how these small-scale societies maintained their identity and cultural practices to some degree through navigating the new structural frameworks and social and physical landscapes created by external groups as the primary agents of change, a viewpoint that tends to place little agency in the hands of forager groups (Junker and Smith, 2017; Smith and Junker, 2014). It is not surprising that foragers have not been viewed as dynamic actors

in the social landscape of Southeast Asia over the many millennia during which they have shared the physical terrain with and engaged in various types of sustained social interactions and material exchanges with, the largely sedentary agricultural societies integrated in later periods into maritime-oriented “chiefdoms” and “states.” The primary methodology for accessing this distant “history” of foragers are the forms of material analysis and interpretation found in archaeology; however, archaeology has been almost completely absent in the study of foragers in island Southeast Asia after around 3000 BC. As noted in Junker and Smith (2017), one of the most volatile debates in Southeast Asian archaeology revolves around the “Austronesian colonization” of island Southeast Asia, and its emphasis on ‘displacement’ by waves of sedentary agriculturalists moving through the archipelago which almost precludes the notion of foragers as dynamic actors and strategic architects of change.

Foragers have frequently been seen as progressively marginalized by expanding Austronesian farmers in the Neolithic Period, a scenario that still resonates with many archaeologists working in Southeast Asia. In the traditional model, archaeological study of foragers largely ends as foragers are marginalized or eclipsed by the more visible remains of more sedentary populations, until they nearly fall out of archaeological view altogether in the later periods of Southeast Asian prehistory and during the rise of Southeast Asian states. A key issue that has impeded archaeological work on relatively recent Southeast Asian foragers involves the tendency to question the reality of identifying groups as “foragers” when they have eclectic subsistence practices that include some tending of fruit or nut trees; work on swidden farming plots of adjacent sedentary groups, (or in some cases), seasonal farming initiated by foragers); and/or adopting a significant specialization in “commercialized” foraging of products that largely enter into long-distance, land-based, and maritime trade networks. This had led some researchers to dismiss many recent Southeast Asian groups with “mixed” farming and foraging economies as “spurious” foragers or “devolved” agriculturalists with little historical depth as “foragers” and who share presumably of limited archaeological interest (Headland et al., 1989; Headland and Reid,

1991; Hoffman, 1986; Junker, 2002a; Junker and Smith, 2017; L. Smith and Junker, 2014). However, a number of archaeological studies of foragers have critiqued the reification of “farmer”/“forager” dichotomies, emphasizing the flexibility of both economic and social strategies over time and space, and calling for historical and processual studies of foragers that do not segregate them from larger archaeological studies of politics and social networks in complex societies like those of historic Southeast Asia (Hutterer, 1983; Kelly, 1995; Layton et al., 1991; Morrison and Junker, 2002; Smith and Junker, 2014; Spielman et al., 1994).

Another impediment to archaeological studies of foragers enmeshed in regional networks within larger-scale complex societies is the prevailing view that the social and economic agendas of adjacent farmers have shaped these relationships and that foragers passively ‘adapt’ as they begin to engage heavily with sedentary, larger-scale societies. In fact, foragers in Southeast Asia have a significant history of engaging in complex and “situationally shifting” socio-economic strategies (Junker, 2002b:142-148; Rabett and Barker: 73-74, 2010; Shoocondej, 2010:62-64; Tuck-Po, 2013) that include a sophisticated scheduling of mobility patterns related to seasonal forest resources, their “managing” of wild plants or seasonally engaging in farming, and/or specialized extraction of forest resources for trade. Decision-making in these societies involves complex calculations of both economic and social risk (the latter including the probability of conflict) in managing exchange relations with external cultural groups. Although recent attempts to insert foragers into these inter-cultural social networks as active “actors” rather than as “reactors” (Fortier, 2001, 2013; Layton et al., 1991; Morrison, 2002; Tuck-Po, 2013) have been important in reorienting archaeological work, there is still little recognition that foragers can have any real social, political, or economic leverage over the groups with whom they interact, or that they can be significant agents of change in the larger social and economic networks of which they are a part. Interestingly, archaeologists using ‘resilience theory’ have suggested that the sheer complexity of chiefdoms or states with whom foragers interact make these large-scale entities *less*

adaptable and more prone to dissolution in situations of severe ecological or social stress, while small-scale societies like mobile foragers are generally *more* able to quickly adjust to change, to regroup and adopt innovative practices and forms of organization that allow them to thrive over the long-term (Redman, 2005; Thompson and Turck, 2009).

However, to get at these issues of resilience, agency, and change, large databases are required that encompass the regional-scale physical landscapes in which foragers practice their variable strategies, as well as an expansive temporal framework over which these processes might occur. Regional-scale databases based solely on archaeological evidence with significant time depth have been useful in inferring or modeling dynamic trends in social organization, social networks, subsistence practices, and exchange patterns through material analysis of settlement patterns, economic resources, exchange patterns, etc., in wholly pre-historic contexts (Bradt Möller et al., 2017; Locatelli et al., 2008; Marean, 1997; Phillips et al., 2011; Romanowska et al., 2019; Turck and Thompson, 2016; Whallon et al., 2011), but often by using ethnographic analogies with more recent foragers who cannot be inferred to be closely connected culturally, historically, ecologically, and/or geographically with the populations represented in the archaeological record (Gamble and Boismier, 1991; Griffin and Solheim, 1988; Hodder, 1982; Kent, 1987, 1992a; Smith, 2020; Stiles, 1977) Studies of foragers in regions where they have both long-term histories and a contemporary presence, along with the complexities of long-term co-existence in a multi-ethnic landscape, allow a multi-pronged approach using archaeological, ethnographic, and multi-vocal historic analyses to examining the dynamics of how foragers negotiate complex social networks and develop strategies of resilience. My dissertation focuses on the early history, material remains, and contemporary practices of foragers as part of a multi-ethnic and culturally diverse landscape on the islands of the Philippines.

While my dissertation addresses the long-term dynamics of forager-farmer interactions going back into the prehistoric past within the larger archipelago and it engages larger theoretical issues of the

dynamics of forager-farmer relations in multi-ethnic social landscapes, the historical and archaeological emphasis herein is on a detailed case of long-term forager-farmer interactions on the island of Negros in the Central Philippines. This island is located in the middle of the Philippines islands, in an area commonly referred to as the *Visayas*. Negros Island is one of the more diverse islands in terms of topography, consisting of a relatively narrow coastal plain fed by mountain springs and rivers coming down through the mountain gorges. It is divided into two separate geographic and political halves, Negros Occidental and Negros Oriental. While my geographic focus for anthropological fieldwork gives prominence to the Oriental side of the island, it also spans the frontier zone of the Occidental, due to the geographically extensive migration patterns of the foragers, both in the past and to some extent in recent times. Although the Negros Island population largely consists of lowland Cebuano Visayan speakers associated with modern cities and towns and rural agricultural villages today, my archaeological and ethnographic work concentrates on the smaller, forager indigenous population known as the Ata, a term often interchangeable with the Spanish Period appellation “*Negritos*,” a broad category used early in the colonial period to describe all foragers with a specific set of phenotypic traits throughout the Philippines (Beyer, 1903; P. Endicott, 2013; T. N. Headland, 1978; Heyer et al., 2013; Jinam et al., 2013; Reid, 2013; Stock, 2013; Ulijaszek, 2013; Vanoverbergh, 1925a, 1925c, 1925b)¹. These traditional forager groups are distinct culturally and phenotypically from their interior tribal agriculturalist neighbors, groups known as the *Bukidnon* or *Magahat* (T. Oración, 1961; T. S. Oración, 1967) as well as the lowland Cebuano Visayan speakers. Differentiated historically by possessing caramel or gradients of brown skin color and wavy to tightly curled black hair (Benjamin, 2013; Headland and

¹ Bukidnon and Magahat seem to be alternate terms for the same upland swidden farming societies, with the appellation “Bukidnon” roughly translated in English as “mountain people” and “Magahat” as “fierce people.” The presence of similarly named groups on other islands in the Visayas and on Mindanao indicate that the names of these societies are referents derived from nearby lowland groups and not the way in which these small-scale societies referred to themselves either in the Spanish Period or in the early 20th century American Period when these groups were first studied by ethnographers.

Griffin, 1997; Heyer et al., 2013; Reid, 2013; Stock, 2013; Ulijaszek, 2013), these indigenous peoples resembled more of the occupants of Melanesian islands like Vanuatu, Papua New Guinea and Australia than the typical, Filipino image portrayed in the contemporary Philippine polyglot and multi-cultural society. The Ata/Aeta have been linked genetically to the late Pleistocene/Early Holocene Aboriginal forager populations colonizing northern Japan (ancestral Ainu), early Australian and New Guinea populations, and various peninsular and island Southeast Asian foraging groups (Semang, Ata/Aeta, and others) (Barker and Richards, 2013; Benjamin, 2013; Blust, 2013; Bulbeck, 2013; Déroit et al., 2013; Fortier, 2009; Habu, 2002; Heyer et al., 2013; Higham, 2013; Jinam et al., 2013; McHenry, 2014; Migliano et al., 2013; Morrison, 2002; Padilla, 2013; Rambo, 1988; Stock, 2013; Vanoverbergh, 1933). The phenotypic characteristics often afford them the classification of “Negritos,” no matter the variously named groups among the hundreds of Negrito populations throughout the Philippine islands. As the earliest Holocene inhabitants of the archipelago, archaeological work in the Philippines (Barker and Richards, 2013; Bellwood, 2011; Mijares, 2008; Mudar, 1997; Rabett and Barker, 2010) and in the other archipelagos of island Southeast Asia (Barker and Richards, 2013; Jones et al., 2016; Lansing et al., 2022; Mijares et al., 2010) indicates that these early Holocene foragers occupied multiple, eclectic ecological niches, from the mountainous interiors to the coastal areas. But as new maritime-focused agriculturalist populations colonized the lowland areas in the 3rd or 4th millennium BC, foragers likely adapted to more specialized ecological niches and economic strategies, characterized in a somewhat simplistic model of trade economic ‘symbiosis’ by archaeologists and ethnographers like Hutterer (K. L. Hutterer, 1974; K. L. Hutterer et al., 1976, 1985; A. T. Rambo, 1981) and others in the 1970s and 1980s, but more recently morphing into a more sophisticated scenario of complex forms of forager decision-making and agency rather than the traditional reification of ‘forager’ and ‘farmer’ dichotomies (Junker and Smith, 2017; Morrison, 2002; Smith and Junker, 2014; Smith, 2020; Tuck-Po, 2013; Turner, 2013) would suggest.

My research on the long-term histories of foragers centered on Negros Island in the Philippines. This research is somewhat unique in terms of documenting forager histories in the Philippines in that the recent ethnographic population of Negritos in Mabinay, Bais, and other nearby communities in Negros Oriental are historicized in the area through: (1) early 20th century ethnographies, (2) historical documents from the Spanish and American colonial periods, (3) non-geographically specific pre-colonial references to Negrito roles in foreign trade dated to the pre-16th century Chinese accounts of island commerce, and (4) substantial archaeological research in the Bais-Tanjay River drainage area that includes what are likely forager sites predating the late 16th century and up to the mid-to-late 20th century. In the last half of the 20th century, there were significant changes in upland mountainous landscapes which were their primary territory, when forest cutting by lowlanders associated with building and power industries denuded much of the upland forests that held their primary resources (Aldecoa-Rodriguez, 1983; Cadeliña, 1980; Cuesta, 1974; McDonald, 1982; Oración, 1963; 佐竹眞明., 2001) . The result by the 1980s was migration out of the highlands for many groups to find work (primarily involving labor for farming, construction, and other relatively low paying jobs) in the lowlands, particularly in the municipalities of Bais and Tanjay.

As a result of my focus on these particular populations of Negritos, I have chosen to use the term “forager” over the earlier popular “hunter-gatherer” classification. The Negrito foragers of Negros, like many foragers globally, practiced eclectic and varied forms of subsistence over time and space according to fluid ecological conditions and changing social landscapes. The “forager” appellation captures the fluctuating nature of both the economic resources and social options used to maximize those resources and emphasizes the complex strategizing implemented rather than that depicted in earlier models of hunting and gathering. Based on my ethnohistoric and archaeological research, the foragers of Negros Island have exploited, both in past and contemporary times, a myriad of subsistence strategies and forms of resource procurement, including hunting, gathering, fishing, trading, and small-

scale agriculture, among other forms of subsistence. This ability to problem solve different environmental zones and to employ various practices further differentiates them from the earlier anthropological notion of hunter-gatherers as just “simple” societies, and situates them within the context of complex foragers who possess the ability to exploit the environment, but also to manipulate the economic, political, social, and cultural within the environment in order to survive. Ata strategies illustrate the complexity of forager populations, making the assignment of the term “forager,” while not exact, the best classification for these ethnic groups in terms of both their current practices and long-term histories, as demonstrated in this thesis.

The fundamental argument of this dissertation is that forager populations in the Philippines must not be simply viewed as either artifacts of an unchanging dichotomous hunting and gathering past, or, alternatively, as marginalized tribal relics who have largely been integrated into contemporary ‘Filipino’ society. Instead, this dissertation, using ethnographic, ethno-archaeological, and historical approaches to studying these foragers, allows a more nuanced analysis of the Ata as both individual and collective actors within the complex contemporary Philippine social and political matrix of the 21st century. This approach to long-term histories of a region inhabited for millennia by the Ata is neither a history solely of fervid resistance nor just impassionate submission. This reinterpretation of foragers is herein one of multi-faceted agencies of change and resiliency. Forager groups have indeed been subjected to culture change, experiencing dynamic, ever-evolving, variant, and dependent interactions fueled by both internal and external influences (Barker and Richards, 2013; Dunn et al., 2013; Gallagher et al., 2019; Junker, 1996, 1999a, 2002a, 2002c; Junker and Smith, 2017; Mijares, 2008; Morrison, 2002) However, analyses of foragers must also acknowledge that despite these changes, foragers, and specifically the Ata foragers of Negros Oriental, have maintained a distinct and noticeably unique set of cultural characteristics and identity, exhibiting resiliency of various magnitudes. Archaeologists, anthropologists, and scholars e.g., Fitzhugh et al., 2011; Hamilton et al., 2018; Redman, 2005; Redman and

Kinzig, 2003 describe 'resilience' as the process within societies (including small-scale indigenous populations) that selectively retain or dynamically transform cultural practices, beliefs, and traditional foci of knowledge over time in response to various factors or changing conditions within and external to the society. Theorists and scholars describe these strategies as historically situated and contextual, as individuals and groups experience shifting ecological and economic conditions, as well as social and ideological pressures, within a larger social domain (Coulthard, 2012; Hoover and Hudson, 2016; Leslie and McCabe, 2013; Redman, 2005; Reyes-Garcia et al., 2019; Rogers, 2017; Thompson and Turck, 2009a; van der Leeuw and Redman, 2002).

The concept of resiliency I use in this thesis is complex, in that it encompasses strategies that can be glossed as maintaining durable structures and stability in social practices when this strategy is advantageous, but at the same time engaging a wide repertoire of flexible and situationally contingent responses to new economic and social conditions and opportunities. Based on these premises, 'resilience' is neither only a byproduct of trade and voracious consumption of foreign products, nor only based on the macro level of colonialistic-led and pejorative-infused attempts of modernization, which favors the narrative that only the presence of the 'civilized' other as the main determinant of forager change. Instead, the cultural resiliency of foragers, in this case the 'Negritos' of Ata, must be understood as a multi-faceted matrix of options highly influenced by time, place, the environment, political structures, social-cultural ideologies, group decision-making, and independent agency, at even the microscopically individual level. Resiliency must be redefined as economic, political, geographic, ecological, environmental, political, and socio-cultural strategies that conjointly can resist change, adapt radically to new circumstances, slightly modify practices according to circumstances, adopt hybridized practices, and even *volte-face*, strategically return to traditional practices, all of which has contributed to the survival of various forager groups in the Philippines for many millennia.

In order to understand how foragers are agents of change historically and in their contemporary social formations, this study examines dynamic ecological, economic, political, social, and geographic factors. which likely affected strategic decision-making and changing practice over time through a multi-pronged methodology. This methodology includes analysis of formal historical documents, ethnography, archaeology, ethnohistory, and geographic spatial analysis highlighting forager movements across the landscape. This multi-faceted, multi-disciplinary strategy for examining Philippine forager strategies over both the short and long term (or *longue duree* particularly in historical analysis and archaeology) rejects both the extreme of an ethnographic snippet of contemporary foragers being seen as unchanging representatives of the past, as well as the incomplete record of forager lives recorded in archaeology and history being interpreted as of little value in reconstructing the distant past.

Because the Ata themselves are not represented as literate in the few indigenous written histories of adjacent sedentary agricultural peoples until very recent centuries, a key element of deciphering the long-term histories of Philippine foragers involves oral traditions communicated in the recent past (and recorded by ethnographers as early as the 19th century) and in contemporary times. However, aspects of their social structures, economic strategies, mobility, and resource tactics over time require a historical comparison of documented events that have occurred in the past (written primarily by outside observers or inferred from the material evidence of archaeological studies), i.e., multi-vocal oral and written histories, material practices inferred through the archaeological record, and contemporary ethnographic accounts. It is only through this multi-faceted methodological approach that we can begin to examine specific circumstances at the various points in their ‘history’ that forager groups in this multi-ethnic landscape may have either advantageously engaged in inter-dependent trade with other groups within their regional landscapes (including small-scale sedentary swiddening societies and large coastal maritime-focused societies), or strategically retreated to ‘haven’ areas to avoid exploitation or violence (Smith, 2014; Smith and Cochrane, 2011). From these events one can extrapolate

the degree to which foragers may have participated in trade with coastal populations and whether their migratory patterns were disrupted, and if these events caused the Negrito populations to revert to traditional practices if only temporarily.

Philippine historical documents, largely from Chinese and the Spanish sources (Craig, 1914; Jocano, 1998; Solheim, 1981), but also a few pre-Hispanic indigenous writings in what appears to be Sanskrit, of major events and these accounts illustrate foreign influence stimulating inter- and intra-island trade and shed light on intra-island trade network possibilities. These accounts reveal as much about direct relationships as they do about the indirect inferences that can be made about forager migrations over time. However, these diverse sources suggest a larger issue: biases in how these both historically/archaeologically documented foragers and recently ethnographically studied groups in the Philippines (whether they are referred to as some variant of “Ata” or “Negrito”) have been perceived somewhat negatively or even strongly pejoratively in written documents over the centuries by external groups who described them in written documents or in their oral traditions. Early pre-16th century chroniclers included some literate lowland Philippine Island coastal peoples living primarily near the coasts and exchanging interior (usually upland) products for coastal resources, but also Asian foreign traders (most prominently Chinese, but also traders from other island archipelagos and the Southeast Asian mainland kingdoms) in the pre-16th century period. Both lowland traders indigenous to the archipelago and Asian maritime traders coming into Philippine ports spoke different languages than the interior foragers who traded forest products down the rivers to the coast and were clearly wary of these trade interactions that could result in violence. By the early 16th century, Spanish colonizers of the archipelago, often with religious, military, and economic agendas promoted by negative characterizations of both interior “tribal” peoples and small-scale forager groups, quickly established a divide between ‘civilized’ Filipinos and others. Similarly, motives of American colonial period ethnographers of the late 19th century to the mid-20th century often emphasized cultural disintegration

and dependency. Even a few post-colonial foreign and Filipino ethnographers of the later 20th century, characterized foragers largely as an assimilated group with limited vestiges of a once-vibrant indigenous culture.

‘Negritos’ have been depicted negatively, particularly by European colonizers, the negative and loaded descriptions honing in on features perceived as undesirable, based on European and even Austronesian or Asian standards of beauty. Based on informal conversations with people of non-Negrito descent on Negros Island and the Philippines overall, the Negritos are categorized as short, or pygmy, dark-skinned groups with kinky-course hair that are simple and lack the intelligence to either strive for academic achievement or the ability to civilize themselves. These descriptions are often justified in that they are mirrored by academic and government documents that often portrayed Negritos as willing subjects of colonialistic rule, government assistance, and within a socio-economic hierarchy that places them in the lower echelons of society, several levels below the civilized agricultural populations of the Philippines (Cuesta, 1974; Garvan, 1964; Heyer et al., 2013; T. Oración, 1963; Rahmann and Maceda, 1955; 佐竹眞明., 2001). Although, these descriptions may seem harmless to some, these are indeed loaded terms and have aided in the stigmatizing and discrimination of foragers, Negritos, and the Ata people for centuries. The classification of a darker skin and a kinky hair texture are perceived as undesirable, subjecting them to overt discrimination, often denying them socio-cultural clout or mobility. Additionally, their forager activities classify them as less civilized, ignorant, in need of being modernized, and Christianized, ideological products of a still present unilineal idea of the evolution of people (Akehurst, 2012; Beyer, 1903; Cadeliña, 1974; Dizon, 2015; Heyer et al., 2013; T. Oración, 1963; Ulijaszek, 2013). And, lastly, but not least, these categorizations have completely removed the acknowledgment of levels of forager agency that are inclusive of independent thought, complicated cognitive decision-making based on best outcomes, or even the cultural value in being “*Negrito*.” This has resulted in Negrito populations being ostracized and even geographically quarantined to designated

reserved lands in Mabinay, as well as being historically, economically, politically, and completely under-represented academically, with regard to more positive perceptions of the proactive roles of foragers in literature and in the archaeological and historical records of the Philippines. These unfortunate circumstances require a scope of research that provides voice to foragers (*Negritos* or *Ata*) that can account for the varied levels of forager agency, research that diminishes stigmatization and that places foragers within the macrocosm of Philippine history. As “first peoples” who are traced to late Pleistocene migrations out of mainland Southeast Asia to the Philippines, further migration research connects them to similar groups colonizing Australia (the Aborigines) and New Guinea in this transitional Late Pleistocene/Holocene Period (Junker, 1996, 2002a, 2002b, 2002c; Junker and Smith, 2017).

1.2 **Method**

In order to accomplish this, a multifocal approach using: (1) ethnographic research in the Ata tribal reserve at Mabini, close to the Bais-Tanjay areas where (2) earlier archaeological studies of stone tools and probable Ata forager sites were recorded and published by Karl Hutterer and William Macdonald (1979; 1982), Junker (Junker 1996; Junker 1999; Junker 2002a; Junker 2002b; Junker 2002c), and co-authored publications by Laura Junker and I (Junker and Smith, 2017; Smith, 2020). In order to accomplish this, this dissertation uses a multifocal approach including ethno-archaeological method, theory, and practice provide ideal tools to reinterpret forager mobility patterns over more than 1,000 years, supplementing ethno-archaeological field work throughout the Tanjay, Mabinay, and Bais areas. Although not conducted over a typical uninterrupted year in the field, a number of shorter periods of archaeological and anthropological fieldwork over a period of 10 months, with intermittent, monthly increments of archaeological survey, excavation, and living with a host family yielded an overwhelming amount of anthropological data, while still ensuring the safety and security for me, my host family, and the surrounding neighbors. Additionally, I also employed a number of modern interdisciplinary methods

to gather my data and analyze it. Combining archaeology with historical accounts, Geographical Information Systems (GIS) spatial analysis, Network Analysis, and statistical analysis with SPSS software, I established a data set using diverse methods that reinterprets and reappropriates the long-term history of Philippine foragers as highly mobile and savvy agents of intra- and inter-island network exchange over time.

The ability to combine history, archaeology, and ethnography to interpret often dated information and perspectives on forager strategies, is essential to enhancing the study of foragers over the long periods of their interactions in the Philippines within the approximately 315 km² region stretching from coast to mountains within the municipalities of Bais and Tanjay. This region today includes remnants of populations representing past and current strategies of foraging in interaction with contemporary lowland farming populations. Furthermore, this thesis endeavors to endow new forms of scholarship with a different tool set to reinterpret forager histories in interaction with larger-scale populations in the Philippine islands and beyond. It does so by challenging their sometime portrayal as marginal peoples and redefining foragers and their histories as an integral part of complex social matrices. Essentially, my research aims to demonstrate why and how foragers were, and still continue to be, complex agents of change with the abilities, power, expertise, and flexibility to adjust to new and ever-changing human landscapes that require new strategies that have ensured their survival for millennia. The Ata have embraced resilience strategies that have insulated them to some extent from being simply viewed as subjects of colonialistic powers, peons in comparison to more complex agriculturalists or farmers, or lacking in agency economically, politically, geographically, or socio-culturally.

1.3 Overview of Thesis

This may come across as strong language, but these sentiments were expressed by the Ata throughout my research among the “Negritos.” Studies should now turn to a more accurate depiction of the indigenous that acknowledges that them as people possessed of preexisting networks of exchange prior to foreign influence and who have maintained their indispensable cultural characteristics despite encroaching migratory groups. Most important to this dissertation is that this thesis argues that contemporary Ata foragers still hold on to a cultural identity and “long-term history” that informs their present, with archaeology and history remaining effective tools that can reflect their near past and even the deep histories of these first peoples of the Philippines. This dissertation constitutes a voice for the Ata today in the Philippines, emphasizing their cultural resilience.

Chapter 2 provides an overview of general methodological issues and the problems of archaeological priorities focused on the large-scale sedentary polities in the Southeast Asian lowlands, rather than the ‘peripheral’ small-scale societies that increasingly interacted with the large-scale trading chiefdoms, states, and empires. While ethnographies of late 20th and early 21st centuries have multiplied, only recently have we seen a broadening of archaeological research on foragers during the of the “Neolithic” (ca. 3rd millennium BC) and “Metal Age” (later 1st millennium BC to early 1st millennium A.D.) periods, and the development of larger coastal polities tied into the foreign porcelain/forest product trade with China and other developed mainland Southeast Asian and East Asian states and empires, as the foragers have moved into the historic period record. While there are difficulties in documenting forager sites during periods of expanded agricultural societies and incipient coastal trading polities, there have been significant studies of Pleistocene and early Holocene archaeology on foragers; however, most of the archaeological literature on forager ecological adaptations and possible social practices is muted shortly after the 3rd to 4th millennium BC colonization of Austronesian-speaking agriculturalists in island Southeast Asia. Thus, foragers are largely missing in the archaeological and later

historical and ethnographic literature of the small-scale foraging societies who provisioned growing coastal polities with interior upland forest products on many of the equatorial islands of insular Southeast Asia. While this chapter calls out the lack of foci on the role that foragers have played in complex histories and social networks, Chapter 2 also acknowledges the most recent increase of interest reflected in bottom-up archaeological approaches that have occurred in examining their flexible and sophisticated mobility patterns and strategies. This chapter provides a brief overview of archaeological and historical work on forager-traders beginning in the 2nd and 3rd millennia BC.

Following the general overview of forager-farmer interactions in Chapter 2, Chapter 3 reviews the anthropological approaches that focus on foragers in the tropics, specifically the Amazon, Africa, Australia, and Southeast Asia. These case studies and ethnographic analogies discuss the confluence of trade, and resource use and avoidance as they relate to forager ecological, political, and social strategies over time. This chapter proceeds onward from Chapter 2, illuminating the diversity, dynamism, and complexity behind hunter-gatherers, or in this case forager, strategies. In doing this, Chapter 3 substantiates the gaps in past and current ethnographic, historical, and archaeological literature on the movement strategies of foragers and hunter-gatherers, their relations with adjacent lowland agriculturalists, strategies of cross-cultural engagement vs. isolation due to friction, violence, economic incursions into forager territory, the appropriation of the term “foragers” and hints at the beginnings of a need to reinterpret forager histories.

Chapter 4 argues for the use of regional-scale settlement archaeology in order to access foragers. Due to visibility and “findspot” impediments, forager sites tend to be less accessible than those associated with agricultural groups. To remedy this, a more detailed exploration of how archaeologists have detected forager sites from the Paleolithic through the Neolithic and into the Historic periods is chronicled. Regional methods prove to be some of the most viable methods in establishing long-term forager histories diachronically and spatially. Mainly, this is because regional scale methods expose

forager tendencies to develop various types of migration movement patterns across the landscape (Fortier, 2013; Hutterer et al., 1976; Junker, 1990; Peterson and Drennan, 2005). These movements have been largely based on political, economic, or environmental conditions that they have been subjected to due to internal and external pressures (Barker and Richards, 2013; Headland et al., 1989; Henshaw, 2006; Pookajorn, 1985; Tuck-Po, 2013) The subsistence strategies used historically and today by foragers vary from sedentism to highly mobile and broad-spectrum specialized strategies, often dependent on shifting balances of social friction and trade involving forager-farmer interactions. These patterns are reflected in various case studies, and many of the foragers throughout the Philippines do exhibit these strategies (Blust, 2013; Fix, 2002; Junker, 1990, 1994; 2002a, 2002c; McHenry, 2014; Rahmann, 1963; Turner, 2013). This portrays tropical foragers as possessing a significantly unique set of strategies that cannot be compared to African or Arctic foragers, or even the Aborigines. Instead, Philippine foragers, like the Semang, Batak, Agta, Punan, and the Ata must have implemented flexible strategies. Unfortunately, these flexible strategies are still largely based one or two factors, i.e., political or economic. They are also time specific and discussed as irreversible, with foragers adapting the new strategies without reservation and abandoning their traditional ways (Benjamin, 2013; R. V. Cadeliña, 1980; A. T. Rambo, 1988; L. M. Smith, 2020; C. P. Warren, 1964). However, more recently, a number of cultural anthropologists and archaeologists have emphasized that the historic record (often involving outsider literate populations, but still useful), ethnohistory, ethnography, and archaeology provide a multi-media snapshot of probable strategies for interaction that usually have involved trade of forest resources for coastal and manufactured goods over a significant time framework. Common with other Southeast Asian tropical landscapes of mountains inhabited by upland forest foragers, while agriculturalists inhabiting large coastal valleys rich in farmed resources, this thesis has significant focus on patterns of engagement and disengagement with lowland trade centers.

Differing lowland agricultural and seacoast populations engaged in cycles of intense interaction with forager groups most likely millennia in the past, but there were significant and complex factors that shaped the nature and intensity of forager interaction in the lowland economies from the mid-3rd millennium BC to recent times. As early as the Neolithic period, and into the Metal Age (ca. 2nd millennium BC through the 1st millennium BC), there is evidence, largely in the form of lithics and temporary cave dwellings with wholly non-domestic fauna and flora, while ceramics and metal are increasingly found.

As outlined in later chapters, the archaeological evidence of ceramics at certain times demonstrated a lessened focus on foreign trade for certain periods that may range from one season to decades, then ceasing temporarily, and finally, resuming when the most beneficial for a forager group. It also indicates that foragers were not reliant on foreign trade or lowland populations for their survival, with the option of weighing the negative factors of lowland violence and warfare, slave-raiding into the uplands, resource depletions in the uplands that inhibited trade, various social factors that inhibited long-distance economic relations, and possibly even foreign disease vectors in later periods. The archaeological evidence supports the idea that foragers, including the Ata, were active agents rather than simply reacting to the needs of lowland coastal trading centers occupied by agriculturalists who required connections with upland forest specialists to meet the demand of maritime traders at coastal ports. Therefore, ethnographic, historical, and archaeological information are equally important to establish the level of forager group agency at various time periods of their social interaction vs. strategic isolation the multi-faceted strategies of cultural resiliency in which they engaged, as well as to explore their possible intra-island networks over more than 1000 years.

Chapter 5 deals with model building and theoretical applications. It elaborates on the current literature concerning resiliency theory, examining and critiquing the efficacy of resiliency theory to forager studies. Resiliency theory has been applied frequently to complex societies with large

populations, but there exists only a small corpus of literature that discusses the resiliency of foragers (Bar-Yosef, 2017; Lancelotti et al., 2016; Locatelli et al., 2008; Lu, 2010; Rabett et al., 2017; Salisbury and Bacsmegi, 2013; Temple and Stojanowski, 2019; Thompson and Turck, 2009). This small corpus expands the use and application of resiliency theory beyond contemporary forager societies, examining both the historical and archaeological contexts of forager societies in interaction with agricultural societies in the more recent past in Southeast Asia. Much of the work on how societies adjust to new and changing social landscapes has been successful applications of resiliency theory in complex societies e.g., (Crate, 2011; Gronenborn et al., 2014; Hughes et al., 2018; Kempf, 2020; McLaughlin et al., 2018; Rogers, 2017). However, aspects of connecting smaller-scale societies often, on the margins of developing sedentary complex societies or integrated with large-scale sedentary societies within complex social and political landscape formations, have been little studied in terms of resiliency theory. One of the problems in these types of studies is the varying temporal scales and parameters of the concept of “resilience” in long-term archaeological investigations of ecological, economic, social, and political changes in the distant past, and the more immediate or short-term decisions on economic and political strategies seen in the everyday life of ethnographically studied societies in the present. In many ways, small-scale societies such as the Ata have, in the past (but to a lesser degree in the present), distanced themselves more easily from violence and economic exploitation by strategic avoidance of dense lowland coastal areas and river valleys, as these areas were colonized by agriculturalists from mainland Southeast Asia and most directly from Taiwan in the 3rd millennium BC. On the other hand, many anthropologists have emphasized that large-scale societies in the past were more susceptible to political “collapse” and economic ruin due to congregation in cities vulnerable to disease, warfare, famine, and economic disasters (Butler et al., 2018; Lamoureux-St-Hilaire et al., 2015; Lentz et al., 2018; Nicoll and Zerboni, 2020; Savelle, 2002), often without the alternatives that were available to small-sized mobile foraging populations. This dissertation research applies Crane (2010) Community Resilience Model to emphasizes

the need for a more extensive, multi-scalar definition of cultural resiliency as a strategy for small-sized populations that encompasses the range of Negrito forager behaviors in the archaeological and ethnographic record. The definition of this new phrase, indigenous forager cultural resiliency, includes 10 (a not yet exhaustive number), long- and short-term strategies used by Ata foragers under specific changing conditions, as well as comparable tropical foragers in other areas of Southeast Asia and in other tropical areas of the world.

Chapter 5 turns to the archaeological data in order to confirm the classification of forager sites in the archaeological record and uses recent literature to attempt to connect these sites with their contemporaneous descendants, the Ata (Benjamin, 2013; Bulbeck, 2013; Détoit et al., 2013; P. Endicott, 2013; C. Higham, 2013; Migliano et al., 2013; Reid, 2013; Stock, 2013; Turner, 2013). A major division of ethnoarchaeology is the archaeology. My data set is derived from the Bais-Tanjay project conducted over 30 years (Hutterer, 1981a; Hutterer et al., 1979; Junker et al., 1995; Junker, 1990, 1993b, 1993a, 1994a, 1994b). This first-ever, large-scale regionally encompassing data set was incorporated into this research in order to model Negros forager migration patterns over about 1,000 years. This allowed for the documentation of forager histories detecting them archaeologically across the landscape. With a focus on Geographic Information Systems, Network Analysis, and Spatial analysis I was determined to detect patterns affected by social, ecological, and environmental conditions, as well as the effects of economic/ political conditions, and to decipher other conditions that may have affected the settlement patterns of foragers. This analysis especially draws heavily on network analysis so as to detect the changes in the levels of interaction for foragers with others, inclusive of identifying and differentiating between the parties involved and monitoring how these levels of interaction may have changed temporally. Connection of archeological sites to cultural patterns and, more importantly, to ethnic groups is an extremely difficult task. However, Chapter 4 makes a rather convincing argument for the movements of foragers both spatially and diachronically using these methods.

Chapter 6 focuses on the substantial archaeological survey data that was part of the Bais-Tanjay Archaeological Project, originally headed by the Karl Hutterer and William Macdonald in 1979 (Hutterer et al., 1979), 1981, and 1982 (Hutterer, 1981b; Hutterer and Macdonald, 1982), followed by the additional tract surface survey along the Tanjay River and upper branches between 1994 and 1996. Small-scale excavations that took place in the 1990s of eight additional sites, only one probable “forager” site was excavated on the edge of the lowlands rising into the mountains (Junker, 1996; Junker and Smith, 2017), evidenced in a hearth, a significant amount of lithic tools and debris, a few worked porcelain sherds which may have been used as part of ornaments, and a single exotic lowland carnelian bead (a highly portable from outside the archipelago). Additionally, I added several further archaeological data to this single excavated probable “forager” site from Junker’s earlier work, by carrying out limited archaeological excavations and surface survey work at other known forager camps. This revealed the presence of forager activities that mirrored the first-hand accounts of the types of tools and other materials that recent Negrito informants cited as material manifestations of forager site both along the interior margins of the lowlands and in the rugged uplands above 300 meters, particularly sited next to upland streams within or near steep valleys in the highlands. This region includes the Tanjay and Bais areas, where evidence of the size of Ata ranges are difficult to construct, due to barriers to large-scale recovery of possible forager sites in the areas above 300 meters elevation. While the lithic-dominated sites were extremely visible on the flat alluvial plain surrounding the Tanjay River and lowland river tributaries, due to the open farmland primarily planted in sugarcane in vast plantations, the uplands were rugged and forested, with low surface visibility and multi-crop swiddens that had low surface visibility. Ethnohistoric testimonies suggest a wider expanse north, south, west, and east of the municipalities of Tanjay and Bais. Thus, the current archaeological data is confined to the Tanjay-Bais area, with a few outlier lithic finds in Mabinay which were observed during the period of my collection of historical data and ethnographic histories in Mabinay. Ethnohistory information from contemporary

Ata suggests that the Mabinay area, which is the location of the current Ata indigenous Philippine government reservation, is located a substantial distance of around 30 kilometers northwest from the 315 km² Tanjay-Bais area, which expands this regional analysis to the areas of Mabinay and even into Negros Occidental. With the use of modern tools of Geographic Information Science (GIS) to systematically analyze the landscape, I enhanced the accuracy of previously detected sites, confirmed and created site typologies, and conducted extensive geospatial analysis demonstrating the regional migratory patterns of Negros foragers. Confronted with over 110 locales in the database of “forager sites” in the lowlands and additionally geo-coordinates that needed to be geocorrected, information from GPS provided me with the precise coordinates of previously detected sites, allowing for the geo-correction of previous created sites and the creation of a modern 3D triangulated images of the Negros Region that highlight forager sites exclusively. Once corrected, geospatial analysis could be applied to the database resulting in the ability to provide a visible record of forager mobility patterns over time, affirming the presence and complexity of indigenous forager cultural resilience across Negros Island in the Philippines. This chapter concludes by referencing anthropological case studies supporting the GIS and the archaeology evidencing the indigenous forager cultural resiliency of Negros Island foragers, the Ata.

Chapter 7, the concluding chapter of the dissertation, drives home the premise that if researchers are to study foragers, which I have argued undoubtedly must continue, then it must be done from an indigenous forager cultural resiliency epistemology. Then and only then can the work of re-interpreting long- and short-term forager histories on the roles that they have played in complex and dynamic systems be more accurately portrayed. Furthermore, this dissertation proposes that in order for this reinterpretation to be accurate, researchers must also emphasize the importance of multiple anthropological and historical methodologies, including: (1) archaeological survey and excavations of probable forager sites, (2) using Geographic Information Systems (GIS) to examine geographic spatial

patterning of recorded archaeological sites with lithic material and other clues to whether the site was used temporarily or seasonally by foragers, (3) ethnohistoric research with modern Ata who can also provide information on interpreting archaeological patterning of possible base camps and foraging sites and ethnohistories of foraging groups, (4) multi-cultural historical information from the late 16th to the late 19th centuries Spanish historical documents, and (5) a very small number of translated Chinese historical sources dated as early as the 13th century. This information can serve the distinct purpose of providing a check and balance on historic and prehistoric sources, reducing biases, and ultimately acknowledging the greater degree of agency that foragers have had in “world systems” and global networks. These early Chinese sources of information on trade between coastal trading ‘chiefdoms’ and interior tribal societies who had access to valued forest products were essential to the almost insatiable markets for tropical spices is particularly significant to this thesis. The inclusion of a Chinese merchant accompanying a lowland Philippine trader to the margins of the uplands of an unnamed Philippine Island indicates the interior foragers, most certainly including the Ata on Negros as well as the foragers on other islands, were already part of the “world system” that fueled commerce between China and the world in at the dawn of the 2nd millennium AD. Finally, the use of multifaceted research tools including history, ethnography, archaeology, and geographic spatial analysis is almost unprecedented in the study of Asian foragers over large landscapes and time periods. Lastly, the concluding chapter also discusses how this research can be further executed in the current climate, taking a similar layout to recent research on foragers in Borneo (Lansing et al., 2022).

II. CHAPTER 2

2.1 General Archaeological History of Post-Pleistocene Farmer and Forager Interactions in Southeast Asia²

Archaeological studies of foragers in Southeast Asia have overwhelmingly focused on technologies and economies in the pre-Neolithic social landscapes of ‘pure’ foragers of the late Pleistocene or early Holocene eras. However, there is a growing interest in integrating foragers into archaeological research on the complex social and economic mosaics of early agricultural societies during the Neolithic and Early Metal Age periods, raising significant issues about ‘forager’/‘farmer’ dichotomies and the nature of traditional models of ‘Austronesian’ expansion. With the advantage of historical and ethnographic sources, there is also a recent expansion of archaeological studies focused on specialized forager forest collectors integrated into the political economies of early historic maritime trading polities like the Srivijaya, Kedah, Khmer, the Cham states, and Philippine chiefdoms that were dependent on these groups for export products in the lucrative South China Sea-Indian Ocean trade networks of the late first millennium to mid-second millennium. Archaeological investigations of Southeast Asian foragers in these recent complex social landscapes require regional approaches that include open settlement sites as well as cave excavations, and techniques of archaeological recovery that address challenging issues of site visibility and preservation.

² With the permission of the first author, Laura Lee Junker, this chapter includes material from a co-authored paper with Larissa Smith: Junker, Laura Lee and Larissa Smith. 2018. Farmer and Forager Interactions in Southeast Asia. In **Handbook of East and Southeast Asian Archaeology**, pp. 619-632. eds. Junko Habu, Peter Lape, John Olsen, and Jing Zhichun. *Reproduced with permission from SpringerNature*.

2.2 Foragers in Recent Southeast Asian Social Landscapes

In Southeast Asia, substantial coastal-interior ecological diversity, constraints on various forms of tropical food production, and, in some areas, a fragmented island geography, are viewed as contributing to diverse social mosaics of interacting tropical forest foragers, small-scale tribal swidden farmers, and lowland rice farming communities, characterized by economic specialization and often connected to larger systems of maritime trade (Dunn, 1975; Headland et al., 1989; Hutterer, 1983; Hutterer et al., 1976; Junker, 2002c). In the recent past, among Southeast Asian ‘foragers,’ such as the Semang (Orang Asli) of Malaysia, the Punan and Penan of Borneo, the Kudu of Sumatra, the Agta/Ata/Batak of the Philippines, the Togucil of Maluku, and the Nuaulu of Seram (Figure 1), forager-farmer trade has involved agricultural foodstuffs and a variety of manufactured goods (such as lowland pottery and metal implements, but also exotic beads and shell ornaments) from sedentary lowland farmers in exchange for interior tropical forest products such as hunted meat, honey, rattan, and medicinal plants (Brosius, 1991; Eder, 1988a, 1988b; Ellen, 1988; Griffin, 1984; Headland and Reid, 1991). Early historical sources suggest that Southeast Asian foraging groups relatively close to mainland rice plain states and empires, as well as the island maritime trading kingdoms and chiefdoms of the early to mid-second millennium AD. (Figure 1), were gradually enmeshed in more “commercialized” foraging for forest exports that were significant in the prestige goods economy of local elites, the latter exchanging spices, resins, pearls, tropical birds, and other locally-derived materials for porcelain, silk, bronze, and other exotic status-conferring goods in the South China Sea-Indian Ocean luxury goods trade (Hall, 2011).



Figure 1. Location of historically and ethnographically known forager groups in Southeast Asia, as well as the location of the historic polities of the 7th-16th centuries and archaeological sites mentioned in the text. [Permission from Laura Junker].

Despite the rich array of historical and ethnographic sources to provide interpretive frameworks for archaeological data from forager landscapes, archaeological work on Southeast Asia foragers has been largely constrained to pre-farming periods (late Pleistocene to mid-Holocene) or to the early 'Neolithic' phases. Foragers have frequently been seen as progressively marginalized by expanding

Austronesian farmers in the Neolithic Period, and their archaeological study eclipsed by the more visible remains of sedentary populations, until they nearly fall out of archaeological view in the later periods of Southeast Asian prehistory, as well as during the rise of Southeast Asian states. One of the issues that has hampered archaeological work on relatively recent Southeast Asian foragers involves debates about the reality of identifying groups as “foragers” when they have eclectic subsistence practices that include some tending of fruit or nut trees and even swidden farming plots. This has led some researchers to dismiss many recent Southeast Asian groups with “mixed” farming and foraging economies as “spurious” foragers or “devolved” agriculturalists with little historical depth and presumably of limited archaeological interest (Headland et al., 1989; Headland and Reid, 1991; Hoffman, 1986; Junker, 2002a). However, a number of archaeological studies of foragers have critiqued the reification of “farmer”/“forager” dichotomies, emphasizing their flexibility of both economic and social strategies over time and space, and calling for historical and processual studies of foragers that do not segregate them from larger archaeological studies of politics and social networks in complex societies like those of historic Southeast Asia (Hutterer, 1983; Kelly, 2005; Layton et al., 1991; Morrison and Junker, 2002; Spielman et al., 1994).

Another impediment to archaeological studies of foragers enmeshed in regional networks within larger-scale complex societies is the prevailing view that the social and economic agendas of adjacent farmers shape these relationships, and that foragers passively ‘adapt’ as they begin to engage with sedentary, larger-scale societies. In fact, foragers in Southeast Asia have a significant history of complex and “situationally shifting” socio-economic strategies (Junker, 2002b:142-148; Rabett and Barker, 2010:73-74; Shoocondej, 2010:62-64) that include a sophisticated scheduling of mobility patterns according to seasonal availability of forest resources, “managing” wild plants or seasonally engaging in farming, and/or specialized extraction of forest resources for trade. Decision-making in these societies involves complex calculations of both economic and social risks (the latter including the probability of

conflict) in managing exchange relations with external cultural groups. Although recent attempts to insert foragers into these inter-cultural social networks as active “actors” rather than “reactors” (Fortier, 2001; Layton et al., 1991; Morrison, 2002; Tuck-Po, 2013) have been important in reorienting archaeological work, there is still little recognition that foragers can have any real social, political, or economic leverage over the groups with which they interact, or that they can be significant agents for change in the larger social and economic networks of which they are a part. Interestingly, archaeologists using ‘resilience theory’ have suggested that the sheer complexity of chiefdoms or states with whom foragers interact make these large-scale entities *less* adaptable and more prone to dissolution in situations of severe ecological or social stress, small-scale societies like mobile foragers are generally *more* able to quickly adjust to change, to regroup and adopt innovative practices and forms of organization that allow them to thrive over the long-term (Redman, 2005; Thompson and Turck, 2009a). However, to get at these issues of resilience, agency, and change, large archaeological databases are required that encompass the regional-scale physical landscapes in which foragers practice their variable strategies, as well as an expansive temporal framework over which these processes might occur.

2.3 Methodological Challenges in the Archaeological Recovery of Forager Sites

One of the most significant problems in the archaeology of foragers in Southeast Asia has been the recovery and behavioral interpretation of sites, given the frequent ephemeral nature of settlements of highly mobile populations in the forested tropics and their low visibility in the heavily vegetated open sites where many categories of archaeology remains would usually not be well-preserved (Junker, 2002a:154-162). A likely perishable technology would not necessarily be reflected in the more visible lithic material and later traded metal implements used to create implements out of wood and plant materials (K. L. Hutterer, 1977). Due to visibility and preservation issues, archaeological work that might have relevance to forager-farmer interactions, particularly in the Neolithic and earliest Metal Ages tends

to focus on cave sites (Barker and Richards, 2013; Bulbeck, 2008; Spriggs, 2011) rather than the presumably more common open sites where we would expect both ‘farmers’ and ‘foragers’ to carry out most aspects of their sociality and livelihood.

Another obstacle to identification and analysis of forager sites concerns chronology and related assumptions about the association of certain types of temporally diagnostic artifacts related exclusively with sedentary farming populations. Absolute dating of foraging sites is often difficult, particularly in the case of open sites of ephemeral rather than long-term occupation. Lithic material, which is the primary durable artifact for possible relative dating of archaeological sites associated with foragers from the Pleistocene through recent times, is notoriously non-diagnostic at most Southeast Asian sites in terms of either identifying chronologically distinct types or even functional toolkits (Glover, 1986; Gorman, 1971). When relatively datable trade beads, earthenware pieces, and fragments of imported porcelain or stoneware (often chipped into portable ornaments) are recovered from small ephemeral sites in the same region as large settlements of agricultural populations in the Neolithic to Early Historic periods, archaeologists almost invariably assign these sites as negligible “findspots” associated with agricultural societies.

Most critical to the development of archaeological studies of foragers in Southeast Asia that go beyond culture history, in both pre-agricultural periods and later, is the application of regional scale archaeology to examine the temporal and spatial dynamics of complex social landscapes embedded within complex ecological systems, using approaches like social network analysis (Whallon et al., 2011) and historical ecology (Thompson and Waggoner, 2011). Archaeologists have recognized that scholars working in Southeast Asia lag behind most regions of the world in implementing regional scale archaeological projects (e.g., (Grave, 1995; Junker, 1996; Miksic, 2004; Veth et al., 2005), and in most cases where regional settlement data has been collected, large centers associated with regional power in multi-ethnic landscapes are privileged in archaeological investigations. This emphasis on “centers”

with impressive scale and architectural features precludes archaeological analysis that might illuminate the ways in which Neolithic Period and later foragers in Southeast Asia, as dispersed “small worlds” on the margins of larger sedentary communities, kingdoms, and empires (see Kolb and Snead, 1997; Schortman, 2014:169-171), add to our understanding of the dynamics of social boundaries, exchange, conflict, and negotiations of power in the early social landscapes of Southeast Asia.

Yet we noted that archaeologists working in Southeast Asia often have difficulties distinguishing sites created by mobile foragers vs. predominately agricultural societies carrying out specialized activities (such as occasional ritual or prey processing in interior caves), since economic resources and technologies frequently overlap between these groups, resulting in somewhat similar archaeological signatures. Ethno-archaeological studies among recent foragers, combined with a large and diverse sample of archaeological sites analyzed for both congruencies and differences, may be useful in identifying distinct material correlates associated with discrete social “communities” and seasonal differences in activities where these populations come into contact (Griffin, 1984; Junker, 2002a; Kelly, 2005; Smith and Junker, 2014). However, ethnographic analogies used to construct archaeological models of past forager interactions with adjacent sedentary farmers are strongest when the living foragers inhabit the same region as the archaeological “community,” and can be historically linked in time close to the period emphasized in archaeological analysis (Spielman et al., 1994). For this reason, among others, archaeologists working in Southeast Asia have tended to focus on ‘pure’ foragers in the pre-Neolithic periods, or the much later Early Historic period just prior to European colonialism (ca. 10th – 16th centuries), during which indigenous Asian and European texts aid in contextualizing archaeological patterns and may even demonstrate historical continuity.

2.4 Forager-Farmer Interactions in the Neolithic and Early Metal Age Archaeology

The relative dearth of archaeological work on forager-farmer interactions in the Neolithic Period and Early Metal Age seems largely attributable to an early tendency by archaeologists to simplify the relationship between population movements (human migrations within Southeast Asia and connecting with East Asia and the Pacific), linguistic histories (the expansion of Austronesian languages), technological changes indicative of new economic or social adaptations (pottery, groundstone technology, sedentism), and evidence of animal and plant domestication, creating a unified process of 'neolithization' rather than complex histories of mosaics of peoples practicing eclectic strategies that are not easily defined as 'forager' or 'farmer' ((Barker et al., 2013; Bulbeck, 2013; C. F. W. W. Higham et al., 2011; Kealhofer, 2002; Mijares, 2007; Spriggs, 2011). Archaeologists have begun to cite an abundance of evidence to refute many of the generalizations in this model of Neolithic Period societies, particularly as supposed 'Neolithic' features appear in the island archipelagos to the south as part of an 'Austronesian' expansion. For example, domestication or intensive tending of root crops and arboreal species may have been more significant than domesticated rice in Southeast Asia (Bulbeck, 2008; Dewar, 2003; Kealhofer, 2003), domesticated foods in general may not have dominated the diet (Barker and Richards, 2013:359-360; Kealhofer, 2002; Lloyd-Smith, et al, 2013; Spriggs, 2011) linguistic and biological groupings do not correspond well in demarcating 'Austronesian' colonizers and an earlier stratum of foragers (e.g., Donohue and Denham, 2010; Ross, 2008), and the Neolithic 'package' (both the general technological suite, and specific artifact forms such as shell scrapers and distinct pottery designs) is quite variable over time and space (Bulbeck, 2008; Spriggs, 2011).

A number of scholars have replaced the traditional Austronesian rice farming societies with maritime-oriented 'forager-farmers' who were predispositioned towards eclectic economic practices and early enmeshed in symbiotic interactions with other economically diverse groups in complex social landscapes (Oppenheimer and Richards, 2002; Sather, 2006). New models for the 'Austronesian'

expansion emphasize not just economic patterns but also social impetuses for long-distance trade interactions that broaden access to social capital. As noted by Bulbeck (2008:44), “the Austronesian diaspora had very little to do with the migration of a farming complex, and everything to do with the traffic of valuables (including fauna) and technology.” Long-distance social alliances shared ‘religious’ themes, and even the kernels of status competition are materialized in the widespread circulation of decorated pottery styles, shell objects, obsidian, and other goods, throughout the island archipelagos and into the Pacific ‘*Lapita*’ interaction spheres (Blench, 2012; Bulbeck, 2008; Oppenheimer and Richards, 2002; Sather, 2006; Spriggs, 2011). The implications of this complex picture of Neolithic Period populations as flexible and fluid – practicing what Sather (2006) refers to as “adaptive diversity” – means ‘foragers’ no longer disappear from the scene as they ‘acculturate’ to the cultural practices of increasingly dominant ‘farmer’ immigrants, but instead remain as components of dynamic social landscapes.

Recent work emphasizes the importance of what Bulbeck (2008) refers to as “bottom-up” approaches that call for fine-grained archaeological analysis in specific regions examining networks of interaction and the specific factors (e.g., environments, population dynamics, social landscapes) that may have affected economic choices, mobility patterns, and new social formations, rather than generalizing a grand narrative of colonizing agriculturalists and displaced foragers (see also Barker and Richards, 2013; Spriggs, 2011). Higham et al., (2011), borrowing Bellwood’s (2005) term of “friction zone” for areas in which foraging and farming societies come into contact, notes that economic impacts varied according to ecological features and presumably the volatility of social encounters. In the coastal estuary environment of the mid to late 3rd millennium BC., the sites of Nong Nor and Khok Phanom Di are interpreted, on the basis of artifact and skeletal evidence, as coastal hunter-gatherers moving inland and encountering expanding agriculturalists, who introduced these hunter-gatherers to some rice farming, agricultural tools, and ceramic forms, as well as foreign women. With a rich database of sites in

southwest Sulawesi, Bulbeck (2010) traces a continuous sequence of Austronesian maritime forager-farmers entering into the region where they interacted with local foragers using a Toalean toolkit, maintaining a mixed economy that may have involved exchanges of wild resources, maritime products, and, increasingly, agricultural crops. Toala foragers may have provided specialized forest products and gradually retreated to limited inland areas (where they are found in recent times) in the later Metal Age as exotic prestige goods, intensive lowland rice production, and large trading “centers” appeared in the coastal regions where the 13th-14th century maritime trading Bugis and Macassar kingdoms emerged.

In Malaysian Borneo, intensive archaeological work in the Niah caves - with good organic preservation, skeletal material isotopic signatures for environments, and a good sequence of radiometric dating - Barker and his colleagues were able to demonstrate the presence of distinct but interacting ‘foragers’ and likely intrusive ‘forager-farmer-maritime traders’ practicing strategies of eclectic resource use in the Neolithic Period through the Metal Age, with forest foraging, marine/estuary use, and limited crop production (likely primarily root crops rather than rice) until the early second millennium A.D. (Barker and Richards, 2013; Lloyd-Smith, et al., 2013). Based on the Niah data, Barker echoes emerging contretemps with traditional models of Austronesian impacts in island Southeast Asia, noting that the prevailing “meta-narratives or all-embracing theories of ‘colonization’ versus ‘acculturation’ are unsatisfactory in their inability to deal with the increasing complexity and variability of the regional archaeological record” (Barker et al., 2013:357).

2.5 Archaeological Approaches to Forager-Farmer Interactions in Later Prot-Historic and Historic Complex Societies

Archaeologists focusing on the later Metal Age Period, the Early Historic Period of state development, and multi-ethnic polities in more recent historical periods have had the advantage of

more archaeologically visible open-air sites and historical records (indigenous Southeast Asian, Chinese, and European contact) to contextualize the material record. Perhaps because of the greater numbers of contemporary foragers that have attracted long-term ethnographic study in the island archipelagos of the region, and the substantial Chinese and European contact records providing explicit descriptions of local trade involving interior foragers, archaeologists working in island Southeast Asia have tended to take the lead in regional-scale archaeology focused on forager-farmer interactions spanning the later Metal Age and state emergence. Here we start out with a comprehensive regional archaeological study of one of these more recent forager-farmer interaction spheres, then present comparative work from other regions where projects are still developing.

2.6 A Regional Scale Case Study in the Early Second Millennium AD Philippines

As an early advocate of a regional approach to the archaeological documentation of complex, multi-ethnic social landscapes in the later periods of prehistory in island Southeast Asia, Karl Hutterer launched systematic regional settlement survey projects on the islands of Samar and Negros in the Philippines that were specifically aimed at elucidating economic specialization, social networks, and exchange linking coastal trading agricultural societies and interior foragers (K. L. Hutterer, 1974; K. L. Hutterer and Macdonald, 1982), work followed up in later years by Laura Junker (1999b). Three decades of regional survey and excavations in the 315 km² Bais-Tanjay Region of Negros documented more than 300 sites. This has included a diverse range of settlement types primarily spanning the later Metal Age to Early Historic (pre-Spanish) and Spanish colonial periods within the large alluvial plain occupied by the *Visayan-speaking* population of a coastal agricultural and maritime trading polity in the 15th-16th centuries and in the rugged upland interior historically (and to some degree today) inhabited by *Bukidnon* swidden farmers and *Ata* foragers (Junker, 1998, 1999a).

Excavations of pile house remains, burials, and probable ceramic and iron production locales at the river mouth site of Tanjay and related lowland sites, coupled with intensive regional survey in the Bais-Tanjay river drainage area documented the growth of a maritime trading polity centered at Tanjay that was increasingly engaged in foreign prestige goods trade involving Chinese, Mainland Southeast Asian, and Indian products, such as archaeologically visible porcelain, beads, and bronze Junker (1999). Particularly after the 14th century, several trends in the archaeological data suggest the emergence of a polity that expanded its political and economic reach in the region, and that specifically engaged with interior foragers more intensively in new forms of social interaction and trade (2002c). Regional settlement analysis indicates a significant expansion of the coastal center of Tanjay, a rise in overall site densities and, most importantly, large upriver secondary centers that begin to appear, which likely functioned as locations for concentrating the upland exports (largely tropical forest resources)(Junker, 1990, 1999b:221-260). Agriculture intensified in the lowlands, evidenced in accelerating forest reduction and the possible establishment of wet rice fields, recorded through geo-archaeological, paleobotanical, and zoological studies (Green, 2010; Gunn, 1997; Mudar, 1997). The regional production of metal goods and pottery appears to become more centralized at Tanjay and at other secondary centers (Junker, 1994b; Junker et al., 1994), with increasing standardization of some ceramic forms that appear to be common exports to interior upland groups. Growing status differentials and social competition, at least partially fed by foreign prestige goods trade, are evident by the 15th to early 16th centuries in household remains, burials, and features associated with ritual feasting at Tanjay (Junker 2001; Junker and Niziolek 2010). Finally, rising conflict in the 15th and 16th centuries is suggested by the appearance of “warrior-burials,” a large-scale massacre event, a proliferation of head-taking, and a significantly higher frequency of iron and bronze objects that are almost certainly weapons recovered from excavations at the center of Tanjay (Junker, 1999:336-369). The archaeological evidence suggests a high level of social

volatility that may represent the escalation of social stresses in this ever more complex social landscape of competing lowland polities, powerful foreign raiders and traders, and upland foragers and farmers.

Turning more specifically to the hunter-gatherers enmeshed in this complex regional social landscape, ethnographic work and historical sources on the Ata of Negros Island, as well as other forager groups in the Philippines, indicate that they traditionally lived in co-residential groups of 35 to 50 that were highly fluid in composition. They were highly mobile, moving according to a changing mix of economic opportunities associated with seasonal differences in resource availability (largely associated with wet season/dry season contrasts) and according to social factors (i.e., resolving social friction and risk management by maintaining strong external ties with other foraging groups, and beneficial exchange and social relations with sedentary populations) (Eder, 1988b; Griffin, 1989). Ethnographic and historic reconstruction of seasonal mobility patterns among the Negros Island Ata indicate that they generally nucleated in longer-term upland camps in the rainy seasons focused on hunting and collecting forest products (as well as occasionally managing their own swidden fields), with specialized activities radiating out in a “tethered” pattern from these base camps (Junker, 2001:349-353, 2002c). In the dry season, Ata foragers dispersed into smaller and more frequently moved camps of extended families for river fishing and collecting exportable forest resources, and forays downriver into the lowland-upland margins to obtain goods directly from lowland traders or indirectly through Bukidnon middlemen.

While recognizing the general difficulties in archaeological identification and the dating of relatively ephemeral homesteads of swidden farmers and forager camps, a large-scale archaeological survey, site coring, and excavation program, like that carried out in the Bais-Tanjay region produces patterning and redundancies in the archaeological record that can allow us to begin to at least roughly sort contemporaneous sites into forager and farmer occupations to examine the spatial contexts and material content of forager-farmer interactions over time and space (Junker, 1996, 1999a, 1999b:242-260, 2002a, 2002b; Smith and Junker, 2014). In the Tanjay Region, “forager” camps are differentiated from

both upland swiddener hamlets and lowland villages by their compact sizes, significant-sized lithic assemblages (although agriculturalists also use expedient lithic as well as perishable and metal tools), few features (such as multiple hearths and substantial postholes) associated with long-term sheltering, and distinctive assemblages of lowland manufactured goods that are dominated by easily portable tools and preciosities (e.g. marine shell and glass beads, iron implements, porcelain fragments chipped into wearable ornaments) (Figure 2). “Forager” sites, most of which can be provisionally dated by lowland products to the 12th-16th centuries, can be further distinguished in terms of spatial patterning over the landscape, size, intensity of occupation, artifact assemblages, and probable seasonality. Both larger sites and dispersed smaller sites characterize the uplands with less lowland products and more lithic material and animal bone. Dense clusters of larger sites (probably representing a palimpsest of repeated return visits to the same locale) are concentrated at the lowland margins, probably representing dry season excursions to the lowland margins for trade. These sites typically have distinct lithic assemblages of steeply edged scrapers and blades, possibly used to process hides or plant materials like rattan which are common trade products, and higher concentrations of lowland-derived pottery, metal, and foreign exotics such as beads and porcelain fragments.

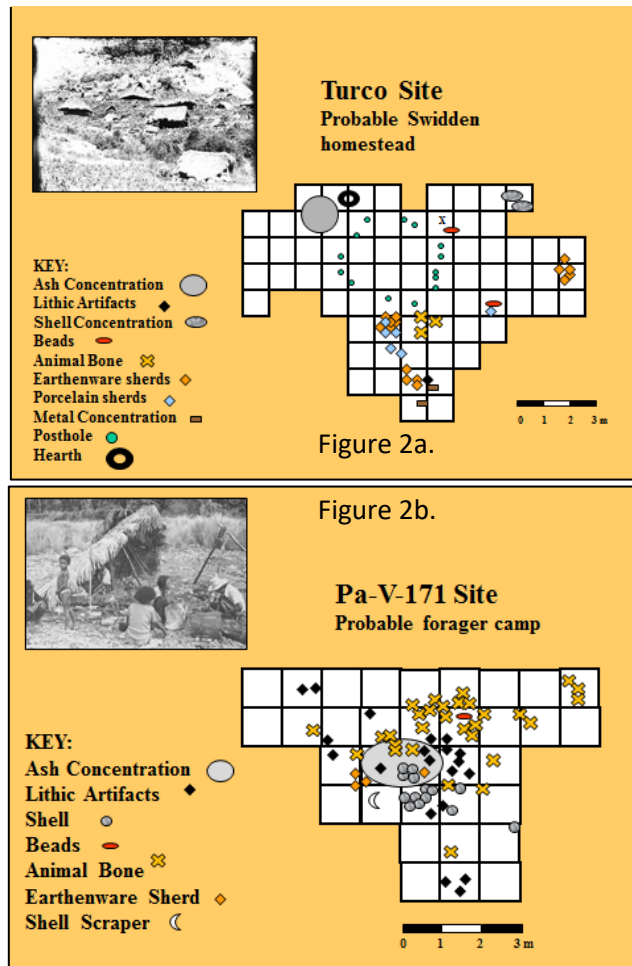


Figure 2. Differing archaeological signatures of the homesteads of permanent or semi-permanent swidden farmers (Figure 2a. top) versus ephemeral camps of foragers (Figure 2b. bottom) in the Tanjay Region during the 15th-16th centuries. There is some overlap in features and artifacts, but clear differences in housing investment and artifact assemblage composition. [Permission from Laura Junker]

Statistical studies of the flow of lowland-produced pottery and iron, exotic beads and marine shells in the Bais-Tanjay region show a distance-related fall-off suggesting “down-the-line” exchange along the Tanjay River and its upriver branches, particularly after the steep elevation climb from the flat alluvial plane at 100-200 meters. Upland flowing trade in all archaeologically visible lowland commodities (earthenware, iron, marine shells, foreign beads and porcelain) increases at the 15th to early 16th centuries height of maritime commerce into the Tanjay chiefdom. However, more germane to

the forager side of this upland-lowland trade is the increasing presence of botanical evidence for high elevation tropical forest medicinal plants, herbs, and spices, as well as an expanding range of tropical forest animals, appearing at the coastal center in the 15th to 16th centuries, many of which are listed in Chinese trade records as export products out of ports like Tanjay (Gunn, 1997; Junker, 1994a, 1999:326-330, 2002a; Junker et al., 1994; Mudar, 1997). Interestingly, some exotic earthenware types appear in the 15th-16th centuries at upland sites associated with both foragers and largely sedentary swidden farmers that are not traceable in archaeological compositional analysis to common Tanjay-produced wares with identifiable lowland clay sources (Niziolek, 2013), suggesting that the Ata and Bukidnon had considerable agency in who they chose as lowland trade partners and that they may have manipulated one potential patron over another (Smith and Junker, 2014) (Figure 3).

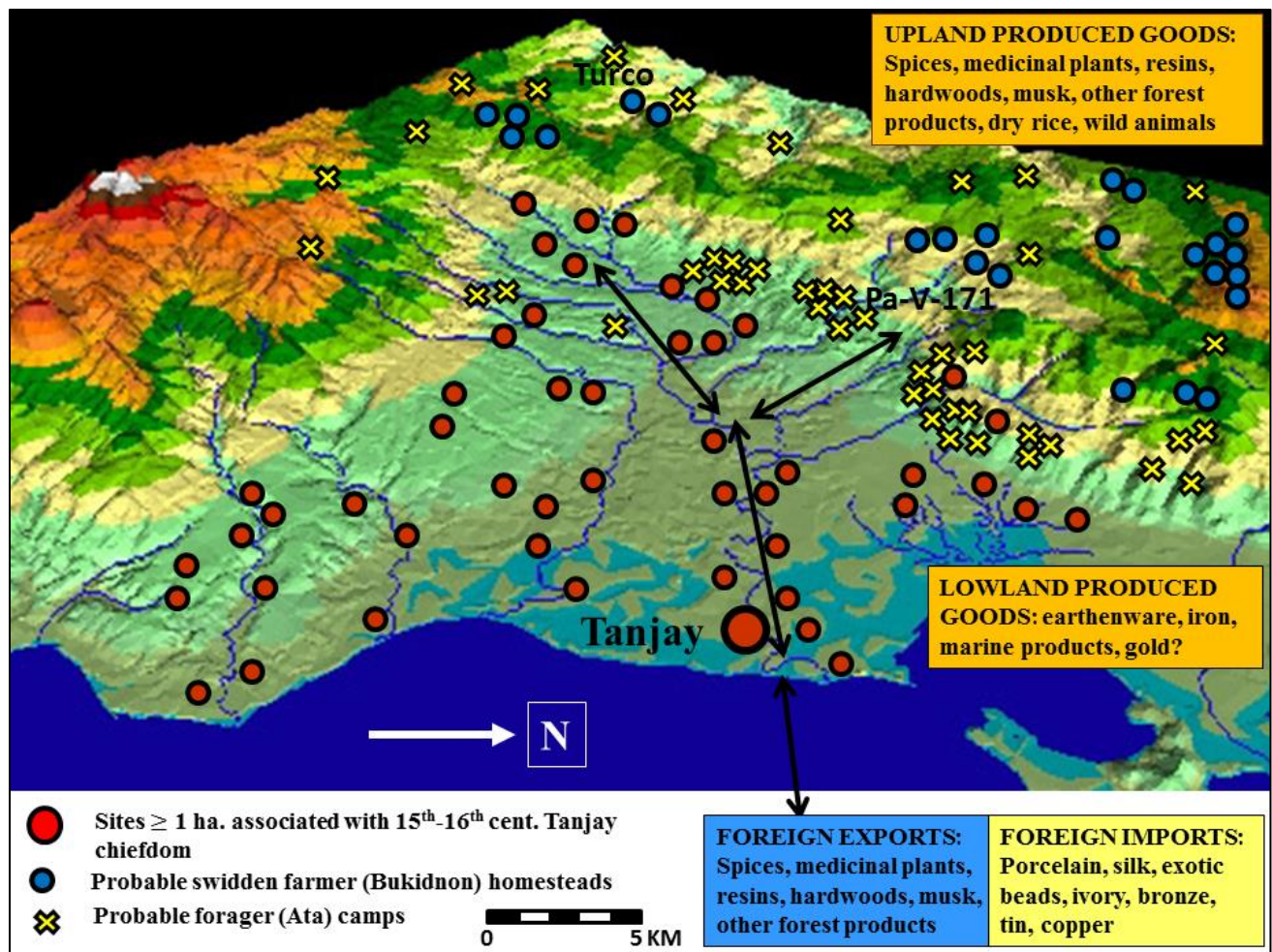


Figure 3. An example of an archaeologically known ‘forager’ settlement landscape on the island of Negros in the Philippines, with reference to 15th- early16th century settlements of farming populations within the trade interaction sphere of the lowland-based early historic period chiefdom of Tanjay. [Permission from Laura Junker].

2.7 Archaeology and Ethnohistory in Examining the Role of Foragers in Late Metal Age and Historic Southeast Asian Societies

While the work in the Philippines is thus far the most extensive regional-scale archaeological study specifically aimed at elucidating forager-farmer interactions tied to the early second millennium AD, maritime trading polities, a number of other regional-scale archaeological projects in Southeast Asia

have begun to integrate the study of interior/upland groups harvesting specialized forest resources for trade into the complex social landscapes of this period. In some cases, historical records allow researchers to specifically identify the small-scale groups who produced the archaeological sites as long-term “foragers” on the margins of lowland polities, while in other cases it is indeterminate whether the groups providing forest products are seasonally mobile foragers or sedentary upland swidden farmers who engage in forest product commerce.

In the Maluku island chain of eastern Indonesia, ethnographic work among the Nuaulu and Tonutil foragers (Ellen, 1988; VMasinambaw, 1972) and historic research by (Andaya, 1993a, 1993b) portrays a foraging population that became increasingly involved in trade in resins, bird plumes, spices, and other forest products to maritime trading polity centers such as Ternate and Tidore, which had reached their height in the 15th to 16th centuries. An extensive archaeological survey and series of excavations of a number of these cave sites in central Maluku by Latinis and Stark (2005) (see also Stark and Latinis, 1996), yielded evidence for short-term, possibly seasonal and likely repetitive occupation of these sites, with many spanning the Metal Age and Early Historic periods via evidence based on artifact assemblages and some radiocarbon dates. Archaeological materials include evidence for specialized collecting activities (e.g., canarium nuts, fruit tree and other wild plant remains, nut-cracking stones, a range of flaked stone tools, a net weight, faunal remains, and gastropod shells), but also decorated earthenware pottery, stoneware, and porcelain that represent trade items. Stark and Latinis (1996) are ambiguous in assigning some of these sites to interior groups that are primarily forager-traders rather than sedentary agricultural populations that occasionally used the caves for collecting and hunting trips or burial/ritual purposes, although we note that manufactured products generally associated with sedentary farmers and exotic preciosities are consistent with the archaeological finds at both 15th to 16th century and 20th century “forager” camps in the Tanjay region of the Philippines (Smith and Junker, 2014).

Several other archaeologists working in island and mainland Southeast Asia have modeled Early Historic states with dendritic river-based trade systems from a limited number of known archaeological sites (Bronson, 1977; see also Manguin, 2011; Miksic, 1984). Less often, researchers have launched regional archaeological surveys and excavation product recovery along dendritic river systems focused on the diverse social landscapes and intertwined economic structures, including foragers, surrounding early maritime trading polities of the late first millennium to early second millennium (e.g., Allen, 1991, 1998). These archaeological studies have primarily focused on the highly visible, lowland-originating trade goods, such as foreign porcelain and stoneware, glass beads, and bronze ornaments and other metal goods at large interior sites that show political and economic connections to polity centers through these prestige goods and Indian style ritual architectural remains which are thus interpreted as ‘concentration centers’ for interior products. While there is only indirect archaeological evidence in all of these projects for the specific role played by foragers like the Kubu on Sumatra or Semang/Orang Asli on the Malay Peninsula in amassing the historically-recorded ivory, rhino horns, resins, spices, alluvial gold, and other products for export, these studies lay the groundwork for the challenging future task of identifying archaeological traces of the material history of these “missing” interior groups (including both foragers and small-scale swidden farming societies) within these complex social landscapes.

In a study that examines river-based systems of upland-lowland trade in central Vietnam spanning the Late Iron Age to historic Champa states, (Phường, 2010) notes that Sa Huỳnh earthenware, iron implements, bronze earrings, carnelian beads, and later identifiable Champa products are found far upriver in the Thu Bồn river basin at upland sites presumably associated with forest product collectors. However, the identity of the forest resources specialists as primarily commercialized ‘foragers’ or upland rice farmers who provided the ivory, rattan, spices, incense woods, honey, beeswax, and other goods recorded in Chinese import rolls is unclear and requires further archaeological work at these interior sites, including botanical and faunal analyses. Another recent project that is very promising for shedding

light on local production and exchange systems associated with overland trade routes across the Upper Thai-Malay Peninsula at an even earlier date (the later few centuries BC to the early first millennium AD), are the archaeological excavations at Khao Sam Kaeo (Bellina-Pryce and Bellina, 2014; Bellina-Pryce and Silapanth, 2006). This walled urban-like center, with significant Indian-inspired architecture of obvious regional power, housed what may have been multi-ethnic artisans producing ceramics, beads, iron and other goods that were funneled into maritime trade networks of the period. However, it is likely to have been central to intra-regional production and exchange networks that included both rural farmers and foragers. However, the project is just beginning to carry out archaeological investigations of interior sites that may represent second-tier centers politically and economically tied to Khao Sam Kaeo, the villages of interior hinterland farmers who supported the complex coastal polity through agriculture, and that possibly were settlements associated with ‘forager’ populations, such as the historically and ethnographically known Semang who specialized in procuring and trading forest products.

Finally, it is important to emphasize again the ambiguity of assigning ‘forager’ or ‘farmer’ status to recent small-scale societies with eclectic and historically shifting economic strategies, as illustrated by ethnohistoric and archaeological work on distinctly ‘non-Khmer’ specialist groups integrated into the 9th - 14th centuries’ Khmer empire. The ethnic ‘Kuay’ minorities who still live in the vicinity of ancient Khmer urban centers like Angkor Wat in Cambodia (as well as in areas of eastern Thailand) are currently primarily rice farmers who also collect and have significant knowledge of forest resources, but historically appear to have functioned as forest product specialists, elephant trainers, and iron workers for the Khmer state (Hendrickson, 2011; Pryce et al., 2014). Evidence of massive iron-smelting sites within the walled industrial enclosures of the Khmer site of Preah Khan corroborates the metallurgical aspects of what appears to have been the use of small-scale ethnic minority groups for both specialized craft work and activities associated with knowledge of forest resources. We simply do not know the long-term history of many of these small populations of “forest specialists” who, like the Punan of

Borneo, can be quickly labeled as devolved agriculturalists or spurious foragers when they engage in what are considered non-forager activities and show a shrewd predilection for opportunistic shifts in economic strategies (Junker, 2002b; Morrison, 2002). As more archaeological projects on early historic complex societies in Southeast Asia start to turn to the regional “hinterlands” with their eclectic social landscapes, these types of archaeological studies are likely to multiply.

2.8 **CONCLUSION**

Archaeologists working on issues of agricultural transitions, incipient social ranking, and the rise of centralized states in the Neolithic Period through the Early Historic periods in Southeast Asia have just begun to expand their work of examining more complex settlement landscapes of interwoven economies and social networks, including groups that could be classified as specialized ‘foragers.’ There are some promising directions for archaeological analysis of these ‘small worlds’ of foragers and small-scale farming societies within the social, economic, and political orbits of developing ‘centers.’ These include a growing interest in regional-scale settlement archaeology to identify distinct social groups and their archaeological signatures, the development of finer archaeological chronologies, and the application of recent methods such as ancient DNA analysis, isotope analysis, and chemical sourcing of artifact materials that can illuminate the myriad forms of interaction within these increasingly complex Southeast Asian social mosaics. The next chapter will review anthropological approaches utilized in the study of ecological strategies of equatorial tropical foragers.

III. CHAPTER 3

3.1 **Equatorial Tropical Forager Ecological Strategies in Southeast Asia and World-Wide: A Review of Anthropological Approaches**

In this chapter, the emphasis is on a broader range of forager strategies and behaviors across a spectrum of recent and archaeologically known foragers, not only in Southeast Asia, but in other areas of the world in which forager and sedentary farming societies of some scale regularly interact, primarily through trade of resources, but also mixing strategic avoidance of larger-scale sedentary societies under varying circumstances as a shield against assimilation into dominant farming societies where they become an underclass. Early to mid-20th century ethnographic and archaeological studies of ‘hunter-gatherers’ tended to conflate archaeological remains associated with pre-agricultural sites in Africa, North America, Europe, and Asia with ‘marginalized’ or ‘remnant’ forager populations in these regions who were seen as timeless (or in ‘equilibrium’ over long periods of history), rather than as entities within dynamic and complex social and ecological contexts within a natural and built landscape prompting scholars to “re-represent” histories of hunter-gatherer populations with emic, agency-centered accuracy (see Kusimba, 2005; Schmidt and Walz, 2007). Even as assumptions of largely homogenized patterns of observed or inferred behavior in these small-scale societies were beginning to be queried in the early and mid-20th century by both archaeologists and ethnographers in terms of broad patterns of ecology and social structure (Steward, 1972, 2006), cross-cultural classifications of human societal forms and levels of political complexity in anthropology established in the early 1960s presented highly standardized views of “egalitarian,” “band”-level forager societies (Fried, 1957; Sahlins and Service, 1960; Service, 1962). While the emphasis on a holistic anthropological approach to forager studies was a significant shift towards a ‘behavioral’ and ecologically-focused approach (Abel and Stepp, 2003; Lloyd, 1985; Vayda and McCay, 1975), specific well-documented case studies were plucked from the ethnographic record of recent foragers to support archaeological modeling of expected regional spatial

patterns of forager sites dated to the Pleistocene (Clark, 1960; Coinman, 1969; Jacobson, 1979; Winterhalder, 1977). Thus, the ethnographic analogy from living groups were interpreted as evidence of somewhat timeless social and economic practices. Most research on small-scale foraging societies, either as ethnographic subjects or archaeological data from the past, showed a preference for investigations of temperate foragers in North America, Europe, Africa, and northern Asia, in various periods, either in the Pleistocene or historically on the margins of much later expanding states and empires, where they were seen as remnants of an earlier age who eked out a living by becoming culturally-corrupted forest or savanna specialists (R. Lee et al., 1968).

Similar to global academic literature, equatorial rainforest groups, particularly in Southeast Asia, were particularly little studied until the 1960s and 1970s with the increased emphasis on human-environment interactions in anthropology, archaeology, and various ecologically focused disciplines (Hardesty, 1972; Love, 1977; Rapoport, 1976). Despite the general shift of discussions about equatorial foragers to holistic anthropological regional perspectives, many of these early ethnographic and archaeological studies of equatorial foragers echo global sentiments of foragers as evidence for somewhat timeless social and economic practices. Consequently, this chapter examines the shift from small-scale, simple “hunter-gatherers” to regional-scale strategies employed by complex foragers, now acknowledging the complexity behind hunter-gatherers, or a more appropriate term, foragers, and secondly, elaborates on the complex strategies that foragers have managed to manipulate under varied circumstances over time.

3.2 Long-Term Histories of Foragers in the Southeast Asian Equatorial Tropics

As noted in Chapter 1, a multi-faceted ethnographic, archaeological, and historical approach to understanding Negrito populations diachronically and spatially best fits the term forager. The categorization of indigenous populations as simple hunter-gatherers diminishes a truer understanding of the multitude of subsistence strategies that they have used for centuries. Therefore, this dissertation will use of the term ‘forager’ in its examination of these groups as historically situated and economically and socially diverse (as materially represented in the archaeological record), with economic strategies both shaped by environmental resources, risk factors, and seasonal or long-term perturbations in the food quest. They have done so engaging in socio-economic strategies of calculated “engagement” or “non-engagement” with sedentary agricultural societies. This research, along with the ethnographic and archaeological research of a plethora of anthropologists (Griffin, 1989; Kent, 1992a, 1992b; Kusimba, 2005; Rabett et al., 2017) illustrates the ways that foragers have adapted to changing conditions globally, spanning this dichotomous characterization while still maintaining their membership in what recent ethnographic and archaeological research has shown to be very complex strategies for obtaining resources, often sharing the landscape with larger sedentary populations. The term “forager” assumes a well-versed understanding of the seasonality of resources and landscapes with usable environmental resources, and known means of obtaining food, raw materials, and technology. Tropical forest foragers engaged in simple hunting and gathering, but also fishing, bouts at small-scale farming or translocation of plants and crops so that they were located closer to traditional settlement grounds. These strategies also included partaking in wage labor and, even intra-land, inter-island, and international trade networks. However, this term possesses some argumentative flaws in terms of a broad categorization of hunter-gatherers, questioning the membership of groups that employ these various strategies. The patterns of the groups discussed do provide, in every political, economic, sociocultural, and historical

sense, insurmountable evidence that the groups referred to as foragers remain unique with distinct members in this “simpler” society.

While prior to 10,000 years ago, foragers spanned the globe, in the Holocene foragers radiated into differing ecosystems than those of the Pleistocene (Fitzhugh and Habo, 2002), adjusting their strategies to post-Pleistocene conditions that included a range of practices in terms of mobility tactics and ecological strategies (Fisher, 2002; Fitzhugh, 2002; Junker, 2002a; Kipnis, 2002; Savelle, 2002). The descendants of Southeast Asian foragers in the Late Pleistocene/Early Holocene appear to have had strategies of hunting megafauna along the dry land routes of the Pleistocene-connected landmasses (Dunn, 1970; Mijares, 2008; Piper and Rabett, 2014). Clearly, considering foragers at this time on island Southeast Asia’s large landmasses, it is important to consider the variability (both geographically and temporally) of tropical terrains and how ecological variation and unexpected environmental perturbations directly and indirectly affected forager decision-making involving calculations of risk, energy requirements, and preparations for alternative strategies. As a matter of fact, Bettinger quotes a reformed Spencer as making the same case that “nature and environment were essential to understanding human behavior and the course of social evolution” (Bettinger, 1991:21), consonant with other early ecological anthropologists (Steward, 1955). McKennan and Damas (1969) forcefully argue for the importance of ecological opportunities and dynamic strategies involving both social and ecologically based assessments employed for maximizing resource availability and the social cohesion of small groups. Therefore, the environment clearly played a fairly significant role in shaping sociocultural components of forager social structure, especially in a tropical forest with highly seasonal changes in resources and patchy, sometimes unpredictable, resources that can vary markedly from season to season and from year to year.

When it comes to the season-to-season, as well as the year-to-year strategies of movement and resource acquisition in these tropical upland forested landscapes, a significant aspect of the Philippines

case is that terrains are not the sole determining factor in the forager interior island uplands chosen for use. Rather it involves the availability of resources, the difficulty of the landscape, and the access to (in my specific case study) trade networks that have been and continue to be the most important determinants of how specific groups of hunter-gatherers chose to live and mobilize. Understanding the multi-facetedness of the various forager strategies provides great insight into how specific groups have chosen to adapt to their environment, but moreover exposes the complexities and diversity behind adapting to these various methods of forager strategies.

Karl Hutterer makes a significant distinction in comparing the types of ecological landscapes in tropical forests, noting that the term “tropics” denotes areas near the equator that lie within the tropics of Cancer and Capricorn. Yet when tasked with describing this type of environment, its characteristics are undoubtedly variable with the only two distinguishing factors being the levels of radiation and humidity/precipitation (Hutterer, 1984:62). Because of these factors, foragers are faced with either infertile soils or very fertile soils as they move away from the equator. These areas may also give way to open woodlands and scrub-like plants in more arid places. Equatorial, tropical-humid environments are said to be categorized by “at least 100 mm of rainfall each month,” high temperatures, with variant degrees of alternating wet and dry seasons with possible strong monsoon patterning (Eder, 1993:25; Griffin, 1984:100; Hutterer, 1983:178; Lockard, 2009:6). Currently, in areas with less recent commercial logging, there are large swaths of secondary forested terrain but limited primary forest, with mostly rainforest-type vegetation characterized by abundant plant growth of tall trees and climbing plants and shrubs that may contain roots, fruits, nuts, and berries. However, many areas may also be classified as “green deserts, devoid of harvestable plant foods and edible game” (Eder, 1993:25; Hutterer, 1983:100). In comparison to other terrestrial ecosystems, rainforests are said to possess “fewer animals per kilogram of plant matter than any other” (Hutterer, 1984:62). This variability is marked and generalized statements about what classifies these ecological zones as “tropical forests” are extremely

varied in terms of actual breadth of usable flora and fauna resources on a daily basis and differing seasonal levels of food resources that regulate their movements in the annual quest for food.

The area of this dissertation's research lies within the equatorial tropics and there is a significant amount of ethnographic information on variations in forager strategies in Southeast Asia throughout the Philippines and in Thailand. Provided by P. Bion Griffin's research (Griffin, 1984:96). Griffin contends that modern foragers, even throughout the Philippines, have adapted differently. Simple comparisons of the Tasaday of Mindanao, the Jarawa and Onge of the Andamans, and the Agta demonstrate this. Because of these differences, researchers have detected variations in mobility, settlements, and resources exploited by these groups, but they have also noted some strong commonalities. According to these sources, no matter the group, tropical foragers are indeed highly mobile. Researchers (Eder, 1978, 1987; Estioko-Griffin and Griffin, 1975; Griffin and Griffin, 1985; Griffin and Solheim, 1988; Rai, 1990; Vanoverbergh, 1925a, 1925b, 1925c, 1929, 1930a, 1930b, 1933, 1936a, 1936b, 1937) that have studied the island foragers like the Aeta, Agta, Ata, Semang and the Batek have noted that they make between 17 and 26 residential rounds throughout the year. These rounds span 5 to 12 kilometers from the previous sources and can cover an average yearly distance totaling around 300 kilometers+. Still other foragers, like the Penan, move as much as least 45 times a year, with an average distance between settlements of around 8 miles, whereas the inland Andamanese only move around 8 times a year, with an average distance of about 2-3 miles between settlement areas (Kelly, 1995:114-115). These high degrees of mobility, based on the "forager-collector" model (Kelly, 1995:117), compared to foragers of temperate, boreal, and arctic forests, is the seasonality cycle that is typified in most of tropical Southeast Asia. Slight differences in this traditional strategy of highly frequent movements are related to rainy periods with monsoons and heavier rain versus, the dry season which allows more mobility in the absence of swollen rivers. These seasonal differences within the equatorial and tropical zones, particularly in the Philippines

and Vietnam, are more marked by frequent typhoons that swell the interior rivers and make travel difficult in comparison to other Southeast Asia upland tropical forests (Lockard, 2009:6).

In northeastern Luzon, as throughout most of the Philippines, the wet season begins in late October and extends into March, with May through September being dry except for an occasional typhoon. Within these islands, there are also a number of significantly large river systems that traditionally provided freshwater sources for obtaining riverine food as well as allowed fast transport down river drainages towards the coast for trading upland products to the socially stratified maritime trading and farming societies at the mouth of these interior rivers. In the Tanjay-Bais area alone, there were at least seven river systems and five different elevation zones (Hutterer and Macdonald, 1982:171). These were artificial divisions that were created by Karl Hutterer to organize regional level surveys. These divisions did not necessarily mark any specific topographic unit, but nonetheless, divided the area into “0-100 meters,” which included all of the lowlands. Considerations for the designated 100–300-meter zones were made as this elevation zone included an abruptly steep ascent to the uplands and were probably areas where the foragers would be close enough for safe trading while still remaining far enough on the floodplain. In addition, anything above 300 meters was likely associated with the Agta and some Bukidnon swidden farmer groups on some flatter upland areas. The main point here is that that these types of tropical conditions and zones were covered in forested mountainous ranges with numerous waterways and rivers that give way to fertile river valleys, seas, and oceans are ideal environmental zones for hunter-gatherers because of their great ecological diversity. This is evident from the fact that hunter-gatherers have been living and sustaining themselves in these areas for millennia. The tropics, however, are also plagued many other issues, according to Karl Hutterer (1985), including rapid soil weathering and decomposition in higher altitudes, slow recovery of rain forest growth if cleared, and soils very rich in iron that lack nutrients (Hutterer, 1985:61, 65). Therefore, what foragers are dealing with are territories where they lack the ability to reside in one place year long.

Heavy monsoon- influenced rains, often seasonal, bring large scale flooding in the lowlands, forcing groups into higher elevations. Furthermore, activities near water systems that allow the exploitation of river resource use for activities like fishing are still subjected to the spawning patterns of animals and the accessibility of the coast through these lean seasons.

This is even more so, because numerous records that discuss the fauna and flora of the Philippines (Department of War, 1903; Eder, 1984; Hutterer, 1985; Rai, 1990; Seitz, 2004; Torre et al., 1982) emphasize the general absence of large mammals, with wild pig and deer being the largest possible prey, although civet cats, monkeys, diminutive deer species, and bats (including a large range from the world's largest to the most diminutive of bat species) have been prevalent in the post-Pleistocene tropical forest. This is particularly the case on rugged mountainous islands with heavily forested interiors well into the early 20th century. The various foraging groups in the interior of a number of the larger Philippine islands also emphasize foraging strategies of frequent movements due to the rather small patchy amounts of ground vegetation available resulting from the many canopied layers of trees and vines that prevent sunlight from reaching the ground. These frequent movements, and lack of abundance due to diffuse patterning of most tropical resources, required the maintenance of small settlements typically with a few dozens of closely related kinspersons who made multiple moves between camps (often re-visiting the same locations annually), and generally maintaining small group size. However, group sizes also fluctuated through the seasons, either increasing and decreasing depending on the abundance or lack of resources at a particular time of the year, as well as seasonal weather issues. As will be discussed later in this chapter, the wet monsoon season in the Philippines, and in other equatorial Southeast Asian Island groups, generally restrains long-distance movements to the lowland margins for trade with large-scale sedentary farming societies and market towns on the coast due to dangerously swelled rivers. The Ata traditionally focused on fishing, hunting, and collecting tropical forest resources in the mountains. In contrast, the dry season allowed them to move to at least

the margins of the lowland plain and, in some cases to, the coastal settlements, to exchange forest products. These generalized statements about foragers provide a glimpse into potential strategies; however, a careful examination of this variations in forager strategies in tropical and semi-tropical environments is crucial to a clearer understanding of this variation.

The Philippine “Negritos” are genetically ‘Melanesian’ populations of hunter-gatherers that spread throughout island Southeast Asia in the late Pleistocene. They are distantly related to the forager populations that colonized island Southeast Asia during migrations south along the then-joined “Sundaland” jutting towards Australia and New Guinea along the linked Malay Peninsula, Borneo, and the Philippine islands (P. Endicott, 2013; McAllister et al., 2013; Ulijaszek, 2013). Even though many hunter-gatherer groups have disappeared or assimilated due to outside pressures, the presence of foragers still remains a vibrant part of this area through the Ata/Agta/Aeta/Ayta/Ati of the Philippines Islands, the Batek of Palawan, the Kubu of Sumatra, and the Semang of peninsular Malaysia, and a host of others. These groups generally live in small family bands and it is in these bands, or camps, which typifies these Negritos, who, like the Ata, are residentially mobile forager-collectors (L. R. Binford, 1980). Memberships in these bands fluctuate according to the abundance of materials in an area as well as the will of its members to join another band, marry out of the band, or simply leave it. For the Ata, moving at least around 20 times a year, their settlements tend to be a small number of non-permanent, makeshift shelters, commonly refer to in Navin Rai’s research (1990) as lean-tos. Navin Rai’s ethnographic work, along with Agnes Estioko-Griffin (1985), P. Bion Griffin (1999), Thomas Headland (1987; 2002), T.S. Oración (1963), Reynolds (1974), Rahmann and Maceda, (1955, 1973), Eder (1988b), Cadeliña (1973), and Seitz (2004) all allude to these types of patterns among Negritos from northern Luzon to the islands of Negros and Cebu. Archaeological projects from Karl Hutterer (Hutterer and Macdonald, 1982) and Laura Junker (Junker et al., 1995; Junker, 1990, 1993a, 1993b) align with these ethnographic observations. Among foragers in the Philippines, one sees a high degree of mobility,

particularly during certain seasons. These patterns span from an increase in forager camps, when wage labor and harvesting of farmer crops are options, to a shift of forager sites into the highlands during the wet season. One may even see the size of forager settlements changing throughout the year, depending on their locations in various ecotones. These data sources point to several adaptive strategies used by foragers in the Philippines, and in the tropics as well.

Although foragers in the tropics are said to settle in small, familial camps, and these camps tend to move frequently so as to not overuse resources. However, variations still exist even among tropical foragers in the varied landscapes and ecological diversities across island Southeast Asia. For example, the Ata differ from groups like the Batak on the island of Palawan in the Philippines (Eder, 1988a), the Semang of peninsular Malaysia (Benjamin, 2013), the Semai of Indonesia (Archer and Ritchie, 1969; Gomes, 1988), and the Kubu of Borneo (H. O. Forbes, 1885). The Batak of Palawan inhabit an area with considerably less rainfall than Negros Island, due to a diverse but not particularly rugged topography, contrasting with the high chain of volcanic mountains that form rain clouds during the pronounced “rainy season” on Negros Island. The Palawan Island Batak live in an environment categorized as seasonally dry over an extended period (Eder, 1988, 1993). This type of dry-tropical condition is characterized by a reduction in the richness of the flora, but also consequently increases the clustering of similar flora species. Eder’s description of the local ecology suggests that the Batak possess a greater range of foraging areas for plant food consumption and are more accessible to trees, shrubs, vines, seeds, fruits, and tubers than in humid tropical environments (Eder, 1993:24-25). This type of terrain has allowed for settlements similar to those of the Agta but has also allowed for greater size settlements. Eder goes on to cite Warren’s (Warren, 1964) observations of these camps as varying in composition and size according to availability of resources at specific times, inclining toward foraging vs. lowland trade opportunities, and seasonal availability of various kinds of foodstuffs. He notes that these camps would get as large as 40 families depending on seasonal differences in resources, but more commonly breaking

into smaller groups averaging, most of the time, family units of two to five households. According to Eder, the Batak “were a highly mobile people, however broadly dispersed across the landscape in a series of transitory forest and riverine camps [with 10-20 individuals] of constantly shifting size and membership, but also always consisting of a cluster of related, nuclear families (Eder, 1987:28; Warren89, 1964:89). Overall, ethnographic work by Eder indicates that the Batak often depleted resources in one area over a two-week span, resulting in at least “17 to 26” residential movements that involved fluid movements of groups of closely related core kin, and occasionally melding more distant kin in a larger band where seasonal food resources were concentrated, or for sociality purposes. The Batak descriptions all fall in line with typical tropical forager mobility patterns and settlements in an environment with patchy, seasonal forest resources. However, during times of large settlements, their behavior mimics that of the Semang. The Semang and Batak tend to also aggregate in larger group sizes. The Semang of Malaysia and the Batak on Palawan do move frequently; however they tend to make short daily trips from the larger main settlement and return to these home bases for significant periods of time. This type of strategy only persisted during short periods though.

Interpretations of long-term ‘forager’ lifestyles among groups, like the Semai and the Kubu in the Malay Peninsula and Borneo, have been challenged by some cultural anthropologists and archaeologists (Glover and Bellwood, 2004; Lee and Daly, 1999:278-279) who believe that these groups were re-specialized foragers whose ancestors were originally agriculturalists. This has also been claimed in the case with Punan of Borneo and the Mlabri of Thailand (Lee and Daly, 1999:275, 278-280); however, this view is controversial with some ethnographers and archaeologists working on forager sites (Junker, 2002a, 2002b, 2002c). Based on ethnographic records, arguments for the ‘agriculturalist-to-forager’ scenario of some ethnographers seems to be supported by the fact that these groups have consistently larger settlement numbers and group members than do other foragers in Southeast Asia and, thus, considerably more land that was exploited (Lee and Daly, 1999:277).

According to Lee and Daly (1999) interpretations, these larger settlement sizes among these particular groups may be indicative a psycho-social phenomenon derived from their former agricultural lifestyle. At one particular time, their agriculture-based subsistence allowed for more sedentary living, an accumulation of resources, and the ability to sustain even larger populations over a longer period of time. Nonetheless, it is also highly likely that these former farmers gave up farming because it was too difficult in these new areas, and they could not accumulate and store resources as they once did. In order to ensure the survival of the group members, this forced the need to revert back to foraging as subsistence, which included becoming more mobile so as to not overuse resources and establishing hunting parties with assigned specific tasks or group members. These adaptive strategies, coupled with the abundance of mangroves, created an environment where it was more strategic to harvest wild resources and hunt animals instead. Granted, many scholars argue that farming was possible in peninsula Malaysia to the Philippines [Bellwood, 1985; Glover and Bellwood, 2004; Junker, 1990; Morrison and Junker, 2002]. No matter the case, these interpretations attempt to explain why people must have seen foraging in the tropics to be more self-sufficient and a favorable manner of subsistence and adapted themselves as such.

As with hunter-gatherers in Southeast Asia, resource use is not only determined by what is available in the environment. Social beliefs also tend to influence mobility patterns and settlements as well. For instance, among the Agta of northern Luzon, Agnes Estioko- Griffin documents change in the paths used when their loved ones have just passed in that area. Once that person dies and is buried in an area, the Agta refuse to go to that area for at least one year. They avoid that area so as not to disturb the spirit and bring bad luck on the group (Bennagen, 1977:189; Griffin and Griffin, 1985:37; see also Rahmann and Maceda, 1955:832). This means that the normal path is altered, shifting movements to a different route. The compliance to this avoidance norm when death occurs on specific places associated with the Agta's close relatives emphasizes that the landscape is imbued with social memory and that the

strength of a social/cultural belief is route altering. Later chapters discuss this impact in great detail. Suffice it to say here that social and cultural beliefs indeed play huge roles in considering in what areas the Agta can reside and what nearby resource zones for food gathering and hunting are available to them, given the need to evade areas associated closely with the deceased relative. Socio-cultural influences are a huge determinant of mobility and resource use strategies. But political landscapes, especially during tumultuous times, can sometimes prove to be an even greater determinant. For instance, the Kubu, considered to be re-specialized foragers, are said to have become foragers “to preserve their political and economic independence from expanding kingdoms, which tended to absorb hinterland peoples as serfs or slaves” (Lee and Daly, 1999:275).

Even among the Semang and Ata of Negros Oriental, one sees an immense role played by foragers in trading with Muslims, the Chinese, and various European colonialists. These roles undoubtedly created changes in settlement patterns, whether the changes were the aggregation of forager camps in lower elevations, as discussed by Laura Junker (Junker, 2002a) or whether these changes opened up a niche for foragers to reassert their identity and preserve their way of life, as described by Glover and Bellwood (2004). Among Negritos in Southeast Asia, Griffin and Griffin (1985), Agnes Estioko-Griffin (Estioko- Griffin and Griffin, 1981), Thomas Headland (2002), Endicott (1979, 1983), Eder (1987) and Navin Rai (1990) consistently discuss disputes over land rights, land use, and water use between the government and foragers. Moreover, on the islands of Negros and Palawan, the steady encroachment of lowland populations, which started as early as 3000 years ago, has undoubtedly changed how foragers have had to adapt. The strategies that equatorial tropical foragers have had to employ have ranged from occupying small territories and ranges, residing in territories for longer periods of time, and overusing areas that they would have traditionally moved out of earlier. There is also the possibility of equatorial tropical foragers resorting to long-term horticulture, beyond simply root transplantation, at frontier locations and borders between hunter-gatherers and either swidden

peoples or agricultural peoples consider Dennell (1985), in addition to modern government policies awarding agricultural land to agriculturalists (R. V. Cadeliña, 1980); Manila Bulletin 4/17/2018; www.dar.gov.ph). The presence of these recent agriculturalists residing in lands that were once a part of the seasonal rounds meant that the lands were and continued to be destroyed for farming activities and that foragers could no longer exploit those resources in these areas. Cadeliña is quoted as saying “Now that the forest lands have been completely denuded, they [the Ata] are like fish thrown out of the water” (Cadeliña, 1980:62). These are just a few of examples of the cultural, social, and/or political landscapes and interactions that have affected the strategies of foragers in Southeast Asia.

3.3 **Comparative Cases with Other Tropical Forest and Equatorial Foragers**

Southeast Asian foragers can be compared to other traditional foraging groups in the tropics, for example, large agricultural polities colonizing the Amazon Basin even before European encroachment in the 16th century (e.g., Roosevelt, 1999a; 1999b, 1999c; Roosevelt et al., 1999) with the advent of large-scale European conquest. Amazonian societies near the mouth of the Amazon are present in tropical lowland environments in South America. There also exists much variation in the types of vegetation, ranging from “closed canopy forests to herbs on floodplains and rocky or impermeable soils” (Roosevelt, 1999a:89). There are also a number of waterways, sparse numbers of large game, heavy rainfall, seasonal protein sources, like fish, and rather rich soils in the lowlands from volcanic ash, rocks, and alluvium. Consider the Ache of Paraguay (Hawkes et al., 1982, 2018; Hill and Hurtado, 2017; Kaplan et al., 1985) and the Huaorani (Rival, 1999:101-104) of Ecuador. Kim Hill and A. Magdalena Hurtado (1999) in Lee and Daly’s edited text, “The Cambridge Encyclopedia of Hunters and Gatherers” describes the settlement patterns of the Ache as living in “ten to fifteen camps of flexible composition in a territory of 20,000 km²” (Hill and Magdalena Hurtado, 1999:94). Within these camps one sees a decrease in the number of camps over large areas, probably in response to loss of land and former exploitable

environmental zones. As with other groups like these, mostly men probably hunted in home ranges, coming back to the group ever so often to share the newly caught prey. Records also indicated that Ache camps used to move only about every “7 to 15 days”, however, the Ache now move almost daily. This increase in mobility is a direct result of modern day and possibly pre-modern political pressures as well. The Ache occupied forested land that has always been rich in trees for logging and rich in resources that can be exported. Furthermore, populations of non-foraging peoples are encroaching on their lands due to increased populations of agriculturalist groups in the Amazon Basin, the Brazil government and non-government industrial use of Amazon Basin products like forest timber, setting fire to swaths of the forest for expanded agriculture, and the influx of the dispossessed poor from Brazilian cities (Hill, 1984; Hill and Hurtado, 2017). There is a long history in this area of Brazil of non-tribal religious missionaries that is similar to the history of the Philippines in the centuries-long introduction of ‘first peoples’ into Christianity and other foreign religions into these communities. This has resulted in both the government and religious missionaries that have been trying to force the Ache onto reservation-type lands in order “to civilize them” and teach them the “art” of agriculture. The pressures to clear land for farming rather than engaging in mixed economies involving forest foraging has meant that the Ache are using much smaller ranges, having to exploit the same areas more frequently than they would have in the past. Likewise, they are probably being pushed towards lands that are less hospitable and/or less fertile for plant growth (Correia, 2019; Gilbert, 2014). Leslie Sponsel’s work in Amazonia (1985) cites the difficulties with rain forest soils (Sponsel, 1985:61-63). Foragers move around because of these exacting conditions. Their settlement sizes were only as large as the environment has allowed. They have structured themselves this way because it was efficient. One sees these strategies repeatedly.

The Huaorani of Ecuador, equatorial foragers who reside in the Amazonian rain forests, face similar ecological conditions. They are highly mobile and live in an area that experiences significant levels of rainfall and high humidity, and as such have tended to move from longhouse to longhouse, often

separating into secondary residences during certain times of the year (Rival, 1999:102). They have lived this way until fairly recently, when the government decided to insert land strips near their territories as well as to establish schools. As of the 1990s, they “are currently in 18 sedentary villages” and are attempting to farm more often than engage in traditional foraging, despite the constraints of rain forest soils (Rival, 1999). This sedentism and government-enforced residential structures have rendered their living completely differently from their former ways. Although some still tend to hunt and partake in optimal foraging (Bettinger, 1991:98), because of the clearing of forests, the forest resources that were once available are no longer as accessible as before. They have essentially been forced to radically change their economic strategies, due to political influence which is wrapped up in economic benefit for large companies who want to harvest valuable tropical forest resources and poverty-stricken farmers who need land.

Economic and social strategies of equatorial foragers are often uniquely employed by specific forager groups. The historical contexts that either force or create these changes are neither unique nor specific to one set of foragers. These strategies can be flexible and *ad hoc*, from year to year, depending on changes in environmental and social landscapes, and historical contingencies that dictate movements across their terrains. In terms of external historical events, the WWII Japanese invasion required many “tribal” peoples to adjust to American and Japanese planes crashing into remote territories, with Japanese then herding of Filipino and American prisoners through the thickly forested Luzon Island interior (Guiora and Jackson, 2021; Ogawa, 1992). William Longacre, who carried out ethno-archaeological research in northeast Luzon with the Kalinga that demonstrated how tribal peoples adjusted to these occurrences (Graves, 2016; Longacre, 1991, 2003, 2005). A smaller-scale invasion of the interior of Negros Island occurred in the waning days of WWII and at least a few dozen US and Japanese planes crashed in the interior (Cleope, 2018; Glass, 1996; Hart, 1964) where unspecified “tribal” peoples (most likely the *Ata* near Bacong) scavenged scattered plane parts and sold them to several collectors in the

Bacong area to the south of Dumaguete. Alternative strategies and even the reinvestment in certain strategies are the primary means that foragers have been able to adapt to ever-changing surroundings over centuries, despite environmentally based weather patterns changes, ecological changes in resource availability, external historical events, and changing social-cultural and political adaptations as cities expanded across Negros and other islands. At the same time, indigenous forested landscapes, which were traditionally the venue of forager populations, were exploited by lowland coastal farming groups and burgeoning need for timber for building larger cities along the coast. Although my focus is equatorial foragers, the execution of various alternative strategies applies to many foragers globally, who are facing economic competition with logging companies, land-poor agriculturalists, and vacation resorts in the cooler highlands, with many of these capitalist ventures in the Philippines using Ata labor and knowledge of upland forest areas. Like the subtle seasonal changes in the tropics, among arctic/sub-arctic groups, changes are further seen in consistent changes in family size depending on the season. McKennan and Damas (1969) argue that winter population groups may have been as large as 100-150 indicating a rather predictable subsistence base. McKennan and Damas (1969) argues that these larger groups were indeed interrelated, essentially large-scale extended family units that grew from a founding family group that included a wide array of lateral and generational genealogical ties. The simple splitting up of bands of familial groups depended on the ecological factors, cultural conditions, and social strains in larger groups. In the present day, there is need for effective current strategies to work with the Philippine federal government NCIP (National Commission for Indigenous Peoples) agency to protect their land rights within designated indigenous reservations, and their important "First Peoples" designation at the United Nations, and to ameliorate the socio-cultural conditions faced by these and other groups.

At this point in the chapter, a comparison of forager groups and their strategies in equatorial or near-equatorial settings is necessary to examine similarities and differences in the kinds of social and

economic exchanges that these foragers engage in with adjacent sedentary agricultural and/or pastoral economies. Foragers in Africa present quite a different picture of their social interactions and economic symbiosis over their geographic and environmental landscapes throughout temperate and tropical environments. The continent of Africa ranges from desert to rain forest. African foragers like the Kung, Bushmen (Guenther 1996), the Hazda, San/Ju/'hoansi (Gordon, 1984:195-206; Kelly, 1995:127; Kusimba, 2005; Partington, 1984:151-172; Winterhalder, 1977, 1981), and the Bofi (Lupo and Schmitt, 2004) occupy this multitude of environments. Some foragers live in typical tropical environments with plenty of forested areas, wet and dry seasons, and warm temperatures because of their relative closeness to the equator, while others live in harsh, dry, and arid deserts. These various groups have developed a great number of different strategies. African hunter-gatherers are the most studied group of hunter-gatherers of all the foraging groups in the world. It is from these studies that anthropologists have arrived at the relative ease of foraging over farming (Lee et al., 1968). Sibel Kusimba (2005), citing Lee et al., "Man, the Hunter," (1968) discusses the San model for groups like the Kung and Jo/'hoansi. These African foraging groups exhibit "seasonal rhythms of aggregation and dispersal, emphasize residential mobility and flexibility, egalitarianism and food sharing, lack of storage, the importance of women's plant food gathering, relatively limited and unpredictable resources of their desert environments and simple technology, and immediate-return economies (Kusimba, 2005:339). These align with characteristics specific to foragers all over the world; however, the difference lies in the strategies they choose and the effects these strategies have on individual foraging groups in terms of environmental factors, as well as socio-cultural practices aligned with economic and political realities. Schmitt and Lupo (Schmitt and Lupo, 2008) note that these strategies directly affect the way the Bofi of the Congo-Zaire Basin use resources. For instance, they argue that there exists a difference in the type of prey hunted depending upon who the meat will go to when the hunting party returns (Lupo and Schmitt, 2004:242). In this case, this social component seems more important than the environmental component because,

although they can only hunt what is available, the choice of prey is based upon the individual's preference. Nevertheless, political influences also play a huge role among the Bofi. Hunter-gatherers of Africa have exhibited a symbiotic relationship with village/farming communities (Denbow, 1984; Fisher, 1993; Grinker, 1994; Kohler and Lewis, 2002; Shott, 1992; Wilmsen and Denbow, 1990). Often times these relationships are manifested in subsistence strategies which determine specific specialized resource acquisition mixes and social practices that involve regular exchange of resources. With regard to the African Bofi, living close to the Aka who are a more sedentary group that grows agricultural crops, ethnographers note that their house constructions, hunting and subsistence technology, and spiritual practices through healers are almost identical to one another. Their act of socially and ritually imbued meat-sharing of wild animals is choreographed by both the parties to ensure the exchange of these significant resources (Lupo and Schmitt, 2004:246-247). The fact that these foragers possess houses close to their traditional sedentary trade partners and are, in the present day, moving between their more stationary abode near agricultural villagers, is not surprising. It is consistent with the Philippine Ata who relatively recently have both permanent or semi-permanent stationary housing and partake in both modern commercialism (ranging from becoming nature guides for tourists, to advisers for Philippine companies extracting interior resources), and activism. For example, a recent Ata appointed to a major town as member of the mayor's counsel took the initiative to preserve tradition medicinal plants in the upland forests. However, the scholars of the Negros Island Ata have sought to lead one to believe that the environment is not the sole determining factor that has changed their way of life. Granted, other factors may not have always been as permanent of a deterministic factor as the environment, I have no doubt that the existence of factors, other than the environment, were still rather consistent or at least remained underlying throughout. Through examples like the Bofi, one sees the diffusion of cultural ideas, beliefs, and political structures through close, long-term symbiotic relationships. This social and political influence has created the patterns seen now, as is the case with other African groups.

Returning to contemporary African foragers, who have had prolonged contact with adjacent agriculturalists, we see this is also common among the Okiek and other Wandorobo in eastern Africa. Among these groups, there is hunting of small mammals for exchange, but also the acquiring of bees and honey in order to trade with pastoralist societies (Blackburn, 1996; Kusimba, 2005:346-347). These delayed-return hunter-gatherers “live in large, less mobile communities and have social and subsistence systems oriented to the past, present and future” (Dale et al., 2004:341; Woodburn, 1982, 1988). These groups also tend to store food and engage in a host of commercial transactions that mix modern forms of capitalism with tradition norms of exchange, and they invest highly in technology, and exhibit a host of other attributes. Darla Dal, Fiona Marshall and Tom Pilgrim (Dale et al., 2004:343) note yet another strategy used by hunter-gatherers: over-reliance then complete avoidance. These more permanent and sedentary settlements were largely attributed to a reliance on foods like honey for a large part of the year, then complete avoidance of this food for as long as a year after this gorging. In addition, there is also the exploitation of plants by altitudinal movements, but movements seem to be only clans moving between houses in these differing elevation zones; but this does not involve large scale activity and frequent mobility in which groups frequently abandon flimsy seasonal structures and pack up their possessions like the highly mobile foragers in the past. These movements appear to be based on changing seasonal resources and possibilities for trade, however, socio-cultural values allow for the ownership of hives and territories by clans, a restricting element of land and resources use. Specifically, reliable resources are allowed for sustainable, larger populations which, in turn, have created more complex forms of social organization, like highly structured clans, associated with a mode of recognized land ownership. It is likely that this raw product of bee honey is a significant trade item, but requires some period of tending, and that this led to the introduction of different economic and political strategies, which in turn changed the dynamics of social and economic relationships between sedentary populations and foragers in the region. These strategies probably include the clustering of at least

seasonal settlements closer to agricultural trading partners, and the establishment of rank, wealth, and status held by clans with bountiful harvests of raw materials. These two African examples provide a picture of how at least two of the many late 20th and early 21st century traditional foraging groups in Africa have adopted these strategies over time.

Yet another type of terrain to consider with foragers is an arid or semi-arid environment, and while there are marked environmental differences from the tropical zone inhabited by the Ata, it is useful to look at varying strategies of mobility. Such is the case with Australian Aborigine groups like the Garawa (Pickering, 2004) and the Alyawara (O'Connell and Hawkes, 1981; Winterhalder and Smith, 1981). According to Michael Pickering's ethno-archaeological work (2004), the Garawa live in a transitory area between sub-humid and sub-arid zones, in northern Australia. Their traditional area of occupation also consisted of a range of terrains: coastal plains, gulf fall, a plateau, and fluvial corridors. This group seemed to divide the year into four seasons, with sub-seasons within these. Within these seasons, the toolkits seem to basically stay the same. But then, Pickering noticed increases in specialization in the early wet season and during late, hot, stormy times. During late summer periods, the toolkits emphasized focus on terrestrial game, while during the late winter and early summer the toolkits changed to implements that were suitable to aquatic game (Pickering, 2004:384). These toolkits coincided with the archaeological sites of Garawa along riverine corridors between the coast and upriver sites. As wet weather approached, there is ethnographic and archaeological evidence of settlement sites moving away from the river corridors, towards the hinterlands. During this movement, there is also an increase in the mobility of these foragers as well as an increase in dispersal across the landscape. During this colder time, there seems to be an increase in the number of occupation sites as well as an increase in the number of people at them, particularly around permanent water sources (Pickering, 2004:398). Based upon this ethno-archaeological framework, there exists little doubt that the settlements and movements of this group is correlated with seasonal ecological constraints

associated with resource use. They were using the resources available to them and moving according to those resources; however, Pickering also introduces another significant factor that may contribute to forager movements on the landscape.

Pickering emphasizes that these patterns are largely a result of social landscapes as well, particularly as in small-scale societies social relationships in forager groups are necessary. These social relationships are intertwined with cultural practices, and even individual preferences are integral to truly understanding how foragers lived (O'Connell and Hawkes, 1981). This perspective is particularly fascinating in understanding forager settlement systems for a number of reasons. American archaeologists in the late 1960s to the early 1990s espoused blending ethnographic approaches with ethno-archaeological and other archaeological tools to capture the materialized and spatial elements of "hunter-gatherers" moving through landscapes as guided by a "least cost" or "optimization" of various terrains and its resources (Hawkes et al., 1982; Hawkes and O'Connell, 1992; Smith et al., 1983). However, what this suggests is that the pathways to acquire resources, where foragers choose to move, and why foragers settle in particular areas for varied periods of time are not solely based on ecological based *least cost* analyses. Instead, movements reflect the sociocultural cosmogony of foragers that relies heavily on psycho-social and often abstract understating of the animistic world of foragers. The movement of foragers may be largely based on avoidance of a recently buried elders (see Negritos in Cadeliña, 1974), or avoidance of a particular fauna or flora due to their connection to ancestors or cultural taboo (R. V. Cadeliña, 1974). There is even a possibility of avoiding an area because it is the territory of either a familial band recently separated from their own kin band, or a completely different forager group altogether that is not related to their own (Tuck-Po, 2013; Turner, 2013). The Alywara (O'Connell, 1987), among many of forager groups, have been subjected to the same influences of social avoidance related to social friction rather than economic resource potentials among the Ata on Negros, resulting in distancing themselves from other groups and adjusting their strategies accordingly.

Lastly, foragers tend to be flexible in their employing different strategies in order to be successful in navigating a complex web of social relationships and ensuring their economic livelihoods. These strategies are often guided by historical and political factors of internal change within their foraging group and external influences, to a greater degree in the later centuries. Strategies are categorized as environmental or ecological based and focus on seasonality, the availability of rainfall and fauna, the latter based largely on the movements of wild prey. There has also been a focus on foreign influences and the role that foreign powers and groups have had on forager movements and settlements over time. Nonetheless, if one were to analyze social-cultural or psycho-social factors (consider Kracke, 1987a, 1987b), the largely ecological approach can be broadened towards interpreting forager behaviors in terms of psychological and social factors that are significant in understanding their movements over the landscape. Consider the case of the Ata who avoid using areas because of burial areas for deceased ancestors. Or consider the Semang preference for mountain-laden traditional lands now occupied by later Malay groups (Endicott, 1999a:277), with mobility strategies and settlement patterns of foragers integrally tied to their values and beliefs. Values undeniably are instrumental in orchestrating how people live and use their surroundings. Leslie Sponsel (1985) has emphasized this attachment to their traditional landscapes, even when they are no longer in control of their territories or parts of their territory due to the expansion of lowland populations into the mountainous interior which has been colonized by loggers, large-scale agriculture, and recreational use of forest preserves. While not discounting the role of a radically changed physical environment, it is important to also emphasize the psycho-social attachment to their now radically changed forest while engaging in other economies. One has to attempt to emphasize the importance of other factors as well. That being said, the environment has played a role in each and every one of these ecological zones, whether tropical-semi-tropic, arctic/sub-arctic or arid/semi-arid in determining how foragers move spatially but has also

influenced the size of settlements and how they have organized their settlements. Culture and/or factors of preference do impact forager groups everywhere and throughout history.

Consider the Alyawara once again. With examples from Gerard Riechel- Dolmatoff works (1971:243, 1985), Leslie Sponsel argues that taboos on which animals could be killed in Amazonia was a cultural and spiritual value incorporated in a way to preserve and manage wildlife (Sponsel, 1985:94). Other scholars have noted that taboos associated with cosmology and cultural preferences for certain animals or plants can be significant factors in the zoo-archaeological record of animal remains (Tuck-Po, 2013). This could explain the relatively small amount of a certain animal in the archaeological record, or could explain, why although there may be a great deal of them, one does not see it represented in the archaeological record or sees it at certain sites that coincidentally seem to be classified as seasonal. Furthermore, although I did not discuss this with each and every foraging group, beyond the politics from colonialists, political environments, like nation states and bordering cultural and ethnic groups, are instrumental to the strategies foragers choose in order to survive. There may be lands that are not available due to the rapid historical changes in the late 20th and early 21st centuries or the pre-historic arrangements made by some groups. Depending on the size of the group, there may be territorial issues with foragers that reside within distances of each other, resulting in the refusal of a certain group of foragers to move into a certain territory.

Further, I have not even considered movements or settlements that are a result of religious, astronomical, or spiritual constraints. This could include lands where evil spirits dwell, locations that are reserved for shamans or other ritual specialists that may be in the vicinity of sacred landscapes, superstitions, and the list goes on and on (Akehurst, 2012; Daye and Healey, 2015; Demetrio, 1989; Durham, 1933; Pungetti, 2013; Zedeño, 1997). These are inferences that can be made from ethnographic works and research but are very difficult to get at archaeologically. Nonetheless, what these close examinations do involves investigation of the intensity of influences and the degrees of change in the

mobility, settlements, and the resources of foragers. Fundamentally, this forces researchers to think beyond ecological elements in order to understand the totality of forager strategies that are related to the larger 'social world' that small-scale foraging populations have interacted with for thousands of years before the present.

3.4 Archaeological and Historical Work

Adaptation according to Merriam-Webster's dictionary is simply stated as being an "adjustment to environmental conditions." It goes on to define it as an "adjustment of a sense organ to the intensity or quality of stimulation" (www.merriam-webster.com). The second point is an elaboration intended to describe the ability of a segment to function in response to some external or even internal phenomenon. How could the adaption of foragers throughout Southeast Asia not be applicable to this definition? Throughout the histories of various cultures, foragers have adjusted to any phenomenon that they have been faced with. These adaptations have included strategies like assimilation, but most integrally, the extents of these adjustments have varied immensely depending on the extent of interaction with non-forager societies. So, although one sees land disputes and displacement with the onset of foreigners, one also sees the incorporation of new technologies into the culture that facilitate widespread changes in mobility and resource use. For example, based on outside stimuli and the level of involvement that was required for cooperation between Austronesian agricultural societies, Chinese explorers, Islamic forces and/or eventually, Dutch or Spanish explorers, we do see the intensity and quality of adjustment by foragers vary in a multitude of ways.

Biologists and linguists argue that the foragers of Southeast Asia were remnants of Pleistocene hunter-gatherers that migrated from the mainland into insular Southeast Asia and proceeded to populate Melanesian islands, like Papua New Guinea and later, Australia (Bellwood, 1997:75-78;

Lockard, 2009:13; Shaffer, 1996:9; Solheim, 1981). Genotypic haplotypes confirm this and the use of glotto-chronology add to arguments about these early migratory models (Bellwood, 2006:96-100, 104-105; Morrison and Junker, 2002:149-150, 152, 187-188). However, as scientists begin to dive further into how foragers in Southeast Asia have adapted to their environments, we begin to see a differentiation between foragers in Southeast Asia, Papua New Guinea, and Australia. This differentiation is largely a result of the incredible influence of Austronesian and Austroasiatic agricultural societies, linguistically, socially, and economically, as well as the extent of specific Muslim, Indian, Asian, and/or European influences over time.

Let's begin with an area that this dissertation will refer to as the northern Philippines, which are the islands between Taiwan, Mindanao, and west to Palawan. This area includes all of the Philippine islands that were heavily influenced by proto-Taiwanese early migrations, Chinese influence, and later Spanish. This differs from what I call the southern Philippines Islands and the Malay Peninsula, which were heavily influenced by Indian, Muslim, mainland Southeast Asian kingdoms, and later Europeans, like the Dutch. These are not scholarly accepted terms, but in order for me to organize the prehistory of Southeast Asia, it is important to note the two very different cultural influences in these parts of the island and peninsular Southeast Asia. These cultural influences and pathways had a direct effect on what foragers had to react to, the role they played in society and, overall, how they had to adapt to their surroundings.

Although, it is believed that early Southeast Asian foragers, like the Batak of Palawan, and the Aeta /Ayta,/Ata/Agta of the Philippines, spoke a different language than what they speak now, since contact with mainland agricultural societies, there has been a continued replacement of this original tongue by Austronesian languages and dialects (Bellwood, 1992; Beyer, 1947; Headland et al., 1989:45-48; Rahmann and Maceda, 1955:818). Most traditional foragers on Negros speak Cebuano-Visayan, a language belonging to the Austronesian language family, and there is linguistic evidence that foragers on Negros

island (as elsewhere in the Philippines) long ago shifted to the local Austronesian languages of their neighboring agricultural societies after the influx of Austronesian colonization (circa 2500 BCE) (Bellwood, 1985, 1992; Glover and Bellwood, 2004; Jocano, 1998; Junker, 2002b; Lockard, 2009:13; Shaffer, 1996; Solheim, 1981; Stark, 2008; Thiel, 1980). Peter Bellwood's text "Prehistory of the Indo-Malaysian Archipelago" claims that there is evidence of Austronesian peoples in the Philippines as well as the Talaud Islands and northern Borneo, as late as the Early Neolithic phase via "simple pottery forms with plain or red-slipped surfaces" (1985:223). He goes on state that there have been archaeological discoveries of sites during the Neolithic phases in places like Northern Luzon (Dimolit) that date to between 2500 and 1500 BC, and sites like the Musang Cave with an Early Neolithic date of 3500 BC. (Headland et al., 1989) discuss evidence of rice cultivation in northeastern Luzon by 1400 BC, and even ceramic manufacturing sites in that same area as early as 3000 BC (Headland et al., 1989:46). Their evidence is based on Snow and Shutler's (1985) publication which examines early ceramic assemblages and sites. Ethno-historical, biological, and linguistic evidence cited by the aforementioned sources (Headland et al., 1989) has provided overwhelming support for this great movement. Even more important, during the Neolithic period and later, there still existed hunter-gatherer sites in places like the Sohoton Cave on Samar Island in the Philippines. Archaeological evidence from Mudar's study of animal exploitation (1997) cites strata within this cave that has pottery in the upper remnants, but also has hunter-gatherer tools and camps in lower stratas (Mudar, 1997:78, 81). This evidence points to the fact that exchange was going on from early on, and Hutterer's (1987) and Theil's (1980) works support this. These new settlers were extremely influential in introducing foragers in Southeast Asia in their practices, and some of these foragers were partaking in these endeavors. What we do know is that by 1000 BC "Austronesian languages were dominant from the Northern Philippines to far Western Indonesia" (Lockard, 2009:15) and Austronesian speakers and the "Australoid" foragers were in direct interaction.

It is generally believed that early traditional foragers occupied all of the terrain in the Philippines. This included higher elevations, but most importantly, included lands close to the coast and in elevations between 0m and 200m. As ethnographic evidence from Northern Luzon and Pinatubo reiterates (Estioko-Griffin, 1981; Estioko-Griffin and Griffin, 1981; Griffin, 1984; Griffin and Griffin, 1985; Rahmann and Maceda, 1955; Rai, 1990; Seitz, 2004), foragers were not simply hunting animals in higher elevations and gathering wild plants but were also partaking in fishing and other opportunistic activities. Essentially, they were surviving off every facet of the land and occupied almost every ecotone until the arrival of agricultural societies. Agricultural societies from the north brought with them this lifestyle of cultivating land and emphasized a subsistence built around rice production. Given that rice grows best in certain temperatures and terrains, many of these agricultural Austronesian people settled along the coast and elevations under 100m. It is also possible that they settled in lower elevations and near rivers to continue trade and to ensure consistent water avenues for their rice fields. Their settlements along the coast meant that most foragers were either pushed into the interior or lived alongside these agricultural societies “adjusting” in a number of ways (Junker, 2002b:149; Seitz, 2004; Thiel, 1980).

One of these ways is by assimilating into this new agricultural lifestyle. Granted, some foragers did choose to continue their lifestyle and possibly intensified their traditional lifestyle through various means as theorized by Peter Gardner’s “Foragers Pursuit of Individual Autonomy (1991) and possibly because it required fewer work hours. But on the contrary, some also choose to begin to cultivate land, and I argue, copulate and intermarry with these new Austronesian populations. This farmer-forager argument is supported by much scientific evidence (Beyer, 1947; Department of War, 1903; Griffin, 1984; Headland et al., 1989; Rahmann and Maceda, 1955). First and foremost, the fact that many foragers did not speak an Austronesian dialect, almost to the point where any remnants of their former languages are almost non-existent, requires consistent contact and communication over millennia. As Thomas Headland (Headland et al., 1989:44-48) and Laura Junker (2002b:148-150) have stated, languages do not

simply get replaced overnight. There has to be some type of interaction between these people on a consistent basis, as well as foragers seeing a need and/or benefit to converting to this new language. Biological evidence also points to a lengthy history of inter-ethnic sexual relations. T.S. Oración (1960, 1963), R.V. Cadeliña (1973), R. Rahmann and Maceda (1955), Reynolds (1974) and Beyer (Beyer, 1947) all discuss mestizo Negritos that seem to be mixed with the swidden groups like the Bukidnon and lowlanders. They also discuss their phenotypic characteristics being dark, yet also seeing some that were lighter in complexion in others and had less kinky hair and slanted eyes. And, although foragers are seen as being from a different genealogical stock similar to Australian aborigines and other Melanesians, foragers in the Philippines did share these “Oriental” (*a term now that can be viewed as derogatory*) features discussed by these early researchers. Genetic evidence today demonstrates that foragers in Southeast Asia seem to also possess a high “frequency of a 9-base pair deletion in the mitochondrial genome, similar to Filipinos and Taiwan aborigines” (Fix, 2002:193). These genes are specific to Austronesian populations. Essentially, this means that phenotypically they look like Melanesians, but share genetic similarities to the agricultural Austronesians as well. This is the case with large expanses of forager and swidden farming populations throughout the islands. For these genetic similarities to exist, this takes a considerably lesser amount of time than linguistic changes do, but the fact that it is present in many of the foragers throughout the Malayan Peninsula, Luzon, Cebu, and Negros, gives weight to the fact that interaction and intermarrying between foragers and agricultural societies has been going on for a very long time. Thus, this gives immense support to the fact that assimilating/or mixing was at least one way foragers adapted to the dominating influence of agricultural societies from the Neolithic period onward.

With the emergence of agriculture, we see the emergence of wealth, status, storage of goods, and even the emergence of “more advanced” levels of social organization. This is the case all around the world (Crothers, 2004; Keeley, 1995; Kohler and Lewis, 2002; Schrire, 1984). The Philippines are not the

exception. There were contacts with colonialist powers; however, rising nation-states and kingdoms on the mainland directly influenced the northern Philippines, although not as much as the southern Philippines. In fact, agriculture societies were influenced by mainland kingdoms in Vietnam and Thailand. Because of this influence of these extensive and intensive agricultural societies, one sees an intensification of agricultural practices in Southeast Asia as well as more complex social organization like polities and chiefdoms. I had been informed by Laura Junker that her previous studies about classifying Philippine polities as chiefdoms were not widely accepted. But her (Junker, 1990, 1994a, 1994b, 1996) and Hutterer's archaeological works and historical accounts (K. L. Hutterer, 1974, 1978, 1983, 1988) cite the existence and even dominance of polities and chiefdoms in northern Southeast Asia. These chiefdoms, whether early chiefdoms smaller in scale or later chiefdoms and larger in scale, have been proven by Hutterer (1978; Hutterer and Macdonald, 1982) and Junker's research in the Bais-Tanjay area (Junker, 1990, 1994a, 1994b, 1996) for over 20 years. There does seem to be a correlation between increases in other mainland Southeast Asian countries and increases in Southeast Asia. Nonetheless, we also see an increase in Asian countries like China influencing these chiefdoms, and especially foragers.

The earliest accounts that we have about contact with foreign peoples are through Chinese records. John Omohundro's article "Trading Patterns of Philippine Chinese: Strategies of Sojourning Middlemen" (Omohundro, 1977:177) and a compilation of historical texts in Zaide's book "Documentary Sources of Philippine History" (Zaide, 1990) cite contact between the Chinese and, what this dissertation has labeled as the northern Philippines, as occurring around 900-1000 AD. According to Zaide's sources, the first recorded date of contact with China dates back to 982 AD, even though some talk about contact as early as the Chou dynasty (1122-247 BC), or even the 3rd century AD. Unfortunately, the earliest, physically recorded account that still existed, occurred in 982 and was found in Ma Tuan-lin's book "Wen Shian Tung Kao" (Zaide, 1990;1-2). These next few accounts recorded occurred in 1125 by Chau Ju-Khan (Zaide, 1990:3-8), then in 1349 by Wang Ta-yuan (Zaide, 1990:9-13). These texts chronicled the

Chinese sending voyagers into the South Seas, specifically the Philippines, as early as the 9th century. But the latter text provides scholars and archaeologists with descriptions of the relations and the social organization of the people in the Philippine islands. Wang Ta-yuan accounts the presence of polities in Manila, Mindanao, and the Visayans (1990: 9). He goes on to describe chiefly burial rites (1990:10) as well as trade goods sought and exchanged, elite marriage practices, and Visayan raids (1990:13). Laura Junker (1990) even cites sources that describe Chinese travelers seeing small, dark-skinned people coming down from the highlands and expressing sheer delight over being thrown trade goods and pieces of pottery, then returning into the highlands. She even cites accounts, echoing Zaide (1990), of Filipino travelers voyaging to China to exchange goods and illicit a more extensive trading network between the two parties. There were even accounts of Chinese traders on the coast and intermarrying with Filipino elites. By simply looking at some Filipinos today and even the presence of Chinese dragons on Spanish churches, Chinese influence was indeed a huge phenomenon that affected lowland populations, and in turn affected foragers. Let's elaborate.

As agricultural societies expanded over time and populations in these major settlements increased (Junker, 1990) , foragers are pushed further and further into the interior and even away from major waterways, as these were used primarily for access from the interior to the coast for trading. This meant that foragers now had to exploit different environments and resources to sustain their way of living. Mostly fauna and plants from the highlands were now being exploited, but archaeological and ethno-historic accounts also depict intensive relationships with lowlanders (Griffin, 1984:96; Headland et al., 1989; Headland and Reid, 1991; Junker, 1990, 2002a, 2002b; Seitz, 2004:96-97). These relations ranged from relying on lowlander crops to fill nutritional gaps in the forager diet, to wage labor during the dry season, to some foragers choosing to become extensive partners in trade networks of interior goods like wood toward the coast for foreign consumption. So, aside from assimilating and complete converting to

an agricultural lifestyle, there are at least three ways that foragers attempted to adapt to the expansion of agricultural societies in the Philippines as well as to outside influences from the East.

Of course, the Chinese influence was nothing compared to the influence that the Spanish imposed in the 15th and 16th centuries. Although, there are records by Antonio Galvano (in Zaide, 1990:49-50) and Tome Pires (in Zaide, 1990:51-52) of the Portuguese landing on the Philippines islands at least nine years before Magellan and the Spanish, little influence in what this dissertation has labeled as the Northern Philippines seems to have been documented archaeologically or historically. Since the 16th century, until the onset of American influence, the Spanish monopolized the Philippine islands and exerted the greatest foreign influence. This is evident in the presence of Spanish vocabulary and vernacular in the Tagalog and Cebuano languages, the upholding of Spanish last names among Filipinos, and the prominent, government-led focus on the preservation and conservation of Spanish buildings and sites. Aspects of Spanish culture remain in the Philippines to the present day.

Spanish documents recall the Spanish setting foot on the Philippine Island, Palawan to be specific, a land bequeathed to them almost a century earlier by Magellan in 1521 (Pigafetta in Zaide, 1990:111). Tasked with civilizing the heathens (*in reference to a non-Christian*) from out East, the Spanish were surprised to find that there were such huge polities in Manila and throughout the Philippine Islands. Originally, it was thought that the Spanish created the complex state of social organization on Filipino people, but it is now widely known that institutions were already in place that facilitated even greater trading networks between Europeans and Filipinos (Junker, 1994a, 2002c; Junker et al., 1994). There were already Indian beads before the Chinese, there was blue and white pottery and other Chinese goods, and the elites already had access to silks and other fine exotic goods. Moreover, there were accounts of elaborate feasts, huge houses for chiefs, chiefs that controlled large spans of land and territories, lots of stored foods, and people with extensive signs of wealth, present in ceremonial burials (Zaide, 1990:116, 119, 122, 130, 139, 152). Filipino people were already established traders. The Spanish

simply created larger avenues and exploited resources more intensely. This in turn, created even more cultural, social, and settlement changes for lowlanders and uplanders alike.

First and foremost, the Spanish intended to 'civilize' these heathens (Endicott, 1999a:378-382; Scott, 1992; Seitz, 2004:25). This meant that they undoubtedly had to evangelize these populations, converting them from their tribal religions to Christianity. Any influence from Asian religions (Buddhism, Taoism, Confucianism, etc.), Arabic (Islam), and any indigenous beliefs needed to be eradicated. From the 15th and 16th centuries, one sees the explosion of Spanish Catholic churches and missions in the Philippine islands. Coincidentally, it is common knowledge that, these churches were built on previous burial grounds, indigenous places of worship, and even on top of the houses of powerful chiefs, as were most perils of conquest. Gone were days in which chiefs of polities were the ones facilitating the trading of interior goods towards the coast and collecting royalties from trade. Gone were the days of chiefs having large armies of men and chains of command. For the Spanish government and army had decided to seize major routes of trade and exert their power, setting up their own puppets to facilitate the trading of goods in even the highlands of Negros Oriental. These changes are the most documented archaeologically.

Based on the edited volume by Hutterer and Macdonald (1982) as well as Junker (1990), a clear picture of how the lowlanders adapted to Spanish influence, and especially how foraging populations that traditionally moved seasonally between the uplands and lowlands had to learn to accommodate the growing encroachment of populations of lowland farmers starting in the 3rd millennium BC, the growing coastal centers on the Philippine islands to accommodate maritime trade involving foreign ships seeking inland forest products for porcelain exports beginning in the late first millennium AD, and finally the burgeoning and eventually massive sugarcane plantations controlled by Spanish conquerors by the 17th century on the lowland Tanjay River plain. Karl Hutterer, William McDonald, and Laura Junker's combined 30+ years' work on regional settlements of the Bais-Tanjay area demonstrated that there was

a considerable increase in settlements over the landscape in these time periods. Laura Junker's research elaborated on this by demonstrating that not only were their chiefdoms and polities near major rivers, but moreover, as time progressed (Aguilar through Osmena Phases- (Junker, 1994a, 1994b, 1996, 2002a, 2002c), one can see an increase in the size and an increase in the number of clustered centers around rivers in higher elevations. This meant that the lowland populations were increasing in numbers. One also sees many people moving from previous places of occupation to the centers or trading nodes. Moreover, one sees secondary trading centers and even tertiary centers outlying the centers. Essentially, one sees agricultural societies re-organizing or rather intensifying their organizational patterning in order to re-orient themselves for the best access to trade goods desired by Filipino mercenaries for the Spanish. Furthermore, one sees that this re-organization occurred among forager populations as well. Based upon archaeological surveying, there also seems to be an increase in the number of foraging camps in lower elevations between 100m and 200m (Parry, 1982a; Parry, 1982b:317-318). Also, they seem to cluster around these nodes, whether secondary or tertiary, and even agricultural fields (Junker, 1994a, 1994b; Junker et al., 1994). It has already been established that forager-farmer interactions have been going on since contact between these two ethnic groups began; however, what one is seeing here is something new. Junker hypothesizes that what one sees with foragers during this time period is that some are abandoning their traditional hunter-gatherer tendencies, to a greater extent, and are choosing to partake in extensive trade. Moreover, what she also believes is that foragers were abandoning hunting and gathering to partake in wage labor for farmers. Her archaeological evidence supports these claims (Junker et al., 1995; Junker, 1990, 1994a, 1994b, 1996, 2002a, 2002c; Junker et al., 1994).

Even Seitz (2004) documented these practices among the Agta of Luzon and Mt. Pinatubo. Based on survey work, there exists the presence of largely lithic-yielding sites around former fields. These possessed very little pottery or exotic goods, but much more than what had been documented in the

higher ecotones with forager sites. Even today, given the dual seasonality of the Philippines, one sees many male foragers coming down to the lowlands during the dry season, when resources are not so abundant, to work the fields for lowlanders. They revert to foraging when the harvest season is over. Additionally, evidence has also demonstrated that the Spanish were seeking interior natural products, like wood, honey, beeswax, and other forest products (Hutterer, 1977; Junker, 1990). These could only be attained through foragers that knew the highlands, especially since there still existed negative viewpoints of those savage, man-eating upland, tattooed people. These archaeologically and historical examples I render immense support to the fact that foragers were indeed changing their traditional ways of life to adapt to the newly imposed organizational system facilitated by the Spanish.

The northern part of the Philippines seemed to have been affected by different foreign forces than did southern Philippines (specifically the islands of Mindanao and Mindoro) and even the Malay Peninsula and surrounding islands (Borneo, Celebes, Punan, Java, etc.). There are no doubts that these were affected by foreigners, but influence came more from India, Muslims, and mainland Southeast Asia (Jocano, 1998; Shaffer, 1996). These differences in influence are largely attributed to the geographical layout of the Malay Peninsula. The northern part of the Philippines is closer to Taiwan, so early settlers probably came from Taiwan, south. However, given that the Malay Peninsula is attached to mainland Asia, scientists think that proto-Taiwanese migrants as well as a number of different ethnic groups known as Melayu-Asli, also “entered the peninsula perhaps displacing some of the previous Semang and Senoi inhabitants” (Fix, 2002:185). Mongoloid-type groups, like these, populated this area, after pre-Holocene hunter-gatherers, the Orang Asli, were already there. Linguistic evidence classifies these groups as all speakers of “Aslian,” an Austronesian language, although with each being a different geographic division. This suggests a lengthy history, as well, of loan words, communication, and contact, likely a result of social organizations modified around subsistence needs (Bellwood, 1985, 2001; Fix, 2002:187-189; Reid, 2013). Moreover, because of this land connection, more settlers from various parts

of mainland Southeast Asia migrated here continuously. Therefore, what one may have in the Malayan Peninsula are much higher gene flows of a greater number of different types of people throughout time. Also, this connection facilitated a much easier route for Indian influence to first take its course.

As with forager-farmer interactions in the northern Philippines, one sees agricultural societies spreading into previously occupied forager areas and taking over that terrain. Thus, one sees foragers, like the Semang and Semaq, Batek, Kubu, and Punan in these areas also receding into the highlands, and some even taking up foraging as they did so (Endicott, 1999a:277-279). Moreover, it is safe to say that the processes that foragers in the Northern Philippines were subjected to are applicable here, for the southern Philippines and the Malay Peninsula. The only differences that seem to exist between the historic trajectories of the northern Philippines foragers and the southern Philippines and Malay Peninsula foragers are that the latter were instead greatly influenced by Indian and Islamic forces earlier on. This influence is still evident today.

Indian influence did not come first by voyagers “discovering” this area, but rather what is seen is the appearance of Indian goods in the archaeological record before the “Indianization” of the archipelago and accompanying islands between 1000-1000 CE (Lockard, 2009:21). One even sees the influence of India through the appearance of writing forms, documented through ethno-historical records, in Sanskrit and languages of the sort (Lockard, 2009:22). There is archaeological evidence of beads, jewelry, statues, silks, etc. that were made in India or are undeniably a direct result of Indian influence. There is even evidence of Hindu and Buddhist influence (see Chinese Buddhist pilgrim in Lockard, 2009:23).

Later, after the emergence of Islam as a dominant religion, one sees Islam entering the archipelago around the 1200s and reaching Borneo, Moluccas, Celebes, and the southern parts of the Philippines, Mindoro and Mindanao, by 1300s (Hall, 2011; Lockard, 2009:66). The largest Javanese kingdom,

Madjapahit, was said to have reached its peak during this time (Lockard, 2009:45). Based upon historical records, indigenous leaders as far as Mindanao had begun to call themselves Arabic terms like Sultan, Raja, and worshipped Allah. They designated their own ethnic category “Malay,” denoting people who spoke the Malay language and practiced Islam (Hall, 2011:224; Lockard, 2009:69; Zaide, 1990:161). They also had begun to wear armor reminiscent of Arabic soldiers and had even organized their armies and territories after Arabic influences. This influence was so great, it has been said, that if the Spanish had not gotten to the northern parts of the Philippines, with recorded instances of Islamic influences close to Manila (Scott, 1992:105), the entire Philippines would very well have been Islamic. This influence seemed to have skipped the Philippines because geographically these territories are either connected to the mainland or form a very close chain of islands that facilitate a much easier means of interaction. Although, there are records of battles between the Malays and the Portuguese (Lockard, 2009:77-78), with the Portuguese succeeding in land territories and Christianizing some people in later centuries, Spanish accounts still show Muslim influence extending north when the Spanish arrived (Lockard, 2009:79). Evidence today still strongly suggests a heavy adherence to Islamic beliefs through the Malayan Peninsula and southern Philippines politically and culturally.

This historical trajectory, although reflecting different acting agents of change, followed the northern Philippines as it pertains to foragers. Trade networks were already established that allowed the exchange of spices and forest good (Endicott, 1999a:277). Native peoples of the Malay Peninsula were already seeking out exotic goods, like Indian beads. So, essentially, there was already a market for change in this area. This exchange could only be satisfied from the interior forest peoples like the Punan, the Semang, etc. These foragers were either subjected to conversion, pushed further and further inland to less desirable ecotones and environments, or were a part of trade networks. Unfortunately, when it comes to hunter-gatherer lands being encroached upon by lowland populations, the only options that they seemed to have were 1) do nothing and watching resources become depleted forcing smaller and

smaller mobile groups that lacked the ability to sustain a foraging lifestyle; 2) migrate to another area that could be either less hospitable or be ecologically different from before; 3) become more hostile, increase warfare and raiding; 4) use resources that they were traditional a last resort; or 5) partake in wage labor and/or move to the coast to engage in swidden farming or more intensive agricultural practices (1-4 from Thiel, 1980:21-23). Different forager groups adjusted invariably in one of these ways.

For example, the Semang of peninsular Malaysia went from broad-spectrum foraging to only a few practicing nomadic foraging and trade (Endicott, 1999a:278). Some probably even became horticulturalists. It is a different story among the Punan of Borneo. Researchers believe that these people are “re-specialized foragers whose Austronesian ancestors adopted a sago-based foraging economy to serve their subsistence needs as they moved into the interior rainforest” (Endicott, 1999a:278). (Endicott, 1999a) goes on to cite evidence from Sellato’s (1994) translated work and Brosius (1991) that the Punan, within the last few hundred years, had begun to settle, live sedentary lives, adopting to the mixed economies of the area and even agriculture (Endicott, 1999:278) (Endicott 1999a:278). These groups were undoubtedly pushed into the hinterlands by foreign trade and their adaptive strategies mirrored one of the five mentioned above. However, the only group that seems to still occupy their traditional lowland areas are the Kubu of Sumatra. Researchers (Persoon, 1989; Sandbukt, 1984; Sandbukt, 1988a, 1988b) believe that this group has remained resistant to foreign change since the Malay kingdoms of the 5th century. Some have converted to Islam and farming, still others have created a mixture of foraging-trading-swiddening lifestyle depending on the ecological opportunities that exist at any certain time. This may not be new, but rather an adaptive strategy that has changed over time, with either of these three forms taken as a preference give the intensity of foreign influence and environmental access for said activities.

Based on the research thus far, there seems to be a lot of information that documents foragers throughout Southeast Asia. Nevertheless, given their length of occupation in Southeast Asia, this

research merely brushes the surface of what could be found. The integral question is: Why hasn't more research been done on foragers, and specifically, the Negrito populations in the Philippines and neighboring islands? The answer cannot be narrowed down to one reason, but rather is intertwined with difficulties in finding forager sites as well as cultural, social, political, and economic biases.

Let's explore the least controversial reason. A host of other anthropologists, archaeologists, ethnographers, and ethno-archaeologists (e.g., Bettinger, 1987; Binford, 1982a, 1982b, 1983, 1989; Coutts and Wesson, 1980; Cowan, 1999; Kent, 1987, 1992a; Shoocongdej, 2000; Shott, 1986; Stiles, 1977) have given archaeologists clear criteria that can be used to identify hunter-gatherer sites. Their ethno-archaeological work have even supported these theories by using real life ethnographic analogies to confirm what one sees or fails to see in the archaeological record. However, these methods are particularly troublesome in the tropics, where archaeological materials, like human bones, do not preserve well and traces may not be detectable during surface surveys. During Laura Junker's surveying of the Tanjay Basin, she continuously discussed that fact that many of the lithic materials collected were from surface collection, and although this collection has provided some kind of picture of what lies beneath (Junker, 1990, 2002a, 2002c), the fact that many lithics were amorphous means that one could not be sure what period the lithics were from. However, Parry (1982a:109-114) and Junker (2002a:360, 2002c:218) admit to the possibility of being able to interpret types of stylized designs and worked patterns from these artifacts. Secondly, if lithics from later periods have appeared on the surface, then it was highly likely that the previous hunter-gatherer sites had already been disturbed at some point in the past. Also, if one accepts that early foragers resided along the coastline and were pushed back inland (as stated by Blumentritt [in Jocano, 1998:39], then the earliest sites, unfortunately, are under ruins from lowlanders and have undoubtedly been disturbed by agricultural settlers, farming, chiefdoms, Islamic empires, and the building of Spanish churches. Even more so, due to the lack of geo-morphological/geo-archaeological data on the continent, archaeologists were not completely clear on the changing

coastline of the Philippines. Not until the 2008-2010 research of Deb Green was the tracking of the coastline on Negros and its steady change over time been confirmed (Green, 2010). Furthermore, because many forager sites are in the highlands and have been so since the appearance of agricultural peoples, and areas with heavy vegetation coverage and the visibility of foragers sites as one increases in elevation have become increasingly difficult. Both Laura Junker's work (Junker, 2002c:225) and H.M. Wobst article "We Can't See the Forest for the Trees" (1983) have echoed these sentiments. These few problems illustrate that archaeological evidence for forager sites are difficult to identify chronologically, are difficult to locate due to the terrain, and that archaeologists may not know exactly where to look for this information. This is no fault of the archaeologists, but rather supports to the need for scientists to conduct more work on this area. There may not be perfectly preserved sites that are less than 1 meter from the top surface, but the excavation of 1 forager site (PA-V-110) does provide a glimmer of hope that archaeological work in the Philippines is not only feasible but a necessity.

The second reason why Southeast Asian forager studies has not been a priority for archaeological research is undoubtedly because of biases, socio-culturally, economically, and politically. Socio-culturally, Negritos and foragers have been classified as primitive, savages, and/or barbarians by scientists, early anthropologists, and explorers (Department of War, 1903:157-159; see Montano in Jocano, 1998:38). These classifications date back to Chinese records and continue into Spanish records (see Zaide, 1990:7, 10). Because of the "simplistic" hunter-gatherer lifestyle, forgers have continuously been looked down upon and viewed negatively. They have been portrayed as having very little culture and as uncivilized. Ethnographers have even cited the inability to locate burials to improve their research as being a result of the ignorance of Negritos to remember things cognitively (Reynolds, 1974). Spanish missionaries (see Rahmann and Maceda, 1973), with their obvious biases, depicted Negritos as lacking the ability to farm and do complex tasks.

Because of their lifestyle, their cognitive abilities have consistently been called under question. These biases, by even Filipino people today, have created circumstances that question the need to research these rather simple, “ignorant” people at all. It is believed that these people do not care about their past, hence why they have no recollection of names and burials, that they simply discard the ancestors and keep moving. Further, these people do not have the mental capacity to learn more advanced ways of life like farming. It is believed that these people are essentially, inferior. Moreover, from blatant comments of some Filipino people, lowlander Filipinos would prefer not to have a history connected with foragers at all. When asking one official if these early sites could have possibly been his ancestors, he responded with an assertive no. He stated that he was mostly Spanish and Chinese and even went as far as to hope for evidence that proves Negritos were not the first people in the Philippines. Even to this day, in Mabinay, Christian missionaries brought corn, cows, goats, and chickens to Negritos in hopes of “teaching” them how to be civilized and sustain themselves. There remains this sense that although foragers may have been the first to settle Southeast Asia, they brought nothing and were simple-minded, inferior peoples, without a real history.

Their lifestyle has not been the only thing that has subjected Negritos to discrimination; their phenotypic characteristics, like their stature, hair, and color have also played immense roles. Chinese records describe scantily dressed, small, dark people coming down from the interior (Zaide, 1990:7). The Spanish also have records of contact with these small, dark people (Jocano, 1998; Zaide, 1990:114). Even today, children are taunted if their complexion is dark. If one walks into a supermarket or store, there are rows and rows of skin-lightening creams, lotions, and soaps. Advertisements depict the desire for white skin. I will not go into detail about the connotations associated with words like dark and black. Suffice it to say the term *Negrito*, black in Spanish, speaks for how foragers were and still are viewed and treated. Essentially, for who they are, they have been severely looked down upon and cast aside. This is evident in the forcing of Negrito populations onto reservation-like lands throughout Southeast Asia

(Garvan, 1964:153; Junker, 2002c:213; Rahmann and Maceda, 1973:152-154; Reed, 1904:8-71; Vanoverbergh, 1937:927), land disputes throughout Luzon (Griffin and Griffin, 1985) and Palawan (Eder, 1993) and throughout Malaysia (Carey and Carey, 1976:117-124; Endicott, 1979:183-188; Rambo, 1988:35), deforestation in their homelands, and a host of other economic and political issues. F. Landa Jocano even believes that earlier explorers and later foreign forces chose to declare Negritos as the first occupants of Southeast Asia to bolster their belief in the Philippine's inferior status and history (Jocano, 1998:49). He even begins to question the small amount of research that presents data on the early occupation of this geographical area for that exact reason. I re-iterate here that all of these comments, observations, and circumstances point to a huge disinterest in the need to establish and confirm a history of foragers in Southeast Asia. This tendency is immensely complex and cannot just be narrowed down to just one reason. The reasons are indeed understandable, but unfortunately, they also range from the unjust to the inhumane. As such, Chapter 4 proposes regional-scale archaeology and regional-scale settlement archaeology methods to access signature forager settlement and mobility patterns with reduced biases. Chapter 5 calls for a theoretical, re-reinterpreting of these forager histories that places foragers, especially the Ata, in a more deserving light based on these regional-scale methods.

IV. CHAPTER 4

4.1 **Archaeological Approaches to Long-Term Forager Histories: An Overview Of Settlement**

Archaeology, Social Landscapes, And Materialized Exchange Systems³

This chapter is a broad overview of the archaeology of long-term forager histories. Archaeology in Southeast Asia, specifically the Philippines, is chronicled with intensive and extensive forager-farmer interactions regarding trade and exchange. This chapter continues that chronicling by providing a general framework for understanding the chronology of forager interactions spanning from the 3rd millennium BC to the Historic period. This expanded discussion of tropical foragers places these forager-farmer interactions within archaeological context, using archaeological site identification and recovery methodologies to access the roles that tropical foragers have played diachronically. Due to the characteristically high degrees of mobility exhibited by forager populations, this chapter explores the benefits of regional-scale archaeology and regional-scale settlement archaeology to gain access to long-term forager histories. In addition, Chapter 4 brings together regional settlement archaeology and geographic information systems to propose what can be learned about tropical forager interactions geographically along social landscapes, uncovering their matrices of materialized exchange systems that are often difficult to detect via archaeology alone. Essentially, Chapter 4 attempts to explore methods that reveal or allow scholars to gain access to the social, geographic, political, and economic aspects of tropical forager interactions over periods of time.

³ Portions of this chapter have been published jointly by Laura Lee Junker and Larissa M. Smith in a synthesis of archaeological work on forager-farmer interactions in Southeast Asia from ca. 3rd millennium BC to recent foragers in interaction with agricultural societies. As co-authors, Junker and Smith have agreed to share this previously co-written published material in Smith's dissertation (Junker and Smith, 2017). *'Reproduced with permission from SpringerNature'*

4.2 Archaeological and Long-Term Histories in Southeast Asia: The Expansion of Austronesian Farmers and the Post-Neolithic “Disappearance” or “Marginalization” of Foragers

Archaeological work on forager landscapes in the ‘Paleolithic’ and into the early phases of the ‘Neolithic’ in island Southeast Asia has been traditionally tied to the issue of Austronesian expansion of agricultural populations from the mainland into the southern islands and eventually into the Pacific, with a strong emphasis on ‘marginalization’ or even complete disappearance of equatorial or near-equatorial foragers by colonizing farmers over great swaths of the island archipelagos by the 3rd millennium BC (Junker, 2002b; Junker and Smith, 2017; Smith and Junker, 2014). By the later millennia of the Holocene, archaeological studies of foragers are overshadowed by the more visible remains of sedentary farming populations on the plains and in the river valleys of mainland Southeast Asia, where state-level societies would soon arise around spectacular centers associated with the Khmer, Cham, Dvaravati, and other states (e.g., Barram, 2003; Glover, 2010; Habu et al., 2017; O’Reilly, 2006; Phuong and Lockhart, 2011; Welch, 1997). As noted recently by Junker and Smith 2017, “... archaeological work on relatively recent Southeast Asian foragers involves debates about the reality of identifying groups as ‘foragers’ when they have eclectic subsistence practices that include some tending of fruit or nut trees and even swidden farming plots.” This mingling of farming and foraging strategies has often led to applying the appellations of “spurious” foragers or “devolved” agriculturalists to these groups and ascribing little historical depth to these eclectic subsistence practices (for a discussion of these debates, (see Brosius, 1991; Headland et al., 1989; Headland and Reid, 1991; Hoffman, 1986; Junker, 2002b). However, a number of archaeological studies of foragers have critiqued the reification of “farmer”/“forager” dichotomies, emphasizing the flexibility of both economic and social strategies over time and space, and calling for historical and processual studies of foragers that do not segregate them from larger archaeological studies of politics and social networks in complex societies like those of

historic Southeast Asia (Hutterer, 1983; Kelly, 1995; Layton et al., 1991; Morrison and Junker, 2002; Spielman et al., 1994).

Another impediment to archaeological studies of foragers enmeshed in regional networks within larger-scale complex societies is the prevailing view that the social and economic agendas of adjacent farmers shape these relationships and that foragers passively ‘adapt’ as they begin to engage heavily with sedentary, larger-scale societies. In fact, foragers in Southeast Asia have a significant history of complex and “situationally shifting” socio-economic strategies (Junker, 2002b; Rabett and Barker, 2010:73-74; Shoocondej, 2000, 2010:62-64) that include a sophisticated scheduling of mobility patterns according to seasonal abundances of forest resources, “managing” wild plants or seasonally engaging in farming, and/or specialized extraction of forest resources for trade. Decision-making in these societies involves complex calculations of both economic and social risk (the latter including the probability of conflict) in managing exchange relations with external cultural groups. Although recent attempts to insert foragers into these inter-cultural social networks as active “actors” rather than “reactors” (Fortier, 2001, 2013; Layton et al., 1991; Morrison, 2002; Tuck-Po, 2013) have been important in reorienting archaeological work, there is still little recognition that foragers can have any real social, political, or economic leverage over the groups with which they interact, or that they can be significant agents for change in the larger social and economic networks of which they are a part. Interestingly, archaeologists using ‘resilience theory’ have suggested that the sheer complexity of chiefdoms or states with whom foragers interact make these large-scale entities *less* adaptable and more prone to dissolution in situations of severe ecological or social stress, while small-scale societies like mobile foragers are generally *more* able to quickly adjust to change, regroup, and adopt innovative practices and forms of organization that allow them to thrive over the long-term (Redman, 2005; Thompson and Turck, 2009). However, to get at these issues of resilience, agency, and change, large archaeological databases are required that encompass the regional-scale physical landscapes in which foragers practice

their variable strategies, as well as an expansive temporal framework over which these processes might occur.

4.3 **Methodological Challenges in the Archaeological Recovery of Forager Sites**

One of the most significant problems in the archaeology of foragers in Southeast Asia has been the recovery and behavioral interpretation of sites, given the frequent ephemeral nature of settlements of highly mobile populations in the forested tropics, and their low visibility in the heavily vegetated open sites where many categories of archaeology remains would usually not be well-preserved (Junker, 2002b:154-162). A likely predominantly perishable technology would not necessarily be reflected in the more visible lithic material and later traded metal implements used to create implements out of wood and plant materials (K. L. Hutterer, 1977). Due to visibility and preservation issues, archaeological work that might have relevance to forager-farmer interactions, particularly in the Neolithic and earliest Metal Ages, tends to focus on cave sites (Barker and Richards, 2013; Bulbeck, 2008; Spriggs, 2011), rather than the presumably more common open sites where we would expect both ‘farmers’ and ‘foragers’ to carry out most aspects of their sociality and livelihood.

Another obstacle to identification and analysis of forager sites concerns chronology, and related assumptions about the association of certain types of temporally diagnostic artifacts exclusively with sedentary farming populations. Absolute dating of foraging sites is often difficult, particularly in the case of open sites of ephemeral rather than long-term occupation. Lithic material, which is the primary durable artifact for possible relative dating of archaeological sites associated with foragers from the Pleistocene through recent times, is notoriously non-diagnostic at most Southeast Asian sites in terms of either identifying chronologically distinct types or even functional toolkits (Glover, 1986; Gorman, 1971). When relatively datable trade beads, earthenware pieces, and fragments of imported porcelain or

stoneware (often chipped into portable ornaments) are recovered from small ephemeral sites in the same region as large settlements of agricultural populations in the Neolithic to Early Historic periods, archaeologists almost invariably assign these sites as negligible “findspots” associated with agricultural societies.

Most critical to the development of archaeological studies of foragers in Southeast Asia that go beyond culture history, in both pre-agricultural periods and later, is the application of regional scale archaeology to examine the temporal and spatial dynamics of complex social landscapes embedded within complex ecological systems, using approaches like social network analysis (e.g., Whallon et al., 2011) and historical ecology (Thompson and Waggoner, 2011). Archaeologists have recognized that scholars working in Southeast Asia lag behind most regions of the world in implementing regional scale archaeological projects (e.g., Grave, 1995; Junker, 1996; Miksic, 1984; Veth et al., 2005), and in most cases where regional settlement data has been collected, large centers associated with regional power in multi-ethnic landscapes are privileged in archaeological investigations. This emphasis on “centers” with impressive scale and architectural features precludes archaeological analysis that might illuminate the ways in which Neolithic Period and later foragers in Southeast Asia, as dispersed “small worlds” on the margins of larger sedentary communities, kingdoms, and empires (Kolb and Snead, 1997; Schortman, 2014:196-171) add to our understanding of the dynamics of social boundaries, exchange, conflict, and negotiations of power in the early social landscapes of Southeast Asia.

Yet we noted that archaeologists working in Southeast Asia often have difficulties distinguishing sites created by mobile foragers vs. predominately agricultural societies carrying out specialized activities (such as occasional ritual or prey processing in interior caves), since economic resources and technologies frequently overlap between these groups, resulting in somewhat similar archaeological signatures. Ethno-archaeological studies of recent foragers, combined with a large and diverse sample of archaeological sites analyzed for both congruencies and differences, may be useful in identifying distinct

material correlates associated with discrete social “communities” and seasonal differences in activities where these populations come into contact (e.g., Griffin, 1984; Junker, 2002a; Smith and Junker, 2014). However, ethnographic analogies used to construct archaeological models of past forager interactions with adjacent sedentary farmers are strongest when the living foragers inhabit the same region as the archaeological “community” and can be historically linked in time close to the period emphasized in archaeological analysis (Spielman et al., 1994). For this reason, among others, archaeologists working in Southeast Asia have tended to focus on ‘pure’ foragers in the pre-Neolithic periods or the much later Early Historic period just prior to European colonialism (ca. 10th – 16th centuries), during which indigenous Asian and European texts aid in contextualizing archaeological patterns and may even demonstrate historical continuity.

4.4 **Archaeological of Forager-Farmer Interactions in the Neolithic and Early Metal Age: An Overview**

The relative dearth of archaeological work on forager-farmer interactions in the Neolithic Period and Early Metal Age seems to be largely attributable to an early tendency by archaeologists to simplify the relationship between population movements (human migrations within Southeast Asia and connecting with East Asia and the Pacific), linguistic histories (the expansion of Austronesian languages), technological changes indicative of new economic or social adaptations (pottery, groundstone technology, and sedentism), and evidence of animal and plant domestication, creating a unified process of ‘neolithization’ rather than complex histories of mosaics of peoples practicing eclectic strategies that are not easily defined as ‘forager’ or ‘farmer’ (see Barker and Richards, 2013; Bulbeck, 2008; Higham et al., 2011; Kealhofer, 2002; Mijares, 2007; Spriggs, 2011). Archaeologists have begun to cite an abundance of evidence to refute many of the generalizations in this model of Neolithic Period societies,

particularly as supposed 'Neolithic' features appear in the island archipelagos to the south as part of an 'Austronesian' expansion. For example, domestication or intensive tending of root crops and arboreal species may have been more significant than domesticated rice in Southeast Asia (Bulbeck, 2008; Dewar, 2003; Kealhofer, 2003), domesticated foods in general may not have dominated the diet (Barker and Richards, 2013:359-360; Kealhofer, 2002; Lloyd-Smith, et al., 2013; Spriggs, 2011), linguistic and biological groupings do not correspond well in demarcating 'Austronesian' colonizers and an earlier stratum of foragers (e.g., Donohue and Denham, 2010; Ross, 2008), and the Neolithic 'package' (both the general technological suite and specific artifact forms such as shell scrapers and distinct pottery designs) is quite variable over time and space (Bulbeck, 2008; Spriggs, 2011).

Several scholars have replaced the traditional Austronesian rice farming societies with maritime-oriented 'forager-farmers' who were predispositioned towards eclectic economic practices and were early enmeshed in symbiotic interactions with other economically diverse groups in complex social landscapes (Oppenheimer and Richards, 2002; Sather, 2006). New models for the 'Austronesian' expansion emphasize not just economic patterns but also social impetuses for long-distance trade interactions that would broaden access to social capital. As noted by Bulbeck (2008:44), "the Austronesian diaspora had very little to do with the migration of a farming complex, and everything to do with the traffic of valuables (including fauna) and technology." Long-distance social alliances shared 'religious' themes, and even the kernels of status competition are materialized in the widespread circulation of decorated pottery styles, shell objects, obsidian, and other goods, throughout the island archipelagos and into the Pacific 'Lapita' interaction spheres (Blench, 2012; Bulbeck, 2008; Oppenheimer and Richards, 2002; Sather, 2006; Spriggs, 2011). The implications of this complex picture of Neolithic Period populations as flexible and fluid - practicing what Sather (2006) refers to as "adaptive diversity" means 'foragers' no longer disappear from the scene as they 'acculturate' to the cultural practices of

increasingly dominant 'farmer' immigrants, but instead remain as components of dynamic social landscapes.

Recent work emphasizes the importance of what Bulbeck refers to as “bottom-up” approaches (Bulbeck 2008) that call for fine-grained archaeological analysis in specific regions examining networks of interaction and the specific factors (e.g. environments, population dynamics, social landscapes) that may have affected economic choices, mobility patterns, and new social formations, rather than generalizing a grand narrative of colonizing agriculturalists and displaced foragers (see also Barker and Richards, 2013; Spriggs, 2011). Higham et al. (2011), borrowing Bellwood's (2005) term of “friction zone” for areas in which foraging and farming societies come into contact, notes that economic impacts varied according to ecological features and presumably the volatility of social encounters. In the coastal estuary environment of the mid to late 3rd millennium BC, the sites of Nong Nor and Khok Phanom Di are interpreted, on the basis of artifactual and skeletal evidence, as coastal hunter-gatherers moving inland and encountering expanding agriculturalists, who introduced to them some rice farming, agricultural tools, and ceramic forms, as well as foreign women. With a rich database of sites in southwest Sulawesi, Bulbeck (2008) traces a continuous sequence of Austronesian maritime forager-farmers entering the region where they interacted with local foragers using a Toalean toolkit, maintaining a mixed economy that may have involved exchanges of wild resources, maritime products, and increasingly agricultural crops. Toala foragers may have provided specialized forest products and gradually retreated to limited inland areas (where they are found in recent times) in the later Metal Age as exotic prestige goods, intensive lowland rice production, and large trading “centers” appeared in the coastal regions where the 13th-14th century maritime-trading Bugis and Macassar kingdoms emerged.

In Malaysian Borneo, intensive archaeological work in the Niah caves - with good organic preservation, skeletal material isotopic signatures for environments, and a good sequence of radiometric dating – was undertaken by Barker and his colleagues, who were able to demonstrate the

presence of distinct but interacting ‘foragers’ and likely intrusive ‘forager-farmer-maritime traders’ practicing strategies of eclectic resource use in the Neolithic Period through the Metal Age, with forest foraging, marine/estuary use, and limited crop production (likely primarily root crops rather than rice) until the early second millennium AD. (Barker and Richards, 2013; Lloyd-Smith, et al., 2013). Based on the Niah data, Barker echoes the emerging contretemps with traditional models of Austronesian impacts in island Southeast Asia, noting that the prevailing “meta-narratives or all-embracing theories of ‘colonization’ versus ‘acculturation’ are unsatisfactory in their inability to deal with the increasing complexity and variability of the regional archaeological record” (Barker et al., 2013:357).

The emergence of regional settlement archaeology in the 1970s was largely a result of the need for archaeologists to move away from small-scale snapshots, so to speak, of societies so as to try to understand the totality of a society and its integrated system on a larger scale, region-wise of 100 kilometers or more² (e.g., Blanton et al., 1982; Kowalewski, 1982, 1989; Peterson and Drennan, 2005; Sanders et al., 1979; Thomas, 1973), with many surveys associated with non-agricultural societies in both the distant and recent pasts. Anthropologists were no longer using a small-scale approach and applying inferences onto other nearby areas. Rather, regional-scale archaeology attempted to document the total ecological system in which specific societies, such as the Ata of the Philippines, practiced their strategies of access to significant resources that were seasonally guided and dependent on group size within an annual round of seasonally fluctuating resources. Additionally, regional-scale archaeology examines ecological, political, and organizational aspects of an entire area from a combination of archaeological evidence and ethnographically observed ecological practices. Sampling strategies and full-surface survey of the terrain to collect and document artifact scatters of stone tools/ lithics, pottery sherds, animal bone, shell, modified metamorphic rock, obsidian, and other detritus that were left in an archaeological record provide archaeological evidence of regional patterns of resource use in archaeologically analyzed settlements. Once this information was gathered, archaeologists were then

able to identify artifact variations and site patterning, based on the archaeological content, possible artifactual chronological markers, and size and patterning (e.g., dense vs. dispersed) of these remains per elevation or ecological zone.

The greatest wealth of knowledge to address the importance of regional-scale archaeology, specifically in the Philippines, comes from Karl Hutterer and William MacDonald's publication "*Houses Built on Scattered Poles: Prehistory and Ecology in Negros Oriental, Philippines*" (1982) and the later archaeological work and publications of Laura Junker (Junker, 1990, 1994b, 1996, 2002a, 2002b, 2002c). Karl Hutterer argues formidably that "no society is a single segment of that society fully and truly...one segment cannot be representative of the whole society, its organization or the variability that exists in the society" (Hutterer and Macdonald, 1982:162). He further argues, that "to understand organization one needs representative cross-sections of various parts of the system" (Hutterer and Macdonald, 1982:162). His arguments echoed earlier scholars on the value of regional analysis and the use of systematic survey rather than single sites to understand the workings of early societies from small-scale foragers to developed large-scale states (Parsons, 1972; Plog and Flannery, 1976; Steward, 1930; Willey, 1953a, 1953b) in that they all believed that the only way to achieve this was to focus on archaeological sites within a region and to look at settlement patterns on a regional landscape. "Only in this way will it be possible to sort out the spatial and temporal dimensions of variability of the archaeological record (e.g., "to work out frameworks of regional prehistory which make it possible to see camp sites of hunter-gatherers and village sites of agricultural populations as contemporary and to observe changes in both as well as changes in their relationship to each other through time)" (Hutterer and Macdonald, 1982:9). Large scale analyses of settlement patterns were essential in establishing relationships in complex social matrices like those in island Southeast Asia. Of note, Hutterer's graduate students pioneered regional studies, not only in the Philippines, but in other areas of Southeast Asia, and were at the forefront of

large-scale regional settlement studies using statistics-based sampling(Macdonald, 1982a, 1982b; Mudar, 1997).

Other archaeologists mirrored these exact sentiments. Foley (Foley, 1981:1-3) as another early archaeological proponent of examining larger regional scales of analysis of forager settlements on a regional scale, emphasized the behavioral characteristics that were materialized at forager sites and contended that they can be deduced to some extent through ecologically based theoretical frameworks, in line with Binford's Middle Range Theory (Bettinger, 1991:64, 67; Binford, 1977, 1980, 1981), Clarke's Pre-Dispositional Theory (Clarke, 1973:16), and Hutterer et.al.'s (1985) and Schiffer's (1976) (Schiffer 1976) use of ethnographic analogies. Foley's research (1981) proves to be beneficial, along with that of Binford (1981), in that their studies paved the way for using ethnographic and historical studies of these groups at various points in time, using ethnographic interviews to document relatively recent memories, but also collecting older accounts. This research follows these same parameters. Their research focuses on small-scale, mobile societies that predominantly [use] lithic technology and treat lithic artifacts only (Foley, 1981:1). Their main argument is, with specific regard to the subsistence of hunter-gatherers, human occupation across the landscape is dynamic and continuous. But, most importantly, by looking at sites that have been classified in archaeological work or identified more recently in ethnographic work as relatively of small size and often ephemeral occupation, and that have significant amounts of lithic and animal bone artifacts, there is little evidence for permanent housing and location, either in the upland forests above 300-800 m² or ephemeral sites at lower elevation for the purpose of short-duration trade contacts with coastal group-classified sites. Therefore, via their spatial patterning and any archaeological evidence of ephemeral occupation and discarded practices, archaeologists can arrive at an acceptably reasonable assurance that the ethnographic behaviors of hunter-gatherers in the near present, as well as in the past, involved movement from the mountainous interior forests to the edges of the agricultural coastal plain. They can also infer that coastal maritime trading polities and

agriculturalists on the Bais-Tanjay plain continued to trade lowland products for forest resources up to and beyond the Spanish conquest. That is, the behaviors of hunter-gatherers over time and over the larger upland and lowland landscapes, tended to adjust to lowland agricultural societies and foreign traders (including Chinese and Southeast Asian traders interested in upland tropical products) because of their high levels of mobility. Moreover, given that all areas of a landscape may not have been used continuously by hunter-gatherers either directly or indirectly, lowland hostilities for whatever reason might have made a “retrenchment” into greater upland isolation due to factors they could not control, such as warfare and hostility in the lowlands.

Using regional settlement archaeology and its theories of spatial distancing and interaction, one can arrive at not only changing ecological factors, but also social factors of distancing in some cases due to historical events. For example, an increase of violence and slave-taking between Philippine polities may have affected this discontinuous use of particular areas within regions and in the archaeological record. Foley cites Lewis Binford and lists factors like productivity, topography, climate, habitat, and diet/subsistence as significant factors that meld with these issues of the social landscapes in which foragers share natural landscapes with sedentary agriculturalists (Foley, 1981:6) These pioneers of theory on ethnographic and archaeological forager/farmer interactions strongly relates to my work in the Philippines, prehistorically, for it provides a structure by which to look at site formation processes, and regional and site-level spatial organization aspects in the archaeological record. With regard to the Philippine case of long-term proximity between the farmers who colonized the islands around 3000-4000 BC and the foragers, if one accepts that the environment is, indeed, a driving force in the ability of a group to adapt (see Bettinger’s summary, 1991:53), then it is possible to infer that many of the settlement patterns that one sees on the landscape have been culturally or socially influenced, but also are a direct result of the needs of hunter-gatherers or forager-collectors(Bettinger, 1991:73) to adapt to their environmental and social surroundings and survive.

Secondly, it is also reasonable to conclude that there may be certain epistemological or intangible inferences that can be made about cultural values and norms that may have also affected how hunter-gatherers used the landscape and how those played out in the archaeological record (Hodder, 1982; Nunn, 2001; Tilley, 1994). Granted, it is far more difficult to get at the intangible aspects of how foragers have perceived their physical and social landscapes, and how this relates to the changing lived and multi-culturally written histories of the Philippines, but it is not impossible. Navin Rai (1982; 1990), who is originally from Nepal and who wrote a PhD thesis on the Agta of Northwest Luzon Island uplands, perhaps due to his interest in religion and ideology, emphasized issues such as how the Agta dealt with spiritual life. As an example, ethnographers note that the Agta avoided certain areas of the forest due to a family member having recently died there (Griffin and Griffin, 1985:35-38). Subsequently, that particular location is then left alone for long periods of time, changing the normal subsistence pattern or movements of their family group. I cite this specific example because to reconstruct the past, it is not enough to simply describe it; rather one must interpret the archaeological record, attempting to understand the processes behind the formation of sites and look at how behaviors, reflecting a mixture of political, economic, socio-cultural, and environment influences affect them. Foley (1981) along with others (e.g., Bird-David, 1990; Dennell, 1985; Guenther, 2002; Kelly, 1995; Kent, 1991; Price and Brown, 1985; Shott, 1986) provides steps by which to outline the complexities behind human-land interactions and deciphering those interactions. Foley provides a beginning list of classificatory terms for hunter-gatherer sites [e.g., home base, home base periphery, secondary home range loci, occasional home range loci, extra home range loci] (1981:5) based on debitage and refuge, abundant material according to W.J. Parry's work on stone tools of Negros [1982a, 1982b]. This initial step, in further delineating the types of sites and the behaviors that may have occurred, will allow one to understand the processes that may have been at work and/or may continue to be at work, specific to each type of site. The

identification of sites and the evidence they yield from excavation will provide the largest basis for reconstructing pre-modern societies in the Philippines.

Site excavations, whether the site is an occupation site, a temporary campsite, kill site, stone tool production site, or other possible transient forager sites, including trading sites at the upland-lowland margins yield the bulk of the archaeological record research overall (Binford, 1982a, 1982b; Foley, 1981; Junker, 1996, 2001). On one hand, these excavations provide the archaeologist with a snapshot of that particular site, hopefully over time, but on the other hand, they also provide the key to the usefulness of regional archaeology.

Let's use the example of a kill site. The first question that comes to mind is how one knows that it is indeed a kill site and not an occupation site. Kill sites are places to dismember prey once caught; therefore, the archaeological remains of a kill site are said to be categorized by: the number of faunal bones that exist and the number of stone tools/flakes and/or cores, and thus the number or lack thereof of cultural items and size of the artifact scatter (Binford, 1982a, 1982b, 1983). The site will essentially contain mostly moderate amounts of faunal remains and associated stone tools, since a "kill site" is generally a transient site where one or more hunters kill and butcher one or several animals and return immediately to the current base camp where most of the group is sheltered. Alternatively, the hunting party continues to move to other areas of the forest to locate other forest prey, moving to a new temporary camp for sleeping at night. While these camps appear to be "ephemeral," one does acquire a glimpse into the type of animal or prey preferred by this particular hunting party (or a palimpsest of recurring "camp" locations can indicate the recurring use of a temporary camp that is well-sited). Unlike some foragers who have very specialized tool assemblages for hunting and curate these hunting implements (Collared et al., 2005), the Ata foragers, like many in Southeast Asian tropical forests, use a lot of perishable hunting technologies such as nets, bamboo spears, and wooden traps. Although these composite tools are constructed perishable technologies, they are also probably manufactured and

subsidized with hard tropical volcanic stone in lithic technology which can aide in the preservation of these perishables in the archaeological record. In the case of lithics, it may even be possible to identify wear/working and handedness of the person who used the tools (Cahen et al., 1979), which is rarely attempted in Southeast Asian studies of lithics. Moreover, if one can identify variable compositions of kill sites, then one will have clearer pictures of what to look for during survey. Most importantly, analyses on each site over a large scale will allow the archaeologist to confirm the components of a kill site and will allow the archaeologist to construct more demonstrative pictures of the mobility patterns of kill sites spatially and temporally. Correspondingly, the archaeologist would be able to discern the different types of faunal remains most common and compare tool technologies over the region and the materials used to manufacture these tools. The archaeologist could then hypothesize about why differences existed between kill sites. Given these multiple lines of evidence, regional archaeology allows the archaeologist to seek out the ecological circumstances that created differences in faunal remains spatially and temporarily, possibly the social and cultural factors at play in certain areas over others, and the extent of the relations of the people in that entire geographical expanse. For those, like me, working with hunter-gatherers/foragers who are highly mobile and thus require large expanses of land, regional-scale archaeology is the only way to accomplish the task of looking at foragers on the island of Negros Oriental, Philippines over time and space with any certainty.

It is documented that hunter-gatherers do not just use the same single kill site continuously but that hunter-gatherers are mobile and tend to roam over large distances frequently. Ethnographic and ethno-historical accounts by Navin Rai(1990), Junker (see chart and summaries Junker, 2002c:349), (Vanoverbergh, 1925c:532), and (Griffin and Griffin, 1985) all describe Negritos moving at least 12 to 22 times a year and not returning to the same area within a year. If this is the case, then one is not dealing with one site, but rather a system that encompasses regions and large amounts of terrain, especially over time. Binford's article "Willow Smoke and Dogs' Tail: Hunter-Gatherer Settlement Systems and

Archaeological Site Formation” (L. R. Binford, 1980) argues that there is no doubt that hunter-gatherers create patterns across the landscape. But he takes it a step further and declares that from these settlement patterns one can infer information about a settlement system (Binford, 1980:4-5). He also critically argues that from these systems/rules of behavior, an archaeologist can figure out “the factors that condition or ‘cause’ different patterns of inter-site variability in the archaeological record” (Binford, 1980:5).

A real-life research application can be seen among the Aeta of Luzon. For example, if the Aeta partake in the “foraging subsistence-settlement system” then they are said to move around about 22 times a year, a distance of about 8 miles between sites, and a total of about 178 miles per year (Vanoverbergh, 1925c:532) [see mobility chart in Binford, 1980:7]. Archaeologists are grappling with understanding how the foragers organize their movements over a large area of land. Likewise, they are also dealing with deciphering how exactly these 178 miles of land were used by the Aeta over time. Archaeologists are tasked with looking at ecological factors like seasonality and how these may determine the type of sites and what materials remain at a site (Cowan, 1999). Anthropologists are also tasked with understanding the role that agency, or socio-cultural factors, have played in determining the routes taken (e.g., how a preferred food or ideology may have swayed the migratory pattern despite its high energy cost) (Bird-David, 1990). Factors like these all play a role because different kinds of activities leave different kinds of marks on the archaeological records (L. R. Binford, 1980). The key is to identify the many types of activities in the region and to understand what the materials from those sites tell us: 1) about the animals that were or were not around in the various ecological niches of the Bais-Tanjay Region, 2) the type of vegetation available in that particular area as opposed to at other sites, 3) how frequently the site was occupied, 4) if there exists an abundance of a seasonal plant or fruit at a certain site and not another, and 5) the way that a specific hunting group or party may have organized

themselves, short term and long-term, in order to accomplish the tasks of everyday living. Trying to get at this information seems more feasible by using regional-scale settlement archaeology.

In Hutterer and MacDonald's edited book (Hutterer and Macdonald, 1982), compiling the work of a number of archaeologists who carried out surveys and excavations in both the uplands and lowlands in 1979-1982, stone tool use is more likely by foragers, particularly at small ephemeral base camps or special activity sites, since iron and bronze metal are more common as weapons or tools in the lowland alluvial plain at least as early as the late first millennium AD. Tens of thousands of lithic material items have been collected both in the upland areas above 300 meters, as well as upriver sites from the supposed coastal port of Tanjay. Two chapters in Hutterer and Macdonald (1982), authored by William Parry (1982a:107-116, 1982b:303-331), focused on the technology of stone tools and provide the archaeological basis for technology among foraging peoples on Negros Oriental. This is significant due to the regional scope of the research; he was able to delineate stone tools/lithic materials by elevation and extrapolate on the variations that existed between these sites. For example, the discovery of 5 blades above 100m, demonstrated a generally bifacial-flaked ridged working, with standardized shapes (Parry, 1982b:307). Additionally, coupling the 5 finished blades with the other tools, some with significant edge modifications, Parry's conclusion was that sites seemed to be strongly clustered and had greater densities in elevations over 100m. He also noticed the presence of lithic artifacts increasing at higher elevations, even though they showed less evidence of utilization demonstrating a "stable pattern of site distribution throughout temporal periods" (Parry, 1982b:317). His data derived from 503 stone artifacts (from a smaller number of the 284 sites with lithic artifacts in both upland and lowland contexts) (Parry 1982b:316) points to the Bais-Tanjay region, tools being largely irregular shapes, consistently retouched, with few prepared cores and flakes manufactured from a percussion method.

This large archaeological collection of lithics in the Bais-Tanjay region is extremely significant, if not just for the sheer numbers of stone tools in the archaeological context, but also the presence of

contemporary Ata foragers who now use metal tools (particularly multi-functional *bolos*) and continue to use smash-and-grab flakes from the available abundant volcanic obsidian and chert for on-the-spot cutting needs. Contemporary Filipino foragers, whether they live in allocated forest preserves or live and work in lowland towns, have a clear breadth of knowledge about stone tools among Philippine hunter-gatherers, and the almost unprecedented amount of forager sites in this study of archaeologically and ethnographically visible toolkits over a regional scale is fairly unique.

From this large database, researchers can look at the technology of contemporary hunter-gatherers in the area and arrive at numerous conclusions. Hunters and gatherers in the Bais-Tanjay Region use volcanic stone materials that could be retouched continuously, with ad hoc edge sharpening for specific immediate tasks. Unlike other regions of the world with pre-modern or contemporary foragers who carefully “curate” their lithic tools, the abundant volcanic chert and obsidian in the region, associated with ancient and on-going volcanism on Negros Island, allows what we might refer to as an ‘in the moment smash-and-grab followed by tool discard’ strategy due to this wealth of workable stone littering nearly every part of the coast, the inland lowlands, and the mountainous valleys above 100 meters elevation. Therefore, there is limited development of complex cutting edges, conservation, and reuse of lithics, and negligible investment in complex shaping of the lithic item beyond a shape that is appropriate for the task at hand at that specific point in time (in Hutterer, 1982:328). Simple analyses of technology revealed some preference of certain materials over others, manufacturing methods favored over others, and partiality to specific areas for hunting while also having access to a wide range of ready-to-use lithics.

While this lithic dataset and associated ‘forager’ sites are significant to this dissertation, detailed analysis of specific use-wear patterns and materials analysis of lithics from the Bais-Tanjay Region was

deemed beyond the scope of this thesis⁴ due to the tragic death of Dr. Larry Keeley. However, the greatest asset of this data is its role in reconstructing the social and ecological pathways of the region over time. Consider Cahen et al., (1979) article “Stone Tools, Toolkits, and Human Behavior in Prehistory” and Cowen’s (1999) article “Making Sense of Flake Scatters: Lithic Technological Strategies and Mobility.” These articles discuss the scope of lithic analysis and can provide insight into future lithic analysis of stone tools, stone wear, basic lithic technology, and level of mobility from the scatters of the Negritos. Cahen’s et.al. (1979) research looks at how refitting, microwear analysis, and distribution of artifacts can be used to determine not only the site activity, but also used to investigate “the dynamic and behavioral organization” of a site (1979:662). The article argues that lithic analysis thus far has not ventured far enough, that it must move beyond a simple functional explanation and tie into typology, connect space and time, and “distinguish between the expedient and curated elements” (1979:662). For stone tools to truly be informative, the article lends support to the idea that descriptions of stone tools (see Parry, 1982b) are important, but research needs to go further to determine the level of visible use-wear, the evolution of the tool, and how the individual forager may have modified these various tools for possible curation as they moved over-the landscape. While W.J. Parry’s work (1982a, 1982b) was limited in scope, as later work in the Bais-Tanjay region prioritized large permanent sedentary coastal and river-bank settlements rather than forager archaeological imprints, he hints at lithic variation that existed between hunters (Parry1982a:110), the functional tool shape possibly reflecting the ecological zone targets of the hunter, the hunter’s physical abilities, personal preferences, and skill level (i.e., novice hunters vs. experienced hunters). While this question of variable hunter behavior and stone

⁴ Dr. Larry Keeley, a use-wear specialist, was a member of this dissertation committee and had planned to help with possible use-wear analysis of selected lithics from the Bais and Tanjay areas. His untimely illness after an accident, resulted in his death before this part of the thesis could be realized.

technology for hunting is beyond the scope of this thesis, Cahen et.al. (1979) and Cowen (1999) discuss issues of hunting strategies based on possible social and ecological computations.

‘Reading’ the ecological and social landscapes from the archaeological remains, combined with ethno-history of foraging peoples, provides more robust methodologies in which to address questions about the extent of certain limiting ecological factors, as well as possible individual social norms and thought processes that are continually adjusted to facilitate forager success under a range of circumstances. If there seemed to be a large number of artifact scatters clustered right around 100 meters, which is verified through preliminary GIS data in the Bais-Tanjay region (Junker, 1990), then was it in response to an abundance of desired fauna and or plant resources in this transitional zone where the alluvial plain abruptly meets the steep climb up to 700+ meters? Or was this ‘transitional’ zone also a location where upland-lowland trade could regularly occur (particularly in the dry season of easy movement)? Is this within the areas of lowland societies farming on the almost wide and flat alluvial plain which meet, simply put, food sources in those areas? If there existed this abundance of food in this area, then hunting must have been a favorable task and the environment/terrain must have been able to sustain continued ventures for food. These are thought-provoking questions for me. Nonetheless, what has to be proven here by the archaeological evidence is that because of the large number of sites here and the plethora of lithics, the prehistoric environment of hunter-gatherers on the island of Negros Oriental was sustainable and well-suited for extensive hunting for the length of time that foragers have been in the Southeast Asia, specifically the Philippines. That is what my research hopes to tackle in reconstructing the past of this tropical environment.

In addition to literature that provides specific site classification terminology and the realms and ramifications of regional settlement analysis on hunter-gatherer sites, regional-scale settlement archaeology today is intertwined with Geographic Information Systems (GIS technology) for examining the spatial movements across a landscape. This includes using Geographic Information Systems and

Geostatistical analysis to examine regional settlement patterns of, in this case, hunter and gatherer seasonal mobility in spatial movements in more than 100 sites located over the landscape, over 1,000 years. These range from deciphering whether these settlements are clustered or random, patterns that can be seen over large expanses and even establish predictability models of possible sites that have yet to be identified for various reasons. This new technology has real application to my research.

Let me explain. Parry claimed that sites were indeed clustered over a certain elevation, and even that sites were random and less clustered below 100m (1982b:317). These calculations were probably done by hand or with less advanced GIS technologies. However, using the advanced GIS applications and programs, one can arrive at a plethora of trends. The software allows the archaeologist to create a continuous surface that is derived from the sites/points from the archaeological data (Ormsby and Alvi, 1999). Because of the greater number of points inputted and the more accurate the results, an archaeologist will be able to arrive at the exact spatial correlation of points, or, in this case, hunter-gatherer sites, and be presented with a trend analysis plot as well as have a computer-generated polynomial of the landscape and sites in 3D or even a TIN (Triangulated Irregular Network). This program can be replicated using a simple function tool in GIS, saved, and further analyzed using Technical Pattern Recognition (computers given training points to recognize locational patterns using logistical regression) and Discriminate Analysis (which determines the specific variables that are causing the pattern) (Ormsby and Alvi, 1999: Chap. 5). These programs can account for variables like streams and waterways, slope, terrain, vegetation, etc. The utilization of Spatial Analysis and further Geostatistical Analysis can be done with a small amount of data, but better results can be achieved using a large database on the archaeological remains of forager sites. The capabilities of GIS can be extended further to looking at the continuous distribution of sites over the landscape (Kriging), including Multi-Distance Spatial Cluster Analysis, Nearest Neighbor Hierarchical Clustering Technique, and even Predictive Modeling [that attempts to predict possible undocumented sites that may be using the specific variables of the current

dataset]. GIS possesses the ability to handle large amounts of data, correct for human error, ensure the validity of their data, and arrive at conclusively supported determinations about the settlement patterns of a group of people, with greater efficiency and accuracy. The fact that it can even predict possible sites of occupation over time and space, tackles surveying limitations, such as what can be seen on the ground and/or echoed by other archaeologists (Kent, 1992a; Parry, 1982b; Wobst, 1983). Essentially, GIS provides the means to analyze the regional-scale archaeology data efficiently, accurately, and with an exhaustive number of conclusive and replicable results and potential models.

Aside from technological and computer-based analyses, a thorough look at the remains of archaeological sites provides another thought-provoking glimpse into the world of the people who occupied these sites. In an ideal situation, one can find a site of continuous occupation over time that has been relatively undisturbed to present day, preserved well, and is essentially pristine. Just by using a simple stratigraphic analysis (Harris, 1989a, 1989b), an archaeologist would be able to decipher the following: periods of occupation using relative dating; what the individual(s) were eating during that time period, what they seem to have a preference for, and what was most abundant in the area; what tools were used; any cultural markers, objects, or artifacts that were or were not; important; possibly how many people occupied that site; the size of the site during each time period; and a host of other things. Aside from the technology, the ecological implications resonate as being the key aspect that can be arrived at, assuming that people do not travel long distances to procure food, but rather the distances are only as long as is needed to return within a day.

Navin Rai's ethnographic work on the Agta of Luzon (1990) emphasizes that the Agta bands are strategic in setting their base camps between moves and focusing on their locations to achieve a significant variety of food resources. If these statements are assumed accurate, then many food remains are samples of the surrounding environments of those who occupied the site. All the plants and animals that were eaten may not be there (as explained by Bird-David, 1990), but what is there is a great

snapshot of the terrain around them. It allows the researcher to make educated inferences about the abundance or lack of abundance in food sources. An archaeologist, therefore, would be able to re-create the exchange of goods between areas that have an under-representation and those that experience an abundance of a certain material (such as usable stone for tools), as well as a diversity of food products and materials for technology (e.g., wood). For example, De la Torre and Mudar's (1982) research on animal exploitation cites that hunters Noy Tomas and Noy Pedro rarely caught deer, but almost always caught the Negros native pig (*Sus celbensis/ bakatin*)(Torre et al., 1982:88-90). This is not because this hunter did not want to catch deer, but rather that the native pig was more abundant in the area within which they hunted. The deer were in higher elevations or ecotones and were less numerous, possibly a result of the threat of deforestation or inability of the deer to adapt to rapid environmental changes due to lowlander encroachment. If they did possess any deer, it is highly likely that this was obtained through exchange or trade with peoples in higher ecotones, where there were greater populations of deer.

This supports the notion that the archaeological record can provide substantial evidence for past lifeways, but also lays claim to the need for regional-scale work. If there exists archaeological data within ecotones in higher elevations, as is the case with regional data, using nearest neighbor or distance weighted analyses, a researcher can use the data that is already present to determine the most likely places of contact to procure these sources of deer as well as any other food that may be less abundant in lower areas. The availability and the extensiveness of the already accumulated data simply requires more modern technologies or theoretical frameworks to be examined so as to re-interpret or re-analyze the data from any facet desired.

As it pertains to my ethno-archaeological research, major components of food procurement, lithic use, geospatial analysis, as well as the ecology of this area are integral to compiling a complete history of foragers on Negros Oriental, Philippines over 1,000 years. My goal is to spotlight foragers,

tunneling into their pre-existing and even resilient forager matrices of interaction and exchange, from a solely forager context and to this based upon forager frameworks. Let me explain. I agree with other researchers (e.g., Jocano 1998; Junker 1990, 1994; Morrison and Junker 2002) who argue for long-time trade in the Philippines between forager groups, who tended to specialize in interior upland forest products. Indeed, on Negros Island, *Aeta* or *Ata*, foragers, along with tribally organized (Jocano, 1998; Junker, 1990, 1994a, 1994b; Morrison and Junker, 2002) interior swidden farmers, known as the Bukidnon or Magahat, developed inter-dependent specialization and trade among these various upland groups and the developing coastal maritime-focused centers, including the settlement of Tanjay at the coast. In the case of the Philippine, support of an isolationist model, where foragers existed without influence, especially in the Philippines, is unrealistic. However, I do believe that there existed iconic markers or situation-specific circumstances, for lack of a better term, that foragers were subjected to or actively involved in, which remained unique to them. First, let us begin with the most recent 500 years. During this time, it has been well documented that the environments of the Negritos rapidly changed (Bellwood, 1985, 1995; Eder, 1988, 1987, 1999; Eder, 1987, 1999; Endicott, 1999a; Endicott 1999b, Griffin and Griffin, 1985; Headland, 2002; Headland et al., 1989; Heaney and Regalado, 1998; Jocano, 1998; Morrison and Junker, 2002; Stark, 2006). The same can be said about any hunter-gatherer groups globally (Allen, 1997; Ambrose, 1986; Bodley, 1999; Kliemann, 1999; Silverbauer, 1996; Spielman et al., 1994; Wilmsen and Denbow, 1990) . Consequently, these changes have directly affected the lives of foragers, as does any interaction, especially concerning the procurement of goods. For instance, the data from the Bais-Tanjay project (Hutterer and Macdonald, 1982) and Laura Junker (Junker, 2002b), in the Philippines specifically, shows large regional settlement shifts in occupation and forager camps sites during this period (Junker, 1990, 1996, 2002a). One knows that they are foraging sites because they fit the criteria of being primarily lithic-yielding sites where the number of lithics/technology and the number of faunal/food remains far outnumber pottery and exotic goods (Junker, 1996:395). In later periods, there

seems to be clustering of sites within a reasonable distance of sites with larger populations, which are, coincidentally, situated along rivers or waterways with easy access to the coast and foreign traders (Junker, 1990:180-181, 1996: 397). On one hand, movement along landscapes such as these are a response to external stimuli, more than likely trade or labor that facilitates trade goods. On the other hand, I want to explore any specific socio-cultural factors that may have played a role in this shift, from the internal perspectives of various group sets of Ata, over the last 1,000 years. Since more foraging sites seem to exist, ever-increasingly over time, in lower elevations and near river sources, are these sites from solely men, like those partaking in wage labor? If so, this evidence provides a voice for male Ata. Conversely, if these are primarily men, then the Ata woman must still be gathering and hunting [there are records of Agta women hunting (Estioko- Griffin and Griffin, 1981:121-152; Griffin and Griffin, 1985:18-32). Therefore, there must exist a voice of female Ata in these foragers systems (see Roosevelt 2002). If there existed differences in stone tools and bow and arrows among Philippine hunters due to skill, prowess, and body type (Parry, 1982a:110), then the tool kits of female hunters may look different archaeologically as well. Studies among the Aborigines strongly suggest this (see Bliege-Bird and Bird, 2008; Kelly, 1995). These ponderings are simply to extrapolate on the need for research to illuminate the agency of indigenous groups and the gender differences that may arise. But research must also look at the intricacies of forager-focused, forager-centered matrices.

As well, there must have been some foragers still in those higher elevations. Begging the questions: What type of mobility occurred in the interior for those individuals, those bands, or those of the interior forager populations in general? Archaeologists are beginning to look at the act of trading or exchange being a phenomenon that predates direct foreign trade. Authors (Jocano, 1998; Junker, 1990; Morrison and Junker, 2002) argue the pre-existence of structures of exchange already in place prior to 500-1000 years that facilitated the possibility of this extensive foreign trade in later years. Because this is the case, what types of exchanges existed among foragers in pre-modern times? What additional types of

interactions did foragers have in lower elevations? High elevations, like the interior? Even, what types of interaction did they have with foragers with the Occidental? Essentially, the task at hand must be to uncover the social, political, and economic interests that drove the circumstances for forager to specifically target social interactions with other groups, including early agriculturalists in small-sized communities on the coast and upriver lowland agricultural areas in the Neolithic Period, later developing polities on the coast that focused economic trade in forest products that depended on knowledge of resources in heterogeneous upland landscapes.

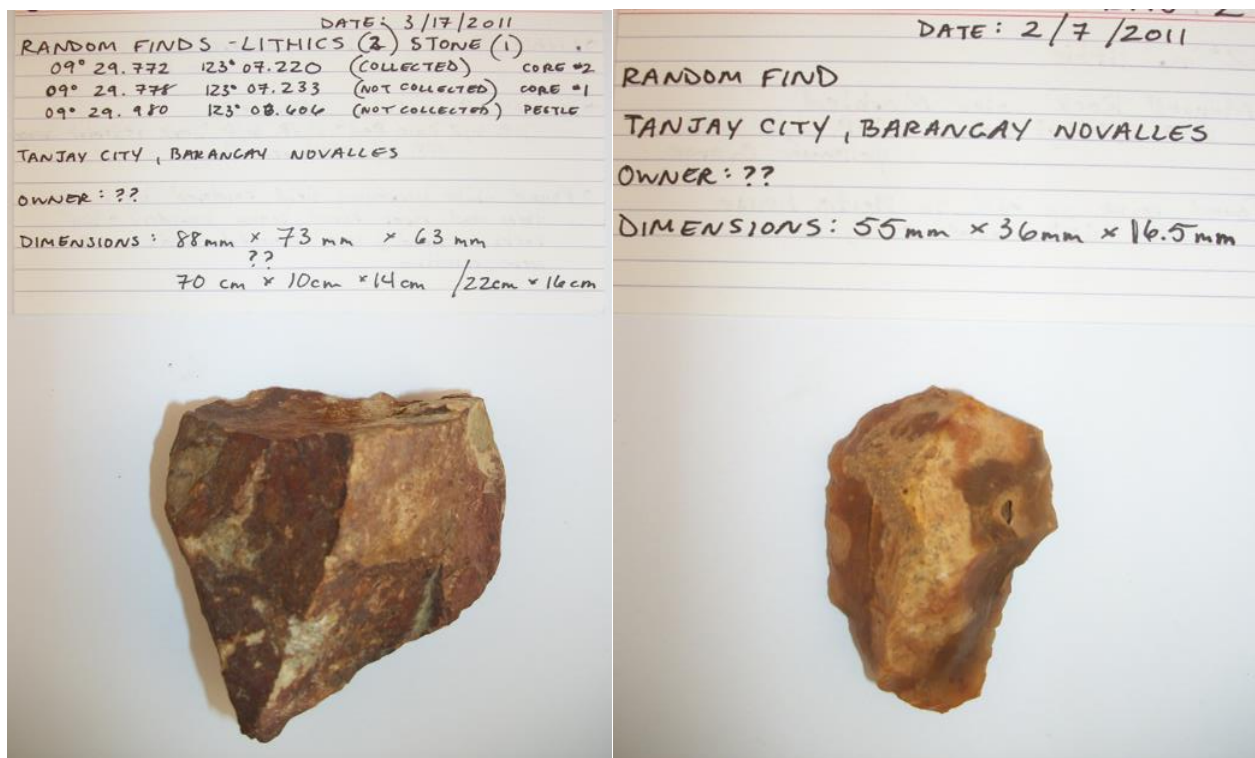


Figure 4. Examples of ubiquitous and random find lithics found while surveying the area during the 2011 field season of this dissertation. Attests to the state of lithics discussed in some literature.

In conclusion, the task of reconstructing the life histories of foragers in the Philippines offers promising results despite its challenges. The main evidence, lithics/tool technology, is comprised of amorphous objects that lack[s] regular patterned shapes (see Figure 4). Even more difficult is that fact that tools are “simple, non-decorated utilitarian artifacts which lack stylized elaboration” (Junker, 1996; Parry, 1982:114) and possess a uniform style that remains constant throughout time. These make it difficult to establish technological periods or stages in stone tool “development” (Junker, 1996:396). Additionally, many of stone tools and even sites of foragers lie within stratigraphic layers that have been disturbed or are difficult to date. The only sure ways to date these stone tools are with other artifact associations, ecological or geological changes, and these have their limitations. Nonetheless, from the over 800 stone tools collected thus far in this area, these artifacts can undoubtedly tell us something pertinent to my research. However, short of relying on a utilitarianistic view of hunter-gatherers over time, which has its drawbacks, my research would entail relying almost solely on statistically sound and replicable, regional settlements patterns demarcated by lithic- and faunal-dominated sites, stratigraphic dating methods and techniques to establish some sort of chronological history aside from later introduced materials (Harris, 1989a, 1989b; Zimmerman, 2003), the presence or absence of social-cultural or human influence or manipulation of the landscape. This will form the basis of this research and support for this research over the last 1,000 years and beyond.

V. CHAPTER 5

5.1 **Resiliency Theory: The Individual Agent as a Catalyst for Indigenous Forager Cultural Resiliency**

Key to this dissertation is the focus on resiliency theory as a framework to discuss how foragers aggregated over the landscape and have developed fluid strategies of movement over time. While “resilience theory” has often associated with sedentary complex societies (often large-scale, socially stratified societies), this chapter presents arguments for a different type of resiliency for highly mobile, non-sedentary populations. Foragers have distinct social and economic strategies, particularly in the humid tropical forest, which allow both specialization in forest products and trade, the use of geography and landscape remoteness as a tool of distancing when needed, and the ability to control the interior upland forests. This unique type of resiliency in small-scale and vulnerable societies creates the catalyst for archaeologists and ethnoarchaeologists to examine ways that foragers, as affecting and affected agents, have been resilient to what and for whom (and why) politically, economically, ecologically, and socio-culturally. In order to address, the “to what” and for whom” questions that seems to emanate from research on resiliency theory (Carpenter et al., 2001), a regional archaeological approach to forager studies in the Philippines is ideal as a case study. Mainly this is because no other known databases in island Southeast Asia rivals that of the Bais-Tanjay area, where more than one hundred sites are associated with lithic materials and tools generally identified as “smash-and-grab” stone implements. However, a caveat to this is that lithic blades, as well as more amorphous chert, obsidian, and quartzite tools are also found on small activity sites which are in areas with clearly fully sedentary sites with broken porcelain, metal blades from and likely sedentary villages. It should be noted that there are literally hundreds of these sites located in the archaeological record in the 315km² Bais-Tanjay Region and this reflects almost certainly shared technologies in the permanent farming settlement housing in what were likely Visayan-speaking farmers.

A longitudinal, regional approach is necessary for the several reasons outlined and discussed in detail in previous chapters. First and foremost, this dissertation conceptualizes resilience under the premise that resiliency is a process. Thus, understanding how these processes play out can neither be understood within the context of a solely static nor a single punctuated episodic occurrence. In addition, these processes cannot be observed in short-term spans of time either. Instead, resilience processes must be understood and interpreted under long-term, historically dynamic contexts (Bristow and Healy, 2014). The dynamics of measuring the when and how, and the conditions and processes under and by which resiliency occurred requires both quantitative and qualitative case studies that combine statistical data with abstract and detailed histories that can ultimately get at the emic and etic perspectives that expound on where people started as well as where they ended, both concurrently and contemporaneously. Etic-based, quantitative case studies that are bioarcheological in nature note that the mixing of foraging groups with biological markers of interbreeding between the “first peoples” Ata and people of later Neolithic Period genetics during the movement into the archipelago can be seen in a number of case studies (Justice and Temple, 2018; Smyntyna, 2016). However, emic-based qualitative case studies that outline the cultural contexts of these continued mixtures over time are also important in understanding these groups. A discussion of these case studies and the genetic data will be again raised in the next chapter.

In general, the Bais-Tanjay survey settlement data shows that forager camps are present in larger densities during the earlier periods prior to about the 12th century, when the coastal center grew rapidly. By the next time period, the 15th to 16th century, the numbers are greatly diminished, only to fluctuate intermittently throughout later periods (Junker, 1993b). These changes are indicative of people undergoing cultural transformations and, in this case, processes of adaptation to external stimuli that included what are best understood as “rare decade-to-centuries-scale studies” (Redman, 2005), a methodological approach that only archaeology can adopt and does so rarely.

This example of resiliency as a process aligns with Holling's (1973) illustration of resiliency theory in that foragers are directly absorbing shocks and reverting to their previous states when conditions allow. Of note, this dissertation expands beyond Holling (Gunderson and Holling, 2002; Holling, 1973) and tackles the multi-scalar, agent-focused, cultural resiliency of foragers in response to the political, economic, ecological, and sociocultural changes over 2,000 years. In particular, this chapter applies a number of combined definitions from scholars (Crane, 2010; Obrist et al., 2010:290; Smyntyna, 2016) to create, define, and examine indigenous forms of forager cultural resilience, to depict it as a resilience that encapsulates at least ten types of resiliency strategies used by foragers over at least a 2,000 -year period. Indigenous forager cultural resiliency (IFCR) is the process in which Philippine foragers, in this case, planned, prevented, evaded, mitigated, avoided, coped, reacted, anticipated, changed, searched, and allowed themselves to remain the same socio-culturally, temporally, and spatially.

One of the main arguments herein is that, despite the long-term sedentary agriculturalists, their coastal trade centers and the structures of trade and their often-dangerous friction with lowland peoples, foragers' means of coping was rather expansive and even rather successful in maintaining forager identity over millennia. These 10 strategies, as they will be referred to in this and the subsequent chapter, expand beyond the stable/neutral vs. unstable debate of Holling (1973), or even simply the resisting or reverting of Redman (2005). Instead, the chapter will argue that if archaeologists and anthropologists in general are to understand foragers temporally and spatially, forager cultural resiliency theory may be the lens that we can use to explore the multitude of ways that foragers have been resilient macroscopically and microscopically.

Reiterating Bollig (2014: Abstract): "cultural resilience may complete resilience thinking within anthropology, shedding the light on the longevity of social institutions and cultural patterns." Indigenous forager cultural resilience not only adds to studies of resilience theory, it, in addition, proselytizes

scholars with epistemological and phenomenological agility(Folke, 2016; Willerslev, 2009) to reinterpret the foragers studies of the past and in the future. Even more so, it allows some insight into how to deal with current issues, like climate change, for example, and continues the relevancy of archaeology work for the future, preventing its steady decline and the almost inevitable demise of forager studies. Essentially, knowledge about this human branch of people and their subsistence strategies assures that future anthropology studies are neither lost nor exhausted, but rather provides us with ever-increasing knowledge about explicit strategies they be employed in the future.

Due to the fact that that terminologies under the umbrella of “resiliency theory” can get muddled and misused, it is necessary to define the terms and some crucial concepts that have been chosen for this research so as to be clear about the use of the macrocosm that is a Resiliency Theory (RT) framework. First and foremost, as previously mentioned, this dissertation defines resiliency by departing from Holling (1973) who originally defined resilience as “the ability of a system to maintain its structure and patterns of behavior in the face of disturbance,” being more biologically based. Next, this dissertation also departs from the subsequent branching of resilience that encompasses ecology “as the amount of disturbance that an ecosystem could withstand without changing self-organized processes and structures as was conceptualized in close relation with adaptation to the environmental changes (Nelson et al., 2005; Smyntyna, 2016). In addition, this dissertation also chooses not to go down the road of psychological resilience (Cicchetti and Garmezy, 1993; Masten et al., 1990; Mukherjee-Kumar, 2016; Rutter, 1990). Instead, this dissertation’s interpretation of indigenous forager cultural resilience couples social and cultural resilience. This combination of variables best conveys how scholars should use resiliency to understand and reinterpret forager settlement patterns spatially and temporally, as a sociocultural aspect that situates resilience as a person-focused, and, thus agent-focused tool, contextualizing the power dynamics of foragers and tribal groups as acting agents instead of passive adapters (Pillatt, 2012a; Smith, 2020). As such, this dissertation defines resilience and, subsequently,

indigenous forager cultural resiliency as the agency of foragers to plan, prevent, evade, mitigate, avoid, cope, react, anticipate, change, search, and even remain the same, despite political, economic, ecological, and sociocultural perturbations and stasis. In addition, this dissertation arrives at these 10 strategies by examining them at multi-scalar levels, local, regional, and international, as these distinctions focus on the integrity of the parts (Lu, 2010) and are important.

To begin, focusing on “hunter-gatherer agency” (Tuck-Po, 2013:424), or as it will be referred to here, “forager agency,” encompasses the full suite of subsistence strategies used. Thus, forager agency situates foragers as acting agents who affect and are affected by internal and external forces. One argument of resiliency theory is that agency is not given enough credence. It is true that agents, in this case foragers, do not act in isolation (Bollig, 2014); however, understanding the inter- and intra-relationships and the unique and rather distinct roles that they play is integral to understanding the macroscale of any system. Human systems and networks are inherently bounded and riddled with hierarchical power dynamics. In addition, systems are composed of human networks of varied degrees and scales. This is innate, given any human network. In this case, the network existed throughout the Philippines over more than 2,000 years. Nonetheless, a closer look at the “science of the integrity of the parts” (Lu, 2010) is integral to understanding the full magnitude of the system. One of these “parts” is that of foragers, a part that arguably needs to be re-interpreted and reconceptualized (Smith, 2020). On a strictly basic level, foragers have continually been relegated to the of the complex webs of ‘society’(Smith, 2020), subjected to pejorative histories, and discussed as byproducts of a larger system. The focus has been on the foreign power that fuels the international trade, whether Chinese or Spanish (Bentley, 1986; Beyer, 1930; Junker, 1998; Omohundro, 1977) or the agricultural, lowland peoples that happen to offer these foragers opportunities through wage labor (Benjamin, 2013; Fortier, 2009; A. T. Rambo, 1981; Tuck-Po, 2013) or trading of interior goods (Junker, 2018). This is not to say that these are not important or are not true, as these “parts” are unequivocally important in crafting the long -term

history of Southeast Asian interaction spheres and forager-farmer interactions (Morrison and Junker, 2002). This dissertation simply chooses to look at the semi-autonomous nature of foragers and their narratives. Foragers do not exist solely at the expense of foreign traders or lowland populations. Rather, they existed prior to either of these components and, despite these external influences, still manage to maintain their forager or ethnic identity today. They are indeed a part of the larger Central Philippines system of networks; however, who they are and how they maintain their ethnic identity is the focus of this dissertation.

Essentially, this dissertation tackles Who Are the Foragers? (Ballard, 2006; Reid, 2013; Ulijaszek, 2013) in ways that sheds the shackles of power dynamics and frees the identity of this marginalized society to exist within their own right and their own contexts. This view of looking at the intricacies of this marginalized group has the ability to change how scholars interpret and re-interpret the livelihood of these foragers and of foragers in general.

This research contends that the epistemology through which scholars study and portray foragers must change if we are to transform the rhetoric surrounding and about foragers. This epistemological shift can be used to apply more appropriate heuristic devices to studying the livelihoods of foragers. These devices equate to research question chains that elucidate and expound upon, whether than simply describe or classify, often pigeonholing foragers as a scientific category and nothing more. For the sake of this dissertation, this epistemological research question chain includes: Who are the foragers, as cultural distinct groups? In this case, who are the Negritos (Benjamin, 2013; Endicott, 2013; Heyer et al., 2013; Ulijaszek, 2013)? What are their activities and how do those activities play out within forager networks? What are their belief systems and the associated symbolic cultural components of those systems? Most pertinently, what pre-existing networks, embedded with symbolic culture ideologies, exist within Philippine forager populations in their own rights that allow the stability and propagation of forager cultures, traditions, and knowledge to persist? What pre-existing networks of

Philippine forager populations have allowed the political and economic at the macroscopic level to work? And, lastly, although foragers are not seen as possessing “power,” within the context of having the ability to exert or directly force, this dissertation argues that power dynamics are not solely based on a top-down structure or about the ability to exert force or change over someone or something due to superior economic or political structures. Instead, in regard to networks, power dynamic relationships exist at multiple levels and to varied degrees. Within a network, power dynamics are constantly occurring between a forager who seeks to trade and a forager who receives this trade. At a larger scale, power dynamics exist between bands within a region that seek to negotiate an exogamous marriage. Power dynamics exists between the forager and the farmers or other tribal groups in the region who interact through social and economic transactions, bind together with other forager bands or sedentary communities when needed (in the past, for warfare or ceremonialism), and provide security and solidarity through ritual (Gardner, 1991; Griffin and Griffin, 1997; Mithen, 2009; Tuck-Po, 2013; Turner, 2013; Whallon et al., 2011). In any network relationship, there is evidence of differential influence, ranking, or hierarchy where an individual exerts force on another, to various degrees. It merely depends on the level that the power relations are exerted. Thus, foragers can and do possess something greater than mere influence, something intermediary between power and influence that creates a state of agency locally, regionally, and internationally. This intermediate level of “influential power” is what I am using to compartmentalize my understanding of agency and forms the basis for the crux of this chapter.

The strategies and forces at play require a rather lengthy explanation, so this chapter will discuss these in detail later, a discussion that will be followed by the topic of scale. For now, this part of the chapter will address what is meant by forager agency at multiple scales and varied degrees. For at each scale, the influential power of forager agencies performs differently. And, unfortunately, the energies embedded in forager agency greatly diminish along the continuum from the microscopic to the macroscopic. Thus, it is necessary to address the influential power of person-focused and community-

focused forager agency at each level, outlining its greatest magnitude at the local, network level of forager interactions, in response to variable-focused sociocultural and even ecological stimuli. Then, discussing how it looks at the regional level, still in response to sociocultural level influence, it now uses another variable, the political. And, finally, at the international level, it is fully thrust into the economic-centered world systems. Because each of these levels tells a story, gives a piece of the puzzle about forager history, it is necessary to examine and analyze each of these levels. In addition, if we are to model the multitude of strategies that foragers have utilized over time, each of these levels offers some insight into these multitude of ways of empowerment.

This multi-level approach is important because simply looking at one level suggests that a population retreated, resulting in a consensus that as foreign hazards increased, populations attempt to maintain in an equilibrium state by reverting. However, upon a closer examination of archaeological data, illustrates that not all members of the population retreat or revert homogeneously (McLaughlin et al., 2018; Rival, 2009; Smyntyna, 2016; Willerslev, 2009). As a matter of fact, people exhibit “differential community resilience” to events that occur (Turck and Thompson, 2016). In the case of foragers, this differential community resilience encompasses both forager community and individual resilience since foragers tend to “play with the broader world” (Tuck-Po, 2013:420), remaining flexible, being opportunistic, and moving toward and away, and essentially, epitomizing what socio-ecological resilient systems do (Folke, 2006:254; Tuck-Po, 2013:419-420). Some members choose to remain in the external hazard, despite the risk, as it affords them opportunistic advantage, simply because they “neither win nor lose,” or, because, despite the risk in this probability space (Rogers, 2017), this area is their stability landscape (B. Walker et al., 2004). The first point is to make sure that we acknowledge these strategies, instead of assuming that the entire area is depopulated and fleeing. The second point is to begin to investigate how and why remaining in a risky situation is still a resilient strategy. In this case, choosing to remain in their stable landscape represents the purest form of resiliency, one that absorbs shock. These

two points only further the epistemological research question chain, in that one must now address how these agents, whether as a community, group, or individual families are able to do so. Subsequently, what buffers to these horizontal exchanges did they or have they put into place or place around them that allows them to do so? Are these buffers a result of pre-existing social memory (Pillatt, 2012a:63), a sort of ingrained technique that was genetically passed down to these people and communities specifically? What psychological or, dare we say influential, power do these people and/or communities have that infuses them with the gall that they will not be affected? Who or what do they know? What horizontal exchanges or resources do they have access to? Essentially, what and how great is their influential power that they remain unscathed by these external hazards? Although these questions take us on a roller coaster of thought and they seem ethereal, these questions can be addressed by using phenomenological and ethnographic analogies in conjunction with archaeological data to be “more closely attuned to particular historical realities” (Pillatt, 2012a:)at work in the Philippines. Let’s provide a description of two brief instances that can be discussed from fieldwork.

The first instance involved travels with a high-ranking official into the interior of the province (Figures 5). There was this fear about a particular guerrilla group and whether or not they would kidnap an American, or another high ranking official. So, despite traveling into a high-risk environment, there was no hesitation. In fact, going into this area for a few days elicited minimal worries or concern. Why was that? Why were we willingly going into an area of great risk or “hostile territory”? At first thought, the answer could be simple: who would really kidnap a high ranking official? The amount of time, energy, and skill would be too great, possibly. Nonetheless, on the contrary, the answer was much



Figure 5. Tanjay high-ranking officials, policies, staffers, and townspeople hoisting a city vehicle up the mountain, on a journey towards the innermost interior/upland barangay, Santo Niño.

simpler than that. When asked, the officials and some of the security nonchalantly simply said, “I am N.P.A.,” or “I know them, they won’t harm me.” Granted, given their nonchalance, there was still a rather large security detail armed with guns, but that was explained away as “just in case.” Although, they knew members of this guerilla group, there was still the possibility of rogue factions or horizontal and vertical relationships that were not as well-maintained as all parties assumed. These parties included the Tanjay officials, members of the guerilla group, some Bukidnon, and some Ata. As a matter of fact, one of the homes we stayed at was that of a self-identified Bukidnon man (*Note: the Bukidnon are considered another tribal group on Negros Oriental* (Oración, 1961, 1967)). Therefore, in this case, the buffer mechanisms were multi-fold, one physical buffer was the security details. Another buffer was the guns that came along with the detail. Lastly, but most important to the arguments throughout this dissertation, the buffer was the internal networks established between lowland populations and those in the interior. Discussions on how this situation is peppered with power relation dynamics on several levels will be reserved for later to refocus on the main point, which is that groups of

people enter and stay within a hostile territory because they have either established or tapped into pre-existing political and sociocultural networks at different scales. Again, it is understood that the power dynamics, in this situation, are not identical to foragers remaining among lowlanders during external hazards. Nonetheless, this is a great example of how foragers could have remained resilient by reacting, mitigating, anticipating, and establishing political and sociocultural buffers that allowed them to remain “safe” despite the risks.

Yet in another instance, I was visiting a particular group of Ata in Mabinay with a professor who had been working with them for decades. We arrived very early during the day and made sure to leave before dark. When I asked him and the Ata why this was the case, one Ata said that, again, as an American, and even a lowlander, that it would not be safe for us due to this same guerilla group mentioned earlier. Nighttime was the time when that group walked the interior. From this explanation, one can infer that there was an unwritten understanding between these Ata, or anyone in the interior, for that matter, that the daytime was a free and safe time. However, when night arrived, if you were not of that guerilla group, it was best to get in your home, or someplace safe if you could not make it back to your place. This instance is yet another example, of the fact that a population, a group, or people can remain in high risk or “hostile” territory despite the risk because they established horizontal buffers within pre-existing political and/or sociocultural networks. In summation, it is essential to look at the intricacies at the local scale of those networks, for they provide three primary insights: 1) the buffers that people use, 2) the multitude of strategies they engage in, and 3) the complexity of the scale at the microscopic, local level.

Another angle regarding the importance of scale is better framed within a regional scale. One strategy often employed by groups engaged in resisting is to simply retract inward. In Hollings (1973) explanation, when water sources dry up, plants tend to draw in or close themselves off until the water levels resume. In the case of people, they practice resiliency by resisting change and drawing inward,

away from all external pressures, essentially residing in their safe, home range and stable landscape. This is indeed the case with marooned populations (Weik, 1997). Nevertheless, one can also propose that the strategy people employ may also be one of shifting longitudinally and latitudinally, again reiterating diverse strategies in response to differential resiliencies. An example that can be given is from the movie “The Hunger Games Trilogy: Catching Fire” (2009). In this particular movie, the players are thrust into an arena. This area is divided into different ecological biomes. Ignoring the premise of why they are there, as it does not add to my case, the players work their way shifting through these biomes. Each biome exhibits different flora and fauna, but, most pertinently, each of these has their own unique risks. In one biome, a poisonous fog is the greatest risk. In another, water tsunamis are another. Let’s digress here as explaining each biome is unnecessary, as only two biomes are needed to illustrate my point. In applying this analogy, it is possible that the strategy for foragers in this case is to simply move, not necessarily inward but, instead in combinations of up and down and/or left and right of the hazard to reduce risk. Tuck-Po (2013) argues that foragers are opportunistic populations that execute and utilize well-developed strategies that methodologies best suited to social-ecological systems (Tuck-Po, 2013:419-420, 422). From this perspective, one can conclude that foragers possess the innate and learned abilities to metaphorically “play chess” and that the ways that they execute their moves of evasion can be analyzed. The whos and hows of forager evasion are just as integral to understanding how foragers have remained resilient over time as any other “move” or strategy. Going further I contend that the whos and hows are what we should actually be focusing on (Carpenter et al., 2001; Forbes, 2013; Yacobaccio et al., 2017). These authors would agree. The whos would include the foragers, of course. However, who they are evading is equally important. Is the threat foreign? Is the threat from another tribal group? Is it a powerful chief? These questions are important because who they evade is deterministic of the risk-reduction strategies deployed as they move latitudinally and longitudinally. If the threat is Spanish, but not Muslim or Islamic instead of residing in the Tanjay area,

foragers on Negros Oriental may simply move up or down, traversing the island, where sightings of these foreign threats are least likely to occur. This would mean that foragers would shift towards the southernmost part of the island, reducing risk from the external pressure. If the threat is regional, foragers may simply shift to a different province, say to the Occidental or the northern parts of Negros, where the chief who has elevated the risk no longer has political power or economic control. If it is local, well, the most obvious thing is for forager groups to disband, split up, and disperse according to the expertise of their elected band leaders, under the guise of traditional fission-fusion forager strategies (Bollig, 2014). A discussion of these scenarios is necessary because although Tuck-Po (2013) concentrates on mobility as a forager strategy, how this mobility looks is tantamount to documenting what these strategies look like so that they can be detected archaeologically, which streamlines into the second point about forager resiliency.

It is important to address the second proponent of analyzing resilience. One can address the “what.” or the external variables: the political, ecological, economic, or the sociocultural aspects of resiliency. Similar to the aforementioned regional example, if the aims of foragers are to evade “the political,” again shifting into a different political network or biome, one must examine how they would employ the strategy of evasion. If stressors are ecologically triggered, then foragers shift to territories throughout the island where these stressors are less of a factor, again a risk-reduction strategy. Such was the case when forest reserves, flora, and fauna, were depleted during the Chinese and Spanish time periods of intense trade (Fenner, 1985; Junker, 1998; Junker et al., 1994; Peterson, 2003). In these ecological triggered cases, “*the what*,” or ecological variable, applies under the context that foragers group are aware of a particular set of people who are known for depleting a particular ecological zone. Because foragers are forest dependent communities and groups, reduction or depletion of environmental resources would suggest a strategy that evades that part of the forest and those people. These simple disturbances, no matter the magnitude, of forest resources results in lower flora and fauna

densities, decreases the yields of both flora and fauna for traditional foragers, and, conversely, affects forager mobility in their probability space. This example illustrates the importance of the “who” and “what” of forager resiliency over more than 2,000 years among Philippine foragers. The context of each of these actors and variables affords archaeologists and anthropologists different narratives that guide us through different epistemology on understanding and re-interpreting foragers over time.

The history of resiliency theory elucidates how cultural resilience theory can be applied to Philippine foragers and their modern-day descendants, the Ata, for this dissertation. The literature on resiliency theory is dense. Fleming and Ledogar’s (2008) analysis of resiliency theory cites “868 authors” over “4 disciplines” with over “1,006 papers, and citations totaling “47, 453” (Fleming and Ledogar, 2008:25). Therefore, it is pertinent that resiliency theory references are kept to the social sciences. According to just some of the extensive literature (Rogers, 2017; Smyntyna, 2016; Southwick et al., 2014; Thompson and Turck, 2009; Yacobaccio et al., 2017), the mentioning of resilience begins with the works of C.S. Holling (Gunderson and Holling, 2002; Holling, 1973; Walker et al., 2004). In these instances, Holling using the term resilience and defines it within a biological context. He uses the term to explain how organisms “absorb shock” efficiently and effectively bouncing back from this shock. The degree to which they bounce back illustrates their resilience. That they bounce back to their original state is, according to him, what makes them resilient. Conversely, their inability to bounce back makes them not resilient.

Furthermore, his argument is framed within a biological context in which organisms, ecological in nature, exist in equilibrium, in a neutral, stable state, until a stressor effects that state (Holling, 1973:2-3). For this scholar, resilience is the opposite of stability, and the ultimate innate goal of the organism is the recover enough to revert to the stable state. An example he gives involves plants and water (Holling, 1973:6-8). When water resources are greatly diminished, to cope this plant draws inward. The lack of water sources is understood to be the stressor that caused the organism and the system to be thrown out of equilibrium, to become unstable. To cope with this stressor, plants attempt

to absorb these shocks by preserving their reserves. The term “resilience” was simply the process of dealing with the stressor that had thrown the organisms, or system, out of stability. To reiterate, to Hollings, resilience is the ability of the plants to revert to their stable state once waters return. Therefore, resilience to Hollings is described as a reaction to external stimuli that ultimately results in the survival of an organism. If the organism is not able to completely revert to its previous state and thus survive, then it is not resilient. As with many initial coining of terms, in their appropriate context it seems rather simple, and thus does not encompass the full magnitude of the way that organisms survive or react to external stimuli. In addition, it does not account for human agency and the varied ways that humans have chosen to cope and adapt (Bollig, 2014; Obrist et al., 2010). Notwithstanding, Holling (Gunderson and Holling, 2002; Holling, 1973) never claimed that resilience should, or can, apply to all scenarios. Southwick et al., (2014) pointed out that how one defines resilience is dependent on context. As such, this will be the focus of this dissertation: establishing the context and under what conditions human behavioral resilience, and, subsequently, forager cultural resilience, can be defined and used within an anthropological and archaeological scope that must always remain humanistic, person-focused, cultural, longitudinal, latitudinal, and historical in its application. Because these parameters of human behavioral resilience and specifically forager cultural resilience are based on human behavior, and resiliency looks at how humans behave within these systems, a discussion on how the term resilience become indoctrinated and evolved within the sociological and ecological context is appropriate.

Holling’s (1973) works and subsequent discourse set the ground for applying resilience outside of the biological sphere and moves the discourse into how resilience can be applied ecologically. Leaping from the biological organisms, like plants, into the ecological seems almost commonsensical, as organic plants are interdependent segments of ecological systems. In addition, acknowledging how external stimuli, i.e., climate change stressors, can affect a system aligns with the perspectives ecological

theorists. As such, we see an explosion of literature that applies resilience theory to the environment to explain how entire environments remain resilient; ecological resiliency “focuses on understanding and managing the dynamic interactions between human and natural systems” (Fleming, 2016:29). As a matter of fact, Fleming’s (2016) analysis highlights the hegemonic dominance of ecology and ecological theory thought within the discourse of resilience theory (Fleming, 2016:27). According to Fleming, “the ideas, arguments, and propositions of ecology have okayed an outsized role in the evolution of resilience theory (2016:28). In the context of ecology, resilience is transformed into something slightly different though. In this context, resilience is tagged to words like coping, adapting, and transforming (Cashdan et al., 1983; Connell et al., 2016; Folke, 2016; Gallopín, 2006; Sundstrom et al., 2016). In these contexts, the organisms, flora and/or fauna, are either coping, adapting, or, possibly, transforming into an entirely new system within and across various scales. This view of resilience falls slightly more in line with cultural resilience. However, the context is still ecological in nature; and its focus still gives prominence to the environment determining how systems undergo the processes of resilience. To examine culture resilience more closely, one must examine social-ecological systems (SES).

5.2 Integrating the Social and Ecological of Social-Ecological Systems (SES) Into a Resiliency Theory Framework

Social-ecological systems (SES) diverge from and merge into the social sciences (Cote and Nightingale, 2012; Forbes, 2013; Gallopín, 2006; Walker et al., 2004). Leaping from the ecological, it changes the context to one that acknowledges the social-ecological when looking at resilience. This gets closer to how cultural resilience theorists define resilience in several ways. First and foremost, it acknowledges that it’s a system that is intricate, non-linear, is dynamic, laden with cross- scale interactions, and is complex and adaptive (Redman and Kinzig, 2003). SES expands from the organism’s individual or dichotomous response to external stimuli, and now looks at the macroscopic system that

the organism is within. Even more so, it begins to examine the interplay between multiple parts of the system, under the assumption that individual parts of the systems do not act in isolation. They are each effected by and affect one another. In addition, SES also acknowledges that the external stressors, are not solely, ecological in nature, or climatic. Instead, it the system that is affected by variables: political, ecological, and social external stimuli. The ecological stimuli remain the same as with ecological resilience (Walker et al., 2004; Walker et al., 2006). The slight differences, in these contexts, are the acknowledgments of new variables: political or social pressures that may work in tandem or in conjunction to affect the ecological. Essentially, SES situates resilience within a complex network. This complex network includes the ecological, the political, and the social in understanding how resilience plays out. In this context, the political can begin to acknowledge group dynamics, power relations, and economic factors. Political and economic systems are often intimately intertwined with the ecological, as they form the bases of capital. Products are either taken directly from the environment or manufactured from raw materials from the environment (McGreavy, 2016; Obrist et al., 2010). These things are created, amassed, exchanged, and traded for political or economic gain. Even more so, changes in the availability and concentrations of the environmental products can have a direct political or economic effect. Thus, when it comes to resilience, it is not simply the environment being able to absorb shock, but it is also the ability for the various political and economic triggered variables to exert forces that result in the human-ecological system's abilities to absorb shock and remain stable. So, in these cases, resilience becomes about the continuity of the macrocosm of this complex system, which is unlike what Hollings originally introduced. This is not because he could not conceive of these complexities. On the contrary, Hollings was and continues to be rather explicit about the fact that he looks at the microscopic (Gunderson and Holling, 2002; Holling, 2001). His focus is on the context of the organism and biology, not on the variables: ecological, economic, political, or the social at work within the system.

Now on to how SES applies to the social sciences, for this specifically applies to the context of forager cultural resilience in this dissertation. Despite acknowledging variable-based resilience, SES does not encapsulate a person-focused, agent- based resilience framework that best suits indigenous cultural resilience. People are undoubtedly resource dependent, especially forest populations (Adger, 2000). What is social is integral to how people use and maintain the landscape. Consequently, the environment is not the sole determining factor. A major component of SES is the social, humanistic aspect of resilience. This aspect, social resilience, is what has been largely applied to anthropological and archaeological studies. Granted SES, inclusive of the ecological, political, and economic has been applied as well, as these are the issues of focus for anthropologists and archaeologists. However, the human element brings a degree of agility that requires a different epistemological and heuristic mindset for understanding and explanation. This is immensely important because for anthropologists and archaeologists, the goals are to decipher the mystery of the human timelines and to understand and portray the intricacies of histories as accurately and explicitly as possible. The social aspect focuses on how humans affect humans, in addition to how each of these variable-specific stimuli affect them and presents a more complete picture of the complex intricacies of the systems. Some scholars have even begun to acknowledge the scales of the social, local, regional, and international, rendering an understanding of the systems even more complex. Indeed, the interplay of systems forms the basis for many of the theories on the collapse of societies (Nicoll and Zerboni, 2020; Torrence, 2016), within the context of Resiliency Theory or the Resiliency framework. In Hollings's (Holling, 1973) most basic sense, societies that collapse would not be termed resilient if they were not able to return to their previous state. In other words, when not resilient, there is no cultural continuity, no positive adaptation and transformation. On the other hand, SES and social theorists would still classify some societies as true examples of resilience in the way they are defined by those disciplines, in that transformation is a component of resilience (Folke et al., 2010), and that these societies may have undergone a normative

adaptive cycle until the cycle is no longer possible. At that point, societies are forced to transform into something else (Fleming and Ledogar, 2008). In these social contexts, societies that have collapsed, have, indeed, undergone normative, adaptive cycles of positive and negative feedback loops of resilience (Caillon et al., 2017; Walker et al., 2004) for periods of time, in response to external stimuli, stressors, or pressures, having been able to cope and/or adapt either continuously or in a punctuated way. This has allowed them to remain in their current successful states of survival. At some point, within these collapsed societies, the negative feedback loop(s) were too great to cope and/or adapt to, causing the systems to collapse or be transformed (Folke et al., 2010; Nicoll and Zerboni, 2020). The use of the term transformed in the social context is used slightly differently, as is the term collapse. According to SES (Nicoll and Zerboni, 2020), collapses are the complete demise of a group of people, as populations of people do not just disappear unless there is a great sickness or genocide. Rather the state of the current society ceases to be organized or exist as it did in the past. Instead, the people of that system are forced to transform it into a new “thing” that then begins to undergo a new adaptive cycle of feedback loops of coping and adapting. What is unique about the social aspect of how they describe systems is that this transformation can vary according to the group or society. It does not necessarily always look the same because how people change is largely reflected differentially in either the scale and/or the magnitude of those processes. The transformation could be perceived like something completely new, due to the loss of an ecological or economic capital, e.g., a trading partner does not have any more raw materials. This loss means that the society can no longer rely on that product for economic gain or capital, and thus must find another source of it. Another example could be that they must move from that area, but this effect is more individualistic, as simply moving to a new region restarts the cycle. It could be political e.g., a change in the ruling family and related these cultural ideologies. In this case, the transformation looks different. The entire system does not collapse but is instead re-organized. New Ideologies may simply supplant the old, with little effect macroscopically, but great affect the communal followers of

the old ideology. The transformation could even be one of completed demise, like with the Hohokam (Redman and Kinzig, 2003). Their society with its intricate irrigation system existed, then suddenly did not. However, The Hohokam people were still socially resilient in that they did not simply disintegrate. The O’odham nation remains today, modern descendants of the Hohokam people. These people abandoned a system and created something else, a sort of reinvented reintegration (Fleming and Ledogar, 2008).

Transformation is what the social adds to resilience theory that is unique and gets at the crux of how anthropologists and archaeologists can better explain and re-interpret human behavior resiliency, and ultimately, forager cultural resiliency. Undoubtedly, explaining people over time and space is a huge task, but the application of social resilience, as applied by anthropology and archaeology, shifts the epistemology of studying and understanding human history to one that analyzes the stories of adaptive cycles undergone by various segments of populations e.g., foragers, agriculturalists, etc., and how these humans have remained resilient over time. It required examination of the ways that humans affect and have been affected by political, ecological, economic, and social stimuli, externally, internally, temporally, and spatially, at various scales. Social resilience presents the framework to do this; even more so, it provides the framework that starts us on the journey to forager cultural resilience.

5.3 **Incorporating Culture Resiliency into the Resiliency Theory Framework**

Several authors have defined cultural resilience (Bollig, 2014; Folke, 2016; Forbes, 2013; Fortier, 2009; Holtorf, 2018; Smyntyna, 2016). However, the definition that best fits this dissertation is defined by Todd Crane’s (2010) discussion of cultural resilience in Social Ecological Systems. Crane defines “‘cultural resilience’ as the ability to maintain livelihoods that satisfy material and moral (normative) needs in the face of major stresses and shocks, environmental, political, economic, or otherwise.” According to Crane (2010), this definition does a better job of respecting the integrity of the normative

experience for it acknowledges that people's lives mean something and can accommodate changes that are behavioral, value laden, socially instituted, and, most important, dynamic(Crane, 2010:2). This definition is favored by scholars such as Bruce Forbes(2013:2), because it offers a long-term approach that explores the "culturally defined experience: the tension and synergies, through an analytical scientific lens that ultimately situates resilience as a normative process (Forbes 2013:2 summarizing Crane, 2010). Essentially, cultural resiliency brings to the forefront the role of the sociocultural in the resiliency of individuals, groups, the community, and the macro-communities with which each of these are intertwined. Crane is not the only scholar from whom I draw my definition of forager cultural resilience. Fleming and Ledoger (2008) discuss cultural community resilience and the Abel and Stepp (2003)definition of "symbolic culture" both add to the definition of forager cultural resilience presented herein, in that these sources magnify the role that the sociocultural has in outlining the various ways that people have been and remain resilient. These components do not simply acknowledge, but most pertinently, push to the forefront, the influence of worldviews, belief systems, memory culture, and cultural heritage. These ways of thinking change our epistemology about resilience, re-focusing it on the agent and, the multi-matrix networks of the agent, along with the interplay of the complex cultural and social factors that contribute to how the individual, and subsequently, that group, community, or society were "proactively, creatively, and diversely" resilient (Crane, 2010).

This conglomeration of definitions invents fascinating angles from which to consider resilience for several reasons. One, cultural resilience tackles the gap of human agency that many scholars have pointed out (e.g., Bollig, 2014; Bristow and Healy, 2014; Crane, 2010; Fleming and Ledogar, 2008; Holtorf, 2018; Lancelotti et al., 2016; Obrist et al., 2010; Sundstrom et al., 2016). Further discussion on the "agent" will occur later, but suffice it to say here, that agent-based modeling (Bristow and Healy, 2013; Rogers, 2017; Romanowska et al., 2019) broadens the list of cultural factors that can be included in resilience processes, and, in turn, provides anthropologists and archaeologists with alternative ways that people

have responded over time. Another reason that this wealth of definitions is fascinating for cultural resilience is that it rids the notion of resilience as solely a positive response that results in survival, to one that is simply involves “outcomes” (Fleming and Ledogar, 2008; Rutter, 1990). According to Fleming Ledogar (2008) cultural resilience is understood as a process that “denotes the role that culture may play as a resource for resilience in the individual” (Fleming and Ledogar, 2008:3). It “confronts how social actors interpret, articulate, and make sense of these shocks, and how this influences or shapes their responses” (Bristow and Healy, 2014). Even more so, Fleming and Ledogar (2008) substantiate Hunter and Chandler’s (1999) claims that resilience is a continuum. Thus, one could argue that cultural resilience is a continuum of “relative” and “variable” (Fleming and Ledogar, 2008; Rutter, 1990) cultural continuities predicated on normative cultural processes (Crane, 2010:2) of the individual group, community, and macro system that are “intimately interconnected with the material behaviors, social institutions, and environment incomes” (Crane, 2010:3).

Cultural resilience allows us to look out how resilience looks emically, understanding the “logic and experience of people...engaging within the systems,” to examine an expanding list of cultural factors and resources (Crane, 2010:Appendix 1 Chart Page 1) that truly contribute to multi-layer resilient systems (Obrist et al., 2010) and processes at the individual level, family, and community levels, within “the contingency of context” (Bristow and Healy, 2013). These distinctions differ from the ecological in that they acknowledge the exponential variability in reflexive ways that humans innately adjust and respond non-linearly to spontaneous and prolonged internal and external stimuli.

Most important to this dissertation is the advocacy for the empowerment of the actors within these systems, who are often subjected to pejorative characterizations or considered relegated to the simplistic means of adaptation (Smith, 2020). Foragers are complex and have not simply been puppets subjected to outside, more powerful forces. Instead, their individual experiences, rids the hegemonic shell of simplistic dichotomies in the stochastic ways that foragers have adapted over time, providing an

epistemological, or even phenomenological, lens that elucidates for scholars the lived experiences of foragers, shedding light on the wider breadth that foragers as agents have adapted for themselves multi-scalarly.

Situated within the anthropological discipline, cultural resilience requires us to look at how resiliency itself has coped, adapted, and been transformed across cultures. Within the anthropological context, cultural resilience seems to encompass much of what we ask for. Even so, this dissertation argues a slight distinction in that it examines how foragers have remained resilient on multiple levels, including the cultural. Forager cultural resilience is situated within a social and cultural context among foragers, specifically. What do foragers do as semi-autonomous groups? What cultural buffers exist and had existed in the past that have allowed them to remain resilient in the face of internal and external pressures? What does the “longevity of these social institutions and cultural patterns” (Bollig, 2014) look like ethnographically? Archaeologically? What are the strategies that they deployed? These types of questions are best suited to a more specific term, forager cultural resilience. Cultural resilience is more concerned with those cultural attributes that allow groups to survive despite ecological, political, economic, or social pressures. Forager cultural resilience takes a more in-depth look at a particular group, a segment of the larger system, in order to closely examine what pre-existing buffers existed that either kept a group in a positive or remembered feedback loop (Bradt Möller et al., 2017), through cultural strategies like memory culture or belief systems, or ways that a group has transformed, (Shimizu, 2020) either shedding their previous subsistence strategy or lifestyle or refashioning themselves into something new, all the while still maintaining their cultural identities.

In the case of anthropology, it is rather simply to conduct ethnographic fieldwork to see how this process unfolds (Bendrey, 2015; Biagetti, 2017; Fleming and Ledogar, 2008; Redman and Kinzig, 2003; Smyntyna, 2016; van der Leeuw and Redman, 2002; Yacobaccio et al., 2017). Archaeologically, it is a bit more difficult; getting at the intangible continues to be a thorn in the more verbose archaeological

record. Nonetheless, Olena Smyntyna's (2016) work on human response to global climate change, Temple's and Temple and Stojanowski's (Temple, 2019, 2020; Temple and Stojanowski, 2019a, 2019b), and Pillatt's (2012b, 2012a, 2012c) works provides concrete blueprints of where and how to look for cultural resilience archaeologically. Detecting, understanding, and contextualizing forager/ hunter-gatherer "culturally- focused resilient adaption" (Clauss-Ehlers, 2004:27) may be best seen archaeologically using case studies that rely on the materials, such as stone tools, "flint knapping technologies, and food procurement strategies". Transmigrations...can also be discussed in the context of resilience" (Smyntyna, 2016:15). These case studies demonstrate that archaeologically we cannot focus solely on how foragers change or react to change, and that, in addition, how "under new conditions...[they] did not produce any new cultural or historical phenome (transformation)" (Smyntyna, 2016:16) (see Figure 5). Bioarchaeologists like Smyntyna (2016), among others (e.g., Lu, 2010; Temple and Stojanowski, 2019a, 2019b) present a case for conducting research under a multi-disciplinary methodology like ethno-archaeology. Multi-disciplinary methods use modern analogous examples of culturally resilient groups to understand how foragers have been resilient over time and space (Akamani, 2012; Biagetti, 2017; Crane, 2010; Fleming and Ledogar, 2008; Forbes, 2013; Leslie and McCabe, 2013; Lopez-Sandoval and Maldonado, 2019; Lu, 2010; Rival, 2009; Smyntyna, 2016; Theron et al., 2015; Willerslev, 2009). This dissertation can illuminate how archaeologists can increase the number of strategies that foragers, as agents, have planned, prevented, evaded, mitigated, avoided, coped, reacted, anticipated, changed, searched, and remained the same temporally and spatially over more than 2,000 years.



Figure 6. Refashioned musical device (drum set) created by the youth from Cangghob proper barangay as an example of the innovativeness of indigenous, interior populations.

5.4 **Defining Indigenous Forager Cultural Resiliency, Its Matrices, and Models**

As such, this dissertation, ultimately, defines resilience, and subsequently, indigenous forager cultural resiliency as the agency of foragers to plan, prevent, evade, mitigate, avoid, cope, react, anticipate, change, search for, and even remain the same despite political, economic, ecological, and sociocultural perturbations and stasis multi-scalarly at the local, regional, and international levels. It is neither either nor or. It is neither just stability/resilience nor instability. Likewise, it cannot be continuity or resilience. Furthermore, it is not a process of tertiary adaptive cycles, like coping, adaption, then transformability (Akamani, 2012). Therefore, the task of defining the scope, scale, and theoretical framework of forager cultural resiliency must be clearly defined here. This dissertation presents indigenous forager cultural resiliency as matrices where foragers undergo, experience, and process

strategies over time and space. It cannot simply be construed as dichotomous or pigeonholed to three of four things. Instead, the resilience of forager migrations over time and space must be understood as a nexus of interconnected actions by the community, the household, and/or the individual response to the economic/political, ecological, and the socio-cultural. In this case, the technological is not necessarily important because stone tools among the Ata/Philippine foragers have remained fairly “ubiquitous” over time (Morrison and Junker, 2002). However, mapping the community’s movement over time, is just as important as mapping out the household and individual response to external drivers of change. The intent of this dissertation is to construct these matrices, using ethnological and ethnographic literature and geo-ethnography to extrapolate on how these 10 aforementioned strategies can be applied and understood archaeologically.

For the dissertation, understanding the “state” of foragers temporally and spatially requires the application of models that place a forest-dependent population as the basis of analysis. It is understood that foragers do not exist as isolated, autonomous beings, on a metaphorical social-cultural, or geographic island; however, they do perform agency and resilience at semi-autonomous scales (Obrist et al., 2010:290). In addition, forager cultures contain their own stability/neutral landscapes and zones, horizontal exchanges, and agency. Hunter-gatherers are appositely for arguments for forager agency and the collective agency of hunter-gathers (Tuck-Po, 2013). Their actions are innately riddled with capital. Therefore, we must acknowledge that forest dependent populations, like foragers, have been subjected to different ecological conditions under which and by which these populations have existed over time. As such, a discussion of forager cultural resilience is well suited to be modeled under a Community Resiliency Model (Beckley, 1998). In the case of Philippine foragers over 2,000 years, the Community Resilience Model is optimal to analyze the interactional factors that contribute to certain residence outcomes over time and space, substantiating forager cultural resilience as the agency of foragers to plan, prevent, evade, mitigate, avoid, cope, react, anticipate, change, search, and even remain the same

despite political, economic, ecological, and sociocultural perturbations and stasis multi-scalarly: at the local, regional, and international levels. In the case of the Ata of Negros, and with the aid of previous archaeological data, the allows me the advantage to insert “codes” by which to unlock and measure forager resilience over time and space.

The Community Resilience Model emerges as a system within a system(Akamani, 2012; Beckley, 1998; Colfer, 2005; Colfer et al., 2005; Force et al., 2000), constantly bombarded by and subjected to “drivers of change.” According to (Tuler et al. 2008), these drivers of change can be “demographic, economical, ecological, technological, or natural.” Within the context of this archaeological study, the external factors of economics/politics, and ecology have been thoroughly teased out by the work of Dr. Laura Junker (Junker, 2002a, 2002b, 2002c). Her work continues to attest to forager migrations vacillating during times of economic strife, such as the case with slave raiding. It is also quite evident when the archaeological records show an explosion of exports from the interior outward, stressing the ecological environment of the highlands resulting in the reduction of flora and fauna (Junker, 1996, 1999a; 2002b). Essentially her research demonstrates that forager resilience is largely predicated on economic and ecological factors creating the variation of forager settlement patterns over time. The archaeology supports the impact that external drivers, like ecology and economics, have on how people aggregate across the landscape. Ethnological texts validate the role and impact that the socio-culture has had on how foragers have managed to be resilient throughout Southeast Asia, in particular the Philippine foragers often referred to as the Ata.

The Community Resilience Models address culture (Crane, 2010) as an “external driver of change.” However, enough researchers have not truly granted the sociocultural” the notoriety that it deserves, for the social-cultural inherently opens up other matrices of how and why peoples chose to use and move around the landscape the way that they do. When we talk about foragers, a community of people known to vote with their feet, the “influential power” of voting with feet and how impactful this

can truly be must be acknowledged. This acknowledgment expands the number of resilience strategies deployed by foragers. In addition, because there already exist notions of the individual, or agency, in the ways that people move, and, in this case, the ways that they can be resilient is multiplied ten or, even, one hundred-fold. It is painstakingly obvious that one cannot fathom the entire suite of strategies, or adaptations that individuals make; however, this comment serves as a reminder that individual thoughts, actions, and processes can fuel great economic or ecological change in the intra-connected forager networks, and this deserves more exploration.

We return to how exactly to identify and measure the “intangible sociocultural.” In this case, validating the sociocultural in the community resilience model must rely on ethnological testimony and a reverberation of ethnoarchaeology. Essentially, we look at modern day foragers to gain insight in the ways that foragers may have adapted in the past. Granted, these modern analogies or connections may not be exactly analogous, and no group has been untouched or remained homogeneous over 2,000 years. However, foragers globally still seem to exhibit unique, cognitive dissonance in terms of cultural ways of things that are based memory culture and knowledge passed down from generation to generation. Pillatt (2012b, 2012c) and Bollig (2014) argue for the importance of social memories. Pillatt believes that these are “direct links... as a means of describing the infinite flow that determines human response to change” (2012a:63). Memory is essentially a “conceptual and symbolic reservoir”(Pillatt, 2012a:63). Despite the landscape, foragers tend to move in very similar ways, even in contemporary society. This suggests that foragers, globally, have exhibited extremely similar ways of establishing and maintaining memory culture and social memory. These social memories and memory cultures have undergone very few revolt loops, instead continuously undergoing “remember loops” (Bradt Möller et al., 2017) that have provided them with the tools to continue foraging practices for millennia. The memory loops have created and substantiated forager cultural heritage and identity, allowing them to remain largely intact enough where archaeologically we can detect, classify, and analyze them on the

landscape, even when those memory loops change (Eder, 1987, 1988a; Shimizu, 2020; Tuck-Po, 2013). These memory loops, which will be referred to here as forager capital, are forager assets that can be analyzed and used to tease out matrices of indigenous forager cultural resiliency when impacted by political, economic, ecological, and sociocultural perturbations and stasis, multi-scalarly at the local, regional, and international levels.

This dissertation uses the Community Resilience Model as a base for one of the planes within the matrices of indigenous forager cultural resiliency, that of assets. These assets are split into natural community assets, social community assets, and human assets. Each of these are levels within community capital with unique properties, that, despite their uniqueness, are interdependent and influenced by one another. Anthropologically, the interactions, or networks, between and within this matrix alone, adds new dimensions to the human experiences (Borck et al., 2015). Regarding how community assets interact with access, adaptive strategies, institutions, and organizations further complicates adaptive and maladaptive outcomes of resilience. Essentially, what is being proposed here is the exploration and examination of separate matrices of interactions at the community capital levels to access the cultural resilience of foragers.

The next plane within indigenous forager cultural resilience matrices deals with household capabilities. According to Akamani's research, "household capabilities represent the distribution of capital assets with the community" (Akamani, 2012:105). It can be argued that, even at this household level, the natural, social, and human capabilities are in constant communication with the each of the natural, social, and human capitals as well. How the social capabilities of a household are configured rely largely on the household's ability to remain sustainable, as much as the human capabilities such as "skills, knowledge, health, and other attributes...enable individuals and households to make informed decisions and engage in productive activities that enhance their well-being"(Akamani, 2012:105). The interplay of these six factors: natural capital assets, social capital assets, human capital assets, natural

household capabilities, social household capabilities, and human household capabilities, is even more applicable when we deal with groups that vote with their feet. The fission and fusion of these bands are directly and indirectly predicated on the interchange of these six factors variably and relatively. Even more pertinent to this dissertation, the micro and macro cosmic interplay of these matrices amplifies the breadth of culturally resilient strategies that foragers can employ over time., substantiating a resilience that is inclusive of a forager resiliency as the agency of foragers to plan, prevent, evade, mitigate, avoid, cope, react, anticipate, change, search, and remain the same despite political, economic, ecological, and sociocultural perturbations and stasis, at the local, regional, and international level. The goal is not to over-complicate forager studies but rather to simply acknowledge ways that we as anthropologists can consider alternatives outside of our own cultural relativistic and epistemological realms. What resilience looks like within and between these matrices of assets and household capabilities may be the gateway to understanding and reconceptualizing the “what” and “who” about how foragers have used the landscape over time.

Lastly, the final indigenous forager cultural resiliency matrices are those of the institutions and organizations component under “*Time with the Community Resilience Model.*” In the case of Philippine foragers, institutions and organizations are different (Obriest et al., 2010) and can be seen as working at two different scales. Organizations are understood at the group level, which, as such, deserves its own matrix in relation to the assets and household capabilities matrices previously mentioned. The group, like the individual, exists within a dynamic, and thus, organizations are not free of the impacts from the social, natural, and human assets and household capabilities. This interplay of matrices offers yet another narrative, at the local and, even, regional scale. At the same time, institutions represent another matrix and yet another scale of analysis. If the institutions are understood as “the system of rules that shape social interaction (Akamani, 2012:105), these institutions vary as well. Within the context of the Philippines over 2,000 years, these institutions have included Forager-Farmer

interactions; Forager, Farmer, Chinese interactions; Forager-Farmer-Spanish interactions; Farmer-American interactions and “Filipino” interactions. Each historical period exhibited a different set of “rules that shaped[d] social interactions[s] (Akamani, 2012:105). Consequently, analyzing these changes in rules in relation to the aforementioned matrices further expands our epistemology, thus providing more options by which foragers may have traversed terrains, figuratively and literally.

5.5 **Conclusion**

The matrices of indigenous forager cultural resiliency are complex and varied. What remains to address is the final component, the summation of all the matrices, that of resilience outcomes. In this case, instead of partitioning strategies or lumping them into large overarching categories, it may be best to list all of the resilience outcomes, similar to what other scholars have done (e.g., Bollig, 2014; Bradtmöller et al., 2017; Fleming and Ledogar, 2008; Folke, 2016). Exploration of these lists of outcomes coupled with comparative studies shed forager cultural resilience of simplistic adaptive or maladaptive parts and the notions of resilience as positively adapting or bouncing back to their original state. Even more so, shedding this notion of positive adapting depoliticizes socio-economic dynamics (Rogers, 2017), highlights the implicit biases in the modernization of marginalized groups, and removes the curtain of pejorative histories that have been attributed to marginalized groups (Smith, 2020). Lastly, and most important to archaeology, it allows scholars more markers with which to identify the permanency of foragers as ethnic groups, even if those “forager” groups are no longer categorized as such due to subsistence changes. This list, demonstrative of the continuity of foragers, can still look at history and identity markers for foragers, who, at first glance may appear as lacking resilience, or as maladapted, but have been and are still remaining culturally resilient. Such is the case of the Negritos of Mt. Pinatubo (Shimizu, 2020). Scholars question if they are still foragers because they have settled; however, their identity as Negritos with a history of forager remains (Benjamin, 2013; Endicott, 2013;

Heyer et al., 2013; Turner, 2013). It does so because, despite some economic and cultural transformation, their social memories and the subsequent memory loops maintain their cultural heritage resiliency. In this case, “livelihood practices” and “identity markers”(Crane, 2010:3), “critical cultural knowledge and practices,” have helped them to overcome adversity in a “culturally focused way” (Clauss-Ehlers, 2015:324) over millennia. This has allowed to them to retain their identity as Negritos, a category paired with forager subsistence. This is the also the case with the Che of South-Central Chile (Sauer, 2015a), and one can argue these are also the same conditions that allow Negritos to remain unique, as discussed in (Benjamin, 2013), thus forming the basis for detecting, reinterpreting, and reconceptualizing foragers’ resiliency over more than 2,000 years in the Philippines. The next chapter will use ethnoarchaeological case studies and ethno-geography to examine the ten ways that agent-focused Philippine Ata forager cultural resiliency can be identified, classified, and reconceptualized in forager studies.

VI. CHAPTER 6

6.1 **GIS and Regional Archaeological Survey and Excavation of Forager Settlement Sites**

This chapter focuses on the GIS and archaeological evidence for Ata forager sites and mobility patterns throughout the island of Negros, mostly Oriental. The case studies are a result of combined historical and ethnographic sources in the areas of Mabinay and the interior of Negros Oriental whereas the archaeological data is derived from the expansive Bais and Tanjay River drainage areas, with the river mouths located at the municipal cities of Bais and Tanjay at the coast. The Negros Island has many aspects of geography, topography, ecology, and history that provide ideal conditions for archaeological studies of these “first people” Ata foragers who entered the Philippine islands over the Pleistocene Period land bridges as early as 30,000 to 40,000 BC. As noted earlier in the thesis, Austronesian groups migrated from mainland Southeast Asian and Taiwan shortly after 3000 BC, and these new agricultural interlopers settled primarily in low elevation coastal areas and river valleys, likely establishing linkages through trade and probable occasional intermarriage. This scenario is supported by the archaeological record of what appear to be semi-permanent or permanent settlements, domesticated rice, animals and other foodstuffs, pottery manufacturing, and some limited long-distance trade from outside to obtain glass beads, greenstone axes, and other exotics found outside the archipelago at the beginning of what is referred to as the “Neolithic” spread of Austronesians to the Philippine Islands ca. 2500 BC. The entrance of Austronesian farmers into the island archipelago introduced an agricultural component that was focused on rich alluvial plains with seasonally high rainfall and field flooding levels, suitable to multi-cropping in the rich volcanic soils of Negros Island and other river valleys in the Philippines. Transitioning to the “Metal Age” in the Philippines, dated by most scholars around 800 BC to AD 800 to 1000 on the island of Negros, brought iron tools for farming and the more prized bronze for both weapons and ornamentation (often found in burials as grave goods). While the Tanjay Project primarily focused on the Early Historic/Pre-Spanish Colonization Period (regionally known as the Santiago Period,

approximately AD 1200 to 1450 and the Osmena Phase, approximately AD 1450 to 1580), and the Late Historic Period (colonial periods spanning both the Spanish and American rules in the Philippines up to 1950).

Presumably interactions between farmers and forager groups has a long history in the large Bais-Tanjay river plain, most likely exchanging forest products from the interior mountains down upland stream valleys to the Tanjay River, which in turn connected eastward to the Bais and Tanjay lowlands, where early farmers developed riverbank fields of rice and other foods along the coast, most likely somewhat later than the earliest Austronesian spread in Luzon, as agriculturalists moved southward. As noted in previous chapters, by the 10th century, exotic glass beads, earthenware, and mainland Asian porcelain trade wares attested to vigorous down-the-line trade involving the Ata foragers, with lowland coastal traders bringing these goods along major rivers to the margins of the uplands for trade. The account of a Chinese trader, Chao Ju-kua's Chinese language chronicler early in the 13th century was a witness to an exchange between lowland Philippine traders and foragers somewhere in the Visayas (Ju-Kua et al., 1911:162; Zaide, 1990:Vol 1:7), noting in his chronicle [here in English translation]:

"In the remotest valleys there lives another tribe called the Hai-tan. They are small in stature And their eyes are round and yellow, they have curly hair and their teeth show between their lips. They nest in tree tops. Sometimes parties of three or five lurk in the jungle, from whence they shoot arrows on passers-by without being seen, and many have fallen victims to them. If thrown a porcelain bowl, they will stoop and pick it up and go away leaping and shouting for joy."

Junker (Junker, 1999b:245-246) proposed that Chao Ju-kua's highly accurate description of Negrito physical characteristics suggests the strong possibility that these foragers who were the first colonizers of the islands and were active traders in upland-lowland trade in the region, although this particular Chinese description does not provide a specific location for this 13th century encounter by this Chinese trader and his lowland Filipino guides.

Hutterer and Macdonald chose an area with a diverse topography (a large alluvial plain below 100 meters elevation and rugged interior mountains up to 700+ meters elevation) that was known by early 20th century historians and ethnographers as an area where a coastal archaeological site under the modern town of Tanjay yielded significant amounts of 16th century and earlier Chinese and mainland Southeast Asian porcelains, pre-Hispanic burials, and “midden” and “posthole” features indicating a possibly substantive pre-Hispanic settlement. Municipal authorities and agricultural plantation owners reported a range of archaeological sites within the Tanjay River and Bais River drainage areas that flowed from the western mountain chains. This region was somewhat unique in terms of both ethnohistory and archaeological visibility, since it included upland swidden farmers (alternatively referred to as “Bukidnon” or “mountain” people, or sometimes referred to as the “Magahat,” a general term for “fierce” people), who interacted along the upland rivers with the Ata foragers and were known as purveyors of forest products to both upland swidden farmers and the large towns on the vast alluvial plain surrounding the Tanjay River, well-documented by the late 19th and 20th centuries by early ethnographers.

A number of ethnographers specifically carried out ethnographic and historic work on foragers in general and specifically with the Ata in the mountainous area from about 300 to 800 meters above sea level on Negros Island. Having carried out successful surface surveys and excavations on Leyte, in an area where a smaller and heavily vegetated coastal plain and a rugged interior with thick forest cover made it difficult to systematically survey a large block area (Tuggle and Hutterer, 1972).

The Tanjay-Bais Project archaeologists were rewarded with almost perfect conditions for both survey and substantial excavations in the Bais-Tanjay Region as they began their project there in 1979-1982 (Hutterer and Macdonald, 1982). Because the center of the then-small town of Tanjay maintained a number of parks in the town center with grassy areas that were maintained by the municipality and its significant leaders, the early archaeological excavation work by Karl Hutterer and Bill Macdonald and,

later, Laura Junker, generously allowed what was likely the first and continued “systematic” ground surveys involving huge swaths of both lowland and upland, and multiple site excavations in this massive 315 km² region. Archaeological work continued through the later 1980s and the 1990s and up to 2010. More than these fields were maintained over many generations of plantation owners, and aerial photographs of the survey region within the lowland Tanjay and Bais areas from the late 1970s, using airplane flyovers, show similar field boundaries of early 21st century work with modern satellite images (see discussion below). At the same time, the then-small town of Tanjay maintained a number of parks in the town center with grassy areas, combined with the efforts in road building by the municipality that unearthed Chinese porcelain and possible house or burial remains that buttressed the likelihood of finding significant archaeological materials at the coastal site and inland along the Tanjay River and six other rivers reaching from the mountains to the coast.

The east side of the large island of Negros, with cities on its coast, is where much of the flat lowland alluvial plain below 100 meters elevation is located and where massive 18th century Spanish Colonial Era sugarcane plantations are that were deeded to Spanish families who engaged in *corvée* labor in the fields in a feudal-type, debt-bondage relationship. It is only relatively recently (in the 1980s and 1990s) that labor changed from a feudal model to become regulated in terms of modern fair wage laws and protections for workers (see Bollig, 2003; Hedman and Sidel, 2000 for an overview of sugar plantation structures and worker conditions on the island of Negros). Most of the Tanjay and Bais municipalities are located on a large, essentially flat and massive alluvial plain under 100 meters of elevation (constituting about 50% of the total 315 km² that was irrigated by high rainfall from the mountainous upland where the foragers and “tribal” groups (known as Bukidnon or Magahat) resided, as well as mobile Ata foragers.

Because these sugarcane plantations were fairly massive in size and planted sugarcane fields, they were easy to survey (particularly when the sugarcane fields were newly planted or the sugarcane

plants were less than 0.5-meter waist-high or lower and furrow weeding was frequent). The survey and excavation teams could quickly line up along the farm rows, at a fairly consistent 1.0 to 1.2-meter distance between the survey furrows, allowing the survey teams to move swiftly through the fields. Of note in all of the field seasons the survey workers were consistently placed five rows apart – that is, a surveyor would be placed every 5 rows to acquire a 20% sample of the field. While the hundreds of sugarcane fields were scheduled for survey when the plants in the field furrows were “ankle-high,” or at least no higher than “knee-high,” the visibility of archaeological remains in these recently plowed furrows was generally good. However, when the plant height of the sugar cane was significantly higher than “knee high,” the probable density of archaeological material needed to be estimated through an evaluation of several factors: (1) how mature the sugarcane crop was, which increases height and “bushiness” of the plant, affecting the amount of visibility on the ground; (2) whether or not the furrows had been weeded recently, which allows better visibility on the ground; (3) how recently the furrows had been plowed (churning up the soil and increasing the chance of observing freshly uncovered artifacts), and (4) the tropical rain downpours (that beat the furrow soils and often revealed pottery sherds, lithics or other items just below the soil surface).

The survey teams counted paces as they walked the furrows and recorded an estimated number of meters from a designated edge of the field as they traversed the field furrows, logging the practiced “pace” of each walker and estimating the distance from the edge of the field to the archaeological find. Crossing the field in the direction of the furrow was called a “sweep” and the “sweeps” were numbered, beginning in the approximate northeast corner of a rectangular field. Survey workers carried small notebooks indicating the square or rectangular field corner. Generally the northeast corner of the commonly rectangular fields served as the datum point for beginning “sweeps” along the plant rows (whether the field rows were east-west or north-south oriented), and each walker in the survey counted their individual “pace,” (i.e., “the typical measured distance of their individual stride,” generally unique

to each surveyor), marking the number of paces taken by an individual surveyor on, for example, "Sweep 1, 2, or 3, ..." who found an "artifact," listing the category of artifact (e.g., pottery shards; stone tools, cores, and flakes; shell [some worked into artifacts]; animal or human bone, metal objects, etc.). The aim was to record the spatial extent of artifacts within the surveyed fields, the range of artifact types/categories (noting any chronological information, such as readily recognized chronological markers such as pottery types), and the overall density of artifacts on the surface that could provide clues to the size and function of the site. In addition, the number, weights, and densities of each of the artifact types (e.g., porcelain/other highly fired tradeware sherds, earthenware sherds, metal [bronze, iron], lithic items, shells, animal bone, beads, glass, and some of the nebulous category, "modern trash").

In the summer of 1979, Karl Hutterer (a professor at the University of Michigan) and William Macdonald (a recently minted PhD at Michigan and professorial hire at Columbia) initiated the first uses of systematic full coverage and probability-based archaeological survey sampling in the Philippines, focused on the 315 km² Tanjay-Bais region (for an overview of the archaeological and ethnoarchaeological work in the region between 1979 and 1982, as well as field season reports see Hutterer, 1981a, 1981b; Hutterer et al., 1979; Hutterer and Macdonald, 1982; Macdonald, 1982a, 1982b). However, as early as the late 1960s and early 1970s and into the 1980s, archaeologists in the Philippines embraced comprehensive regional level surveys of sites to examine regional settlement patterns by surface survey and shovel testing in the Philippines (Cutts, 1983; Cutts and Wesson, 1978, 1980) and elsewhere in Southeast Asia, with regional settlement pattern archaeological studies (e.g., Mudar and Piggott, 2003). Hutterer and his students led much of the charge to make the regional survey more comprehensive and systematic (Allen, 1991; Hutterer, 1973, 1977, 1983, 1987; Hutterer et al., 1979; Junker, 1990; Macdonald, 1982a; see also Mudar and Piggott, 2003). Probability-based survey, in particular, came into vogue in the 1960s and 1970s following the evanescence of systematic surface survey as a means of examining

demographic trends, settlement organization on a large scale, and social interactions and exchange on various scales.

Hutterer and Macdonald chose an area with a diverse topography (the large alluvial plain below 100 meters elevation and the area of rugged interior mountains up to 700+ meters elevation) that was known by early 20th century historians and ethnographers as an area where a coastal archaeological site under the modern town of Tanjay had yielded significant amounts of 16th century and earlier Chinese and mainland Southeast Asian porcelains, pre-Hispanic burials, and “midden” and “posthole” features, indicating a possibly substantive pre-Hispanic settlement. Municipal authorities and agricultural plantation owners reported a range of archaeological sites within the Tanjay River and Bais River drainage areas that water flowed to from the western mountain chains. This region was somewhat unique in terms of both ethno-history and archaeological visibility, since Ata foragers were known and historically recorded as part of the upland landscape in the later 19th and 20th centuries (Junker, 1990, 1996, 2002a, 2002b, 2002c).

Having carried out successful surface surveys and excavations on Leyte, in an area where a smaller and heavily vegetated coastal plain and a rugged interior with thick forest cover made it difficult to systematically survey a large block area (Tuggle and Hutterer, 1972), as they began their project in the Bais-Tanjay area in 1979-1982, Hutterer and Macdonald were rewarded with almost perfect conditions for both survey and substantial excavations (Hutterer and Macdonald, 1982). These fields had been maintained over many generations of plantation owners, and aerial photographs of the survey region within the lowland Tanjay and Bais areas from the late 1970s using *airplane* flyovers which showed field boundaries similar to early 21st century work recorded with modern satellite images. Because the cities of Tanjay and Bais remained somewhat stable in their borders over the next forty years, constrained by the sugarcane and coconut plantations that dotted much of the Tanjay River drainage, with huge swaths of surveyable land still today owned by private landowners, Hutterer, Macdonald and Junker were able

to obtain permissions for the surface survey with a near 100% percent permission rate by the farm owners in the region. At the same time, the then-small town of Tanjay maintained a number of parks in the town center with grassy areas, the care of which, combined with the efforts in road building by the municipality, resulted in the unearthing of Chinese porcelain and possible house or burial remains that buttressed the likelihood of finding significant archaeological materials at the coastal site and inland along the Tanjay River and the six other rivers fed by rainfall from the mountains to the coast. In total, thirteen archaeological sites were excavated and more than 300 surface sites have been recorded in numerous field seasons.

In the summer of 1979, Karl Hutterer and William Macdonald jointly began what may be the largest and most comprehensive survey in the Philippines, and possibly in island Southeast Asia, even up to this day. Hutterer noted at this time that only two archaeological sites in Negros Oriental (the east province of the large island) were recorded by Rosa Tenazas, a professor at the University of San Carlos in Cebu City (still today the second largest city in the Philippines on Cebu Island). However, Professor Tenazas focused on the “Late Neolithic” jar burials in the Bacong area and that have been partially housed in the San Carlos Museum in Cebu and in the Silliman University Museum at Dumaguete (the Negros Oriental province capital). The 315 km² research area encompassed a large alluvial plain with the seven major river drainages and was divided almost equally between the flat alluvial plain where were located a number of coastal and near-coastal towns (with the largest municipalities being Tanjay and Bais). The essentially vast flat alluvial plain (at elevations of 0 to 100-meters) included major rivers that originated in the narrow upland valleys and raging streams that tumbled from volcanic mountain landscapes above 700 meters (see Figures, 9-11). In the first field season in the Bais-Tanjay Region, Karl Hutterer, William Macdonald, and a number of University of Michigan archaeology graduate students embarked on an initial probability-based model of survey that came in vogue in the late 1960s and 1970s (e.g., Binford, 1972; David and Thomas, 1969; Mueller, 1975; Plog and Flannery, 1976). They

implemented a “stratified probability survey” that involved environmental zones based on elevation zones (0-100 meters, 100-300 meters, 300-500 meters, 500-700 meters, and over 700 meters) that provided good proxies for landforms, vegetation types, and distinct river drainages towards the coast. There were eight distinct river courses from the mountains to the flatlands below 100 meters. However, a second cross-cutting form of stratification focused on the regional river drainages in the Bais-Tanjay region. The Tanjay River had the most massive imprint on the landscape and most of the large settlements were focused on this river and, to a lesser extent on the smaller Bais River. The Tanjay River had its origins in the highest mountains with elevations over 700 meters, with dozens of miles snaking through the mountain gorges, to empty into the Tanon Strait facing the distant island of Cebu, while the Bais River was primarily hemmed in by a smaller channel and only ran about ten or so kilometers to the coast.



Figure 7. Lowland plains of the Bais-Tanjay project, showing the Tanjay River meandering to the coast, about two kilometers from it, with mountains about 20 kilometers in the west. [Photo 1986 Permission from Laura Junker].



Figure 8. Upland area in the interior mountains, with deep-cut ravines, primarily occupied by tribal groups in the mountainous island center as well as Ata forager camps. Some of the relatively flat-topped mountains were traditionally occupied by Bukidnon/Magahat swidden farmers growing upland rice, fruit trees, yams, beans, and other vegetables. [Photo 1982 Permission from Laura Junker].

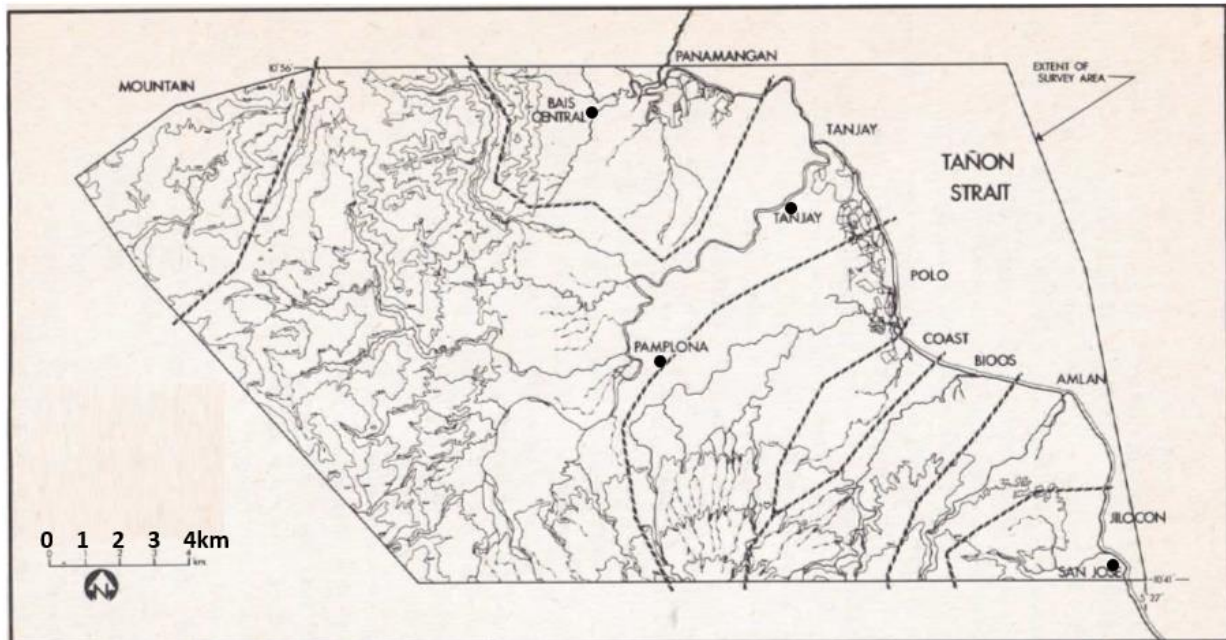


Figure 9. River drainage maps: The Tanjay River is the longest and largest river in the Bais-Tanjay region, with five rivers originating in the uplands at 500-700+ meters elevation. Six additional rivers are designated as Panamangan R., Polo R., “Coastal River” (Visayan Name Unknown), Jilocon R., Amlan R., and Bioos R. Finally, there is a significant mountain stream above 800+ meters of elevation that flows westward into the Negros Occidental on the western side of Negros Island. [Permission from Laura Junker]

The well-chosen research teams recruited by Hutterer included in the three field seasons under his tutelage in 1979, 1981 and 1982 were led by Hutterer and Macdonald, mostly involving University of Michigan graduate students (along with several students from other US universities, along with local archaeology students). During the later years, teams were led by Junker in 1985, 1986, 1992, 1993, 1994, 2003, 2004, 2005, and 2006 also included graduate students at the University of Michigan and other universities with significant skills and knowledge of zoo-archeological analysis of both human and animal bones, paleo-ethno-botanical studies, shell analysis, stone tool production and lithic usage studies, ceramic analysis, and geo-archaeological studies of landscapes. Germane to my dissertation

focus on foragers, stone tools were ubiquitous at most of the archaeological sites along the Tanjay River, although some metal tools (usually iron, but some bronze) but more often shell, and chipped or polished stone knife-type objects were found in both the lowlands and uplands. These objects were associated with significant-size settlements (likely seasonal sedentary home bases in the interior), or small-scale sites used for Ata foragers for hunting and sleeping overnight that had smaller imprints on the landscape and fewer stone tools and other artifacts associated with mobile food hunts.

In the summer of 1982, known as the Phase 2 Survey, William Macdonald⁵ led the second field season of the Bais Anthropological Project, which includes extensive forays into the mountainous interior of the Bais-Tanjay alluvial plain to record archaeological sites in the rugged mountainous interior of the island (Hutterer and Macdonald, 1982; Macdonald, 1982a, 1982b) (Figure 10). On the lowland alluvial plain, which was essentially ‘flatlands’ that stretched 8 to 10 kilometers inland from the sea, the Tanjay River and Bais River drainages fed water to the Spanish era and contemporary sugarcane fields in the large-scale plantations developed in the 18th and 19th centuries in the area below 100 meters elevation. Hutterer³ and William Macdonald and a 1982 surface survey in the Bais-Tanjay Region lowlands included 100% coverage of a probability sampling strategy (Figure 11).

¹ At the time of the 1979 survey, a recent Michigan PhD with an academic position at Columbia University.

² At the time of the 1982 survey, a professor at the University of Michigan and later became the head of the University of Washington Museum in Seattle, followed by a long-term director position at the Santa Barbara Museum.

PHASE 3 SURVEY 48 km² CONTIGUOUS BLOCK SURVEY
PHASE 4 SURVEY 18 km² CONTIGUOUS BLOCK SURVEY

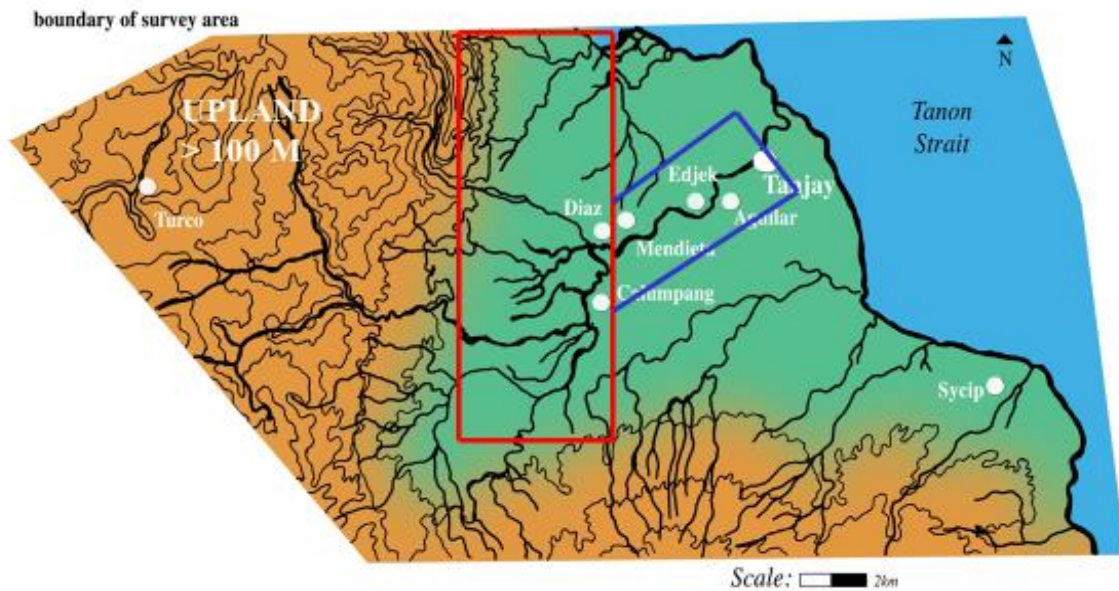


Figure 11. Flat map of areas with survey quadrats in Phase 3 and 4 Surveys (courtesy of Laura Junker). The red quadrat and blue quadrats indicate two different season surface survey units.

6.2 GIS Data Sources Versus Aerial Maps

A digital elevation map (DEM) from was downloaded from the Geo Community website. The DEM was constructed from the Shuttle Radar Topography Mission (SRTM) conducted by NASA in 2000 (Connolly and Lake 2006). The DEM provided a representation of the elevation at ground surface and served as the basis for the displaying of the geographic data for this study. Elevation, slope, and 3D (TIN) spatial maps of the Bais-Tanjay region were created from the DEM map using ERSI's software program, ArcView GIS (Figures 12, 13, and 14). Triangulated irregular network (TIN) maps represented vector

spatial data as a series of continuous surface triangles instead of the typical raster data using square cells. TINs were created from elevation points, elevation contours or grids from the DEM. 3D Analyst provided strong visualization of land features that were difficult to see in two-dimensional maps. Most of the data obtain for GIS portion of this study had to be created by digitizing paper maps and the DEM (Green, 2010:288)

**FINAL TIN OF PHILIPPINE ARCHAEOLOGICAL SITES, ACCOMPANYING
ROADS AND ALL WATERWAYS**

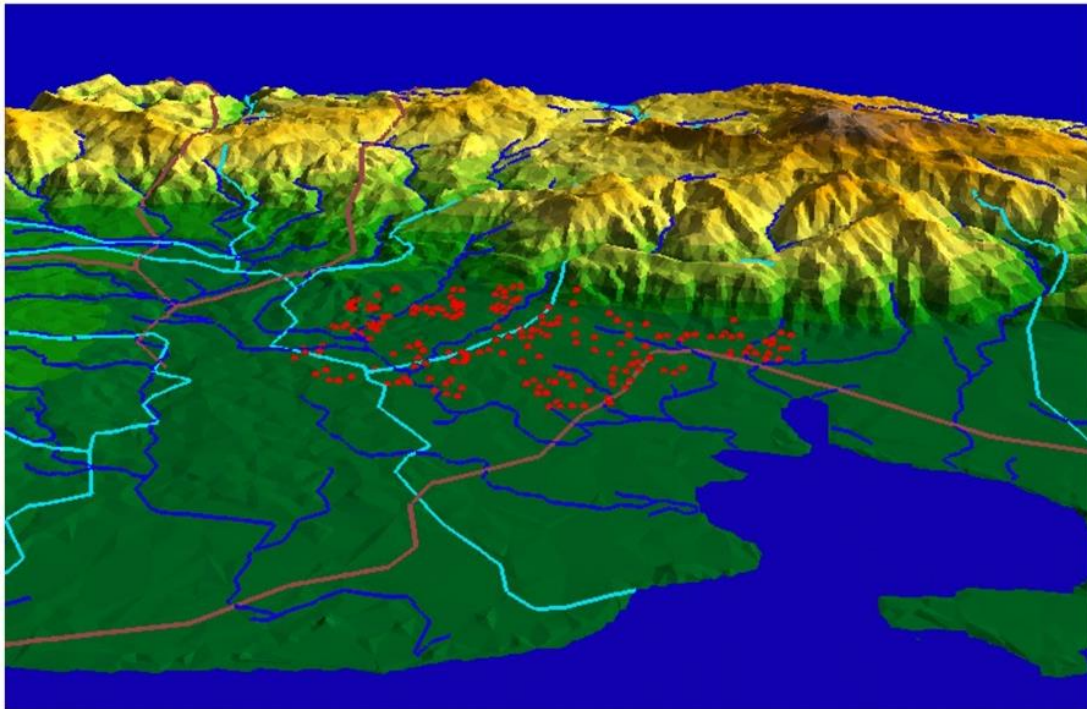


Figure 12. Finalized 3D Image of Tanjay Bais Study Area- Shows delineated streams in royal blue and rivers from previous data (waterutm) in light blue. Comparisons of this data with Google Earth showed that the waterways were more accurate with a combination of both of these datasets incorporated into the 3D image.

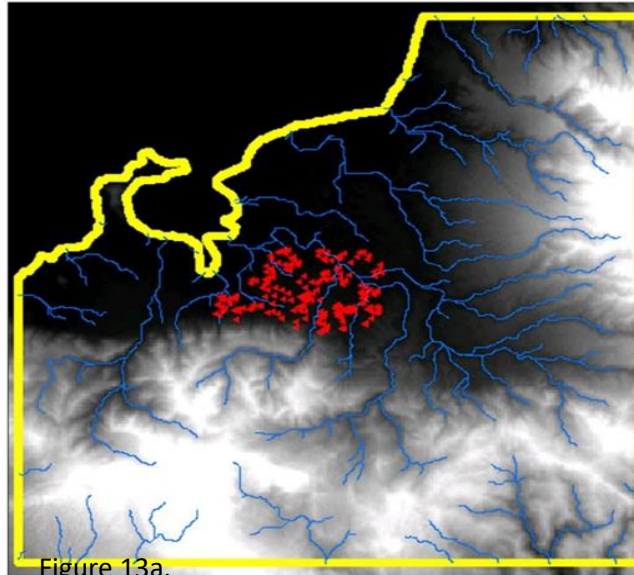


Figure 13b.

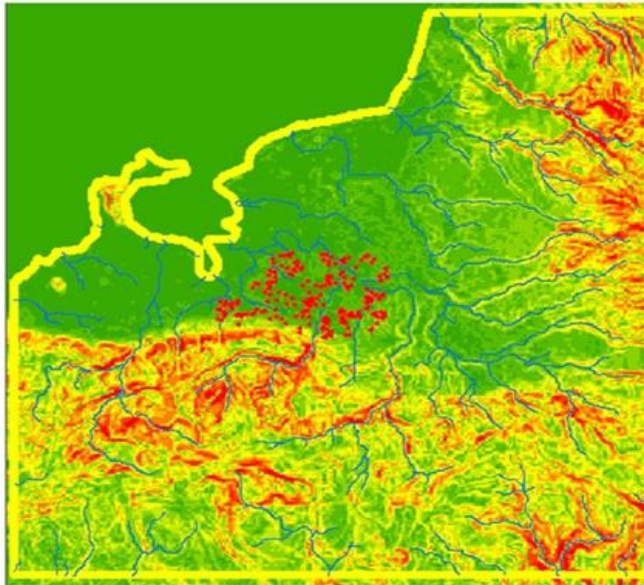


Figure 13. Applying ArcGIS software to derive the hillshade slope (Figure 13a. bottom) and slope (Figure 13b. top) of the Tanjay-Bais area, with red dots signifying archaeological sites and blue lines delineating waterways.

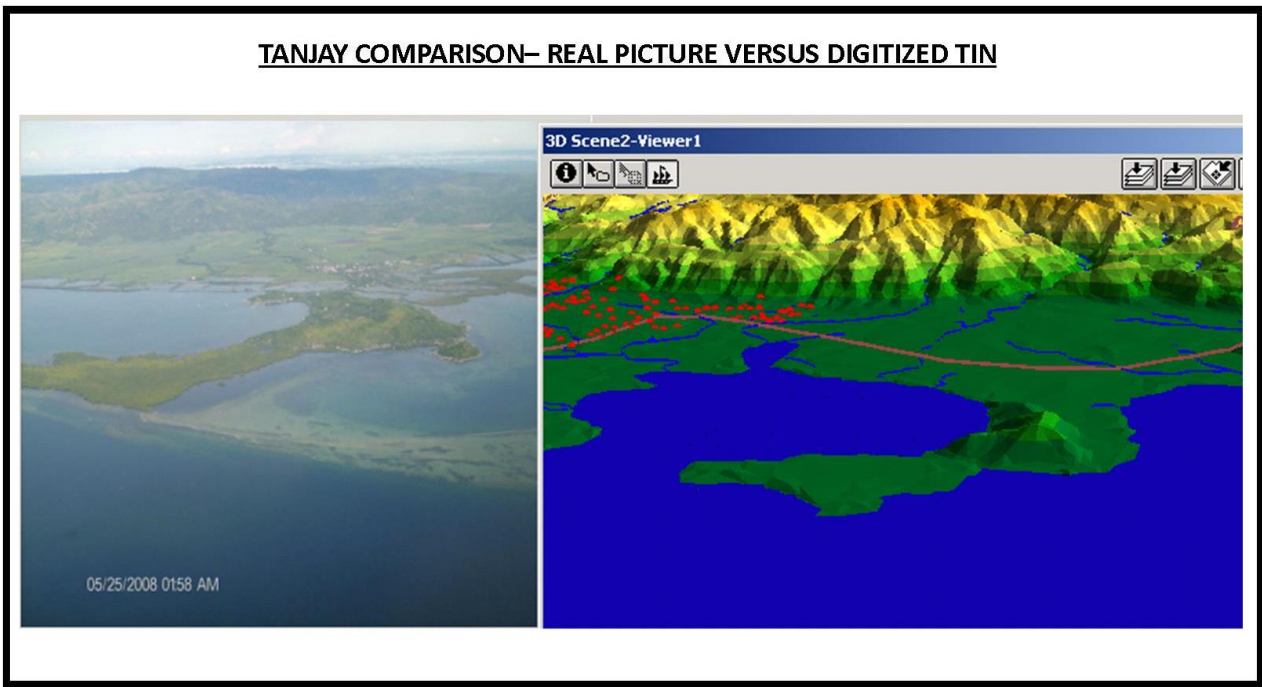


Figure 14. Comparison of Tanjay-Bais study area - Real picture of the area (right) compared with 3D Imaging of study area (left). The real image was used to estimate vertical exaggeration of TIN

The paper maps of the survey and Transects A, B and C created during the Bais Archaeological Project were also digitized including the location of the sites, physiographic features (e.g., rivers), and soil boundaries. The paper maps provided geographic coordinate positions for every survey of the 500 m² (.25 km²) block. Each site was recorded on the original aerial photographs and in the GIS analysis. The maps were rendered into GIS data points on a digitizing table with the assistance of Lisa Nizolek, then a doctoral student completing her dissertation on ceramic types and their distributions in the Bais-Tanjay region under Dr. Laura Junker. The X and Y coordinates for the data set came from Debra Green and Lisa Nizolek, both of whom used Bais-Tanjay Region data in their respective PhD dissertations completed in 2010 and 2011 and focused respectively on the landscape geo-archaeology of Bais-Tanjay Region (Green, 2010) and earthenware ceramic trade distributions (Nizolek, 2011).

Vector data layers were created including a point layer to represent the location of individual sites, a line layer to represent tributary rivers, and a polygon layer to represent the transect (Green, 2010:289). Because of the extensive research that has been carried out since the late 1980s in the Bais-Tanjay region, a wealth of non-GIS maps of hundreds of fields with artifact concentrations were created by graduates of the Engineering School at Silliman University (located in the City of Dumaguete, approximately 50 kilometers south of Tanjay) using transits and plane tables and the individual plotting of artifact clusters (referred to as “sites”), as well as small “findspots” with 1 to 5 artifact items over a field. All of these maps were analyzed prior to each field season with some integrated into the GIS research portion of this dissertation (Green, 2010:265).

Aerial photographs and satellite imagery were used to identify landscape features and provide a visual framework for the distribution of archaeological sites. An extensive aerial photo collection of the Bais-Tanjay research area was secured by Karl Hutterer in the late 1970s that included 18 parallel flight paths (FL-29 – FL-40) that followed a north-to-south trajectory from the eastern mountain boundary to the western coastal boundary of the study region. Over 200 aerial photos were taken at 1:15,000 scale (Figure 9). It should be noted that while there have been small-scale changes in the Tanjay and Bais Rivers and the five smaller rivers known as the Polo River, the Bioos River, the Coast River (which in the dry season intermittently disappears and re-appears in the wet season), the Amlan River, and the Jilocon River, these rivers are relatively stable. It has been noted that during the span of the archaeological work in the Bais-Tanjay Region, there has been a fairly constant river drainage footprint over a number of decades, with occasional surprises when one of the bends in the river broke through the riverbank and created an oxbow. In addition, the interior lowland below 100 meters elevation was primarily agricultural fields surrounding and outside of the towns of Bais and Tanjay,

For this study, aerial photos were used from flight plans FL-33A, FL-33, FL-34A, FL-34, FL-35, FL-36 and FL-37B developed by the US military in 1973 for the 1979-1982 regional survey and site

excavation headed by Prof. Karl Hutterer (then at the University of Michigan) and Prof. William Macdonald (then at Columbia University), and inclusion of then MA-PhD student Laura Junker in 1982 as a graduate trainee, working with both researchers in a massive surface survey using 500 X 500 meter quadrats in the flatlands (essentially the surface surveys). Subsequently, Junker developed a dissertation project at the University of Michigan under Karl Hutterer, and, prior to GIS availability, an initial identification of the geomorphic features and soils of the Bais-Tanjay floodplain, alluvial fans, and the uplifted ancient coral reefs. Each aerial photograph was scanned at 1,200 dpi (1ft/32cm) for future geo-referencing. Satellite images from Google Earth were downloaded as comparative reference maps to the older aerial photos. Comparing modern images to those taken thirty years ago were beneficial for examining alluvial and cultural landscape changes. A digital elevation map (DEM) from was downloaded from the Geo Community website (<http://data.geocomm.com/dem/demdownload>). The DEM was constructed from the Shuttle Radar Topography Mission (SRTM) conducted by NASA in 2000 (Connolly and Lake, 2006). Application of the SRTM data was covered in the GIS section (Green, 2010:266).

6.3 **Methods**

The basic question surrounding the GIS portion of this research is centered on what information could be gleaned from the forager-designated sites, primarily those containing lithics and bone, informing researchers about archaeological the settlement patterns of foragers diachronically and/or spatially. To do this, it was necessary to input all of the 400 sites associated with foragers, which amounted primarily those with higher densities of lithics and faunal bone. Spatial analysis was performed on foraging sites and possibly some geo-processing as well. Essentially, the site coordinates were put in as 9°30'. This was largely due to the fact that these should be considered in 60-second

increments, meaning that half of 60 second increments are 30, not 50. This difference in longitudinal lines accounts for about 1,800 meters, combining to about a 25-mile difference. The coordinates were updated from Latitude and Longitude 1972 to UTM, or Universal Transverse Mercator. This converted the measurements and allowed the points to be used on world maps, officially bringing the sites on land into their correct position, and, finally, defining a distinct coordinate system for use to document the sites outright.

Once the points were converted in UTM, all of the other geographic maps were converted to UTM as well. This was done to ensure compatibility between the different maps. The rivers were converted to UTM for Longitude and Latitude, as well as the map of the Philippines and the hydrological labels and annotations of the rivers, streams, creeks, and base sites, probably residences. This conversion of these maps allowed all four of them to be layered in ArcView or ArcGIS over each other. This step rendered the maps compatible and ready for statistical analysis.

The data file showed that there were sites with continuous occupation over more than 1 classified period, resulting in the decision to save the sites in the Excel file by period. Each of the spreadsheets that contained each period, were saved as .dbf files, resulting in separate .dbf datasets for periods 1, 2, 3, d 4, and 5 that could be imported, displayed, and analyzed separately. To accomplish accurate mapping of the sites, data sets that included a map of Negros Oriental (phlmapUTM), Rivers (waterUTM), roads (roads UTM), and corrected sites (sitesbyutm) were input and joined, creating a new edited dataset, a new .dbf file, dataset “tanjayxy” (Tables 1-3). This .dbf was brought into ArcGIS and the data was projected by right-clicking the file, scrolling to display x,y data to open the dialog to display the data using it’s x,y coordinates (Ormsby, 2008:Chaps.13, 18).

TABLE I

SAMPLE .DBF OF "TANJAYXY" DATA OF SITESBYUTM

SITESUTM_	SITESUTM_I	OID_	SITEA_ID	SITE_NAME	POINT_X	POINT_Y
1	1	0	45	J45	510000.437500000000	1055679.125000000000
2	2	1	49	J49	510270.968750000000	1055299.125000000000
3	3	2	63	J63	510749.562500000000	1055018.625000000000
4	4	3	67	J67	509738.468750000000	1054751.000000000000

TABLE II

SAMPLE .DBF OF "TANJAYXY" DATA OF SITES AND COORDINATES DATA

SITEA_ID	SITE_NAME	UNIT_NUM	POINT_X	POINT_Y
45	J45	PA-V-1A	510000.437500000000	1055679.125000000000
49	J49	PA-V-2C	510270.968750000000	1055299.125000000000
63	J63	PA-V-10A	510749.562500000000	1055018.625000000000
67	J67	PA-V-19A	509738.468750000000	1054751.000000000000

TABLE III

JOINED "TANJAYXY" DATA TO GEOMORPHIC SOILS FROM GREEN (2010)

SITE_NAME	PERIOD	GEOMORPHIC SOIL_TYPES
????J40	5	La Castellana Clay Loam Steep Phase
J41	1	La Castellana Clay Loam Steep Phase
J42	5	La Castellana Clay Loam Steep Phase
J43	1	La Castellana Clay Loam Steep Phase
J43	2	La Castellana Clay Loam Steep Phase

To add x,y coordinates to the updated dataset, the attributes of “tanjayxy” were joined with the attributes of each period, TanjayGMPD1, TanjayGMPd2, etc. individually until all five periods had x,y coordinates (Ormsby 2008:Chapter 9: Lab 6, Chapter 10d). These joinings were based on the “SITE_NAME” column, and a projection system was defined after each period (Ormsby, 2008: Chap. 13, Supplemental to Lab 10: Deducing a Map Projection Map) saving the new data frames under “Projected Coordinates System,” then “UTM,” then “WGS 1984,” then “Zone 51N.” These were the same coordinates that “sitesbyutm,” “waterUTM,” “philmapUTM,” and “roadsUTM” were projected as. These new data frames were added by displaying x,y information. They were then saved as layer files (.lyr) and renamed. Finally, symbols were developed and applied to differentiate the time periods of the forager sites, using different symbols and different levels of classification with different shapes and sizes of symbols (Ormsby 2008:Chap. 5). The symbolizing of sites allowed for further spatial analysis implementing the pie graph feature that compared the percentage of earthenware to bone and lithics. Forager sites are classified largely by the large number of lithics and animal bone and smaller, almost nil, pottery sherds (refer to Figure 2 in Chapter 2). This analysis gave a rough estimate of possible forager sites based solely on the sites that had x,y coordinates, complete artifact assemblages, and complete unit names and site names. cementing three useful results (Figure 15).

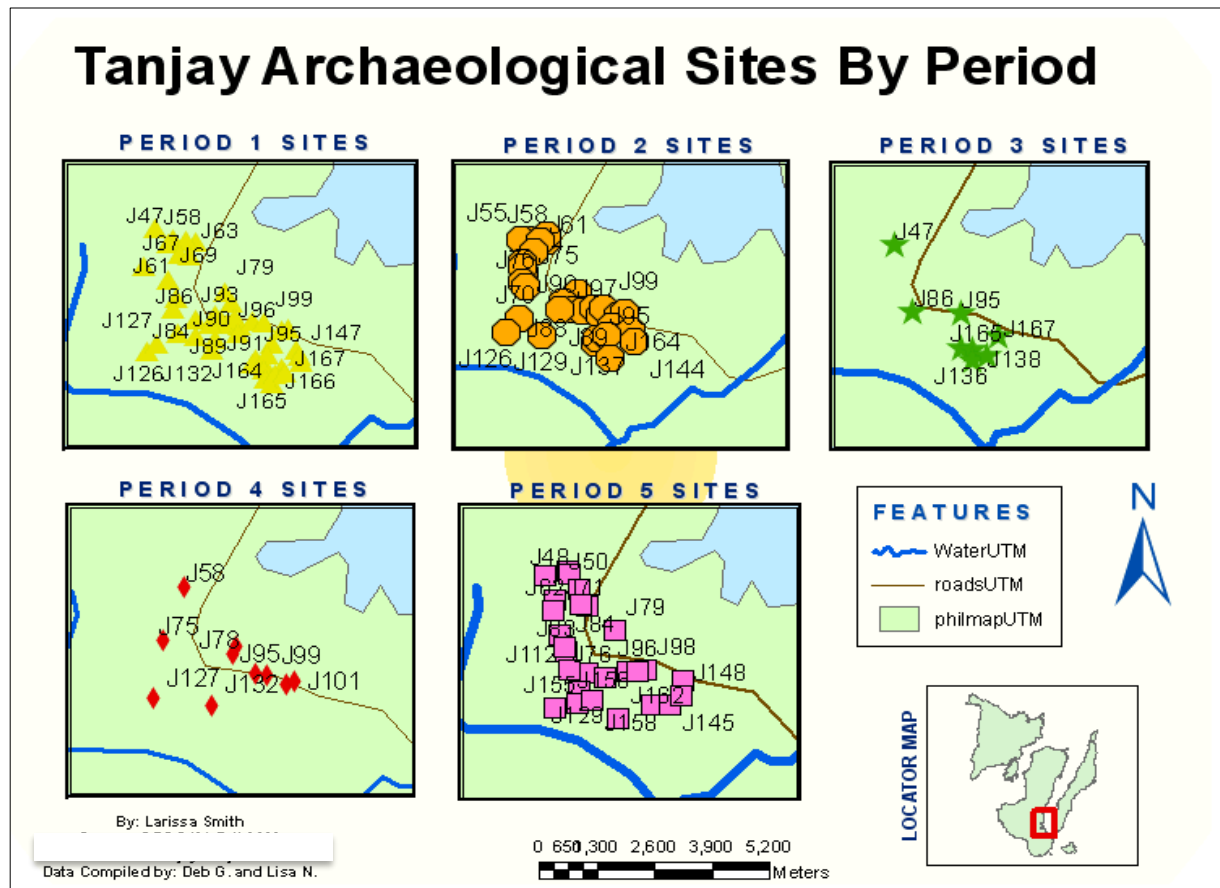


Figure 15. GIS spatial mapping of forager sites based on the five time periods. Forager sites were based on the density of lithics found at the site during that specific time period.

First and foremost, there were not both data sets and layer files for each of Tanjay's 5 periods. It contained a list of sites, the number of artifacts, geomorphic information, and x,y coordinates projected in UTM. Sites contained labels with site names and were symbolized. These were saved as .mxd files to be opened in ArcGIS as projects. Secondly, each of these periods were projected correctly onto a map. This map displayed the sites within each period and where they were located and included basic identifiable information, such as water systems, roads, cardinal directions, etc. These provided

snapshots of the sites, quick, condensed references to review all sites and periods at once, along with the ability to create pie graphs of the forager sites of each period.

Lastly, this short analysis organized sites per period and highlighted contrasts in the aggregation of forager sites in the lowlands during periods 3 and 4 (Junker, 1990:187 for the Phases), in comparison to periods 1, 2, and 5. During Periods 3 and 4, referred to as the Santiago 1100-1400 AD and Osmena Phases 1400-1600 AD, respectively, there was a reduction in the number of forager classified sites, compared to Period 2, the Aguilar Phase. Then, in Period 5, the Historic Phase from 1600-1900, there is a return to similar numbers of forager sites as previously. These changes in site densities indicate population changes during these time periods. Periods 3 and 4, which span from 1100-1600 AD were engulfed with a great increase of exchange and trade externally and internally. Inherent with these trades was the need for interior goods, greater competition, an increase in slave raiding, and, ultimately, was a time of great risk for forager populations (Figure 16). These changes are not the result of the demise of a population, but rather the re-emergence of similar population densities in Period 5 suggesting another and more obvious alternative. People simply move. From the geo-statistical information, it is highly likely to conclude that the foragers of Negros saw this time to be the greatest risk, thus adapting to this great risk by retreating into the interior, until the Historic period, when those risks lessened in magnitude. This observation is what provided the basis of the dissertation and sets the framework of indigenous forager cultural resiliency discussed in previous chapters.

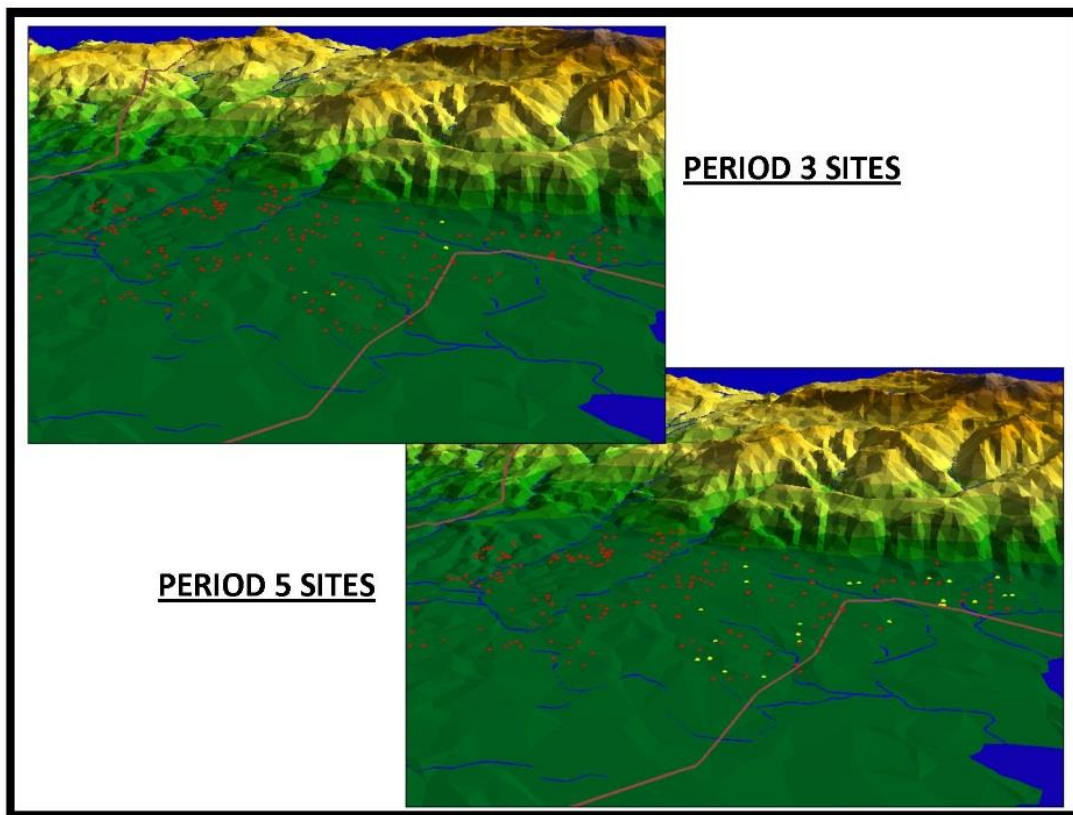


Figure 16. Comparison of Period 3 and period 5 sites. This GIS analysis demonstrates a change in the number of forager sites (represented by the yellow dots) showing an increase in site numbers from one period to the next, in a relatively short time span.

6.4 GIS and Geospatial Analyses

Over centuries, foragers have used numerous strategies to remain resilient. They have actively anticipated and planned when and the extent of exchanges and interactions with others. They have even situated themselves in the interior or in places that are more difficult to get to, to prevent access and to protect themselves. These preventative measures used evasion and avoidance to cope with these exchanges and interactions. Moreover, foragers also searched out and changed, proactively and

reactively in order to survive. What makes indigenous forager cultural resiliency even more dynamic is that of how foragers execute these 10 strategies are analyzed their options at various levels of scale. These 10 strategies become more commonsensical over time, leading to tools that anthropologists and archaeologists can use to re-interpret foragers' movements and activities.

Affirming the existence of indigenous forager cultural resiliency can be done archaeologically. Regional archaeology and statistical analysis suggest that forager populations aggregated along the landscape throughout the early periods of Philippine prehistory (Junker, 1990, 1996). The presence of forager sites archaeologically implies that foragers were existing and co-existing with lowland populations for centuries, yet still maintaining their traditional forager lifestyles, as the signatures for forager sites remain consistent over the centuries, these being high lithic concentrations in comparison to the lowland sites which exhibited high densities of earthenware or porcelain. The presence of forager sites in lowland areas is evidence of the abilities of forager populations to plan and mitigate relations with lowland populations over centuries. These forager sites are not always intermingled with those of the lowland sites; instead, the regional geography suggests that forager sites remained immediately outside of the lowland settlements (Junker, 1996). Headland (1987), in his discussion of the Agta of Casiguran, is quoted as observing forager camps that existed about "a 20- to 40-minute hike from the barrios of non-Agta lowland farmers" (1987:264). Based on a combination of archaeological survey and geostatistical mapping, some of the forager settlements appear on the frontier ecotones, between the agricultural fields and the beginnings of paths that lead to the high elevations of the interior (see view from Figure 17). The presence of these forager sites outlying the lowland settlements and along the frontier support the abilities of foragers to anticipate and prevent uncertainties, providing an assurance for their lives and livelihoods should risky or dangerous situations occur. The acts of prevention, mitigation, anticipation, and planning are all ways that Philippine foragers have attempted to remain resilient over the centuries within the intertwined exchange systems of Negros Island. These four



Figure 17. Picture taken from the frontier zones, areas immediately next to the fields. Areas like these were a direct contrast with the plowed fields that were full of lush, vegetation and walking paths in the interior, and gave way to steep slopes that allowed access into the interiors and uplands.

strategies imply that, at the regional level, and in this case the institution level of the matrix discussed in this dissertation, foragers are involved in systems where their presence and roles in the system is integral to the system as a whole. Whether one considers the asset of the human capital of forager bodies, the asset of social capital of the forager memory culture and knowledge passed down, or the asset of natural capital in implicit in interior territories and resources, foragers have been and continue to be resilient. This regional scale of analysis magnifies the pre-existing networks of exchange that place foragers as the drivers of change and resituates them as agents. The regional scale highlights these four

strategies. However, there are examples of the use of other strategies at this same level that provide a slight variable narrative into forager resiliency.

During the 3rd and 4th periods, the strategies that foragers executed to remain resilient take on completely different properties. Forager resiliency is no longer about living among lowland populations and navigating the small risks associated with this. Instead, the risk seemed to be too great, and they took on different acts, including evading, avoiding, changing, and, basically reacting to the increased risk factors that did not exist prior to this span of centuries. Projecting the archaeological data into geo-statistical data and processing this information endorses a forager mobility riddled with spatial disappearances in that there is a reduction in their population sizes and distributions. The changes in population sizes and distribution should be understood as acts of evasion and avoidance, more appropriate terms to explain the actions of these complex groups.

Ethnographies have observed that when foragers feel that the risk is too great, they completely avoid the area where said risk is said to exist. Dr. Junker discusses these exact sentiments in her writings about forager-farmer interactions (1990). Due to limited visibility for survey and archaeological work in the interior, one cannot say with certainty that foragers relocated to the interior; however, their return in later centuries, coupled with predictably low birth rates and mortality rates among forager populations globally (Griffin, 1984; Hamilton et al., 2018), highly favors the interpretation that forager households simply shifted from the lowlands to the interior and reverted back when conditions were safe.

According to Headland's research (1987) about 10 percent of forager camps resided in the forest canopy and over 60 percent were located in forest biomes when he conducted his research. Although this dissertation tackles prehistoric and historic time periods, modern day examples are integral to understanding forager cultural resiliency. Headland's research suggests that even in prehistoric times there always remained a group of foragers in the interior, however small the percentage. Nonetheless,

the small percentage provides yet another readily available alternative strategy for forager resiliency. Furthermore, even in the 1980s, 61% of foragers residing in forest biomes greatly fuels one of the arguments of this dissertation, that Philippine forager cultural resiliency possesses inherent interior networks that have been fostered and maintained, allowing foragers to execute evasion, avoidance, and change at the regional, group, and local scales over. Taking different paths during a certain time of day or year is also considered to be evasion because of the increased likelihood of encountering what or whom they are avoiding and evading. Avoidance and evasion can also resemble something as simple as remaining in their safe zone and not venturing out of it. One example that can be discussed is when looking for archaeological sites in the interior, from the forest emerged a phenotypically stereotypical Negrito family. When a local was asked who that group was, the reply was that that group] “lives deep in the interior and only come to the co-op every few months.” The local continued to say that they don’t talk or play with anyone. Their clothes were not as fashionable as those who live near the Canggohhob co-op, and they appeared to the local as withdrawn and suspicious. This was enlightening and affirming for a number of reasons. One, researchers tend to conclude that people disappear or that people are forced to change, convert, or withdraw from exchange networks or situations. Although this can be the case in certain situations, this was not the case in this situation. Instead, this was an example of a group of indigenous people actively choosing not to associate themselves with others. This was an example of the agency of indigenous cultural forager resiliency, an example of how some forager groups, households in this case, choose to cope with survival in the 21st century. However, this same logic can be applied to forager behaviors prehistorically.

Let’s continue to explore case studies that utilize the strategies foragers have used in their interactions with lowland populations drawn from the regional scale using the Tanjay-Bais project. Foragers became immersed in intercontinental exchange networks, ushering interior products from the interior to the lowlands for foreign trade. In order to accomplish this, foragers had to execute the

strategies of planning, anticipation, change, and, more importantly, search. The seeking out of the desired products was just as integral as the planning of the networks in the interior, between the interior and lowlands, and with foreign others. In addition, one cannot overlook the anticipation needed to supply these exchange networks, the changes that may need to occur, and, most importantly, the mitigation needed to navigate the bartering and risk of these exchanges. Although, the use of these strategies seems complex, because of the natural tendency for foragers to be highly mobile and to locate these resources, this provided the ideal conditions under which foragers could partake in these exchanges consistently and reliably. According to ethnographic accounts, Negritos typically occupied wide home ranges. Within these ranges existed the entire breadth of their diets, inclusive of flora and fauna, along with the wealth of their memory culture associated with the location of these flora and fauna. This pre-existing knowledge provides the basis for how indigenous forager resiliency has been sustained over these centuries, in addition to how at least these 10 strategies have been and are used by foragers.

Foragers, by definition, are highly mobile groups, often led by a group leader that possesses foresight on times that are best to migrate. The ability of foragers to maintain their forager lifestyle is all predicated on a natural tendency for at least 1 or 2 primary agents to plan accordingly. According to Olsson (Olsson et al., 2006), key leaders undergo premeditated transformations. These transformations are not only recognized by the key leaders but are also created by them to mitigate alternative “system configurations” and to choose opportunities that span scales of governance, orchestrate networks, and reconcile problems. This ultimately ensures the successful adaption of a group. This phenomenon and process are the exact parameters that Philippine foragers and foragers on Negros have had the ability to do to ensure the success of their groups. At any point of time when this cannot be accomplished, Negrito leader ceases to be the leader and a new leader emerges. This new leader emerges because they have demonstrated their ability to lead or seek out innovative solutions for the resiliency of the



Figure 18a.



Figure 18b.

Figure 18. Depiction of interior pathways (Figure 18a. top and Figure 18b. bottom) located throughout Mabinay. These were used by the locals, inclusive of Negritos, Bukidnon, and lowland Cebuano speakers to transverse the interior/uplands.

group. This planning occurs at the individual and group levels, which is one of the basics behind the agency of indigenous forager cultural resiliency. Forager leaders and those foragers who choose to be initiative-taking agents provide the perfect example for how the agency of one individual can affect an entire group and, most importantly, can have an effect on the strategies that foragers use to remain resilient.

6.5 **Conclusion**

This brings the dissertation to its final point of discussion: diagramming exactly where these forager strategies are best utilized and have been utilized for years, the interior. Due to the limited visibility of the interior (see Figure 18, both 18a. and 18b.), it is best to use GIS to illustrate how Negros foragers have been able to navigate and remain resilient for centuries. This has involved bringing in and projecting the most recent Philippine terrain dataset. Recent datasets came embedded with modern city, town, and barangay information, which has allowed for easier projecting in GIS. From opening the map into GIS, it was rather simple to symbolize the important locations of foragers based on ethnographic information and to begin statistical analysis on the interior mountainscapes. Current forager networks on Negros span both the Occidental and Oriental sides of the island horizontal. It is also documented that foragers traverse the island vertically, moving from the north to the South, particularly during the dry season when movement is the easiest (Oración, 1963, 1960, 1967).

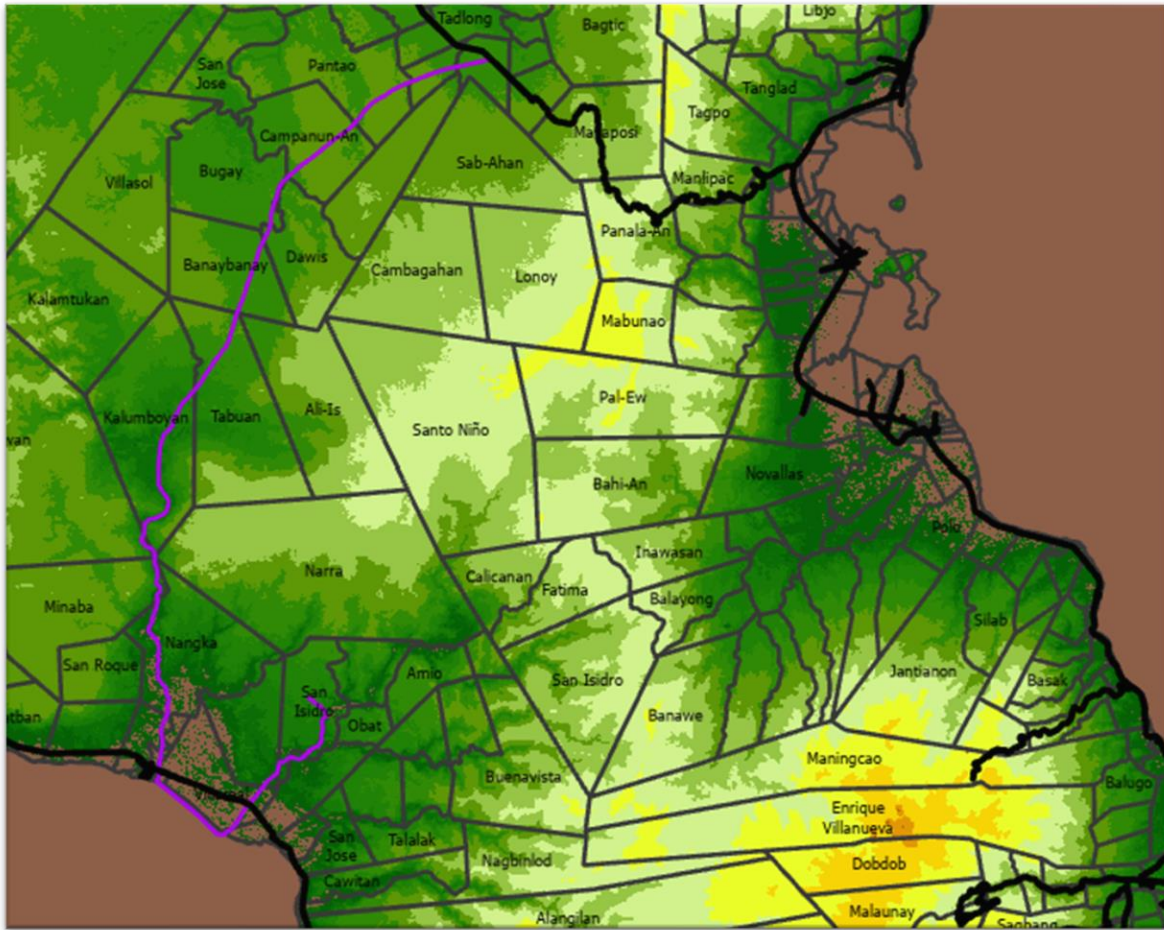


Figure 19. Least Cost Path Analysis. Possible least cost path from Dauin to Mabinay taken by interior populations navigating Negros Island. [Courtesy of Larissa Smith and Will Feltz].

Upon speaking with Professor Rolanda Mascuñana, he informed me that every year, usually around early December, all of the Negritos of the island gather for a celebration near Mabinay. Most of that travel, including from southern places like Dauin, is done through the interior. Running a simple least cost path analysis (Figure 19) of the Negros Island highlights why the least cost path that foragers would take would be through the interior. In comparison, following the coastline then meandering the roads and paths to get the Mabinay takes a greater amount of time and energy. Even more so, this least

cost path analysis illuminates two other important finds about forager migrations patterns in response to external forces: the relative ease that traversing the interior affords foragers. One being, that there has existed and still exists a heavy memory culture that provides them the blueprints to navigate, mitigate, plan, and anticipate this difficult terrain, but also that resiliency strategies like evasion, avoidance, reacting, changing, and seeking were and continue to be employed when necessary. A discussion of two incidents will make this point more salient. First, looking for archaeological sites along the agriculture-forest frontier zone, there were numerous walking paths that led into the interior. These paths were littered with debitage, porcelain, and various broken artifacts, and showed evidence of former and current use. Their paths meandered along gently sloping terrain and disappeared into the trees (Figure 20). There were undoubtedly easier paths that could be taken to move from the interior, or places of high elevation one could traverse to the lowlands. The second instance that illustrates the point of this section, involves another occurrence while conducting survey near the river bend (Figure 21). While surveying the area for lithics near a tree that housed birds, there appeared a Negrito family over the ridge immediately to the north. They did not have any shoes on and were moving from a high elevation to the lower elevation near the river bend. Within minutes of them appearing and making eye contact, they were gone. A local inquiring about what we were doing informed us that Negritos tended to pass this area a lot coming from the mountains. As a matter of fact, there appeared a Negrito family over ridge immediately to the north. They did not have any shoes on and were moving from a high elevation to the lower elevation near the river bend. Within minutes of them appearing and making eye contact, they were gone. A local inquiring about what we were doing informed us that Negritos tended to pass this area a lot coming from the mountains. As a matter of fact, Negritos taught him how to make bird snares to catch the birds that were nesting in the tree we were surveying around. In these two instances, while surveying for archaeological sites, observations and information supported the



Figure 20. Pathway that led from the perimeter of a field straight into the interior, covered brush.



Figure 21. Tree near river bend where snares were used to catch birds, in modern times. Also, a Negrito family was seen just out of view of this photo still frequenting the area (bottom).

movement of Negritos over various parts of the terrain. Moreover, the locations of both of these occurrences are miles apart (Figure #). Furthermore, these substantiate indigenous forager cultural resiliency as a macrocosm of complex movements and migrations inherent to forager populations on Negros Island, and any foragers that traverse coastal, lowland, interior environments, or mountainscapes. In addition, these occurrences along with the GIS data supported a more complex portrayal of forager migrations than a simple fight or flight response. Instead, forager migrations must be re-interpreted as pre-meditated as times, as infused with memory culture, and as readily applied to any circumstance that may arise. This is inherent with indigenous forager cultural resiliency and these complex matrices analyzed using regional archaeology, and eventually, ethno-geographic data are the key to reinterpreting and teasing out forager strategies over time and space.

VII. CHAPTER 7

7.1 Conclusion

The study of foragers epitomizes the foundations of anthropology and, subsequently, of archaeology. Researchers have long been fascinated by this past lifeway and have attempted to capture its “pure” essence before its complete demise. People change as do systems. Socio-culturally, politically, and archaeologically, “little” remains of forager societies. This dissertation examines the perceived rudimentary forager path lifeways that remain. Drawing inspiration from the “little” focused on in (Giovas, 2016) work among American Indian foragers, this dissertation examines the little that remains as within these remnants are the vestiges of the very essence of who people were, have been, and possibly will be in regards to how foragers may choose to adapt, change, evolve, or maintain traditions. For this reason, this dissertation urges scholars to continue to re-interpret or to begin studying foragers. This dissertation also introduces the term “indigenous forager cultural resiliency.” Forager societies that were once perceived as insignificant now appear to be much larger macrocosms. That “little” forager matrix has unfolded, exposing multi-scalar dimensions and networks that must be explained in detail. Simply exposing the fact that forager societies are actually larger macrocosms, the intricacies of these matrices must be explained. Instead, there must be a change in the way that these networks are unraveled and analyzed to develop a different understanding of what these nodules and connections mean heuristically. This concluding chapter calls for a re-interpreting of long- and short-term forager stories in the Philippines but should also be applied throughout Southeast Asia and the globe.

Indigenous forager cultural resiliency is unique because it focuses on foragers and the multitudinous ways that they have adapted individually, locally, and regionally. It is understood that no person, group, or society adapts in isolation; however, it has been established that decision-making processes to pivot, remain the same, or utterly change can occur at even at the individual level. For

foragers, the individual and group levels are where the processes that have the greatest influence are most likely occur. Split decisions by the band leader have a direct effect on mobility patterns and the networks that bands choose to partake in. At the group and local levels, kin and affinal relationships determine mobility patterns. Essentially, these microcosmic levels re-situate foragers and forager groups as active instead of reactive agents or simple subjects to outsiders. When a revised narrative re-situates foragers are being enmeshed in complex and dynamic systems where decision-making is also done by the foragers themselves, then this re-interpreted narrative moves the focus from foragers as exploitative groups to indigenous culturally resilient groups that possess varied degrees of power. This power is neither unaffected by nor solely based upon the outside world. Moreover, this is not recent terrain for foragers. Instead, foragers from forager networks throughout the globe, in the equatorial tropics, and in the Philippines, specifically, have established forager networks and shadow networks and have continued to use these networks to remain resilient. The matrices of networks have been nurtured by affinal kinship ties, i.e., marriages (Tuck-Po, 2013; Turner, 2013), cemented by yearly trips and celebrations (Cadelina et al., 1986; Headland, 1987; Mascuñana, 1997), and tested during times of strife and turbulence. All the while, these networks continue to be the source of the forager resiliency today.

Chapter 2 sets up the dissertation by first acknowledging that foragers still must be studied as there exists significant value in doing so. To do this, Chapter 2 chronicles the integration of foragers into complex economic and political systems. It then discusses how regional approaches to forager studies has exposed “situational shifting” and sophisticated mobility patterns that have occurred in the past (Junker, 2002a). These interactions and shifts were both long and short term. Foragers are enmeshed in dynamic social landscapes archaeologically. Most important to this dissertation, the chapter uses archaeology to frame indigenous forager cultural resiliency within a world systems framework.

Chapter 3 takes forager studies slightly further in reviewing anthropological approaches to studying equatorial foragers. Because this dissertation focuses on Philippine foragers, examining how

equatorial foragers, and eventually Southeast Asian foragers, strategize to remain resilient is of utmost importance. Although foragers globally essentially partake in this subsistence way of living, foragers in various landscapes and biomes endure different stresses and environmental, economic, and political pressures (Cashdan et al., 1983; Kent, 1996; Sapignoli, 2014; Shott, 1992). As such, island and equatorial foragers are faced with slightly different stresses and conditions (Bailey et al., 1989; Rabett et al., 2017; Sandbukt, 1988b; Shoocongdej, 2000). In conjunction with foreign and national influences, equatorial foragers lack the ability to expand exponentially latitudinally or longitudinally. In addition, their interactions and relations are limited to people on the island or in the immediate area, including those who choose to venture off their island or the interior. These variables also mean that foragers that reside within equatorial zones either do not or cannot strategize in the same ways. This chapter examines the many forager groups, specifically the Ata, Batak, Semang, Semai, Kuba, and Malay, in equatorial zones and the Philippines, studying the ways that foragers have traded and continue to trade and mix strategies to remain resilient. These case studies fall within the framework of indigenous forager cultural resiliency because how each of these groups has chosen or has been forced to remain resilient appears to be small, like the little that was spoken about at the inception of this chapter. Nonetheless, because each of these “little” groups have matrices of resilient strategies, their forager lifestyles unfold into greater scales and expand the complexity and dynamism of indigenous forager cultural resiliency in equatorial zones.

Chapter 4 takes a deep archaeological dive into the evidence that exists for indigenous forager cultural resiliency within regional contexts. It chronicles long-term forager histories from the Paleolithic through to the Historic periods and explores methods that gain access to the social, geographic, political, and economic. The data supports the presence of forager-farmer interactions from 3 BC through the Historic, reinforcing the longevity of the foragers’ role (Bar-Yosef, 2017; Fix, 2002; Stock, 2013). Regional settlement archaeology of tropical foragers, combined with Geographic Information Systems (GIS),

showcase foragers strategizing in various magnitudes in response to various stimuli (Junker, 1993a, 1993b, 1998, 2002a; Padilla, 2013). For example, when foreign trade increases, raids increase. It becomes dangerous, so forager sites reduce in density and number. However, when this risky situation ceases, foragers return to the landscapes where they previously resided in almost the same quantities and densities. This example is discussed in a previous chapter, but here it illustrates that regional settlement data of foragers is supportive of the magnitudes of ways that tropical foragers have remained resilient over time. Thus, indigenous forager cultural resiliency gains greater traction from an archaeological scope. It moves beyond cultural case studies to regional data supportive of forager movements across the landscapes over the long-term. Again, from the little, in this case small lithic and/or faunal finds, archaeologically classified forager sites scattered across the landscape further unfolds the extent of interactions on islands. Indigenous forager cultural resiliency obtains yet another layer of support for its importance.

Chapter 5 takes a step-by-step approach to explain how this dissertation arrives at indigenous forager cultural resiliency. The transition from the original intent of Resiliency Theory to indigenous forager cultural resiliency, although lengthy in discussion, is necessary for this dissertation because indigenous forager cultural resiliency maintains some ephemeral components of Resiliency Theory. First, indigenous forager cultural resiliency exists within a system. This system consists of feedback loops which foragers have undergone and continue to undergo. The main difference, though, is that, regarding the end component of Resiliency Theory, there does not appear to be a reversion or a collapse in these cases. Instead, by virtue of the fact that these forager groups still exist, foragers have not “collapsed.” Furthermore, indigenous forager cultural resiliency examines forager resiliency at various levels and in various dimensions of forager network matrices. This dissertation is fueled by the premise that foragers must continue to be studied, for the little that is assumed about foragers in actuality encompasses much more, thus requiring further fine-grained analyses and reinterpretations. The term

indigenous forager cultural resiliency situates itself well within the Resiliency Theory Framework, but a specific scope is necessary to expound upon this “little.”

Chapter 6 uses a combination of ethnographic analogies, archaeological data, and GIS data to illustrate how Philippine foragers have executed indigenous forager cultural resiliency over 2,000 years. Uniquely, the chapter uses modern ethnographies and fieldwork from a span of 50 years (spanning 1960- 2010) to demarcate how indigenous forager cultural resiliency still exists (Cadelina et al., 1986; Headland, 1987; Headland and Griffin, 1997; Headland and Headland, 1997; Mascuñana, 1997; Oración, 1996; Oración, 1960, 1963; Rahmann and Maceda, 1955, 1973; Rai, 1990). This research indicates that prehistoric network spheres still exist in modern society. Recent research conducted in Borneo in 2020 but published in 2022 (Lansing et al., 2022) presents the ideal methodologies for observing and/or recording these systems using current technology. Chapter 6 also hints at how to obtain and affirm the extent of these forager interaction matrices.

As such, this dissertation outlines at least 10 ways that foragers, whether individuals, bands, larger groups, and/or regional networks, can be detected and examined anthropologically, archaeologically, and geographically. This list is not exhaustive, but it attempts to expand beyond the simplistic fight-or-flight response that is assumed of foragers, especially with regards to forager resiliency. Additionally, indigenous forager cultural resiliency establishes a need to continue to observe foragers but also to re-interpret or re-examine previous ethnographic and archaeological studies, both to look for new strategies and to re-interpret data for better accuracy regarding the exact activities foragers engage in. Investigating the intangible is often a daunting and inaccessible task, but using ethnohistoric accounts, ethnographic analogies, and modern methods are the keys to these re-interpretations.

If archaeologists are to interpret long- and short-term forager histories, this dissertation proposes the following considerations. In regards to ethno-historic texts, there are numerous Chinese, Spanish, American, and Filipino accounts of foragers in the Philippines (Beyer, 1903, 1921, 1930, 1947, 1948a, 1948b; Chen, 1966; Jocano, 1998; Pigafetta, 1975; Wu, 1953). Nonetheless, these accounts are not exempt from biases. Some of these accounts are laden with stigmatization and crude judgments about the intellectual capacities of foragers. Other accounts are dismissive of the foraging lifestyle, in hopes the foragers would partake in settled farming (Adelson, 2008; Brosius, 1997; Carpenter et al., 2001; Correia, 2019; Department of War, 1903; Eder, 1984; Gilbert, 2014; Headland and Griffin, 1997; Headland and Headland, 1997; Headland and Reid, 1991; Rahmann, 1963; Seitz, 2004). If one re-examines these accounts and “reads between the biased lines,” the foragers’ story is there. Two ethno-historic stories will be referenced here to make a more salient point. There is a Chinese document that cites Negritos coming down to the coast, trading for Chinese porcelain, leaping with joy, and then breaking these pieces of porcelain (Ju-Kua et al., 1911; Rockhill, 1911). Eventually, these Chinese porcelain pieces were re-manufactured into teeth-shaped ornamentation for a necklace. An example of what this looks like exists in the Worcester Collection at the Field Museum. Instead of focusing on the Chinese merchants scoffing at the Negritos when they broke pottery, one should instead re-examine this interaction and the intent behind the resulting actions of the Negritos to characterize them more accurately. Foragers are generally known to occupy the interior, but, in this case, a forager willingly chose to venture from the interior, or the frontier/friction zone, to the coast to greet and trade with a foreign group that may have been visible from the uplands (see Figure 22). Traversing the interior terrain is not an easy task, but somehow this individual traversed the terrain quickly enough that trade with this foreign group was able to occur. In addition, this individual act must not be rare, for the Chinese accounts recognize these Negritos, thus validating the fact that this was not a first encounter.



Figure 22a.
Figure 22b.



Figure 22. Views (Figure 22a. top and Figure 22b. bottom) of the Negros Oriental Coastal from the upland elevation zone vantage point of the Bais Negrito leader. From these pictures, at his residence, the coast and any coastal traffic are clearly visible, as would be the case with any ships, foreign or from other islands.

Moreover, Negritos had already obtained Chinese porcelains, associated them with value, and re-manufactured them into ornamentation infused with their own cultural beliefs and ideas. Negritos had managed to see (see Figure 22) and/or hear about the arrival of a foreign group, ventured to the coast, traded or obtained objects, manipulated the objects, and returned to their original location within a relatively short time span. Broken down, this “little” occurrence alone speaks volumes about the dynamism of foragers short-term. Archaeologically, there may not be evidence of what happened in a daily or weekly time frame, but this one instance is a short-term account that can be used to supplement the archaeological account, allowing archaeologists to access the intangible.

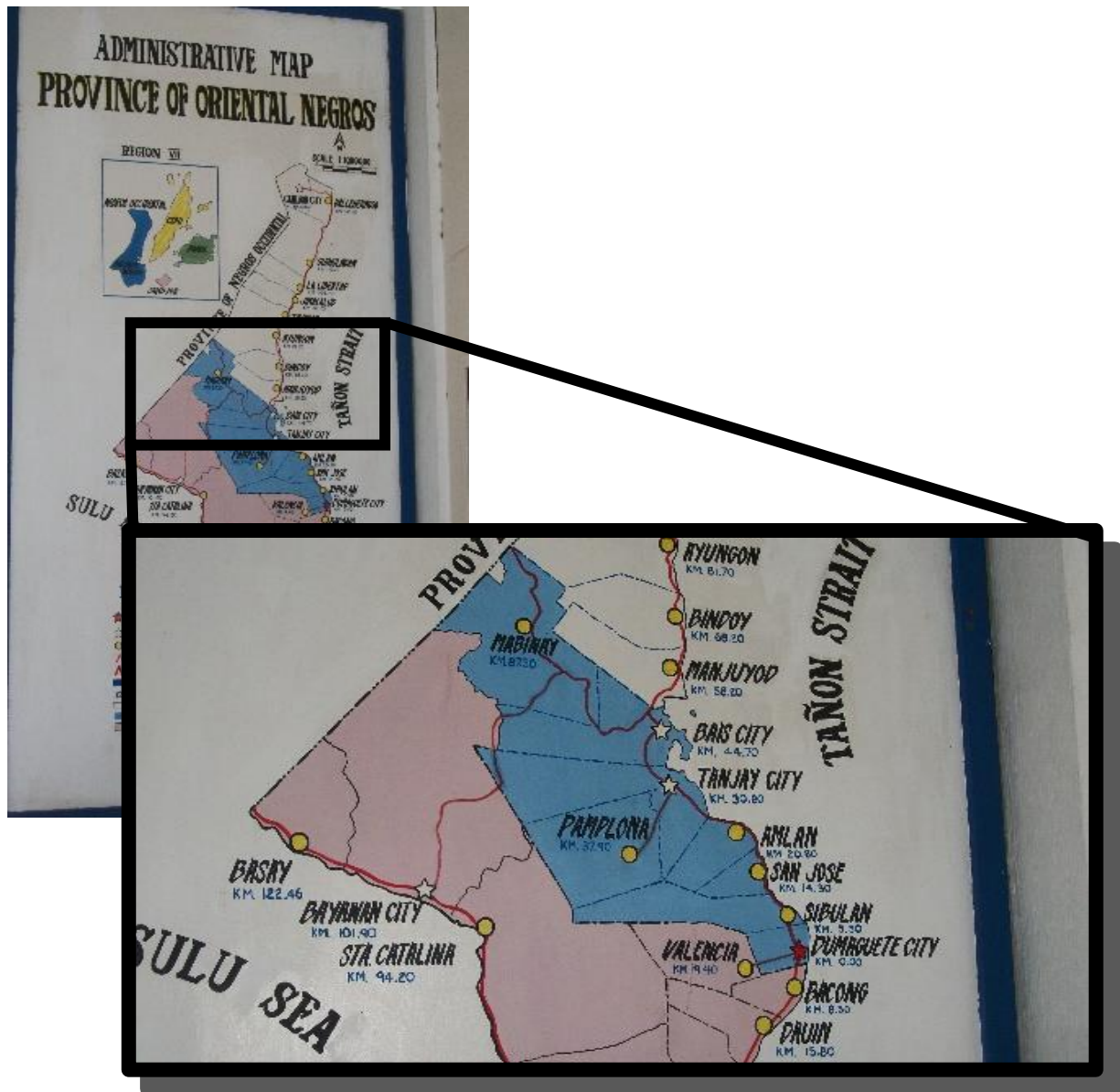


Figure 23. Picture of a Provincial Administrative map of the Island of Negros Oriental with the City of surrounding Provinces and Barangays partitioned out. This city experienced an immense population increase from the 1960's to the 1990s, largely as a result of Negrito populations being placed onto reserved lands as well as lowland Cebuano and Filipinos from other islands being granted land tenure.

Furthermore, this instance allows researchers to reconsider what to look for and where to look for things archaeologically. As it relates to methods and theories about foragers, this account requires archaeologists to re-think the role that individual foragers may have played in forager-farmer-foreigner networks. These accounts illustrate how to investigate indigenous forager cultural resiliency.

Yet another instance deals directly with the conversion of foragers to a more settled farming lifestyle on the island of Negros. Although this account is recent, from about 50 years ago, it provides valuable insight. The government attempted to settle the Negrito population on reserved land in Mabinay. Mabinay is located virtually in the middle of Negros (Figure 23). Although this area was home to some forager bands, their high degree of mobility and use of intra-island networks meant that the area was not consistently occupied. With the combined increase in deforestation and reduction in fauna, occupation of this area by forager bands further dwindled. Even so, there were numerous reports about the Negritos of Mabinay and northern Negros (Cadeliña, 1974, 1980; Cadeliña et al., 1986; Mascuñana, 1997; Oración, 1960, 1963; Rahmann and Maceda, 1955, 1973; 佐竹眞明., 2001). These reports discussed various resilience strategies used by Negritos, ranging from some Negritos refusing to settle, while other Negrito groups retreated further into the interior. Some accepted this new settled way of life and took to farming, as was the case with the current Negrito leader that I was introduced to by Professor Rolando Mascuñana from Silliman University. In addition, while conducting an archaeological survey on the Bais-Mabinay area, I could attest to the accuracy of these reports as of 2010. I bore witness to Negritos groups that had retreated into the interior when I ventured into the interior to visit the barangay captain at the that time. Furthermore, while conducting survey work, I was welcomed to numerous church events and invited to be a part of various congregations that held Negritos and Bukidnon representation from the Mabinay proper and interior areas. Clergymen affirmed these reports and the continued occupation of Negritos throughout the area, in both Mabinay proper and the interior barangays. Many foragers become Christianized, as evidenced by the presence of religious buildings and

the practice of granting last names to Christianized Filipinos, especially Negritos. Ultimately, these historic records and information uncovered while archaeologically studying the area attested to concrete accounts that chronicle what individuals, families, and entire bands and groups either chose or refused to do in response to modernization efforts by the government or any other intrusion. These accounts are significant largely because they are the last accounts of Negrito populations truly foraging in the interior, and many researchers (e.g., Cadeliña, 1973, 1974, 1980; Oración, 1960, 1963; Rahmann and Maceda, 1955, 1973) did a phenomenal job of conducting long-term, detailed, and descriptive anthropological and ethnographic field work over extensive periods of time. Nonetheless, the portrayals of foragers by the government remain riddled with prejudice and biases. Any refusals to governmental proposals by Negritos are rendered as due to ignorance or insolence. Refusal to convert to Christianity labels non-converters as “Impel,” preventing them from possessing a last name and only allowing them to be buried in the traditional Negrito way. For the sake of brevity, the point here is that if one ignores or reduces the prejudices or biases and their resulting actions, the little that remains is demonstrative of indigenous forager cultural resiliency. Regarding prejudice in Negrito burials, I was directed to a Negrito “cemetery” while looking for archaeological sites.

It had no crosses as markers, unlike other burials I saw, instead consisting of holes with rocks encircling the resting place (see Figure 28). I was informed that these were their ancestors who were not baptized, so they were buried the traditional way: in the fetal position placed in a hole circled with rocks. They had first names, but all their “last names” were “Impel,” meaning not Christian. However, this was their choice. They did not want to convert and instead wanted to maintain their traditions. This occurrence happened in 2010. According to the literature on the topic, this modern practice was identical to forager burials conducted in the past. Because the burial sites contrasted significantly with Christianized/baptized graves, these were ideal archaeological phenomena. As it relates to re-examining, and essentially re-interpreting, forager short- and long-term histories, this contrast provided

archaeological insight into how foragers have buried and continue to bury their dead. Through these instances, these foragers spoke from the grave about their indigenous forager cultural resiliency. There was no doubt here that these graves would have resembled burials from a century or even millennia ago.



Figure 24a.

Figure 24b.



Figure 24c.



Figure 24. Examples of grave types found in the interior uplands. 24a) is a picture of a non-Christian Negrito/Ata burial where Negritos are buried in flexed (fetal position) and a circular pit is dug. Rocks and plants encircle the grave/burial. 24b) An example of one type of Christian burials. The left is an example of an individual with lower economic status buried, supine (facing upward), instead of flexed. In addition, the grave is decorated with crosses, along with rocks bordering the edges. 24c) The right is an example of a wealthier, foreign evangelist who had died and was buried in the barangay, evidence by the concrete covering.

Now, I will slightly backtrack and discuss the importance of re-examining another angle concerning forager reactions to modernization. Because there were variations in how individuals, families, bands, and groups reacted to modernization, these variations in strategies should be identified and examined. This dissertation proposes 10 strategies, but a re-interpretation of historic sources in addition to ethnographic interviews with foragers and their descendants may increase the number of strategies further. Again, this dissertation unfolds matrice upon matrice of indigenous forager cultural resiliency. Many of the foragers that remain in Mabinay trace their roots back at least 100 years, and often more, recounting their genealogy bilaterally. Firsthand evidence of this ancestral connection was present when surveying the land for archaeological fieldwork, as permission was necessary to enter, survey, and document sites. This applied throughout all survey work on Negros, whether along the coast, the lowlands, the friction/frontier zones, or the interior. This ability to recount genealogy established the foragers' presence in this area for centuries, connecting them directly with forager populations that have been studied archaeologically. These foragers were the descendants of the ancestors that archaeologists have studied and that interacted with the world prehistorically. Because of this connection, it is reasonable to conclude that many of the strategies that these foragers utilized in response to modernization efforts by the government were also implemented by the foragers' ancestors. As in the present, some foragers chose their own ways to navigate the modernity of their time.

Whichever strategy they chose adds to the stories about the complexity of indigenous forager cultural resiliency. Each happening, whether ecological, social, or political, is yet another instance of indigenous forager cultural resiliency. Where there is archaeological data, anthropological analogies, ethnohistoric accounts, or geography, re-interpretation must occur. Rid the contaminates of prejudices and biases, read between the lines, and magnify the little background noise. By doing this,

archaeologists can effectively re-interpret the indigenous forager cultural resiliency that this dissertation argues for.

This process leads to future research for these proposed re-interpretations of forager histories. Chapter 6 uses GIS to propose possible migratory routes taken by Philippine foragers in the interior of Negros Island. Here, this dissertation argues that the strongest networks, including shadow networks, remain. It is possible that one can identify these long-existing networks, but one may instead find Negrito populations that still truly forage. As mentioned in Chapter 6, I encountered two groups that still looked like “stereotypical Negritos” and who remained isolated. They enforced this isolation by staying within the interior. Informal conversations about the current Mabinay Negrito leader, Rostum, not being the leader for all Negritos in Mabinay, particularly those in the interior, affirmed this isolation strategy. I was informed of this when I sought clearance to conduct survey work in the interior, and it was re-enforced on a trip with the current barangay captain into the interior to his residence. Therefore, it is necessary to access this interior. GIS will affirm if these networks exist and if there are populations or bands of foragers in the interior who still forage or, at the very least, maintain strong traditional cultural beliefs. This seemed impossible in 2010; however, recent research in 2020 in Borneo (Lansing et al., 2022) has provided an effective method to gain access to often impenetrable and dangerous areas. In this article, the researchers suited the indigenous population with GPS units to track their movements in the interior over a period of time. They were able to document the extensive movements of indigenous individuals and used GIS to document these migratory patterns in the interior. This methodology can be applied to the foragers of Negros Island. Using pre-established relationships with Philippine universities, the island’s Indigenous Councils, and a few Negrito populations there, suiting up foragers with GPS devices during the dry season when they are more likely to migrate will be easily attainable. Downloading can be done remotely and GIS maps can be created to provide an illustration of how foragers migrate over the landscape.

Furthermore, ethnographic interviews must be conducted on the current population. Elders would be preferable to interview, as they would have the most in-depth memory culture. This would allow recordings of their ethnographic stories to be documented and provide a visual and oral account that can supplement archaeological or anthropological sources. Use of the GIS data will allow archaeologists and anthropologists to pinpoint exactly where these networks and possible resistant forager populations exist. This will provide the researchers with two crucial resources: (1) an informant who knows the area thoroughly and will allow access to the land and people, and (2) the ability to make point-to-point day trips throughout the area and return safely instead of wading in the dark of the interior. Day trips are possible, as was the case when I ventured with the Mayor of Tanjay to Santa Anna/Nino for a celebration. Any combination of these methods and access points provides an ideal situation to affirm forager systems and obtain more information about the resiliency of those forager systems.

In conclusion, this dissertation provides a thorough rationale for why foragers are still researchable. What is presented here is not a revisionist history but a return to forager studies using fine-grained analyses of the archaeological, ethno-historic, anthropological, and geographical datasets that exist to understand the full breadth of forager resiliency. While this dissertation does not propose a revisionist approach to forager studies, it does possess an underlying criticalness of studying foragers in the past and present. Heuristically, this dissertation urges researchers to revisit forager studies and learn something new for themselves, even though it may appear that this subject has remained stagnant and not forthcoming with any new information. Foragers and forager lifeways have been present in literature about foragers for years, decades, or even a century. Notwithstanding the little that has always been there, archaeologists' epistemology has limited their scope and the angles from which to view these forager histories and in which to analyze them. Most significant to the dissertation, their epistemology has limited how they present indigenous forager cultural resiliency histories. This

dissertation requires researchers to update their epistemology, what we know, and how we know what we know, to a more critical view that gives more credence to what were once considered insignificant “little” forager networks or occurrences. Furthermore, this dissertation requires researchers to view datasets and accounts with a more critical eye that examines the role of foragers emically, turning to the autonomous livelihoods of foragers and asking why they did what they did within their own context. Again, this is not to say that interactions and outside influence were not important or deterministic. This is only to say that within these interactions, each individual has a story to tell. In this case, each band has a story to tell, and gaining access to and presenting that story is the goal of my research.

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