

TAMIL MUNICIPAL MARINE MANAGEMENT PLAN



PHOTO EDITED BY TRCT (MANGROVE ISLAND AT MEERUR TAMIL)

2013

Tamil Resources Conservation Trust

We, the people of Tamil, mindful that our present practices are contributing to the depletion of our natural resources, both in the waters and on the land, have now decided to use the wisdom of our custom and tradition to conserve and manage the natural resources in our municipality in order to be able to provide for ourselves and our families in a sustainable manner and leave behind a healthy natural heritage for our children and future generations.

This report was prepared by the author under contract for The Nature Conservancy under the cooperative agreement award #NA09NOS4190173 from the National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Conservation Program, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of NOAA, the NOAA Coral Reef Conservation Program, or the U.S. Department of Commerce.

ENDORSEMENT

On this day, _____, at **Tamor** in Tamil Municipality, we the Tamil Municipal Chief, Council and the Tamil Resources Conservation Trust endorse this Management Plan, and urge the people of Tamil to make every effort to ensure its effective implementation.

Steven Mar, Chief, Tamil Municipality

Peter Tharngan, President, TRCT

David Bodod, Chairman, Tamil Municipal Council

FOREWORD

It is with great pride that we present to you the Tamil Municipal Marine Management Plan! This document was developed by the Tamil Resources Conservation Trust, a group established by the Tamil Municipal Council in 2012 and composed of members representing each of Tamil's 12 villages. The Trust was tasked to develop strategies and implement actions to ensure the vitality and continued persistence of the natural resources that sustain the livelihoods of our people.

This plan is the result of a genuine consultative process with our communities, our traditional chiefs, and relevant resource agencies. It articulates a shared vision for the future of our resources and ultimately, our community. While this vision has long existed in our minds, the development of this management plan was made possible through the assistance and support of Yap Community Action Program (Yap CAP) and The Nature Conservancy (TNC).

Through this document, we reaffirm our commitment to being conscious stewards of our land and sea, as has been the tradition of our people for centuries. And as we meet new challenges and explore potential solutions of the modern era, we will hold tightly to the proven wisdom and the practical lessons of our ancestors. We aspire to pass on to the next generation a resilient community with the confidence to draw upon the experiences of both traditional and modern management systems and approaches.

We invite you to learn more about this plan and about Tamil, our home. Everyone—whether you are from Tamil, a neighboring municipality, or the other side of the world—can play a part. We encourage you to do whatever you can from wherever you are to support our efforts. And we hope that doing so inspires you like it did us.

---Tamil Resources Conservation Trust



TAMIL RESOURCES CONSERVATION TRUST AND OTHER COMMUNITY MEMBERS. PHOTO BY JAVEZ MOOTEB.

Executive Summary

This document is a result of a year-long process of engaging with the Tamil villages, the Tamil Municipal Council, and relevant technical partners locally and regionally. It is a general management framework intended to guide our efforts to nurture our environment and natural resources. It is a living document that will evolve over time as we learn from our actions and adapt to new situations.

This plan is presented in 4 sections: 1) Introduction, 2) Management approach, 3) Management context and 4) Appendices. The introduction is a brief overview of why the plan was developed and how it may be evaluated and revised in the future. The second section, Management approach, is the bulk of this plan. It states a shared community vision and strategies and actions to be undertaken to realize this vision. It also establishes zones within Tamil waters and describes allowable activities in each zone. The third section, Management context, describes the context physical, social, political, and cultural context of management and provides the rationale for the activities prescribed in this plan. Other relevant information are included as appendices.

Because of the limitations of time and resources, the bulk of this plan and the actions proposed focuses on the marine areas in Tamil. However, the long-term goal is to move towards a more integrated management approach that acknowledges the intimate connections between land and sea, consistent with Yapese traditional management principles.

This plan has been developed in good faith in order to address common issues, maximize resources, and address emerging contemporary threats. It not only acknowledges, but encourages traditional stewardship through customary tenure and traditional use rights and respects the autonomy of each of our villages. This document is not intended to hinder, diminish, or undermine traditional management authority as understood and recognized by the people of Tamil.



TAMIL KIDS PHOTO BY UMIICH SENGEBAU

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1.0 INTRODUCTION

Need for a management plan

In 2012, the Tamil Municipal Council created the Tamil Resources Conservation Trust, a multi-stakeholder team composed of individuals representing each of the 12 villages in the municipality. The Trust was subsequently tasked to develop a plan to address the community's perceived decline of natural resources. With support from the Yap CAP and TNC, TRCT began a planning process that resulted in this document.

This planning process was facilitated by the Yap Community Action Program and The Nature Conservancy. The Conservation Action Planning workshop, facilitated by TNC was held in early 2012 and the need for drafting a management plan for the entire waters of Tamil became apparent.

It was determined that the existing mechanisms available to address the deteriorating marine environment were no longer sufficient, particularly against the contemporary threats of climate change, increasing fishing pressure, and land-based pollution.

Scope of the plan

This plan covers the entire marine area within Tamil. It includes all the waters traditionally understood and currently recognized as belonging to all the respective villages in the municipality. It generally encompasses all areas at or below the high tide mark between Pelak Channel and Waneday Channel (Tamil Harbor)-the main shipping channel into Colonia. The area contains diverse marine habitats including fringing reefs, reef flats, seagrass meadows, blue holes, and the barrier reef.

The long-term goal of the Trust is to have a single plan that integrates the management of the land and adjacent marine areas. However, due to the limitations of time and resources this current plan is primarily focused on the coastal waters. This limited focus does not deter the Trust or the Tamil Council from taking any other management actions on the land concurrently with actions proposed in this plan.

Plan duration

This management plan is designed to be a framework document for the management of marine resources within Tamil Municipality. Although the intent of management and the concepts presented are inherently long-term, this plan shall be effective for a period of 3 years from its adoption.

Annual program evaluation and revision

This Plan is intended to provide a good foundation for the tracking of progress towards stated objectives and should be reviewed and updated at least once a year in an annual review process. Any revision/s to this plan may be done during this annual evaluation process or when deemed necessary by TRCT.

Plan adoption

This plan is considered adopted when it has been approved by the Tamil Resources Conservation Trust and the Tamil Municipal Council through a process deemed appropriate by each of the entities.

2.0 MANAGEMENT APPROACH

A shared vision

We, the people of Tamil, mindful that our present practices are contributing to the depletion of our natural resources, both in the waters and on the land, have now decided to use the wisdom of our custom and tradition to conserve and manage the natural resources in our municipality in order to be able to provide for ourselves and our families in a sustainable manner and leave behind a healthy natural heritage for our children and future generations.

Management themes

The goals and objectives that have been developed in the formulation of this plan including all the activities proposed fall within the following general thematic areas. These general thematic areas are proposed, as a means to more logically present the goals and objectives of this plan, and may in the future evolve into more formal programs within TRCT. These themes are generally consistent with the sub-committees that currently exist within TRCT.

Implement a no-take zone

This thematic area establishes, enforces and manages a marine no-take zone that includes the outer barrier reef between Pelak and Waneday Channels (See Appendix 5). The no-take zone is intended to restrict fishing pressure and provide a core zone, farthest away from land-based sources of pollution, that can potentially re-seed the open access areas.

Strengthen policy and regulatory environment

Many of the threats to the marine environment continue to exist because of the lack of adequate policies/regulations or the insufficient enforcement of those that do exist. This management theme is intended to work towards strengthening the policy and regulatory environment to support more streamlined resource management.

Encourage compliance

This thematic area involves enforcement of not only the no-take zone but also laws and regulations that apply outside this no-take area. Although this is an enforcement strategy, the intent of this management theme, as well as the spirit of this management plan, is more focused on encouraging compliance rather than punishing violators. The goal is that community members as well as visitors understand the need for the established regulations and willingly comply.

Promote traditional stewardship

This management theme is aimed at encouraging traditional stewardship within the community. This is particularly relevant to the existing traditional use zones for each of Tamil's villages. Activities associated with this theme include strengthening traditional management practices and the traditional conservation ethic and actively exploring opportunities to incorporate these principles into modern management.

Create opportunities for public participation

This is an education and outreach management theme but goes beyond merely educating people about the environment and natural resources. It seeks to create opportunities for community members of all ages to

participate in management activities to allow for the exchange of knowledge and skills and fosters community ownership of management.

Invest in building capacity and know-how

This is a capacity-building strategy aimed at building the capacity of individuals, programs and the community to take the necessary management actions prescribed by this plan. This includes indentifying training and capacity needs and then actively seeking resources to meet those needs.

Foster partnerships

TRCT realizes that it will need the assistance of external partners to implement this plan. This strategy is focused on identifying, establishing and developing key partnerships with individuals, agencies and organizations may support the implementation of this plan through technical or financial resources.

Track progress and adapt actions

The final management theme is a program evaluation strategy. This theme is directed at assessing the degree to which management actions are being implemented and whether management is achieving the desired results. This entails developing workplans, tracking progress, capturing lessons and finally adapting actions.

Roles and responsibilities

The implementation of this management plan will require the coordinated efforts of various individuals and entities within Tamil Municipality, as well as institutions and organizations external to the municipality. TRCT has been tasked by Council of Tamil to lead the implementation of this plan. The Trust, as it is now, has organized and formed 4 committees on 1.) Education and outreach, 2.) Finance, 3.) Enforcement, and 4.) Monitoring. The following table generally outlines roles and responsibilities of the various stakeholders directly involved with this plan.

Stakeholder	Role	Responsibilities
Council of Tamil	Stewards of Tamil’s natural resources	To care for and sustainably manage Tamil’s natural resources so that current and future generations have access to these same resources Conduct oversight and enact policies to support the implementation of this plan
Tamil Resources Conservation Trust (or the appropriate sub-	To oversee and provide leadership in the implementation of this plan	Utilize existing or create new subcommittees to implement specific actions within this plan

<p>committee)</p>		<p>Hire and supervise volunteer or paid staff as necessary</p> <p>Review current laws and regulations relevant to the implementation of this plan</p> <p>Advocate for new laws or regulations that facilitates more streamlined natural resource management</p> <p>Initiate annual program evaluation</p> <p>Provide an annual report on the progress of the implementation of this plan to the Council of Tamil</p> <p>Initiate and develop relationships with external (outside of Tamil Municipality) partners and donors</p> <p>Identify and secure funds to implement this plan, as a whole or in parts</p>
<p>Program Coordinator</p>	<p>To oversee day-to-day management activities and to coordinate the activities of the various individuals or entities that are necessary to ensure proper implementation of this plan</p>	<p>Coordinate all activities in the managed area</p> <p>Manage other paid or volunteer staff hired by TRCT</p> <p>Prepare required reports of the site and program</p> <p>Coordinate and implement awareness and education, finance, enforcement and monitoring activities as assigned by TRCT</p> <p>Facilitate annual program review with TRCT and other relevant stakeholders</p>

<p>Other paid or volunteer staff</p>	<p>Perform and report daily management tasks</p>	<p>Undertake and execute site management activities</p> <p>Conduct surveillance and law enforcement activities</p> <p>Conduct monitoring activities with assistance from technical partners</p> <p>Conduct awareness activities</p> <p>Operate and maintain equipment and property (such as boats, engines, radios, buoys, signs, etc.)</p> <p>Provide administrative support (financial reporting, payroll, etc.)</p>
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Management objectives and activities

The following table summarizes the objectives and actions to be undertaken by TRCT. These objectives and activities may align with one or more of the management themes in the previous section. The table is directly taken from the Conservation Action Planning Workshop Report (May 2012). The actions that appear in red are outside the scope of this plan but this does not prevent TRCT or Tamil Municipality from making concurrent efforts to advance these actions.

<p>Objectives & actions</p>
<p>By 2015, reduce overharvesting of important marine food fish species (includes fish, mangrove clams, crabs, etc.)by 30%.</p> <p>Strategic Actions:</p> <ul style="list-style-type: none"> Establish fees and penalties structure. Develop and conduct a community outreach and awareness program. Conduct local, regional, and international outreach and awareness program. Establish a no-take zone (managed area). Develop enforcement program (community-based). Find financial resources to support activities to reach objective.

Objectives & actions

Indicators:

Fee and penalty structure in place, # of awareness activities, enforcement program established, number of citations issued, fees/penalties collected, amount of money raised; demarcation of no-take zone

Objective 2: By 2015 reduce sedimentation levels by 30%.

Strategic Actions:

- Develop a vegetation restoration program and implement with partners.
- Enhance community regulations and revive traditional practices of natural waterway maintenance.
- Develop and implement outreach and awareness program on reducing sedimentation.
- Regulations on wildfire.
- Develop Enforcement Program to implement/enforce sediment reduction activities.
- Find funds for activity implementation and seek partners.

Indicators: Total area vegetated; number and types of regulations enhanced; # of outreach activities; funds secured

By 2015, reduce pollution problem in Tamil by 30%.

Strategic Actions (Trash):

- Develop and implement education and outreach program on solid waste.
- Develop regulations on solid waste (community-based: Tamil).
- Establish Solid Waste Management & Recycling Program at the Municipal level (community based).
- Institute marine and coastal clean-up program.
- Establish Enforcement program.

Indicators: Regulations, Solid waste and recycling program established, # of coastal clean-up activities, # of public awareness activities, # of citations issued, amount of recycled material

Strategic Actions (Sewer and wastewater):

- Work with Yap State Government to improve regular water quality monitoring and testing around the state sewage treatment plant as a basis for future facility improvement
- Establish regulations in Tamil Municipality to address residential septic systems and livestock programs.
- Develop natural filtration program for wastewater.

Objectives & actions
<p style="text-align: center;">Establish Sanitation and Environmental Enforcement Program.</p> <p>Indicators:</p> <p>Strategic Actions: Chemical (oil, detergents, bleach etc.) waste</p> <p style="padding-left: 40px;">Work with Yap State EPA to enforce regulations on chemical waste.</p> <p style="padding-left: 40px;">Establish education and outreach program on chemical waste.</p> <p style="padding-left: 40px;">Establish oil recycling centers and/or integrate into current state recycling program.</p> <p style="padding-left: 40px;">Establish municipal regulations on chemical waste.</p> <p style="padding-left: 40px;">Establish enforcement program</p>

Ecological monitoring

An ecological monitoring plan will have to be developed in the future. The following set of indicators have been identified and may be used as a starting point to begin developing this monitoring plan.

Conservation value	Indicator	Methods
Fish	Abundance, size, species diversity	Visual census
Giant clams	Abundance	Visual census
Lobster	Abundance	Night census, catch per unit effort
Corals	%Cover, diversity	Photo quadrats
Sea cucumber	Abundance	Visual census
Trochus	Abundance	Visual census

Zoning and regulations

The waters of Tamil have been delineated into 3 management zones that are depicted on a map as Appendix 4. These zones are further described in the table below. The no-take zone includes the pre-existing Pelak Channel Conservation Area. These zones may be additionally refined and described when they are demarcated.

Zone	Description	Regulations
No-take/entry by permit zone	Area including back reef and fore reef between Pelak and Wanedey channel (see attached Map)	Entry by permit Non-extractive activities only
Warning zone	Buffer along the lagoon side of the no-take zone (see attached Map)	Open access Non-extractive activities
Traditional use zone	All village waters within Tamil municipality not included in the no-take or warning zone described above	Traditional fishing rights by each of the villages All relevant state and municipal statutes or regulation apply

Tentative budget

The following two tables detail the budget for the implementation of this plan. The operational budget reflects the recurring costs for the management actions prescribed in this plan. The budget for initial program inputs generally includes start-up costs such as capital items and specialized equipment. These estimates are an attempt at arriving at the true cost of management and include costs that may be absorbed by individuals or community groups that may be considered “matching funds” for the purposes of soliciting external financial resources.

Operational Budget

Committee	Category	Amount (USD)	Description	Committee total
Program Administration-- TRCT	Coordinator	12,000.00	salary and benefits	35,075.00
	Annual program review	1,000.00	meetings, etc	
	Office expenses	8,400.00	rent, utilities, office supplies	
	Communications	2,300.00	phone, fax, long distance	
	Equipment maintenance	2,000.00		
	Fuel	1,200.00		
	Meetings	3,600.00		
	Miscellaneous	4,575.00		
Education/Outreach	Signage and brochures	3,000.00		19,400.00
	Community meetings	5,400.00		
	Community activities	6,000.00	coastal cleanup, tree planting, promotional materials etc	
	Supplies	1,500.00		
	Fuel	1,000.00		
	Miscellaneous	2,500.00		
Finance	Fundraising activities	1,000.00		1,725.00
	Meetings	500.00		
	Misc	225.00		
Enforcement	Equipment maintenance	3,000.00		23,000.00
	Supplies	2,000.00		
	Fuel	10,000.00		
	Training	5,000.00		
	Misc	3,000.00		
Monitoring	Supplies	2,000.00		6,900.00
	Training	3,000.00		
	Fuel	1,000.00		
	Misc	900.00		
				86,100.00

Initial program input

Capital Item	Units	Cost	Amount (USD)
Vehicle	1	3,500.00	3,500.00
Desktop	1	1,500.00	1,500.00
Laptop	1	2,000.00	2,000.00
Phone	1	50.00	50.00
Printer/copier/fax/scanner	1	800.00	800.00
Office furniture set	1	2,500.00	2,500.00
Projector and screen set	1	1,000.00	1,000.00
Boat and engine	2	20,000.00	40,000.00
Spot light	2	150.00	300.00
Binocular	2	100.00	200.00
VHF radio set	1	1,500.00	1,500.00
Megaphone	1	100.00	100.00
GPS unit	2	500.00	1,000.00
Demarcation buoys set	1	5,000.00	5,000.00
Floating outposts	2	1,500.00	3,000.00
Safety equipment set (life vest, flares, etc)	1	1,000.00	1,000.00
Underwater camera	1	1,000.00	1,000.00
		Total	64,450.00

3.0 MANAGEMENT CONTEXT

Location and governance

Yap is one of the four states in the Federated States of Micronesia (FSM) located in the Western Carolines island group. Within this federation, Yap is a constitutional democracy with the independence to set its own policy directions.

Respect for traditional tradition is explicit in the state constitution and recognizes the Council of Pilung and the Council Tamol as the fourth branch of government. This recognition of traditional authority is imbedded into state statutes and the structures of government. Local governments headed by a municipal council of chiefs deal with the daily operations of a collection of small villages.

Tamil is one of the municipalities on the island of Yap. It consists of twelve distinctive villages: Meerur, Teb, Aff, Bugol, Doomchuy, Dechmur, Dilag (uninhabited), Maa, Thol, Madlay, Gargey, and Daboch. It occupies the southern portion of Gagil-Tamil Island (See Appendix 2), except for Gargey village, which is located west-side of Tagreng Bridge. Tamil is located on the northeastern part of the Yap Islands and positioned between the municipalities of Fanif, Maap and Gagil. The management authority lies with the Tamil Municipal Council.

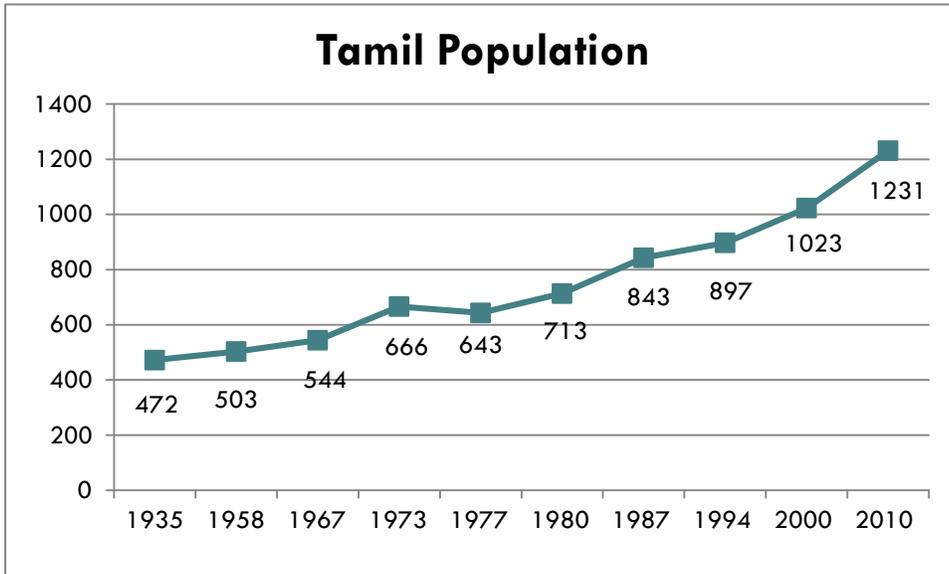
People, culture and environment

Yap is one of the few places in Micronesia where traditional marine stewardship still has the potential to support resource management. But this respect for traditional stewardship and traditional culture is weakening as Yap progressively enters the cash economy.

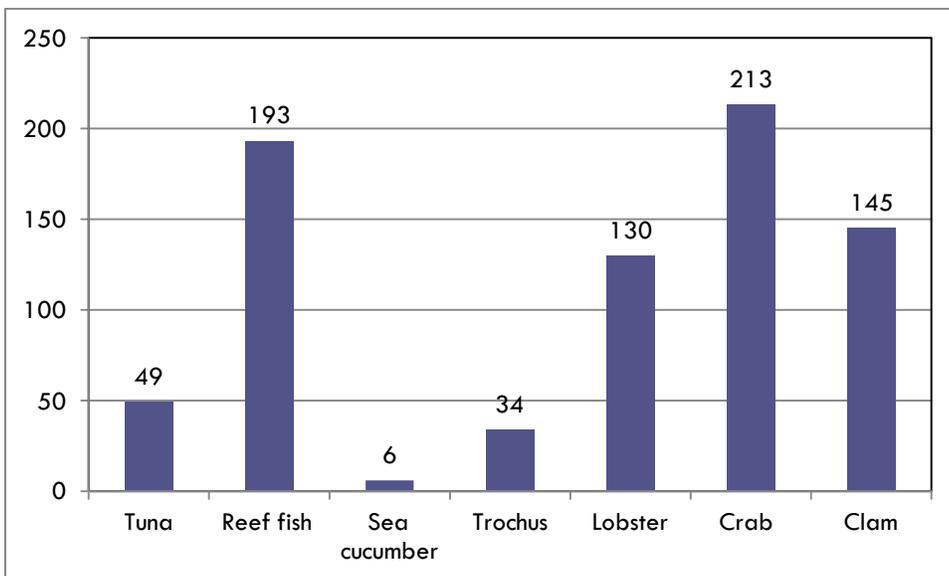
Yapese traditional resources management is an extension of a complex hierarchical system of villages and families. This traditional culture tends to devolve authority away from a “single chief” model to a decentralized system of multiple and specialized leadership roles. A particular chief, not necessarily the highest ranking, has the stewardship responsibilities of the ocean and another has responsibilities on land. Natural resources management decisions were usually made by consensus and the unifying goal was to ensure sufficient food and other resources for the community.

Decision-making by consensus and the specialized authority patterns on land and sea that limited who could harvest and how, ensured that resources met community needs and obligations. Increasingly, this traditional management system is becoming insufficient to regulate poaching (in violation of customary fishing rights), over-fishing (perhaps most attributed to improved fishing technologies), pollution, and the effects of global climate change.

Most Yapese live in their home villages located outside of Colonia. Villages retain many features that have remained for centuries, such as stone pathways and clan platforms. The following graphs are adapted from the 2010 to Yap census. The first graph shows the population growth in Tamil since the 1930s to 2010. The second bar graph shows that number of households in Tamil who participate in the harvest of various marine resources. These show that as the slow erosion of the traditional system of management continues, Tamil's growing population is still very much dependent on marine resources. There is a growing need to revive the conservation ethic within this new management context.



Of Household Dependent on Various Marine Life



Conservation values and status

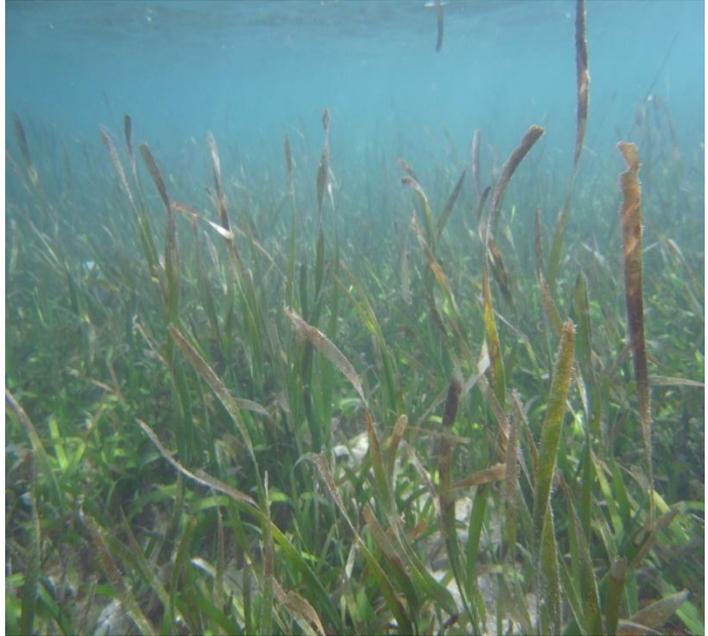
This section is not intended to be an inventory of all the resources and species found within Tamil Municipality. It merely enumerates the marine resources that the Tamil people value and identified during the CAP workshop. The perceived conditions of these conservation values are included in a table in this section.

Clams

Clams were once abundant in the marine area of Tamil according the local fishermen. Clams are considered a local delicacy and source of protein. Today, the population has dwindled to almost non-existent. Overharvesting of these important food resources have led to significant decline in the population.

Coral Reefs

This target includes the coral animal as well as the associated reef habitat. Coral reef is an important habitat for fish and invertebrates. TRCT has proposed a reef area adjacent to all villages in Tamil as a no take zone in hope of increasing fish abundance. The same reef area has zone as a managed area for sustainable subsistence harvesting. Commercial fishing is also banned on this managed area.



Food Fish

This target includes all the fish species that are caught for subsistence and for commercial purpose. These include species such as: Ngol (*Carnaxmelampygus*), Gadgad (*Lethrinusobsoletus*), Sabakuw (*Epinephelusmerra*), Gadaw (*Parupeneusheptacanthus*), Numem (*Cheilinusundulatus*), Galunglung (*Scarusrubroviolaceus*), Nguywe'e (*Hiposcaruslongiceps*), Gumiy (*Kyphosusbigibbus*), Buywod (*Siganusargenteus*), Lab (*Plectrorhincuslineatus*).

Lobster

This target is also an important food source for the local population. It is considered a local delicacy. It is believed that overharvesting for both commercial and subsistence purposes has contributed to the significant decline in the population. Fishermen are claiming to finding fewer and smaller lobster in the marine area of Tamil.

Mangrove Ecosystem

Mangroves are trees and shrubs that grow in saline coastal habitats in the tropics and subtropics. These groups of trees and shrubs form the mangrove ecosystem, which provides nursery and habitat for fish, mangrove crabs, and birds. Mangrove also protects coastline from erosion and big waves. Tamil has an extensive mangrove area bordering the whole marine area. This target also includes the nested targets of mangrove crabs and clams. Mangroves as a habitat is still relatively healthy; however, the food species such as the mangrove crabs and clams have been overly harvested through the years.

Seagrass Ecosystem

Seagrass is an important plant in the marine environment. It helps traps sediment. It provides a critical habitat for fish as well as nursery area for juvenile reef fish. Sea cucumber which is an important fishery resource is usually found in large abundance in seagrass bed. Besides providing a home to a diversity of marine organisms, seagrass is also a source of food for fish and turtles. This target also includes the nested targets of sea urchins and sea cucumbers. The population of these marine organisms and the seagrass as a whole system is still relatively healthy in Tamil.

Trochus

This target is regulated under state law. Trochus is an important commercial commodity that brings revenues for the state as well as incomes for the local residents. In Tamil, the fishermen feel the population is somewhat healthy (fair). The regulation on trochus closure may have halted the steep decline of the trochus population.

Turtles

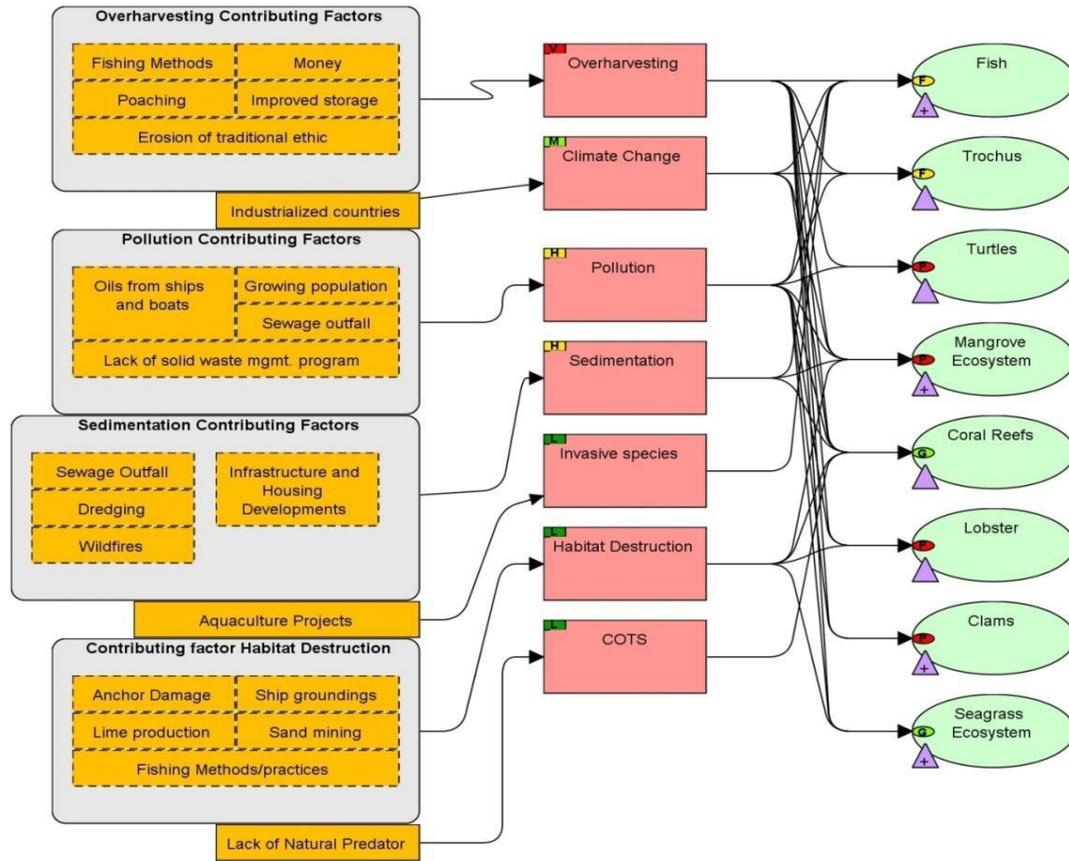
Turtles are globally recognized as endangered species. Like many places in Micronesia, turtles are being overharvested. Furthermore, community members are not seeing the larger turtles (hawksbill and green) that they used to see; they are now only seeing smaller turtles of less than 100 lbs.

Item	Viability Mode	Status
 Tomil Marine CAP		Fair
 Clams	 Simple	Poor
 Coral Reefs	 Simple	Good
 Fish	 Simple	Fair
 Lobster	 Simple	Poor
 Mangrove Ecosystem	 Simple	Poor
 Seagrass Ecosystem	 Simple	Good
 Trochus	 Simple	Fair
 Turtles	 Simple	Poor

Critical threats

The following conceptual model illustrates the multiple threats acting on the conservation values identified in the previous section. Each of these threats are further described below. Also included in this section is a threat rating table that reflects the extent to which each threat is impacting the conservation values or targets.

Threats \ Targets	Turtles	Mangrove Ecosystem	Fish	Trochus	Clams	Seagrass Ecosystem	Coral Reefs	Lobster	Summary Threat Rating
 Overharvesting	Very High	High	Very High	High	High	Low	Low	High	Very High
 Sedimentation		High	High				Medium		High
 Pollution	Low	High	Medium	Low	Medium	Medium	Medium	Medium	High
 Climate Change		Medium	Medium	Medium			Medium		Medium
 COTS							Low		Low
 Habitat Destruction		Low				Low	Low	Low	Low
 Invasive species			Low						Low
Summary Target Ratings:	High	High	High	Medium	Medium	Low	Medium	Medium	High



Overharvesting. Community’s perception of overharvesting have been validated through market surveys that fisheries resources are declining and that there is a shift in fish catch from larger to smaller. Yap used to have traditionally strong restrictions on fishing activity, however, with introduction of modern cultures it seems like there is no regards to traditional fishing grounds. Overharvesting affects all eight targets with varying degrees; for instance, it is very high threat for fish and turtles and low coral reefs.

Sedimentation. Lack of proper land use practices has lead to increased soil erosion resulting in increasing levels of sedimentation in near-shore marine environments. Infrastructure developments, such as roads and public facilities, are believed to be the biggest contributor of sedimentation to the reefs.

Pollution. Lack of environmental awareness and impact of both solid waste and chemical pollution often lead people to indiscriminately dispose of their trash or unwanted oil. In addition to lack of awareness, lack of proper disposal sites often lead to increased problem of trash and chemical pollution. Sewage outfall from the commercial center is also believed to contribute significant pollution.

Climate Change. Sea level rise and sea warming associated with climate change are also believed to be contributing to the degradation of important habitats such as the mangroves and coral reefs. Mangroves are particularly vulnerable to sea level rise as they need to move inward with the rising seas. Sea warming is causing massive coral bleaching that could threaten the marine life depended on coral reefs.

Management challenges and strengths

The following SWOT analysis was done by the Tamil community during the CAP workshop. This table will continue to be useful as strategies and actions are implemented and evaluated.

<u>Strength</u>	<u>Weakness</u>
United community High ranking municipality Well-connected people in community Manpower/big population Local resources Traditional knowledge Black magic Strong Leadership/council support Strong commitment Structured community/council Human resources Strongest traditional and culture Large land & marine areas Strong private sector	Lack of funding Equipment Technical knowledge Community ignorance Community motivation, continued Awareness Information Capacity Commitment Unbalanced Society (shift of leadership)
<u>Opportunities</u>	<u>Threats</u>
Grants (tnc, mct, yap cap,outsidengo, msgp, epa, state gov, marine resources, ...) Partnership (existing mpas, state gov, tnc, mct, fsmgov, sprep, mc, com) Donors (local businesses, tnc, mct,) Technical assistance (yap cap, tnc, state gov, picrc, pacific marine resource institute, com,) Revenues (fundraising, tourism, donations, tax, penalties/fines,) Educ opportunities (state scholarships) Trainers and outside trainings (monitoring, enforcement,)	Information dissemination Poachers Shipwreck Oil spills from commercial Lack of support (gov, ngos, other communities) Lack of financial resources (Outside development (etg, gppc) Climate change Black magic Contradicting traditional practices, eg customary fishing rights Natural disaster Infrastructure development Destructive fishing methods Pollution from sewer

4.0 APPENDICES

Appendix 1 Tamil Resources Conservation Trust Members

Name	Village	Committee/Title
Steven Mar	Teb	Chief, Tamil Municipal/ TRCT Member
Alexsius Giltamngin	Meerur	Chairman, Tamil Council/TRCT Board of Trustees Member
David Bodod	Teb	Tamil Council Member/TRCT Member
Gabriel Garmanang	Doomchuy	Tamil Council Member/TRCT Member
Augustine Giltamag	Madlay	Tamil Council Member/TRCT Member
Jesse Faimau	Maa	Tamil Council Member/ TRCT Advisory and Resource Member
Lawrence Yug	Dechmur	Tamil Council Member/TRCT Member
Stan Filefney	Aff	Tamil Council Member/TRCT Member
Vitt Foneg	Bugol	Tamil Council Member/ Chairman, Education & Outreach Committee
Peter Ruwechugrad	Bugol	Tamil Council Member/TRCT Member
Pius Liyagel	Gargey	Tamil Council Member/TRCT Member
John Mootmag	Bugol	TRCT Advisors and Resources Member
John Mooteb	Teb	TRCT Advisors and Resources Member
Tom Fetan	Teb	TRCT Advisors and Resources Member
Vanessa Fread	Woroo (Rull)	TRCT Advisors and Resources Member
Javez Mooteb	Teb	TRCT Advisors and Resources Member
Cyprian Manmaw	Teb	TRCT Advisors and Resources Member
Peter Tharngan	Teb	President, TRCT Board of Trustees
Cyril Pong Chugrad	Bugol	Vice-President, TRCT Board of Trustees
Paul Achdad	Gargey	Secretary, TRCT Board of Trustees
Sean Gaarad	Maa	Treasurer, TRCT Board of Trustees
John Datmag	Meerur	TRCT Board of Trustees Member
Jesse Sugoy	Dabach	TRCT Board of Trustees Member
Paul Yarmad	Doomchuy	TRCT Board of Trustees Member
Henry Giltamag	Madlay	TRCT Board of Trustees Member
Aloyius Lubumow	Aff	TRCT Board of Trustees Member
Raymond Pitmag	Dechmur	TRCT Board of Trustees Member
Nicholas Gamagag	Thol	TRCT Board of Trustees Member
John Gilmatam	Meerur	Chairman, TRCT Finance Committee Member
Sebastian Taman	Maa	Vice-Chairman, TRCT Finance Committee Member
Abel Tamagpong	Teb	Secretary, TRCT Finance Committee Member
Tony Giltamag	Gargey	TRCT Finance Committee Member
Joachim Filethin	Teb	TRCT Finance Committee Member
Lawrence Pong	Bugol	TRCT Finance Committee Member
Raymond Pitmag	Bugol	TRCT Finance Committee Member
Burton Ruekugbung	Thol	TRCT Finance Committee Member
David Yow	Meerur	Vice-Chairman, TRCT Education & Outreach Committee
Julie Giley	Dechmur	Secretary, TRCT Education & Outreach Committee

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Barbara Tineg	Aff	Secretary, TRCT Education & Outreach Committee
Tommy Tamangmed	Gargey	TRCT Education & Outreach Committee
John Tamugyed	Gargey	TRCT Education & Outreach Committee
William Magmay	Dechmur	TRCT Education & Outreach Committee
John Gaanug	Dabach	TRCT Education & Outreach Committee
Ambrose Fanagyiluy	Dabach	TRCT Education & Outreach Committee
Terrence Falan	Maa	TRCT Education & Outreach Committee
Edmund Wogthuth	Teb	TRCT Education & Outreach Committee
Moses Namneg	Meerur	TRCT Education & Outreach Committee
John Gimén	Meerur	TRCT Education & Outreach Committee
Andrew Growel	Meerur	TRCT Education & Outreach Committee
John Yinug	Aff	TRCT Education & Outreach Committee
Boniface Wari	Aff	TRCT Education & Outreach Committee
Daniel Baweg	Bugol	TRCT Education & Outreach Committee
John Chugen	Bugol	TRCT Education & Outreach Committee
Samuel Gaangred	Dechmur	TRCT Education & Outreach Committee
Louis Samar	Dechmur	TRCT Education & Outreach Committee
Wayne Mafoth	Maa	TRCT Education & Outreach Committee
Fabian Thinnifel	Maa	TRCT Education & Outreach Committee
Carmen Gurungin	Bugol	TRCT Education & Outreach Committee
Virginia Pitneg	Aff	TRCT Education & Outreach Committee
Helen Gag	Maa	TRCT Education & Outreach Committee
Helen Tineg	Teb	TRCT Education & Outreach Committee
Sherlyne Fidingamang	Teb	TRCT Education & Outreach Committee
John Pong	Gargey	TRCT Education & Outreach Committee
Vinetius Meeyog	Bugol	Chairman, TRCT Monitoring Committee
Sylvester Ruethin	Teb	Vice-Chairman, TRCT Monitoring Committee
Jeff Kengin	Meerur	Secretary, TRCT Monitoring Committee
James Tharngan	Meerur	TRCT Monitoring Committee Member
Andrew Bolbuw	Dabach	TRCT Monitoring Committee Member
Francis Gilpagal	Teb	TRCT Monitoring Committee Member
Felix Figir	Teb	TRCT Monitoring Committee Member
Sebastian Giltamngin	Meerur	TRCT Monitoring Committee Member
Bart Gimén	Meerur	TRCT Monitoring Committee Member
Joseph Fal	Aff	TRCT Monitoring Committee Member
Gregory Choo	Bugol	TRCT Monitoring Committee Member
Sylvester Ngalen	Dechmur	TRCT Monitoring Committee Member
Christopher Yug	Maa	TRCT Monitoring Committee Member
Petrus Rigyey	Maa	TRCT Monitoring Committee Member
Ambrose Fanagwaath	Maa	TRCT Monitoring Committee Member
James Falruw	Thol	TRCT Monitoring Committee Member
James Lubwag	Thol	TRCT Monitoring Committee Member
Joseph Defngin	Meerur	Chairman, TRCT Enforcement Committee
John Chininug	Maa	Vice-Chairman, TRCT Enforcement Committee
Jeffery Marbey	Teb	TRCT Enforcement Committee Member

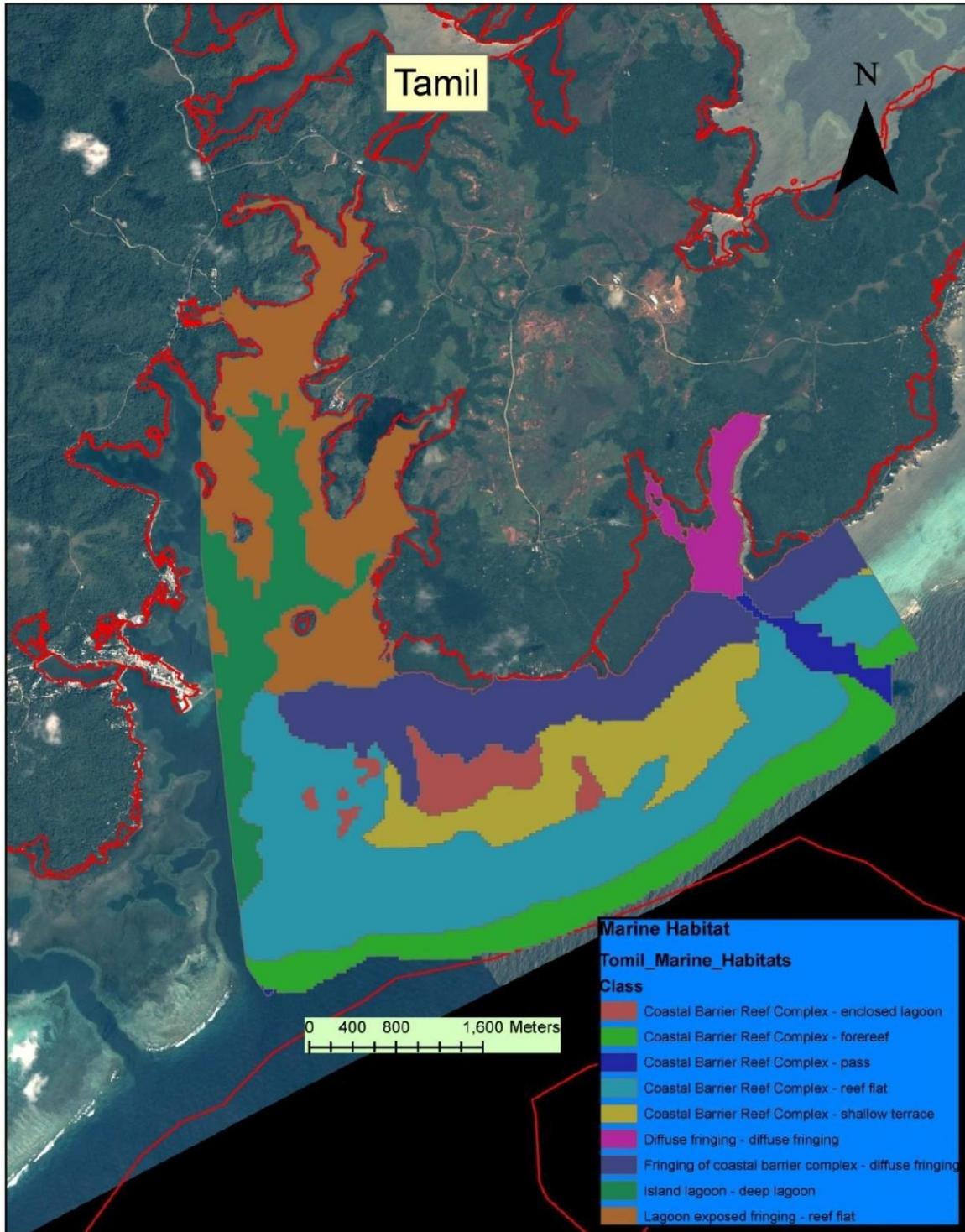
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Damian Kogol	Gargey	TRCT Enforcement Committee Member
Arron Garafel	Madlay	TRCT Enforcement Committee Member
Michael Falbitir	Doomchuy	TRCT Enforcement Committee Member
Marscellus Wag	Teb	TRCT Enforcement Committee Member
Ignatius Urun	Meerur	TRCT Enforcement Committee Member
Patrick Pitmag	Aff	TRCT Enforcement Committee Member
George Goofgir	Bugol	TRCT Enforcement Committee Member
John Ranglely	Bugol	TRCT Enforcement Committee Member
John Tamanged	Dechmur	TRCT Enforcement Committee Member
Stan Garachbar	Maa	TRCT Enforcement Committee Member
Robert Gufithmaw	Maa	TRCT Enforcement Committee Member
Amelio Kamel	Maa	TRCT Enforcement Committee Member
Pius Lubumad	Madlay	TRCT Enforcement Committee Member
Valentine Mouthog	Thol	TRCT Enforcement Committee Member
Jay Goomtin	Thol	TRCT Enforcement Committee Member
Gabriel Gibiy	Dechmur	TRCT Member
Rudolph Ruethin	Teb	TRCT Member
Rasakrishan Manikam	Meerur	TRCT Member
John Kadanged	Maa	TRCT Member
Paul Tithin	Meerur	TRCT Member
Hilario Waathmad	Meerur	TRCT Member
Margie Falanruw	Ngolog (Rull)	Resource Member
Helen B. Tinan	Nimar (Weloy)	Yap State Government Dpt. Of R&D rep.
Anyone and everyone who lives in Tamil is a member of TRCT		

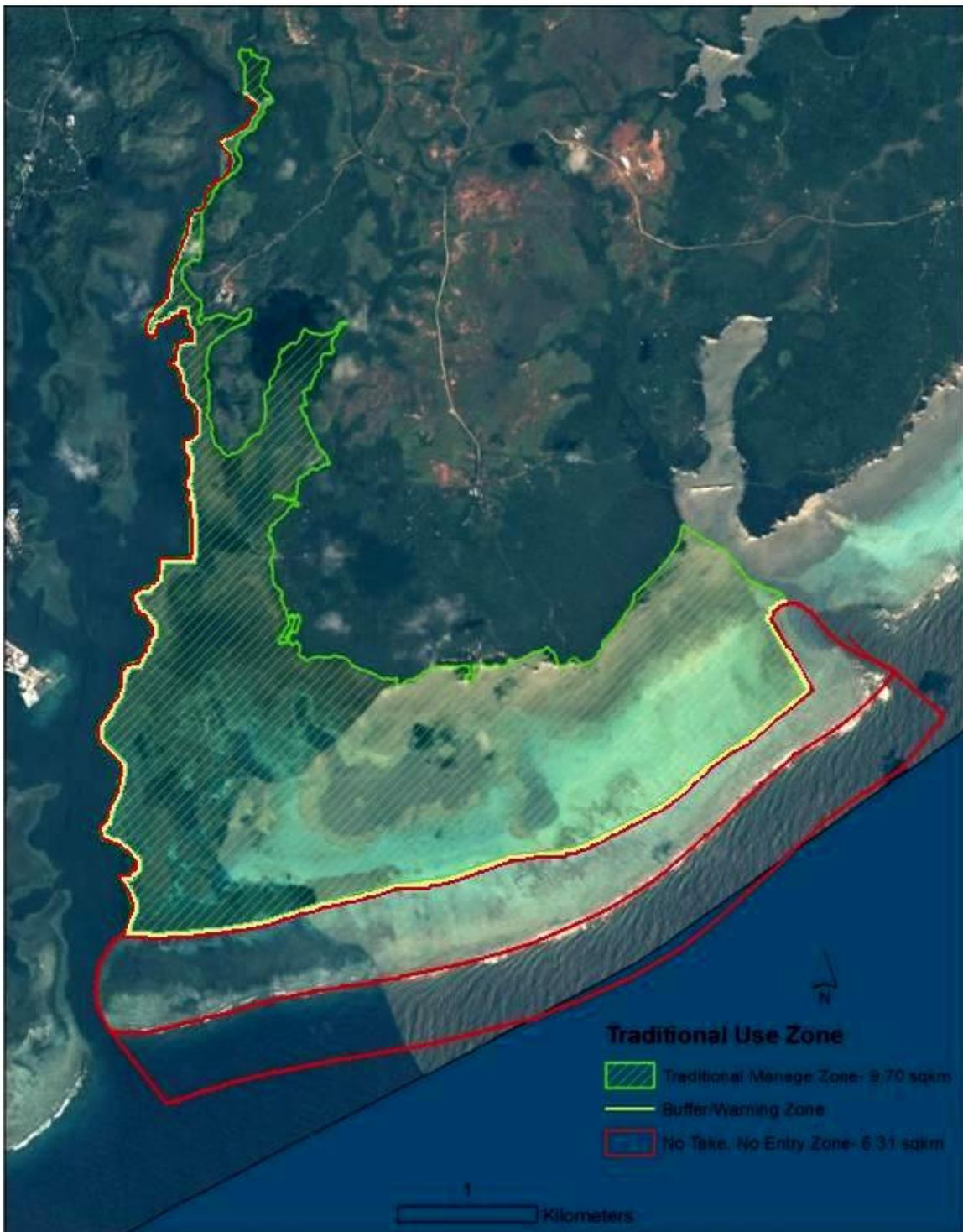
Appendix 2 General location of Tamil Municipality



Appendix 3 Habitat map of the managed area



Appendix 4 Marine Use & Zoning Map



Appendix 5 Zoning Map

