Fifth National Report to the Convention on Biological Diversity

The Federated States of Micronesia 2014

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Resilient nations.

This report was prepared by the Micronesia Conservation Trust in collaboration with the Federated States of Micronesia Resources and Development Department with the generous financial assistance of the Global Environment Facility.

Table of Contents

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Executive Summary

The Federated States of Micronesia (FSM) is pleased to present this 5th National Report to the Convention on Biological Diversity (CBD). Our country is comprised of four States, Yap, Chuuk, Pohnpei, and Kosrae, and contains 607 islands stretching across almost 3 million square kilometers of the Pacific. There are five primary governing structures within the FSM, the National government and the four State governments. Responsibilities for managing natural resources and the environment are shared between private resource owners, the States, and the National level. As such, this report reflects progress towards National biodiversity objectives as well as objectives set in each of the four States.

The report was prepared through a collaborative process. The primary method of data collection to inform the report was a series of five two-day stakeholder workshops held in each of the four States of FSM, and one at the National level. These workshops were augmented with individual meetings. Over a three month period the report team met with over 100 biodiversity conservation stakeholders including representatives from about 70 National and State government resource management agencies, local non-governmental organizations (NGOs), members of communities, traditional leaders, educational institutions, the private sector, and regional and international conservation organizations. Please see Appendix I for information about the dates of the workshops, the agenda, and the list of stakeholders involved.

During these consultations the report team gathered information to provide answers to the twelve questions in the CBD's suggested outline for the 5th National Report. This methodology is intended to provide the CBD with information from the perspective of those undertaking biodiversity conservation work at the site, community, municipal, State, National, regional, and international levels. The content of the report reflects the meeting notes of these workshops and individual interviews, and is supported where appropriate with citations of relevant research and other documents.

The report is structured in three parts. Part I provides an update to the status of biodiversity in the FSM, including emerging trends affecting biodiversity and the implications of these trends and changes on human wellbeing. Part II identifies the

country's biodiversity objectives, discusses the implementation of the National Biodiversity Strategic Action Plan (BSAP) and each of the four State BSAPs, and analyzes progress towards mainstreaming biodiversity. Finally, Part III links in the Aichi Targets and the Millennium Development Goals by assessing the FSM's progress towards, and contribution to, achieving these international objectives. The report concludes with a section on lessons learned. Below is a brief summary of key information in each part.

Part I – Update on biodiversity status, trends, and implications for human wellbeing

Many of the FSM's approximately 100,000 people depend on the country's ecosystems for their livelihoods, both for subsistence and as sources of income. **In terms of ecosystem services, FSM's watersheds, fisheries, and agroforests provide the population with food, raw materials, water, and medicines.** In addition to regulating and provisioning services, FSM's **ecosystem is a key component to the country's cultures and economy**.

As evidenced by biological monitoring carried out since the last report and stakeholder observations, the trends affecting the status of biodiversity described in detail in the 2010 4th National Report remain the main trends in the country. In order to avoid repetition between the reports, this section includes a discussion of trends identified as having an accelerating impact on biodiversity within the country: **climate change; shifts in food consumption patterns; declines in some marine species; and increasing community engagement in conservation initiatives.**

The report describes six main threats to biodiversity in the FSM: **Overexploitation of biological resources; habitat loss and degradation; climate change; pollution; spread of alien invasive species; and infrastructure development.** One key finding for this section is the nuanced and varied impact that population shifts are having on the country's biodiversity. The FSM's overall population is shrinking, declining by about 4% between 2000 and 2010. At the same time, outer islanders are moving to high islands in response to climate change and to seek education and economic opportunities. While residents of high islands are increasingly moving inward as a result of coastal erosion and shifting weather patterns. These movements are contributing to habitat fragmentation and degradation. At the same time, the outmigration is leaving many previously managed agroforest areas fallow, allowing in many cases for invasive species to flourish.

The final section in Part I explores the impact on ecosystem services of the six main threats. The FSM is a small developing country whose residents remain largely dependent on these ecosystem services for income and subsistence. The changes in biodiversity are negatively affecting: **Food security, watersheds, health, and have cultural implications.**

Part II – Biodiversity strategic action plans, their implementation, and the mainstreaming of biodiversity.

While established over a decade ago, the **National and State BSAPs remain an important source of biodiversity-specific objectives for the FSM**. BSAP objectives are

reflected in multiple plans in place and/or development across the States and Nationally, including but not limited to Strategic Development Plans, the FSM State-wide Assessment and Resource Strategy (SWARS), waste management strategies, invasive species eradication and control action plans and task forces, and government performance-based workplans. The country has also made additional regional commitments to conserving biodiversity. **Through the Micronesia Challenge the country is working to conserve 30% of near-shore marine and 20% of terrestrial areas.**

In 2014 the FSM initiated the process to update the National BSAP and State BSAPs to more fully align with the CBD Strategic Plan for Biodiversity 2011 – 2020 (SPB) and the related Aichi Targets. During the workshops to prepare this report, the stakeholders and report team reviewed the BSAPs and other subsequent objectives. **Appendix IV** describes the findings and details initial suggested revisions. Overall, going through each piece of the BSAPs showed that many of the objectives set over a decade ago remain relevant. **Many are supported by iterative actions such as monitoring and community engagement.** Therefore the FSM has begun to focus on sustainable financing and financial mechanisms to perpetuate essential conservation activities. **Other objectives support long-term goals.** The work required to fully achieve an objective can and is taking more than a decade to accomplish.

This report next describes progress towards implementing activities under each of the 11 National BSAP themes. Highlights include: the advancement of the regional **Micronesia Challenge**, which is promoting the consolidation of protected area networks in the FSM, advancing sustainable financing, and creating performance measurement tools; the **passage of shark protection legislation in each of the four States** within the FSM; and **the establishment of the Yela conservation easement**. Obstacles to implementation are also described, including **not enough capacity and resources and gaps in data for decision-making.** Capacity constraints and absorption capacity were cited as the key obstacle to implementation. Insufficient human capacity (not enough personnel and/or personnel with the right skill sets) to plan, implement, manage, and evaluate conservation programming continues to hinder full, effective and efficient achievement of biodiversity objectives at the National, State, municipal, and community levels.

This 5th National Report also provides analysis of mainstreaming at the National and each State level. Overall, **there has been substantial and continuing progress to mainstream biodiversity across the FSM.** Since the introduction of the BSAPs in the early 2000's States and the National governments have included biodiversity considerations into other sector strategic plans, are weaving in biodiversity considerations into public awareness and education programs, and government and NGO actors are increasingly involving communities, traditional leaders, and the private sector in the conservation programming. However stakeholders throughout the country indicated that **additional work is needed to consolidate these mainstreaming gains, particularly the inclusion of sustained funding for biodiversity conservation/management into government budgets.**

Lastly this section evaluates how fully the National and State BSAPs have been implemented. While some objectives and activities include measurable outcomes, the National or State governments have not yet developed a specific set of indicators to measure progress towards achieving the objectives of the BSAPs. Therefore the analysis in this section reflects the collaborative discussions of each activity during the stakeholder workshops. Participants evaluated if actions proscribed in the National and State BSAPs are still in the initial planning phases and/or implementation stages, or if significant progress is being made. This analysis shows that the majority of activities **are in the ongoing implementation stage for 8 of the 11 themes.** The remaining three themes, **Species Management, Genetic Resource Use, and Ecologically Sustainable Industry Development**, represent areas in which implementation is lagging.

Part III – Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant Targets of the Millennium Development Goals.

During each of the five stakeholder workshops held in preparation for this report the groups assessed how on going work relates to the five SPB goals and each Aichi Target. All States and the National government reported activities in progress that support each of the targets. However, in the five stakeholder consultations the teams did uncover room for improvements under three target areas, **Aichi Target 3[1], 10[2], and 12[3]**. This section of the report analyses the issues surrounding these three target areas, and summarizes progress to date for all 20 of the Aichi Targets using a 'stoplight' assessment method.

Part III also connects Millennium Development Goal 7: *Ensure Environmental Sustainability* with the FSM's the progress towards the sustainable use of biological resources. Specifically this section analyzes FSM's progress against targets 7.1: *Integrate the principals of sustainable development into country policies and programmes and reverse the loss of environmental resources*; and 7.2: *Reduce biodiversity loss, achieving by 2010 a significant reduction in the rate of loss.* The report concludes with a section on lessons learned implementing biodiversity conservation and management programming, including the importance of: **partnering, developing alternative livelihoods, securing sustainable financing, building political commitment, and being flexible to deal with emerging issues,** to name a few**.**

[1] Aichi Target 3: *By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.*

[2] Aichi Target 10: *By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning*.

[3] Aichi Target 12: *By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained*.

A view of mangroves in Kosrae.

Part I – Update on biodiversity status, trends, threats and implications for human wellbeing

Q1: Why is biodiversity important for the Federated States of Micronesia?

The Federated States of Micronesia (FSM) is comprised of four States; Yap, Chuuk, Pohnpei, and Kosrae. The country contains 607 islands, of which over 70 are inhabited, and stretches across almost 3 million square kilometers of the Pacific. The total landmass of the FSM is only 4,840 square km, but within that relatively small space are 12 terrestrial biomes including: atoll forest, littoral beach strand, mangrove forest, swamp forest, freshwater marsh, riparian forest, freshwater rivers and streams, grassland, secondary (agro) forest, primary forest, rain forest, and crest (dwarf or montane cloud) forest. The country's marine biomes include: mangrove forest, estuaries, sea grass beds, lagoons, coral reefs, and open ocean. The biodiversity contained within these biomes is characterized by a high rate of endemism and a profusion of species. For example the country is home to more than 1,200 species of ferns and flowering plants, more than half of which are native species. More than 1,000 species of fish and more than 350 types of coral inhabit the country's coastal and marine areas. The FSM is also widely known as a critical corridor for commercially important migratory fish stocks, including the skipjack, yellowfin, and bigeye tunas.

The majority of the islands in the FSM are small coral or coralline islands. These islands serve as critical nesting and spawning sites for species, including: pelagic and reef fish, seabirds, turtles, sharks, rays, and clams. Within the FSM are also 'high' volcanic islands, notably the islands of Pohnpei, Kosrae, and inner lagoon islands within Chuuk such as Weno and Fefan, and the main island of Yap, (Wa'ab). The FSM consists of two ecoregions. The Yap tropical dry forest ecoregion is characterized by a monsoon-like climate with rainy seasons followed by periods of drought. The other three States share the Carolines tropical moist forest ecoregion characterized by heavy rainfall. Please see the 4th National Report to the CBD, particularly Chapter 1, for comprehensive information about the FSM's biodiversity within each of these biomes (Wortel, 2010).

Q1.a Ecosystem Services

Many of the FSM's approximately 100,000 people depend on the country's ecosystems for their livelihoods, both for subsistence and as sources of income. In terms of ecosystem services, FSM's watersheds, fisheries, and agroforests provide the population with food, raw materials, water, and medicines. Freshwater lens and watersheds are critical to the livelihoods of people living on the country's islands. Many communities practice agroforestry, a farming system characterized by multi-storied crop production. It is widely estimated that these agroforests take up about 35% of the country's landmass and include root crops such as taro and yam, as well as food trees such as banana, coconut, and breadfruit – there are over 133 cultivar names for breadfruit in Pohnpei alone (Wortel, 2010). Local food markets are developing across the FSM, providing inhabitants with income generating opportunities.

Fisheries and marine invertebrates provide a principal source of protein and income for FSM inhabitants. Subsistence and small-scale commercial fishing of reef fish and marine invertebrates is widespread throughout the country (Houk, Rhodes, Cuetos-Bueno, Lindfield, Fread, & McIlwain, 2012). However, as is described in detail below, overharvesting of reef fish and invertebrates is a critical challenge. Beyond the reefs, the

sales of international fishing licenses for pelagic fish represent a significant source of revenue for the National government. For fiscal year 2013 the country collected over $30 million in fishing access fees for tuna and other pelagic fish in the country's exclusive economic zone.

Reef fish on the way to a market in Chuuk. Photo © Javier Cuetos-Bueno

In addition to these provisioning services, the islands' ecosystems also provide protection against storm surges, typhoons, and other natural disasters and contribute to climate mitigating erosion and buffering wind and waves during storms. FSM's ecosystems are also a key component to the cultures within the country. For more than 2,000 years inhabitants in the region have lived off the reefs and lands. These environments have shaped island lifestyles, creating strong cultural identities and attachments to the environment that persists today.

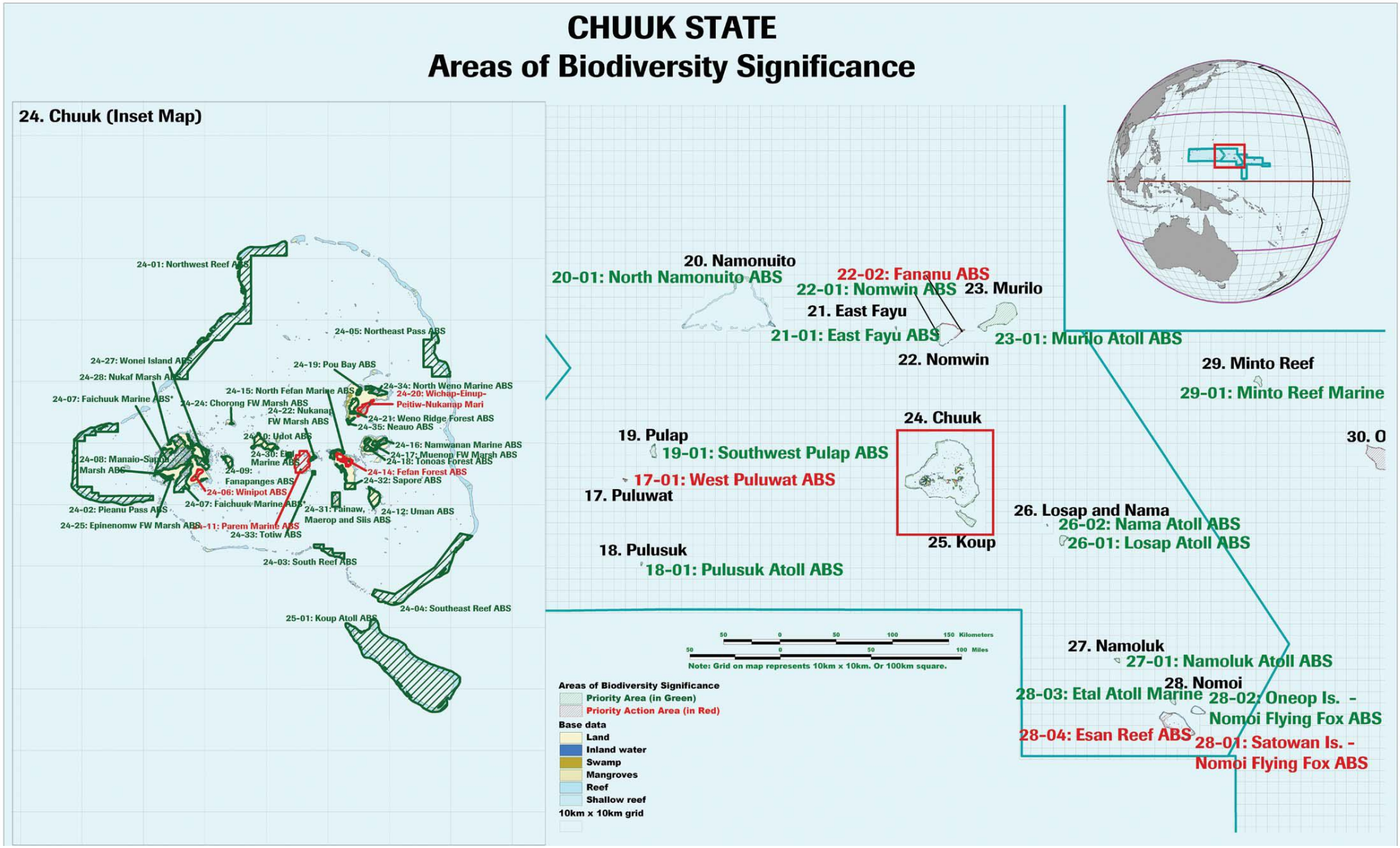
In sum, given the geographic and economic realities of the FSM, the country's biodiversity and ecosystem services are an immediate and critical component of inhabitants' socio-economic wellbeing and socio-economic development. Given its importance, biodiversity management and conservation as a theme runs throughout the FSM's National Strategic Development Plan is a key part of the FSM's contribution to reaching the Millennium Development Goals.

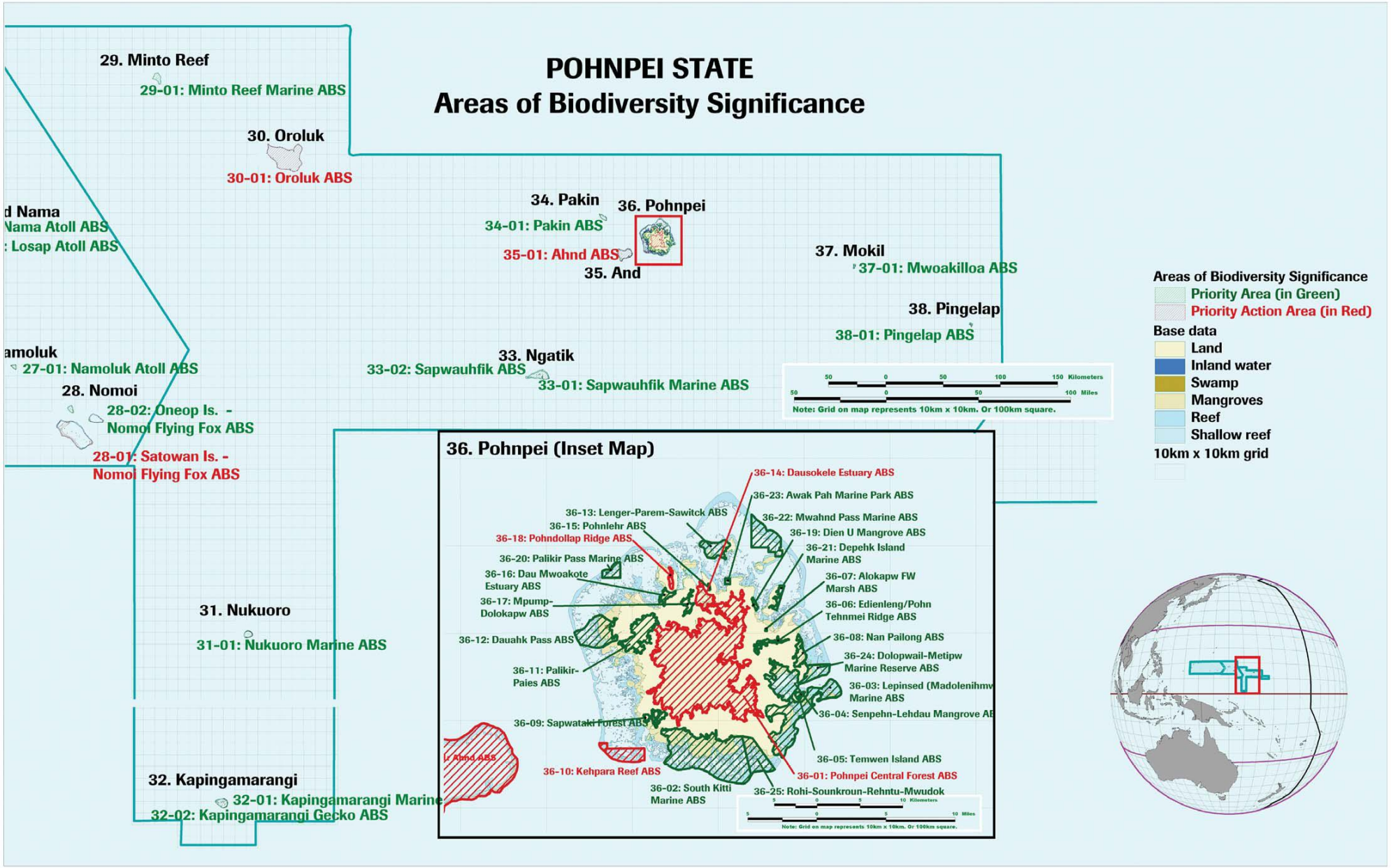
Q1.b Exceptional Ecosystems in the FSM

Published in the early 2000's, *A Blueprint for Conserving the Biodiversity of the Federated States of Micronesia* (Blueprint) remains a seminal work underpinning biodiversity conservation efforts within each of the four FSM States. The Blueprint was the result of a multi-year initiative by the National and State governments of the FSM, The Nature Conservancy, and supported by the United States Forest Service, United Nations Development Programme, the Global Environment Facility, and the United States Department of the Interior. The Blueprint was designed to focus the conservation work outlined in the FSM's National BSAP.

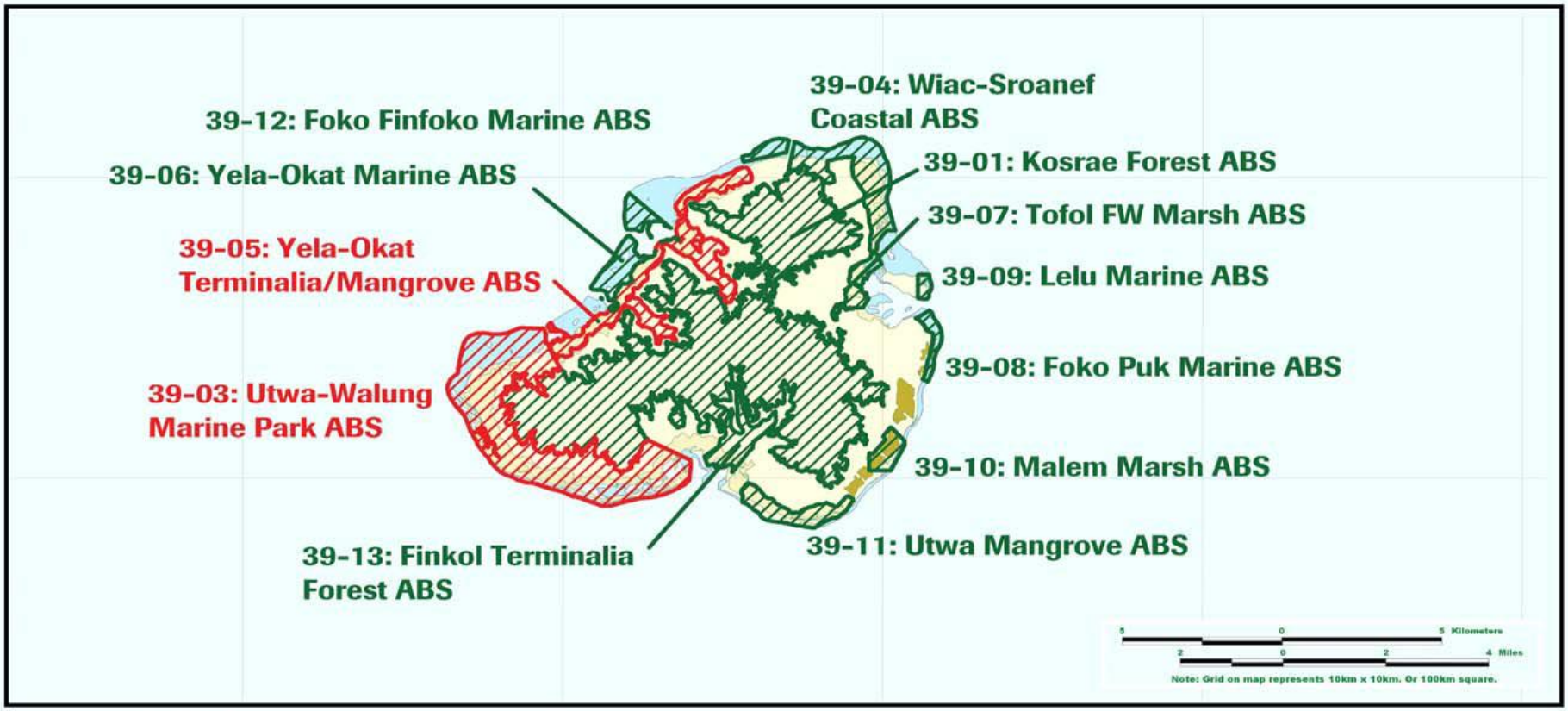
The Blueprint team collected biological knowledge from regional scientists and local experts and mapped focus areas for biodiversity protection. The Blueprint identified 130 Areas of Biological Significance (ABS) sites, 24 of which were designated priority action areas. Sites that were designated ABS house complex constellations of species and habitats. They were also intended to encompass as much of an ecosystem as possible and link together terrestrial and marine ecological systems. As a result, the Blueprint maps the exceptional biodiversity and ecosystems in the FSM, and these maps are included below for reference (A Blueprint for Conserving the Biodiversity of the Federated States of Micronesia, 2002). In the decade since the Blueprint, many of the sites identified in each of the four States are now protected areas.

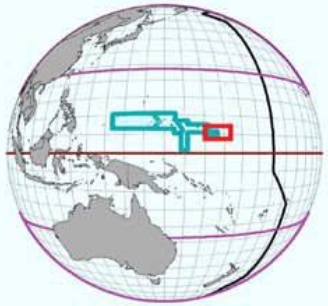
ABS Maps of Chuuk, Pohnpei, Kosrae and Yap (A Blueprint for Conserving the Biodiversity of the Federated States of Micronesia, 2002. P. 48 -54)




POHNPEI STATE
Areas of Biodiversity Significance
29. Minto Reef
29-01: Minto Reef Marine ABS
30. Oroluk
30-01: Oroluk ABS
d Nama
Nama Atoll ABS
: Losap Atoll ABS
34. Pakin
34-01: Pakin ABS
36. Pohnpei
35-01: Ahnd ABS
35. And
37. Mokil
37-01: Mwoakilloa ABS
38. Pingelap
38-01: Pingelap ABS
amoluk
27-01: Namoluk Atoll ABS
33. Ngatik
33-02: Sapwauhfik ABS
33-01: Sapwauhfik Marine ABS
28. Nomoi
28-02: Oneop Is. - Nomoi Flying Fox ABS
28-01: Satowan Is. - Nomoi Flying Fox ABS
31. Nukuoro
31-01: Nukuoro Marine ABS
32. Kapingamarangi
32-01: Kapingamarangi Marine
32-02: Kapingamarangi Gecko ABS
Note: Grid on map represents 10km x 10km. Or 100km square.
36. Pohnpei (Inset Map)
36-14: Dausokele Estuary ABS
36-23: Awak Pah Marine Park ABS
36-13: Lenger-Parem-Sawitck ABS
36-22: Mwahnd Pass Marine ABS
36-15: Pohnlehr ABS
36-19: Dien U Mangrove ABS
36-18: Pohndollap Ridge ABS
36-21: Depehk Island Marine ABS
36-20: Palikir Pass Marine ABS
36-16: Dau Mwoakote Estuary ABS
36-07: Alokapw FW Marsh ABS
36-17: Mpump-Dolokapw ABS
36-06: Edienleng/Pohn Tehnmei Ridge ABS
36-12: Dauahk Pass ABS
36-08: Nan Pailong ABS
36-24: Dolopwail-Metipw Marine Reserve ABS
36-11: Palikir-Paies ABS
36-03: Lepinsed (Madolenihmw Marine ABS
36-09: Sapwataki Forest ABS
36-04: Senpehn-Lehdau Mangrove AB
Ahnd ABS
36-05: Temwen Island ABS
36-10: Kehpara Reef ABS
36-01: Pohnpei Central Forest ABS
36-02: South Kitti Marine ABS
36-25: Rohi-Sounkroun-Rehntu-Mwudok
Note: Grid on map represents 10km x 10km. Or 100km square.
Areas of Biodiversity Significance
Priority Area (in Green)
Priority Action Area (in Red)
Base data
Land
Inland water
Swamp
Mangroves
Reef
Shallow reef
10km x 10km grid

KOSRAE STATE
Areas of Biodiversity Significance



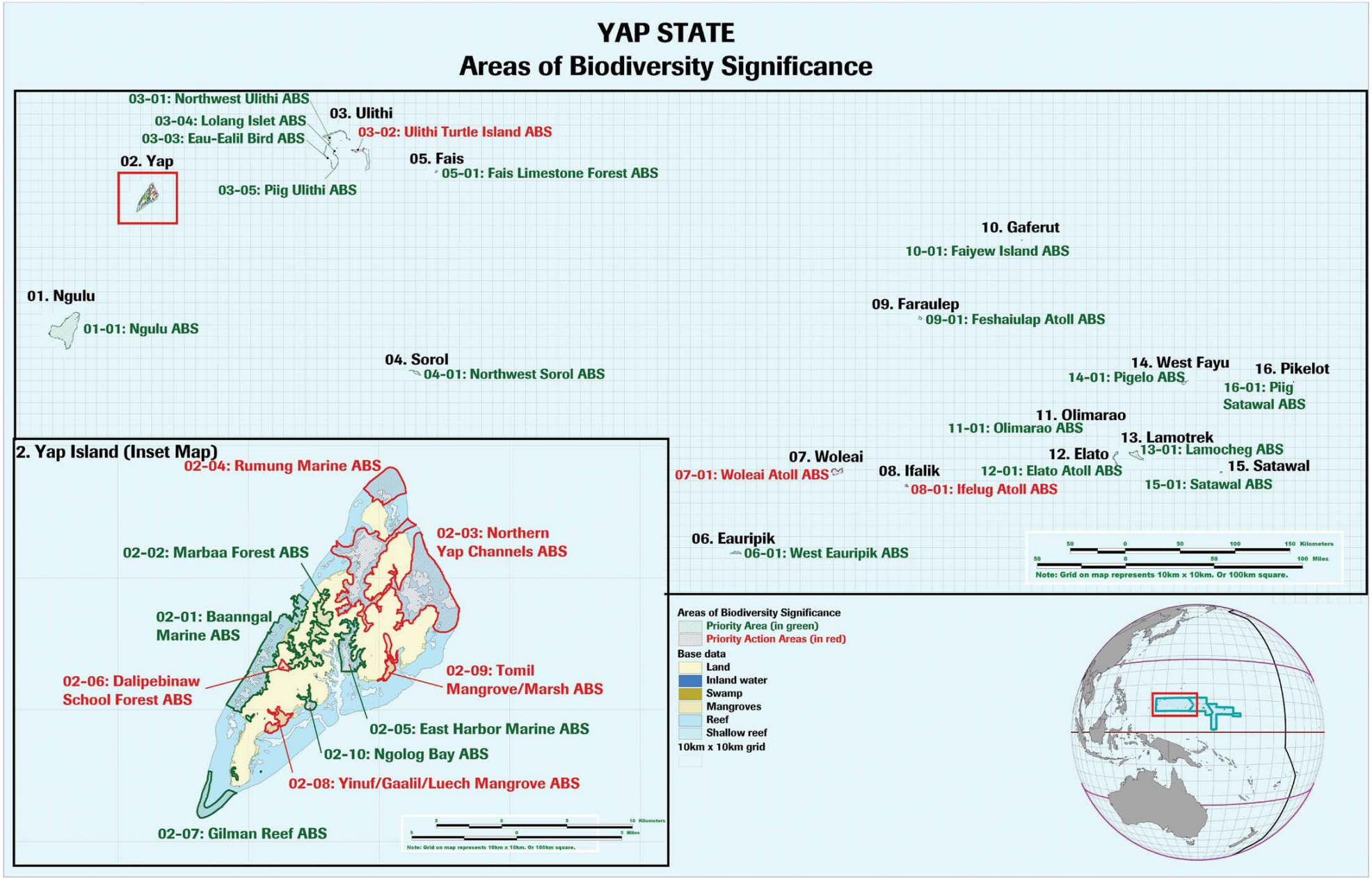


Areas of Biodiversity Significance
- Priority Area (in green)
- Priority Action Area (in red)

Base data
- Land
- Inland water
- Swamp
- Mangroves

- Reef
- Shallow reef

10km x 10km grid


YAP STATE
Areas of Biodiversity Significance
03-01: Northwest Ulithi ABS
03-04: Lolang Islet ABS
03-03: Eau-Ealil Bird ABS
03. Ulithi
03-02: Ulithi Turtle Island ABS
02. Yap
05. Fais
05-01: Fais Limestone Forest ABS
03-05: Piig Ulithi ABS
10. Gaferut
10-01: Faiyew Island ABS
01. Ngulu
01-01: Ngulu ABS
09. Faraulep
09-01: Feshaiulap Atoll ABS
04. Sorol
04-01: Northwest Sorol ABS
14. West Fayu
14-01: Pigelo ABS
16. Pikelot
16-01: Piig Satawal ABS
11. Olimarao
11-01: Olimarao ABS
13. Lamotrek
13-01: Lamocheg ABS
12. Elato
12-01: Elato Atoll ABS
15. Satawal
15-01: Satawal ABS
07. Woleai
07-01: Woleai Atoll ABS
08. Ifalik
08-01: Ifelug Atoll ABS
06. Eauripik
06-01: West Eauripik ABS
50 0 50 100 150 Kilometers
50 0 50 100 Miles
Note: Grid on map represents 10km x 10km. Or 100km square.
2. Yap Island (Inset Map)
02-04: Rumung Marine ABS
02-03: Northern Yap Channels ABS
02-02: Marbaa Forest ABS
02-01: Baanngal Marine ABS
02-09: Tomil Mangrove/Marsh ABS
02-06: Dalipebinaw School Forest ABS
02-05: East Harbor Marine ABS
02-10: Ngolog Bay ABS
02-08: Yinuf/Gaalil/Luech Mangrove ABS
02-07: Gilman Reef ABS
5 0 5 10 Kilometers
5 0 5 Miles
Note: Grid on map represents 10km x 10km. Or 100km square.
Areas of Biodiversity Significance
Priority Area (in green)
Priority Action Areas (in red)
Base data
Land
Inland water
Swamp
Mangroves
Reef
Shallow reef
10km x 10km grid

Q2: What major changes have taken place in the status and trends of biodiversity?

The issues and trends that are described in detail in the 4th National Report remain the key factors affecting biodiversity in the country. To avoid repetition between the reports this section includes a discussion of trends that are having an accelerating impact on biodiversity within the country, namely: climate change, increasing community engagement in conservation initiatives, shifts in food consumption patterns which is having both positive and negative affects on biodiversity, and declines in some marine species. Please see Chapter 1 of the 4th National Report (Wortel, 2010) for information about the changing status and trends of biodiversity within each of the country's biomes.

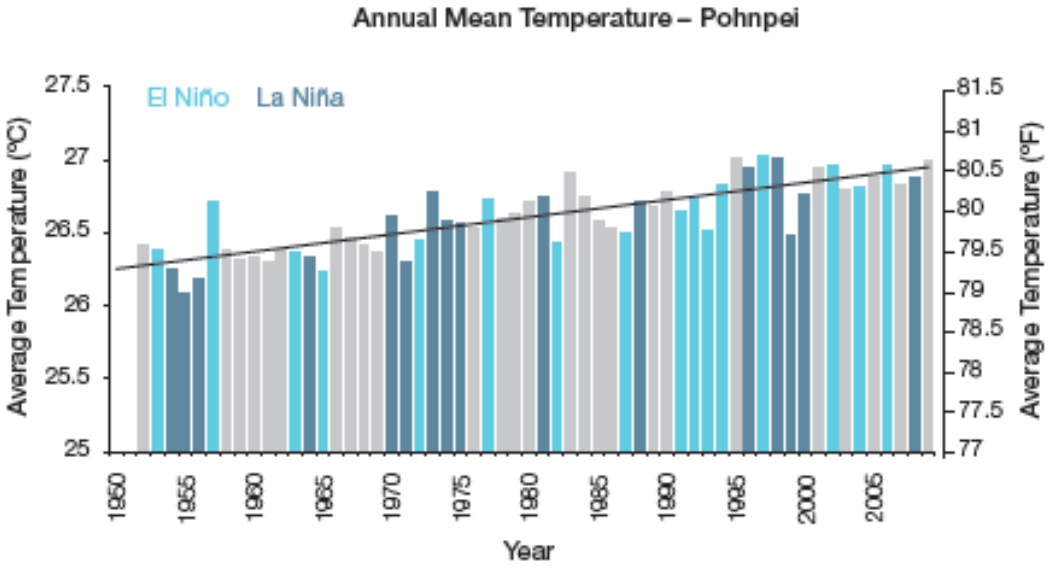
Climate Change: There is growing research about the relationship between climate change – sea level rise, changing weather patterns affecting soil and agriculture, ocean acidification, and increasing water temperature – and biodiversity in the FSM. Healthy and well-functioning ecosystems can be crucial to climate change mitigation and adaptation strategies. As described in the FSM's Second National Communication to the United Nations Framework Convention on Climate Change, the climate-change risks facing the country are increasingly documented through extensive vulnerability and adaptation assessments (Federated States of Micronesia, 2012).

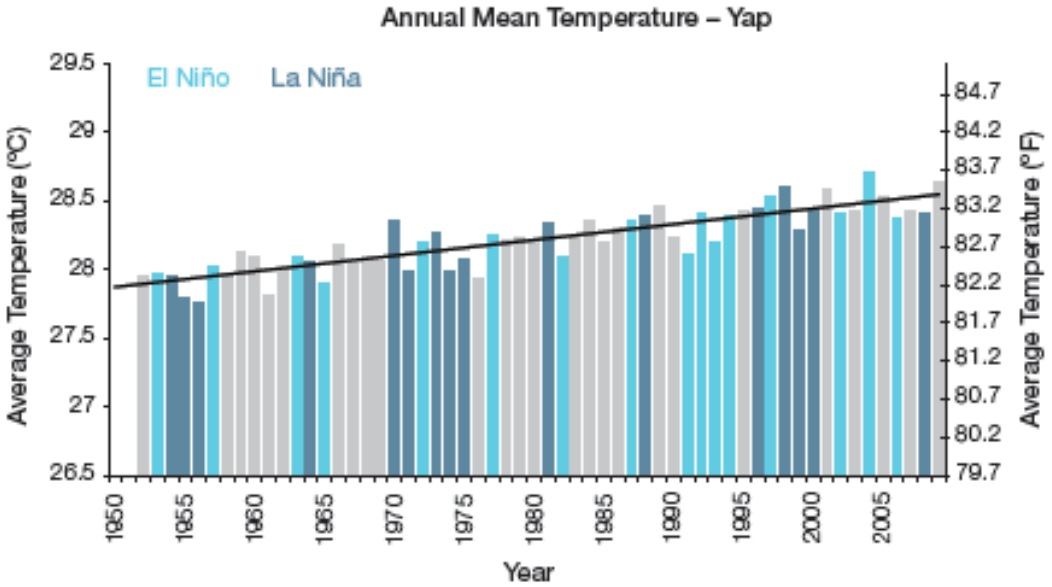
Climate change mitigation and adaptation strategies to address these threats are incorporated into the country's Nationwide Climate Change Policy, the National Energy Policy and State Action Plans, and the National Action Plan to Combat Land Degradation to name a few. While there are some scientific data-gaps that make it difficult to assess the exact effects of climate change, such as information on soil and agroforestry geospatial layers, wave and sea-level monitoring, and lagoon circulation patterns throughout the FSM, climate change is already impacting the country's agriculture, fisheries, forestry and degrading land (Hay, 2013). Below are examples of some of the impact of climate change since the 4th National Report.

In Kosrae stakeholders reported a coral bleaching event in the fall of 2013. This event mainly affected Acropora corals in areas off of the Tafunsak and Utwe municipalities, and followed a month of abnormally calm seas and high temperatures. In Pohnpei stakeholders reported that changing weather patterns are affecting the soil and reducing crop yields. Changing soil conditions may also be behind recent outbreaks of fungus affecting more than 100 varieties of yams in Pohnpei and sakau plants in Pohnpei and Kosrae. In each State, stakeholders reported that changing weather patterns have already resulted in different harvesting patterns than previously known. For example species of breadfruit are ripening at different times during the year, which is impacting traditional and cultural practices that revolve around harvest seasons. These observations are in line with scientific findings about changes in soil and weather patterns (Federated States of Micronesia, 2012).

In Yap, longer than usual periods of drought followed by heavier than normal rains are also increasing sedimentation and erosion throughout the State. Heavier than normal rains can swell watersheds, contributing to excess nutrient runoff that can affect sea grass beds, which are another critical spawning sites for many species (Houk, Golbuu, Gorong,

Gorong, & Fillmed, 2013). There is evidence that temperatures are also increasing. The below charts show a steady increase in annual mean air temperatures between 1950 and 2010 in Pohnpei and Yap. These charts originally appeared in the FSM's Second National Communication to the United Nations Framework Convention on Climate Change and are based on information from the Australian Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation (Federated States of Micronesia, 2012, p. 23)





Sea level rise and shifting weather patterns are affecting food and water security. Freshwater lenses on outer islands are increasingly vulnerable to salt water intrusion from storms and sea level rise. The effects of king tides are particularly evident in the country's outer islands leading to salt-water inundation in taro patches (Fletcher, 2010).

In response, the FSM National government has identified food security as a top priority (Federated States of Micronesia, 2012). On high-islands as well as low-lying ones sea level rise is also a contributing factor to coastal erosion impacting a wide range of species habitats. Coastal erosion increases sedimentation in near-shore areas, degrading the health coral reefs, which in FSM provide a home to more than 1,000 species of fish and 350 species of coral. Disruptions to the coastline also affect mangrove stands degrading that habitat and increasing fragmentation. This is increasingly leaving some shorelines more vulnerable to storm surges (Ramsay, Webb, Abraham, Jackson, & Charley, 2014). Below is a case study that takes a deeper look at mangroves.

Case Study: Mangroves

Mangroves provide numerous essential ecosystem services. They mitigate the impact of climate change by anchoring coastlines, acting as coastal buffers of winds and storms, and filter runoff and sedimentation. Mangroves also provide habitats to other species including numerous types of crabs and fish, and are a natural resource used to heat and build homes.

However Mangrove areas are changing throughout the FSM. In Yap the species composition of mangrove areas is altering and some mangroves stands are growing inland into taro patches. Mangroves are on the move in Kosrae as well. Stakeholders there reported mangrove intrusions out into seagrass beds, in some places by up to 5 meters. Mangrove clearing is also a continuing problem. Stakeholders in all four States pointed out how increases in demand for building materials, firewood, and homesteads are resulting in mangrove overharvesting.

A mangrove tree in Weno, Chuuk.

Regulating the harvesting of mangroves in Yap and Chuuk is difficult, as the majority of mangrove stands in the State are privately owned. While the States in Pohnpei and Kosrae manage mangroves, actors in these areas reported limited capacity to monitor and enforce mangrove protections.

Declines in mangroves have a significant impact on ecosystem services and human wellbeing. Losses of mangroves are disrupting key spawning aggregation sites contributing to fisheries declines. Without healthy mangrove stands, communities within the FSM are more vulnerable during storms and tidal surges and without sufficient mangrove stands to filter sedimentation runoff from upland areas is disrupting reef ecosystems. As sea levels rise, some communities built along the coasts are being threatened by shoreline erosion, exacerbated by mangrove losses. To help safeguard mangroves resource management agencies, NGOs, and community groups are raising awareness about the essential services they provide through public information campaigns, like the 'Select and Protect Our Mangrove' Pride Campaign in Tafunsak, Kosrae. To directly address declines in mangroves, community teams across the country are replanting mangroves in the high islands and atolls. Conservation actors are also setting up mangrove protected areas throughout the country.

Food: Changing food consumption patterns are impacting the country's biodiversity. Over the past half-century, as the FSM became more connected to global trade routes and the world economy, residents began relying more and more on imported food. However, in the past decade this pattern has started to shift back to producing and consuming more local food from the country's agroforests and marine area. Some of the key factors behind this shift are the increasing costs of imported food, the development of local markets for domestically produced food, and growing health concerns - particularly non-communicable diseases. This trend is having both positive and negative consequences for biodiversity.

An array of local foods for sale at a street stall in Pohnpei, one of many cropping up all over the country

On the positive side, renewed attention to agriculture is helping preserve the region's genetic agrobiodiversity. Programs throughout the country are giving farmers wider access to different varieties of food crops. For example, the Island Food Community of Pohnpei is making plantings freely available of many of the State's over 50 types of bananas. To give another example, in outer islands numerous National and State

programs are providing salt-water tolerant varieties of taro and other species of food crops, also helping address food insecurity issues. On the other hand, agroforestry expansions in some areas are increasing encroachment into native upland forests disrupting localized endemic species habitats. This is increasing habitat fragmentation and facilitating the introduction of damaging invasive species. The increasing cost of imported foods is also driving increased demand for reef fish and other marine resources that are already being overharvested. The below case study in Yap illustrates this trend.

Case Study: Shifting Food Consumption Patterns in Yap

In the past decade the availability of imported food in Yap has increased – but at the same time prices have risen. In addition, exports of banana, papaya, and betel nut from the State have fallen due to more rigorous quarantine restrictions into Guam and persistent issues with airfreight shipments. The shrunken export market means more locally produced food is for sale within the State and the increase in the price for imported food is creating more market demand.

As more and more local food markets crop up in Yap, attitudes in the State towards buying local food are changing. People are increasingly recognizing that by buying local they are supporting neighboring communities, and the stigma attached to buying local food instead of growing and harvesting food in a household plot is lessening. This market is opening up an alternative income source for local farmers, but the growth of fish markets is contributing to overharvesting.

While domestic sales have not yet countered the loss of revenue from declines in export sales to Guam local markets in Yap are growing, a trend that is increasingly impacting the State's biodiversity.

Community Engagement: Over the past decade natural resource management agencies and NGOs are increasingly working alongside community-based organizations, women's and youth groups, traditional leaders, and natural resource owners. This engagement is widely seen as a critical component to the success of conservation work. In the FSM communities and resource owners are the traditional stewards of their surrounding environment. Approximately 70% of all of the FSM's terrestrial areas are privately owned. In Yap and Chuuk near-shore marine resources are privately held as well, and more than 90% of terrestrial areas in those States are in private hands (Hay, 2013). As such these communities and individuals have clear incentives to sustainably manage their natural resources. Government agencies and NGOs are working with community groups in each State to create and implement resource management plans. These plans include some protected areas and fisheries management components, as well as identify possible alternative income sources. Designed at the community level, these strategies reflect community needs while also considering State, National, and conservation priorities. In addition to the establishment of these management plans, community groups are working with resource management agencies and local NGOs to rehabilitate habitats and conduct monitoring and research activities. See Part II of this report for more details.

Marine Biodiversity: As described in detail in the 4th National Report the numbers of many species of reef and pelagic fish and marine invertebrates are declining across the FSM. Research since the 2010 report confirms the continuation of this trend, including but not limited to: (Cuetos-Bueno, 2012) and (Houk, Rhodes, Cuetos-Bueno, Lindfield, Fread, & McIlwain, 2012). Reef fish, as an important domestic food and income source in each of the four States, are being overharvested. Marine invertebrates are also declining along with some species of migratory pelagic fish, a key source of income for the FSM through the sale of fishing licenses to foreign fisherman.

A reef fisherman at work in Piis-Paneu. Photo © Javier Cuetos-Bueno

Mutually reinforcing factors are exacerbating and accelerating fisheries declines, particular reef fisheries. As large reef fish are becoming scarce FSM fishermen are taking fish before they reach reproductive age, lowering spawning yields. Fishermen are also going further out to fish, driving up their fuel costs. This is contributing to overharvesting, as more fish need to be sold to cover rising expenses. To increase catches fishermen throughout the country are also using non-traditional methods, such as underwater spotlights during night fishing. These factors have a human toll as well. Fishermen are diving deeper and longer for their catch, putting themselves more at risk. Lastly the emergence of a brisk live reef fish trade by FSM citizens as well as foreign companies is creating another incentive to overharvest. Foreign commercial fishing vessels are also operating in the FSM, mainly targeting the region's pelagic fish.

As a result of fisheries declines, as well as similar reductions in marine invertebrates, reef ecosystems are changing. For example, algae blooms are spreading in Yap and Pohnpei and some types of herbivores fish populations are growing exponentially as predatory reef fish numbers are declining. To combat declines in marine biodiversity in all four States resource management agencies and NGOs are working with communities, traditional leaders, and resource owners to create and enforce fisheries regulations (i.e. size limits and seasonal bans) and marine protected areas. In Pohnpei alone there are 18 marine protected areas, although recent spatial analysis of these areas shows that many are not the right size and shape to most effectively conserve species (The Nature Conservancy, 2014).

Another way stakeholders are working together is the establishment of fisherman and fish market associations. Such associations are intended to foster widespread agreement on size limitations and the price of fish exported to Guam and the region. In Pohnpei the Marine Advisory Council, or Menin Katengesed, is increasingly active and is comprised of fishermen and representatives from State natural resource agencies and NGOs. The group meets regularly to discuss fishing regulations, size limitations, and prices. Similar groups throughout the country are also working towards creating open and closed seasons for specific species, such as groupers. State resource management agencies and conservation groups are also installing fish aggregating devices (FADs) both within and outside the States' lagoons. FADs, designed to attract pelagic fish, are intended to give local fisherman an alternative to reef fish. Lastly teams are conducing public awareness campaigns about the consequences of overfishing. This increase in public awareness campaigns is in recognition that behavior change communications can play an important role in addressing this problem, alongside enforcing regulations.

In terms of regulations, the States each have their own set of rules. For example Pohnpei State has the 1981 Marine and Aquatic Resources Act that governs harvesting of certain types of species, while in 2013 Kosrae State legislators added regulations for sea cucumber and trochus harvesting to that State's Code. However the enforcement of these regulations is a challenge due to limited human capacity, equipment, and fuel to patrol the vast lagoon and ocean areas in the FSM. As is described below, alternatives to fishing are few. Below is a case study illustrating the challenges facing conservation groups and natural resource management agencies in dealing with overharvesting of marine resources. Please see the 4th National Report for further details.

Case Study: Sea Cucumbers in Chuuk

Stakeholders in Chuuk highlighted declines in some sea cucumber populations as a growing problem. A rapid ecological study in the State noted declines in 2008 (Allen, 2008), and another survey of three marine protected area sites in 2011 found very low numbers as well (Andrew, et al., 2011). These studies support anecdotal reports of large declines thought to be due to overharvesting. As a result of fewer marine invertebrates providing filtering services on the reef, people are reporting murky water as well as algae blooms on corals, for example around Piis-Paneu and Fanapanges islands. On October 15, 2014 the Chuuk State Legislature took a significant step forward to protect these critical marine animals by passing a six-year ban on commercially harvesting, processing, or selling them. These new marine resources conservation and management regulations also restrict exports of mangrove crabs, coconut crabs, and lobsters, which are also continuing to decline, as well as prohibit the sale of naturally grown clams, which are considered a delicacy within the State.

A sea cucumber.
Photo by the Conservation Society of Pohnpei

Q3: What are the main threats to biodiversity?

The 4th National Report included a comprehensive discussion of six main threats to biodiversity: overexploitation of biological resources, habitat loss and degeneration, climate change, pollution, spread of alien invasive species, and infrastructure development. These remain the most significant threats to biodiversity and this section provides a brief update to each. Please see Chapter 1 of the 4th National Report (Wortel, 2010) for detailed information about each threat and the implications of these threats on particular species, forests and grasslands, freshwater wetlands, costal and marine systems, and agricultural biodiversity.

Overexploitation of biological resources: Remains arguably the most significant threat to biodiversity within the FSM. In Yap, Chuuk, Pohnpei, Kosrae, and at the National level, stakeholders agreed that human activity is the primary threat to biodiversity in the country. People are overexploiting marine and terrestrial resources for subsistence and financial reasons, not necessarily because they do not understand the long-term impact of their actions. Generalizing across the four States, there is an overall lack of sufficient and viable alternative livelihoods. To address this problem State and private sector groups are promoting numerous aquaculture, agroforestry, tourism and other private sector development programs.

Taking just one State for example, the Pohnpei Office of Fisheries and Aquaculture is working with communities to develop seaweed and fish farms, while the Marine and Environmental Research Institute of Pohnpei is promoting community-based conservation through sustainable development of sponge, marine invertebrate and coral farms. While there are similar private sector initiatives throughout FSM, stakeholders continue to point out the need for additional work in this area. Fundamentally aquaculture and other alternative livelihoods programming are not developed to the point where they are replacing harvesting of wildlife. To illustrate this point is another case study from Chuuk.

Case Study: Overfishing in Piis-Paneu

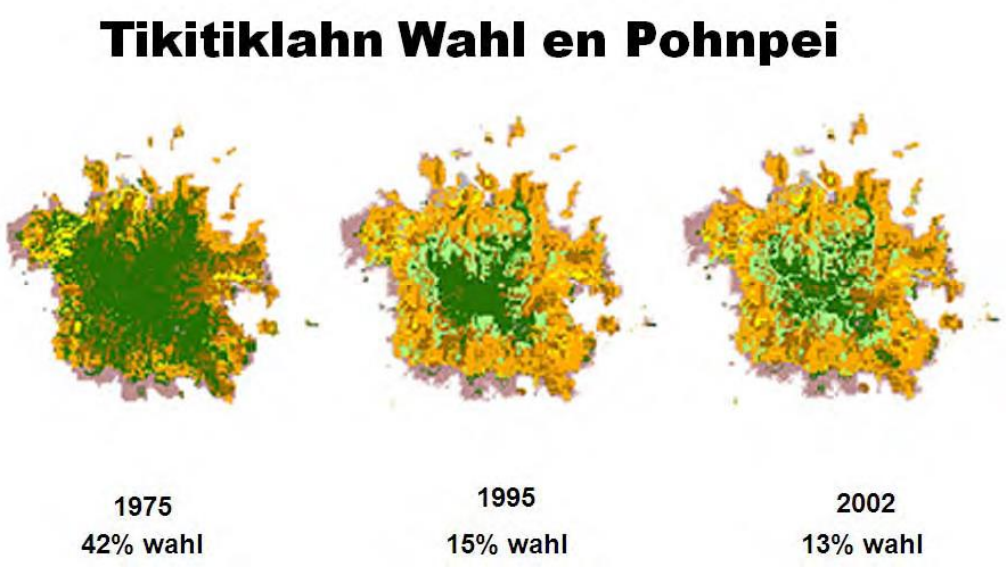
In 2012 a team including representatives from the Chuuk Conservation Society and the Pacific Marine Resources Institute conducted socioeconomic and biological surveys of the marine area around Piis-Paneu. The team concluded that reef fish and marine invertebrates were being harvested beyond sustainable levels, and that while the socioeconomic surveys showed community support for conservation the lack of alternative livelihoods is driving overharvesting. In order to afford average expenses, primarily imported food and fuel, 80% of households on the island depend on selling marine resources; with 91% of fishers said they had no alternative income opportunities. (Cuetos-Bueno, 2012. P.3). Similar dynamics are affecting other communities throughout the FSM.

Habitat Loss and Degeneration: The threat of habitat loss and degradation to biodiversity on the FSM is well documented in the 4th National Report. To illustrate this dynamic without repeating information already reported, below is a case study from Pohnpei.

Case Study: Native Forest Loss in Pohnpei

In Pohnpei stakeholders reported that sakau plantations, a culturally and economically significant plant, are continuing to expand throughout the State to meet demand for the product. Over the past few decades, sale of sakau has become a significant source of income for some Pohnpeians. Economic incentives are driving expanded plantings, including into the State's remaining native upland forests and the area designated as the Watershed Forest Reserve. Sakau clearings in these forests impact habitats for native and vulnerable species, such as the Pohnpeian short-eared owl. The resulting fragmentation also facilitates the entry of invasive plants, further eroding the integrity of the upland forests leading to increased soil erosion and diminished water quality due to sedimentation.

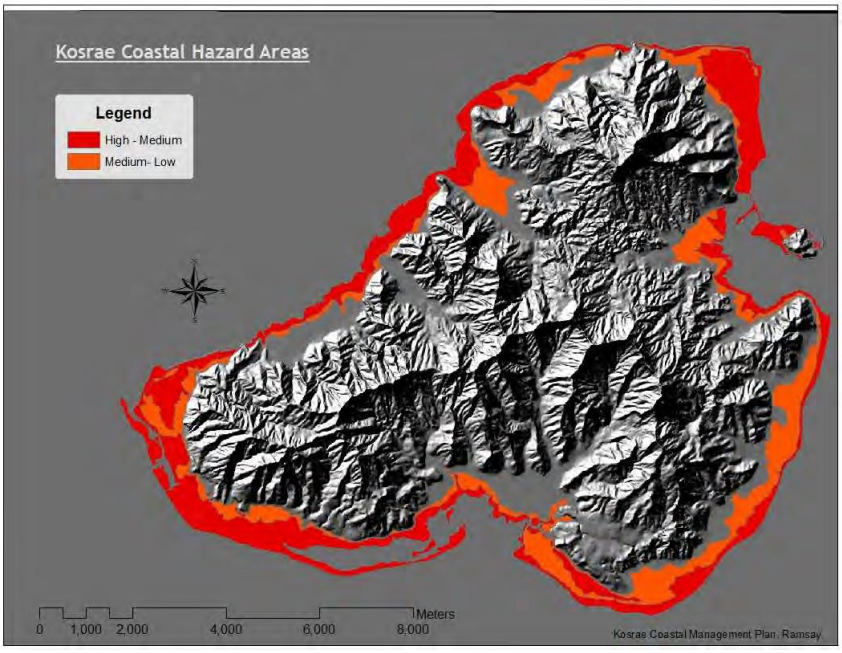
To combat this problem for more than a decade conservation groups within Pohnpei have been promoting the 'Grow Low' campaign to raise public awareness of the impact of growing sakau in upland areas. Natural resource management agencies and NGOs are also working to demarcate the watershed reserve boundary line to show farmers exactly where the borders are. Despite these efforts the sakau planting in upland areas remains a significant threat to terrestrial biodiversity in Pohnpei. The below vegetation map shows the dramatic decline in Pohnpei's native forest (areas marked in green) between 1975 and 2002 (Federated States of Micronesia, 2010. P. 108).

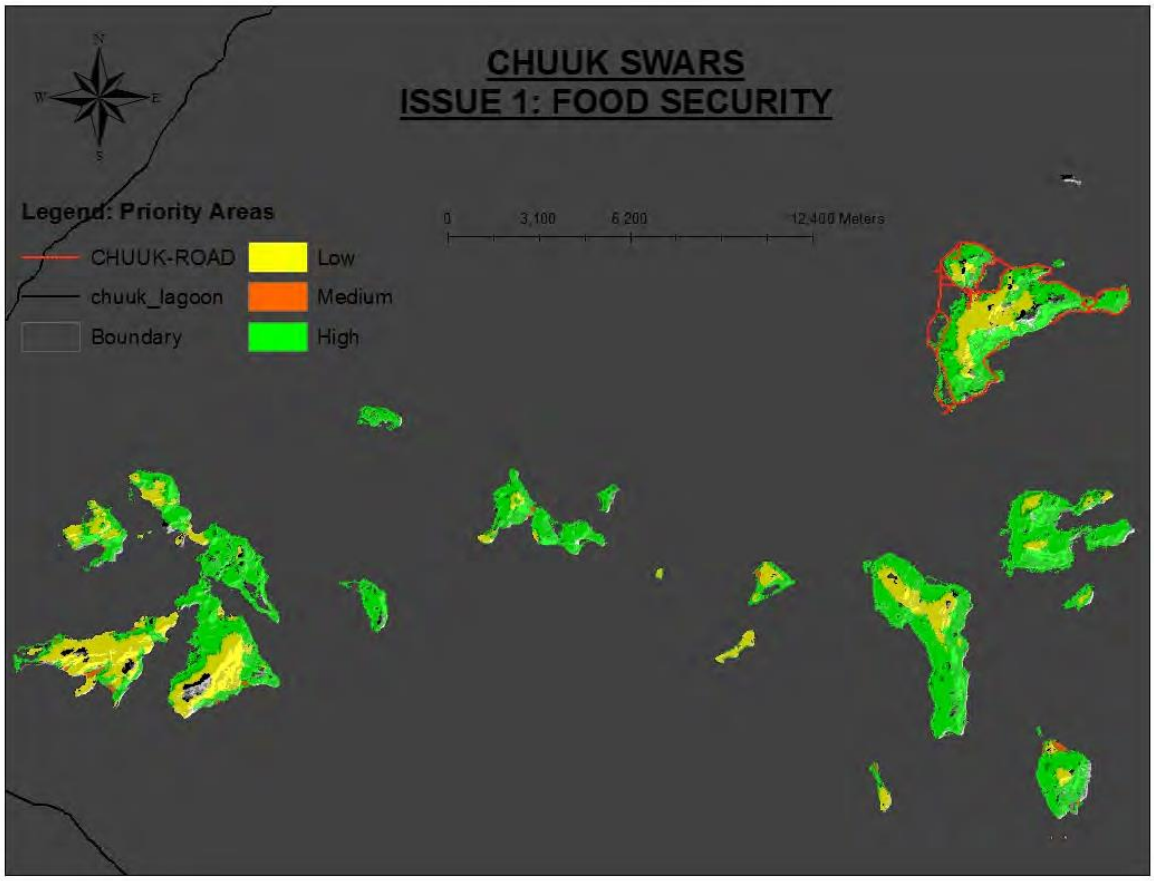


Pollution: Ineffective and insufficient waste management practices, including solid, sewage, chemical, agricultural and industrial wastes, are contributing to pollution in the FSM (Asian Development Bank, 2014). During the workshops to prepare this report, stakeholders in each State provided updates and examples about this continuing threat. In Chuuk pollution was cited as a continuing threat, specifically from untreated sewage, solid waste, oil leaks from sunken ships, and dumping activities in the sea. At the National level stakeholders cited issues regulating the dumping of ballast water, which can be contaminated with bacteria, from ships in the country's exclusive economic zone. Stakeholders in Kosrae also cited pollution as a problem, but pointed out recent advances in solid waste management including the State's semi-anaerobic landfill and new garbage trucks in some municipalities. In Yap plans are also underway to renovate the main island's landfill and programs are helping address waste management in outer islands. Please see Part II below for more details about waste management advances in the FSM.

In Pohnpei it was pointed out that waste from piggeries continues to be a major pollutant affecting critical watersheds. Pigs are culturally and economically very valuable commodities in the country. A 700-900 pound pig can fetch over to $2,000. Pork is a ceremonially important dish for feasts at weddings, funerals, and other community milestones. In Pohnpei, piggeries have traditionally been built in riverine areas. As a result pig wastes are being flushed into the majority of the main island's rivers and streams. The Pohnpei Environmental Protection Agency and its partners reported that levels of leptospirosis, a bacterial disease that affects humans, continue to be prevalent throughout the State's watersheds. A 2011 hospital survey also showed leptospirosis infections to be prevalent (Colt, Pavlin, Kool, & Johnson).

Climate Change: As described under Question 2 above and in the 4th National Report, climate change is a substantial and increasing threat to the FSM's biodiversity. Two maps from the SWARS illustrate vulnerability to sea level rise in Chuuk and Kosrae States. The below map shows how that the majority of coastal areas in Kosrae are vulnerable to storm surge and sea level rise (Federated States of Micronesia, 2010. P. 147).





The above map shows priority areas within the Chuuk lagoon for food security support. The green (high) priority areas constitute the majority of the areas on the Chuuk lagoon islands (Federated States of Micronesia, 2010. P. 79).

Invasive Species: As described in the 4th National Report, terrestrial and marine invasive species such as vines, grasses, insects, reptiles and other animals are causing biodiversity declines and ecosystem disruptions throughout the FSM. Stakeholders during consultations for this report provided additional examples: in Kosrae farmers in low-land areas are increasingly battling the whitefly; the threat of nematodes to swamp taro in Yap is continuing; increased frequency of landslides in Kosrae partially attributed to invasive vines strangling trees; and damage to biodiversity from rats on some of Pohnpei's outer islands. The impact of invasive species on agriculture yields, along with the climate change impacts discussed above, are having a combined negative impact on food security throughout the country. Stakeholders also pointed out a growing urgency to identify and combat marine invasive species and that more public awareness about invasive species is needed.

Since the 4th National Report, the regional Micronesia Biosecurity Plan was developed. Spearheaded by the United States and endorsed by the leadership (Chief Executives) in Micronesia and partners in the State of Hawaii, this initiative is designed to address the possible spread of invasive species as a result of more cargo and passenger movements throughout the region because of military buildup on Guam and the Commonwealth of the Northern Marianas Islands. FSM and the Republic of Palau have already agreed to

contribute funding to the implementation of the Micronesia Biosecurity Plan in their jurisdictions. Please see Part II for more information about ongoing activities to control invasive species in the FSM.

Infrastructure development: Three population settlement trends are presenting threats to the country's biodiversity and driving new infrastructure development. First, people are increasingly moving from the outer islands to the country's high islands in search of economic and/or education opportunities and as climate change and invasive species erode food security and wellbeing on low-lying atolls. Second, people on high islands are beginning to move inland as part of climate change adaptation strategies (Ramsay, Webb, Abraham, Jackson, & Charley, 2014). Finally, a large amount of out-migration from the country is also impacting biodiversity in each of the four States.

In-country population shifts are spurring demand for more housing and infrastructure including roads, commercial buildings and community facilities, and utilities. This is exacerbating habitat disruption and fragmentation, erosion, and sedimentation. Dredging in near-shore areas for fill and construction materials in particular is a major threat across the country as dredging disrupts reef ecosystems, exacerbating declines in marine biodiversity including corals, invertebrates, and fisheries.

In Yap, the last census for the State showed that approximately 40% of its 11,000 people live on outer islands, which are mostly low lying coral atolls. However, stakeholders in the State reported significant migration to the main high island of Yap from outer islands since 2010. To accommodate the influx the State has set aside a previously undeveloped parcel of land for incoming outer islanders. As homes and infrastructure are increasingly built in this area runoff from the site is impacting the contiguous reef. Stakeholders in Chuuk pointed out a similar influx to Weno, as did participants on the main island of Pohnpei.

As coastal erosion increases, and populations are also starting to shift inland. In 2014 Kosrae State finalized its Shoreline Management Plan, which, among other objectives, includes a strategy to gradually resettle the population inland. To do so the implementation team is looking at new methods and technologies for upland development to avoid exacerbating that State's existing fragmentation, erosion, and sedimentation problems.

However, overall the population of the country is declining. The results of the 2010 census showed the overall population dropped 4% to 103,000 people (Office of Statistics, Budget and Economic Management, Overseas Development Assistance, and Compact Management, 2010). In particular, Kosrae's population has declined by 13% in the past decade. Anecdotally, Kosrae stakeholders reported that one in five homes on some parts of the island are now vacant. Out-migration is resulting in many previously managed agroforest areas and homesteads to lie fallow, exacerbating the spread of invasive species. This problem reported by stakeholders in each of the other States as well.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

The FSM is a small developing country whose residents remain largely dependent on ecosystem services for income and subsistence. Fisheries represent the largest source of revenue for the country. Mainly through the sale of commercial fishing permits for pelagic fish, but also through export and domestic fish markets. Other economic sectors, including agriculture, aquaculture, construction, and extractive industries (primarily dredging and mangrove and hardwood harvesting), also contribute to the economy.

In addition to income-generating activities, subsistence livelihoods are prevalent throughout the country. According to the 2010 census, of the country's total labor force of around 32,000 about one in five self-reported as being engaged in the informal subsistence sector (Office of Statistics, Budget and Economic Management, Overseas Development Assistance, and Compact Management, 2010). As this brief snapshot of the FSM economy shows, the country is highly reliant on ecosystem services for socioeconomic wellbeing. The changes and threats summarized in the above section are impacting these crucial ecosystem services. Specifically affecting food security, watersheds and health, while also having cultural implications.

Food security: An essential ecosystem service in the FSM that is being disrupted by changes in biodiversity is the provision of food for subsistence and sale. Each of the main threats identified under Question 3 are negatively impacting the country's overall food security.

- The overexploitation of biological resources (provisioning services) is resulting in species declines, particularly of reef fish and marine invertebrates. The pressure to generate income to afford education, medical services, and imported goods is a main driver behind overharvesting of natural resources, exacerbating biodiversity declines.

- Habitat loss and degeneration is impacting food security. Taking fisheries as an example, runoff caused by infrastructure development and exacerbated by mangrove fragmentation is affecting essential marine habitats and spawning areas including sea grass beds and coral reefs. Habitat disruptions are also leading to declines in keystone species**,** impacting entire ecosystems. For example declines in terrestrial pollinators are increasing the rate of loss of native forest and impacting agroforests, while the declines of apex reef predators, such as groupers, are affecting lagoon ecosystems.

- Climate change is affecting agriculture yields. Stakeholders throughout the country reported salt-water inundation in coastal taro patches as the prime example. The food security of low-lying communities, particularly those on the country's numerous coral atolls, is significantly affected.

- Invasive species, including insects and plants, are affecting agroforests. For example the invasive whitefly in Kosrae. Pollution from piggeries, sewage, and other wastes is reducing water quality. Excess sedimentation and runoff from construction, as well as habitat disruption from dredging, are affecting reefs and sea grass beds.

Watersheds: Watersheds and freshwater lens, which provide essential ecosystem services to the country's population, are vulnerable to changes in biodiversity and environmental threats. On the country's high islands clearing and agriculture production in riparian zones is washing soils into rivers and streams. Invasive species are choking native forests, also contributing to soil runoff into watersheds. Changing weather patterns are also a problem. When water levels recover after periods of drought, river and stream banks are vulnerable to erosion increasing sedimentation. On the country's low-lying islands sea level rise is turning some essential freshwater lenses brackish, and longer drought periods are reducing rainwater yields in catchments (Federated States of Micronesia, 2012). As such, the availability of freshwater, a fundamental ecosystem service, is a key issue facing the country.

Health: The watershed issues described above are also impacting people's vulnerability to disease. For example in Yap over the past decade there has been an increase in mosquito-borne disease outbreaks, such as the Zika outbreak in 2007 which impacted 9 out of 10 municipalities on the main island (Duffy, et al., 2009). Yap stakeholders reported that within the last few years approximately five previously unreported illnesses have cropped up. In Pohnpei, leptospirosis from piggeries is widely found in the State's watersheds, and is a problem in the other States as well. Food insecurity and consumption patterns are also impacting health. The consumption of imported food is contributing to high rates of non-communicable diseases such as diabetes and heart disease. According to the FSM Department of Health and Social Affairs, non-communicable diseases account for about 75% of all hospital admissions in the country (Department of Health and Social Affairs, 2012).

Cultural implications: Pressure to earn incomes to afford imported goods, medical services, and education are shifting patterns of behavior in the FSM and driving the overharvesting of biodiversity. For example changes to traditional fishing methods including the increased use of spotlights and the widespread use of refrigerators. Economic pressures are also causing people to violate cultural and traditional norms for boundaries, leading to increased encroachment and/or poaching. Another factor driving overexploitation is customary obligations, such as providing culturally important food for funerals, feasts, and weddings. Lastly, invasive species are crowding out medicinal plants reducing their numbers and diversity. The declining availability and use of traditional medicinal plants was widely cited by stakeholders as eroding the region's cultural heritage and health outcomes. However natural resource management agencies, local NGOs, traditional leaders and other stakeholders recognize the importance of maintaining systems of resource management that have worked for the approximately 2,000 years that the islands have been inhabited. Traditional leaders are increasingly being engaged by resource management agencies and NGOs to participate in conservation efforts, and State and National level action plans all incorporate objectives to document, preserve and utilize the FSM's traditional resource management practices.

The Kosrae Conservation and Safety Organization monitoring coral reefs in Kosrae
Photo provided by the Micronesia Conservation Trust

Part II – Biodiversity strategic action plans, their implementation, and the mainstreaming of biodiversity

Q5: What are the country's biodiversity targets?

In 2014 the FSM initiated work to update the National BSAP and State BSAPs to reflect current priorities, as well as to ensure that the National and State BSAPs reflect the Aichi Biodiversity Targets and the Strategic Plan for Biodiversity 2011-2020 (SPB). In order to gather information for this report and initiate the update process, a series of five two-day workshops were held at the National and State levels as well as individual consultations with key stakeholders. During these sessions with government, NGO, education, and community representatives, the teams reviewed existing biodiversity goals and targets, discussed the status of implementation and changes, and evaluated existing goals and targets against the SPB and the Aichi Targets. Part II of this report describes the findings of these workshops and the specific status of biodiversity conservation objectives, which are not limited to those found in the FSM's National BSAP and State BSAPs.

In fact, the FSM has multiple plans in place and/or development that include objectives for biodiversity conservation. Both across the National and State levels and at the regional level through the Micronesia Challenge to conserve 30% of near-shore and 20% of terrestrial areas. In 2002 FSM developed its National BSAP. By 2004, each of the four States created their own complimentary State BSAPs. In the decade since, the FSM has also established a National Strategic Development Plan that incorporated elements of the National BSAP into targets for the environment sector. The National government also developed a focused environment sector-specific 5-year plan for the period of 2010-2015.

In 2014, Kosrae finalized its own Strategic Development Plan, Pohnpei has released a near final version of theirs, and State actors in Chuuk and Yap are continuing to advance their own Strategic Development Plans. In 2010, the National and State governments of the FSM collaborated with the US forest service to develop the FSM State-wide Assessment and Resource Strategy (SWARS) that includes biodiversity objectives for each State. In the last decade in response to invasive species, States have established invasive species eradication and control action plans and task forces. National and State governments have solid waste management plans, and finally each resource management agency at both the National and State levels are held to performance-based workplans and budgets, which include targets. Given the number and length of relevant plans, please refer to Appendix II for references to the National BSAP, each State BSAP, the SWARS, the National Strategic Development Plan, and the Kosrae and Pohnpei Strategic Development Plans.

Q6: How have the country's biodiversity strategic action plans been updated to incorporate these targets?

In 2014 the FSM initiated the process to update the National BSAP and State BSAPs to more fully align with the SPB and the Aichi Targets. As a start, the teams in the five workshops held to prepare this report reviewed their BSAP (for example in Yap State the team reviewed the Yap State BSAP). The groups discussed whether or not all objectives and sub-activity/targets remain relevant and whether or not each objective has been revised in practice. For example revised objectives within agency workplans written after the BSAPs, or the other planning documents described in Question 5 above. The teams

also identified objectives that resource management agencies and NGOs are working towards that are not captured in the BSAPs, but are instead reflected in the other relevant action plans. For example through the Micronesia Challenge, the Micronesia Biosecurity Plan, the Strategic Development Plans, the SWARS, and/or resource management agency workplans.

During the workshops the groups each suggested initial revisions for the four State BSAPs and the National BSAP. Appendix IV of this report includes summaries of these discussions and analysis for how the suggested edits align with the CBD's SPB. The Appendix also includes tables detailing the first draft edits. Over the next fiscal year the FSM Resources and Development Department is planning to support continued discussions at the State and National levels to fully revise all of the country's BSAPs. In general, during the workshops the stakeholders pointed out how the vast majority of the BSAPs' objectives and targets set over a decade ago remain relevant. Many are supported by iterative actions such as monitoring and community engagement. Other objectives support long-term goals and the work required to fully achieve them is taking more than a decade to accomplish.

Q7: What actions and outcomes are there to report on the implementation of the Convention since the 4th national report?

This section has two parts. The first includes an overview of advances in National BSAP implementation since the 4th National Report. This part is organized by National BSAP theme and includes descriptions of key State and National level activities from the period of 2010 – 2014. Illustrative case studies are used to highlight progress towards National BSAP objectives. The second part describes remaining challenges towards full implementation of BSAP activities.

Q7.a: Progress implementing the National BSAP

The National BSAP was served as a foundational document for the development of each of the State BSAPs. This section is organized around the 11 National BSAP themes as they comprehensively encompass the objectives of the four separate State BSAPs. For an indication of how the actions taken relate to the various programmes of work and crosscutting issues of the CBD please see Appendix III. This Appendix maps the National BSAP against the CBD thematic areas[4] and the CBD crosscutting issues.[5]

[4] CBD thematic areas include: agricultural biodiversity; marine and coastal biodiversity; biodiversity of inland waters; forest biodiversity; biodiversity of dryland and sub-humid lands; island biodiversity; mountain biodiversity.

[5] CBD cross cutting issues include: Aichi Biodiversity Targets; access to genetic resources and benefit-sharing; biological and cultural diversity; biodiversity for development; climate change and biodiversity; communication, education and public awareness; economics, trade and incentive measures; ecosystem approach; gender and biodiversity; global strategy for plant conservation; global taxonomy initiative; impact assessment; identification, monitoring, indicators and assessments; invasive alien species; liability and redress – art. 14(2); protected areas; sustainable use of biodiversity; tourism and biodiversity; traditional knowledge, innovations and practices – art. 8(j); technology transfer and cooperation

- **Theme 1: Ecosystem Management.** A full representation of FSM's marine, freshwater and terrestrial ecosystems are protected, conserved and sustainably managed, including selected areas designed for total protection.

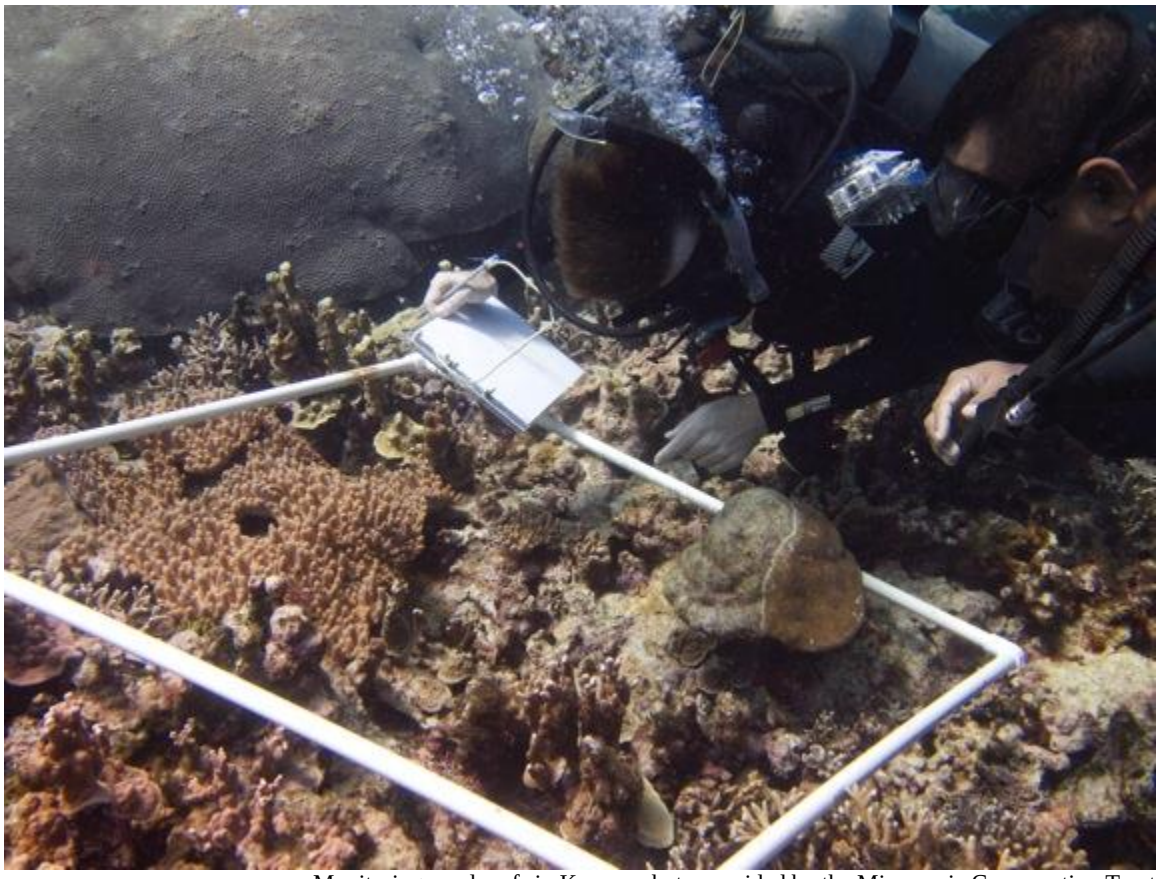
The Micronesia region as a whole is taking significant steps forward to conserve biodiversity through improved ecosystem management. Many of these efforts are spearheaded through the regional Micronesia Challenge. The Micronesia Challenge is an agreement between the leadership of the FSM, the Republic of Palau, the Commonwealth of the Northern Marianas Islands, Guam, and the Republic of the Marshall Islands to effectively conserve at least 30% of the group's near-shore marine resources and 20% of terrestrial resources by 2020. The FSM's participation in the Micronesia Challenge is helping the country to consolidate new and existing protected areas into networks, leverage funding for these protected areas in support of biodiversity conservation (described in detail under theme 11 below), and is providing protected area management teams with new tools to improve the effectiveness and management of ecosystems.

As a result of decades of conservation programming there is a patchwork of protected areas in each of the FSM's four States in over 50 different sites. Through the Micronesia Challenge actors in the FSM are now working to link these sites together into protected area networks. Protected area networks are intended to streamline and clarify the roles and responsibilities of protected area stakeholders (including State, Municipal, NGO, and community actors) in the areas of enforcement, monitoring, program design and evaluation, and public awareness campaigns. The inclusion of a site in a protected area network could also facilitate access to funding from State agencies, local and regional NGOs, and international donors.

Each State is in the process of establishing these networks through regulations or legislation. Kosrae State in 2010 passed a protected areas act and in 2012 the State legally recognized the Utwe Biosphere Reserve in State Law 10-48. This protected area includes three zones that allow for a mix of permitted activities, traditional sustainable lifestyles, and a core no-take zone. The Utwe Biosphere Reserve is an example of a holistic conservation initiative that combines a coastal plane, mangroves, and a marine zone into one protected area. In Yap actors have drafted protected areas network regulations that are being considered by the State legislature. Pohnpei's existing Watershed and Wildlife legislation already includes the legal elements required to establish a network in that State. In Chuuk stakeholders are developing a draft, and finally at the National level stakeholders are considering the creation of a policy framework.

Since the last report, there have also been significant improvements to the tools available to manage protected areas. Through the Micronesia Challenge, National and State resource management agencies and local NGOs and community-based organizations in the FSM are benefiting from the development of a regional monitoring framework with a consistent set of indicators. This monitoring framework includes the development of the Marine Protected Areas Management Effectiveness tool, (which is equally useful in terrestrial sites), indicators for socio-economic monitoring, a climate change toolkit, and biological monitoring tools in marine areas. In development are indicators for freshwater and terrestrial sites. This monitoring framework is increasingly allowing protected area

management teams in the FSM to make evidence-based decisions and to use data to support behaviour change communications campaigns.



Monitoring coral reefs in Kosrae, photo provided by the Micronesia Conservation Trust

Other examples of ecosystem management activities in the States include work to restore and conserve critical watersheds. In Pohnpei State agencies and NGOs are working to delineate the remaining boundaries of the Pohnpei Watershed Forest Reserve in two Municipalities. In Chuuk the State's Environmental Protection Agency recently partnered with conservation NGOs and communities to reforest sections of the watersheds in Weno and Fefen through an Integrated Water Resource Management program. In Kosrae in 2014 partners established the first conservation easement in the FSM. The site is in an important wetland area and is also home to the largest remaining contiguous stand of Ka tree in the world. See the case study below for details.

Case Study: Yela Conservation Easement

A clear success for biodiversity conservation efforts in the FSM since the 4th National report is the Yela forest conservation easement in Kosrae. The easement was officially established in 2014 after more than a decade of negotiations. It covers 78 acres of wetland forest, including part of the largest remaining contiguous stand of Ka tree (*Terminalia carolinensis*) in the world and a portion of the Tafunsak area watershed. This is the first conservation easement in the entire Micronesia region.

While retaining title and traditional usage rights to the land, the landowners, represented by the Yela Environment Landowners Authority (YELA), have agreed not to develop the area and to work collaboratively with the Kosrae Island Resource Management Authority (KIRMA), which now has authority to regulate the site. In return, the United States Forestry Services (Forest Legacy Program) and the David and Lucille Packard Foundation contributed to an endowment managed by the Micronesia Conservation Trust that will provide annual payments to the landowners. Outside of Kosrae, others are learning from the Yela easement as it respects traditional ownership rights common throughout the region while promoting conservation. The site could be a model for similar agreements in other critical habitats.

The trunk of a Ka tree in the Yela Ka Forest. Photo by Emily Gibson, KIRMA

YELA and KIRMA are actively engaged in managing the site, including clearing channels in the watershed, combating invasive species, replanting native species and putting in a network of ecotourism trails. In addition to work on the ground, the management team is also engaged in community outreach and awareness building about the value of the watershed and the wetland forest. According to the YELA project manager, a key achievement to date is the reduction in clearing trees from the site attributed to an increased understanding of the importance of the site's resources and the impact of overharvesting in the area. In this way the Yela story also is representative of the successes throughout the country that natural resource management agencies and NGOs are having by increasing community engagement in conservation.

- **Theme 2: Species Management.** FSM's native, endemic, threatened, and traditionally important species are protected and used sustainably for the benefit of the people of the FSM and the global community.

Throughout the FSM conservation groups are working to protect keystone species, effectively manage fisheries, and control invasive species. For example, in October 2014 the Chuuk State legislature enacted a bill to regulate the harvest of sea cucumbers, mangrove crabs, and other important marine species. Kosrae passed similar legislation for sea cucumbers and Trochus in 2013, and Yap State law no. 7-36 established a mantra ray sanctuary stretching 8,243 square miles. In 2013 in Pohnpei, the Conservation Society of Pohnpei partnered with the Micronesia Conservation Trust, local fishermen, and the State Office of Fisheries and Aquaculture and other State natural resource management agencies to form the Marine Advisory Council to improve fisheries management and enforcement. The key success in this area however since the 4th National Report is the introduction of shark protection legislation in each of the four FSM States.

Case Study: Protecting Sharks

In 2012 the Kosrae State legislature passed a bill banning the sale, trade, and possession of sharks for non-traditional use, as well as all commercial shark fishing in State-controlled waters. Pohnpei followed with similar legislation and Yap augmented its existing Manta Ray Sanctuary (established in 2008) with a shark conservation law. In 2014 Chuuk State rounded out the group by passing its own legislation banning the sale of shark fins while allowing continued traditional use of sharks.

Currently the National legislature is considering legislation to protect sharks in the rest of the country's exclusive economic zone. If passed, the FSM's shark protection zone will connect with existing shark sanctuaries around the Republic of Palau, the Republic of the Marshall Islands, the Commonwealth of the Northern Marianas Islands, and Guam to create the world's largest contiguous area of protected shark habitat.

Other significant activities and results related to this initiative include: more than 8,000 students throughout the Micronesia region signed a petition calling for shark protections; more than 200 enforcement officers from the region have received conservation and law enforcement training; and Luen Thai Fishing Venture, the largest longline fishing company in the Pacific, announced they were no longer going to fish for sharks.

While progress is being made to protect some keystone species, due to lack of sufficient human resources, time, and financial resources there are data gaps about the status of all native, endemic, and vulnerable species. Marine species monitoring in protected areas is generally developed and on going, but terrestrial monitoring is less widespread and State and National stakeholders pointed out that the status of many species is unclear. For example in Weno in Chuuk anecdotal evidence points to declines in some bat populations. However since there has not been a scientific evaluation of the status of the bats, the extent of the decline is unknown let alone the cause(s) of this perceived drop.

Please see the discussion of Aichi Target 12 under Part III of this report for further analysis of this issue.

- **Theme 3: Genetic Resource Use.** The FSM's genetic resources are accessible for utilization and all benefits derived are equitably shared amongst the stakeholders.

Activities to support this theme largely remain in the planning stages. A significant initial step was achieved however. In 2013 the FSM ratified the Nagoya Protocol on Access and Benefits Sharing. Subsequently the FSM Resources and Development Department held a series of workshops on access and benefits sharing, and the States are starting work to establish legal frameworks at the State level. For example, in September 2014 in Pohnpei a group of natural resource management agencies, local NGOs, and regional and international conservation groups came together and created the first draft policy for access and benefits sharing in the State.

- **Theme 4: Agrobiodiversity.** The conservation and sustainable use of Agrobiodiversity contributes to the nation's development and the future food security of the FSM.

This theme represents another area in which considerable progress has been made since the 4th National Report. Throughout the FSM natural resource management agencies and NGOs are supporting food security programming in accordance with climate change adaptation and mitigation strategies and to promote increased agrobiodiversity. For example in the summer of 2014 the National government distributed more than 1,000 plantings of breadfruits to the outer islands of Yap. In Chuuk the Department of Agriculture and Forestry is working in 10 low-lying sites in atolls to reduce saltwater inundation and improve yields from taro patches. Chuuk agencies are also helping plant banana and coconut trees in low-lying atolls. Similar State-supported activities are underway in the other three States.

In addition to State-led activities, in each of the four States the College of Micronesia operates agriculture extension programs through the United States-funded Micronesia Land Grant program. Extension agents provide training and support to local farmers. These agents are encouraging sustainable farming and the use of a wide range of crops, supporting agrobiodiversity. Local NGOs and community groups are also working to address food security through the development and promotion of programs that support the production of local nutritious foods in each of the four States. For example the Island Food Community of Pohnpei in 2014 started a partnership with the Pohnpei Women's Council, the Pohnpei Farmers Association, the College of Micronesia with support from State and National agencies and funding through the GEF Small Grants Programme. This new initiative is designed to increase production of a diverse variety of local food crops and promote energy efficient food processing at the community level.

- **Theme 5: Ecologically Sustainable Industry Development.** Economic development activities in the FSM meet the needs of the population while sustaining the resources for the benefit of future generations.

Balancing economic development with resource conservation continues to be a key challenge in the FSM, and an area of focus at the National and State levels. The FSM's Strategic Development Plan includes a sector on the environment, as does the Kosrae State Strategic Development Plan. The Pohnpei State Strategic Development Plan includes a draft sector for the environment, and various policies and workplans in Chuuk and Yap also call for the integration of natural resource management and conservation considerations alongside development. State resource management agencies, for example the Chuuk Department of Marine Resources, the Yap Marine Resources Management Division, the Pohnpei Office of Fisheries and Aquaculture, and the Kosrae Department of Resources and Economic Affairs all support small-scale livelihoods programming.

NGOs and the private sector are also involved. For example, the FSM Vital PetroCorp is working to develop industries using coconuts including biofuel, cooking oil, animal feed, and health and beauty products. In order to source coconuts the company is looking at a successful development model in Pingelap island in Pohnpei State. The Pingelap Municipality received a grant from the Japanese government in 2013 that funded the purchase of coconut processing equipment and the construction of a processing facility. Community members on the island are increasingly selling coconuts to be processed. While the program is in the initial stages it could result in viable alternative incomes for Pingelapese. Vital PetroCorp is considering establishing additional facilities based on this model.

However the country has experienced only limited successes to date establishing and sustaining impactful livelihoods programs that provide viable alternatives to overharvesting natural resources. Fishing, mangrove harvesting and other resource extraction practices remain the primary source of income for most FSM citizens and overharvesting is a significant problem. Please see the discussion of overexploitation of natural resources as a threat to biodiversity in the FSM under Part I of this report for more details.

- **Theme 6: Biosecurity.** Border control, quarantine and eradication programs are effectively protecting the FSM's native biodiversity from impacts of alien invasive species.

Since the 4th National Report the FSM has made significant progress implementing activities under this theme. At the national level FSM agreed with other countries in the region to strengthening border control and quarantine procedures through the Micronesia Biosecurity Plan. As describe in Part I this initiative is designed to address possible increasing spread of invasive species as a result of more cargo and passenger movements throughout the region. The FSM agreed to contribute funding, and work is underway to implement the activities proscribed in the plan. At the State level, natural resource management agencies and NGOs are also engaged in the fight to control invasive species. Each State has a task force to combat invasive species and the priorities for these groups reflect the local context. For example in Pohnpei the State's iSTOP team recently updated its strategic plan and reviewed activities to date, reporting progress controlling 4 out of 5 priority invasive species including false sakau. The work to manage and control invasive species is long-term requiring iterative activities; therefore activities under this theme are on going.

- **Theme 7: Waste Management.** All human-generated wastes are effectively managed to prevent or minimize environmental degradation, pollution and loss of the nation's biodiversity.

States are making progress towards the objectives within this theme, particularly in the areas of solid waste management and recycling. The FSM government's National Solid Waste Management Strategy 2010-2014 incorporates many of the National BSAP theme 7 objectives and the collection and storage of waste is improving in most States. The Japanese International Cooperation Agency supported the renovation of the main landfills in Kosrae in 2008 and Pohnpei in 2013 to create semi-aerobic landfills. Work is underway to do the same in Yap. In Chuuk landfill improvement has stalled as the State continues to look for suitable land to lease for a new dumpsite, and Pohnpei is also in need of a new landfill facility. Recycling programs are operating in Kosrae, Pohnpei, and Yap, with Yap banning the use of plastic bags in retail stores in 2013. Please see the case study below for more details.

Case Study: Recycling in Kosrae

KIRMA, in partnership with the Micronesia Eco. Corporation, is implementing a self-financing recycling program. The State is collecting a deposit fee of $4.00 on lead-acid batteries and $0.06 on each imported glass, aluminium, and plastic beverage container. Kosraeans can later turn in empty bottles and receive $0.05 back per bottle, with the remaining $0.01 per unit covering handling costs. About $60,000 was reportedly earned in 2011 alone through this program (Asian Development Bank, 2014).

In 2013 Micronesia Eco. Corporation became the first recycling operator in the FSM to be approved to ship used lead acid batteries under the Basel Convention rules, and almost 1,500 used lead acid batteries were subsequently shipped to South Korea to be recycled. The parties have started a scrap metal recycling program and are studying the use of polyethylene terephthalate bottles for construction materials. Micronesia Eco. Corporation used approximately 3,400 crushed bottles to construct a wall at a local hotel. Also in 2013 the Australian Embassy provided KIRMA with a glass pulveriser. With this new machine the partners are now grinding down glass bottles to use as aggregate for cement. The partners are also conducting recycling and environmental awareness campaigns in local elementary schools.

State, Municipal, and National agencies are also working to manage sewage, organic wastes (particularly from piggeries), and medical and chemical wastes. For example, the FSM Department of Transportation, Communications, and Infrastructure is looking into ways to combat ballast and waste water dumping by ships in FSM waters, and actors in Chuuk are working to improve sewage treatment in Weno. In 2013 the Kosrae legislature passed new regulations banning the use of some persistent organic pollutants. In another positive development, community based organizations throughout the FSM are increasingly getting involved. For example women's, youth, church, and other community groups are partnering with local NGOs, State agencies, and donors to conduct

community clean ups. As is described under theme 11 in Pohnpei in 2014 a youth group launched the FSM's first Piggery Waste Management Revolving Fund designed to finance piggery improvements to reduce contamination of the local watershed.

- **Theme 8: Human Resources and Institutional Development.** All citizens, residents and institutions of the nation are aware of the importance of biodiversity and have the technical knowledge, skills and capacity to conserve, preserve and sustainably utilize, manage and develop all biodiversity within the nation

Public awareness and behaviour change communications are critical to the success of biodiversity conservation programming in the FSM. Some efforts are underway to better integrate biodiversity into the country's school systems. For example Pacific Resources for Education and Learning is working with Departments of Education at the National and State levels, with donor support, to develop and introduce curriculum that links climate change with biodiversity to augment existing science courses. To date this includes four books on high and low island environments, mangrove text and lesson plans (currently being piloted in Kosrae), with additional lesson sets on organism adaptations in the works. Departments within the College of Micronesia are also helping advance knowledge and understanding of biodiversity and the environment. Aside from the formal education system, natural resource management agencies and local, regional, and international NGOs are incorporating public awareness outreach into their programming. Below is a case study of Rare Inc. that illustrates this work.

Case Study: Rare Pride Campaigns

Rare Inc., an international development and conservation organization, implemented the Program for Island Resilience in the Federated States of Micronesia between 2012 -2014 with activities in five sites across Pohnpei, Kosrae, and Chuuk. The project identified conservation fellows, key stakeholders from within State agencies and NGOs, and focused on building these fellows' capacity. Fellows initially completed six weeks of university-level Pride Program training and returned to sites. For the next nine months the fellows worked at their sites to establish baseline data through community surveys, develop incentives plans/barrier removal strategies, create preliminary community buy-in, and interview key stakeholders. The fellows then returned with their data for additional training in planning public social marketing outreach, or Pride Campaigns, to begin changing community behaviors. For another six weeks, the fellows went through an in-depth social marketing training and put together their plans for implementing these Pride Campaigns, which they implemented from 2013 – 2014.

Pride Campaigns are examples of behavior change communications that foster community commitment to sustainable management and conservation of their natural resources. Each Pride Campaign is owned by a community partner and led by a conservation fellow specializing in social marketing and community fisheries management or land management. Fellows on marine campaigns market sustainable fishing behaviors and develop locally managed incentives for respecting marine protected areas and no-take zones. The fellows on terrestrial campaigns work to promote

sustainable land management techniques and provide training and technical assistance in erosion control and re-vegetation best practices.

Community members are working to sustainably manage mangroves in Kosrae. Photo provided by Rare

For example, the Yela-Tafunsak Pride Campaign Sulaclah Paki Ac Yukwiyac (Select and Protect our Mangrove) focuses on mangrove conservation through sustainable use practices. Pre and post campaign survey results show an increase in community knowledge about the impacts of sedimentation from 18 percent to 36 percent. Further, the Yela-Tafunsak Pride Campaign has increased public support for forest management regulations, and the designation of mangrove sites proposed for harvesting and no-take zones. The program could be a successful model for future outreach work.

- **Theme 9: Resource Owners.** Traditional resource owners and communities are fully involved in the protection, conservation, preservation, and sustainable use of the nation's biodiversity.

As is described throughout this report, a key positive trend within the FSM is the engagement of community, municipal, and traditional leaders in biodiversity conservation work. In general BSAP activities that support this engagement are developed and on going at the State and National level. State agencies and NGOs are partnering with communities and traditional leaders to develop management plans for protected areas and improve fisheries and sustainable land management practices. Municipal leaders are getting involved with clean-ups, and in some States Municipalities

are increasingly partnering with State, NGO, and community actors to enforce protected areas and other natural resource management regulations.

As more and more State agencies and NGOs are working directly with communities these groups are sharing resources and holding joint meetings. This is supporting biodiversity mainstreaming, promoting synergies between programs, diversifying messages for public education campaigns, and reducing time demands on community members. For example, in Chuuk in the last five years groups working on sanitation, agriculture, fisheries, public safety, and economic development are accelerating and expanding collaboration with Women's organizations and other community groups. This collaboration is also helping build staff capacity as teams are learning job skills from each other and best practices for working at the community level.

That government resource management agencies in the FSM are finding success working with community members and traditional leaders is not surprising. This reflects the fact that much of the FSM's natural resources are privately owned, making it imperative to engage the resource owners. In the case of Yap and Chuuk, ownership extends out into the lagoon. As discussed above in the Rare Inc. case study, working directly with communities helps build popular support for conservation and contributes to behavior change in targeted areas. Engaging actors at the community level can also help balance National, State, and community level priorities by involving existing traditional governance structures throughout the FSM. Traditional leaders can mobilize entire communities to act. For example scheduling regular volunteer community clean ups. Traditional systems of justice can also aid in punishing and deterring behavior, such as fishing in community declared no-take zones.

Working with traditional leaders and communities also helps incorporate traditional environmental knowledge into community based conservation initiatives. In Yap and Kosrae for example, stakeholders reported that in the past ten years of implementing their BSAPs and associated conservation work, activities that reflected community priorities and incorporated community knowledge and leadership advanced more so than initiatives that only reflected top-down goals. Part of the issue is that activities designed at the National, or even regional level, may not reflect community specific needs. In Pohnpei stakeholders added to this discussion pointing out that having regional, National, and State goals – such as the Micronesia Challenge – can help organize community work and frame discussions about what issues are the most critical.

In addition to working at the individual and community level, stakeholders throughout the FSM pointed out the importance of involving Municipalities to facilitate the work of State-level agencies and NGOs. For example, in Chuuk State resource management agencies are increasingly collaborating with Municipal police officers to enforce protected areas, and are including Municipal officials in protected area management planning. In Pohnpei the State is increasingly initiating formal long-term agreements with Municipal governments to conduct joint activities and/or pilot initiatives. Pohnpei stakeholders reported that if a project is successful or best practices are identified at the Municipal level, the increased communication between Municipal and State agencies is making it is possible to replicate those activities elsewhere.

However working at the individual and community level is a process that takes a significant time commitment. The impact of activities can therefore take years to materialize. For example work to protect the Yela Ka forest in Kosrae began in earnest in the 1990's and the easement was just formalized in 2014. During the stakeholder consultations to prepare this report stakeholders also consistently pointed out the need to increase engagement of the private sector, particularly banks.

- **Theme 10: Mainstreaming Biodiversity.** All economic and social activities of the FSM take full account of impacts on and fully consider sustainability of biodiversity.

There has been substantial and continuing progress to mainstream biodiversity across the FSM. Since the introduction of the BSAPs in the early 2000's States and the National governments have included biodiversity considerations into other sector strategic plans and are weaving in biodiversity considerations into public awareness and education programs. Government and NGO actors are increasingly involving communities and the private sector in the planning and implementation of conservation and development programming. However stakeholders throughout the country indicated that additional work is needed to consolidate these mainstreaming gains, particularly the inclusion of sufficient funding for biodiversity conservation and management in government budgets. Please see the Question 8 below for a detailed discussion of mainstreaming at the National and State levels.

- **Theme 11: Financial Resources.** Local, regional and international financial sources provide for the long-term financial sustainability of all conservation and biodiversity related activities.

While funding for conservation activities remains a challenge, actors within the FSM are making significant progress towards creating sustainable financing mechanisms. In addition to the budgets allocated by government to the National and State natural resource management agencies, local, regional, and international organizations are also leveraging funding to support the implementation of BSAP activities. The expansion of the Micronesia Conservation Trust in particular represents a significant area of achievement under the National BSAP.

The 2002 National BSAP under Theme 11 called for the creation of the Micronesia Conservation Trust (MCT) and its early history is described in the 4th National Report. Since the 4th National Report, MCT has realized several major achievements on behalf of the FSM government and regional conservation initiatives, advancing its role as a financing mechanism for conservation work. The leadership of the FSM, the Republic of the Marshall Islands and the Republic of Palau governments came together in 2008 to propose a joint full-sized project to the Global Environment Facility (GEF). The project came to fruition in 2010 and involves the development of sustainable funding plans and country program strategies for Micronesia Challenge goal implementation. MCT provided technical assistance with the development of these plans and continues to assist the FSM government with the completion of its commitments under the project. One of the key activities in progress is the funding of an endowment in the FSM to perpetuate conservation activities, see the below case study for details.

Case Study: FSM Micronesia Challenge Endowment

The FSM government, with support from MCT and inline with the country's Micronesia Challenge commitment, has drafted a sustainable finance plan that calls for the creation of a $33 million endowment fund that would be able to distribute 5% of the fund annually in perpetuity to support conservation work. The development of the FSM sustainable finance plan, which is based on estimates for protected area management activities in each of the States and at the National level, represents a significant step forward by systematically identifying funding needs, gaps, and fundraising sources and targets. The FSM government, in collaboration with international donors and conservation groups, is in the process of funding the endowment. To date, The Nature Conservancy has contributed $1 million: $0.5 in 2010 to match a $1.68 million grant from the UN Global Environment Facility and the remaining $0.5 million in 2013 to match a $250k contribution from the FSM National government. In August 2014 Conservation International fulfilled its pledge, contributing $1 million into the endowment. As of August 2014, the endowment is $4.8 million.

In 2012 the FSM government approached MCT with a request that it pursue accreditation to serve as its National Implementing Entity for the Adaptation Fund. As of the publication of this report, MCT has completed the application process and successfully negotiated modified accreditation standards for small non-government entities. MCT is in the process of responding to a final round of comments and recommendations from the accreditation panel. Achievement of the accreditation will allow for the FSM to directly implement activities with these funds rather than relying on outside institutions such as the United Nations Development Programme.

Also since the 4th National Report the Micronesia sub-regional GEF Small Grants Program, which was previously housed under MCT, graduated to three separate country programs administered through UN Joint Presence Offices in each country. The FSM's Small Grants Program is making available funds directly to local NGOs and community-based organizations in the country. In just the first three quarters of 2014, 14 such groups are implementing projects funded by the Small Grants Program. Subsequent to the graduation of the GEF programs, Rare Inc. and MCT entered into an agreement to host its program staff in the FSM and to cooperate on fund-raising and project funding support. As described in the case study on Rare Inc., the continuing education component of its programs have increased the social marketing and project management capacity of local conservation partners in the FSM and raised awareness of conservation issues across the country.

MCT is also supporting the development of innovative sustainable financing mechanisms at the State and community levels. For example, actors in Pohnpei are working to develop a Nett Watershed Fund to improve watershed management. A recent feasibility study shows overall willingness to bear an increase in water utility cost to initiate the fund, at just $0.005 per gallon the increase would result in more than $400,000 of revenue to fund improvements to the watershed (Kastl, Joseph, Obisop, & Andreas). Lastly, in 2014 the

Awak Youth Organization with support from the MCT and the Conservation Society of Pohnpei established the Piggery Waste Management Revolving Fund. The first of its kind in the FSM, the fund will be used to renovate piggeries to a dry litter system producing compostable material for sale. Some of the proceeds from these sales will return to the fund. The aim of the revolving fund is to reduce or eliminate contaminants from piggeries into the area watershed and shoreline.

Q7.b: Challenges implementing the National BSAP

In addition to the advances described above, during the consultations to prepare this report stakeholders also highlighted obstacles to implementation. **Not enough capacity and resources** was cited as the key obstacle to implementation. Insufficient human capacity (not enough personnel and/or personnel with the right skill sets) to plan, implement, enforce, and evaluate conservation programming is hindering achievement of biodiversity objectives at the National, State, municipal, and community levels. For example, community groups engaged in conservation are essential to the success of conservation initiatives. However community members involved are mostly volunteers, and not necessarily fully trained in project management, public awareness methods, monitoring or enforcement. Insufficient equipment and finances was also a widely cited problem.

Another reoccurring theme during the stakeholder consultations to prepare this report was that there are **gaps in knowledge and continuing issues collecting, processing, and using data for decision-making**. While there is a clearinghouse mechanism for data sharing between agencies, it isn't being effectively utilized and few reports are shared through this portal. Without solid repositories for data, many conservation actors risk losing information or duplicating applicable work that has already been done elsewhere. There is not a program of research at the National level, nor are there set research priorities within each State. This is not to discount the substantial and continuing monitoring work. Including regular marine monitoring of protected areas in each State, the efforts through the Micronesia Challenge to build capacity and establish commonly used indicators, and increased utilization of GIS data.

Lack of sufficient baseline data of terrestrial and marine species to determine overall vulnerability was cited as a problem in each State, as was continuing reliance on outside partners to deal with data. In Chuuk for example the State commissioned a rapid ecological assessment of reef fish in 2008, and brought in outside assistance. However given the expense of the outside support and limited in-State capacity, Chuuk State agencies have not been able to conduct another comprehensive follow-on study. Gaps in baseline data are also making it difficult to make informed decisions. For example, in Yap logging of hardwoods for building materials and handicrafts is continuing, but without comprehensive information about the status of the forests policy makers are not sure how much logging is sustainable. Efforts to address this issue are already underway. The Palau International Coral Reef Center and the University of Guam are providing marine monitoring capacity support, data management services, and analysis as part of the Micronesia Challenge and the Micronesia Challenge Measures Working Group is developing terrestrial indicators.

Community members display traditional foods and products during a Kosrae Cultural Day celebration.
Photo © Carlos Cianchini

Other implementation challenges are:

- **Enforcement:** Throughout the FSM stakeholders pointed out weak enforcement regimes as being a key implementation issue. Enforcement challenges include: low numbers of staff trained in critical enforcement functions such as patrolling and building cases to prosecute violators; limited equipment and fuel to patrol; low deterrence as few cases are successfully prosecuted; and limited cooperation between National, State, Municipal, and community members engaged in enforcement. To give just one example, the National government has three patrol boats to cover its entire exclusive economic zone of almost 3 million square kilometers.

  To address many of these capacity issues natural resource management agencies, local NGOs, and international organizations are increasingly partnering. Between June 2012 and December 2013, the National Fish and Wildlife Foundation worked with the FSM National Police Maritime Wing and the Pohnpei State Division of Fish and Wildlife to strengthen conservation law enforcement networks, develop standard operating procedures, draft compliance and enforcement plans for programs, and build capacity through targeted trainings, site visits, and skills and lesson sharing (National Fish and Wildlife Foundation, 2014). Along similar lines, the Pacific Islands Managed and Protected Areas Community, the National Oceanic and Atmospheric Administration, the Department of the Interior, MCT, and the Pew Charitable Trusts have coordinated marine enforcement trainings in all four states, including some focus on sharks.

As a result, government officials and community members are leading more coordinated and efficient enforcement, compliance, and community awareness activities. This work is already producing results, like the recent enforcement action taken in Chuuk. In September 2014, a fishing vessel targeting groupers and other life reef fishes came into port with sharks onboard. The vessel was seized and a fine of over $900,000 was levied.

- **Funding delays:** Stakeholders cited lengthy government procurement procedures and complicated donor-to-government requirements as leading to implementation delays. However with the emergence of strong local NGOs and the Micronesia Conservation Trust, funding sources and implementing partners for conservation activities are diversifying. At the same time the government is taking steps to streamline its funding procedures.

- **Gaps in legislation:** Stakeholders described how gaps in legislation and policy are limiting the ability of natural resource management agencies and NGOs to advance biodiversity conservation. Delays in passing conservation legislation, such as National shark protection legislation, show lackluster political commitment to conservation and are leaving some species and habitats vulnerable to overexploitation and degradation.

  To increase political and popular support for conservation legislation actors in the FSM are increasingly using scientific evidence and data as part of public awareness campaigns and to inform policy makers. For example stakeholders used the data collected from monitoring the Chuuk lagoon as part of the Chuuk Coral Reef Monitoring Program to lobby for marine resources conservation and management regulations to protect sea cucumbers and other marine species. A representative of the Chuuk Department of Marine Resources credited this use of scientific data as instrumental in getting these regulations passed in October 2014.

Q8: How effectively has biodiversity been mainstreamed in the country?

Actors throughout the FSM have made considerable progress towards mainstreaming biodiversity within the country. Below are summaries of the progress made at the National and State levels to mainstream biodiversity.

FSM National Level: The country's National Strategic Development Plan includes an Environment Sector Plan and Theme 10 of the NBSAP is: *Mainstreaming Biodiversity; all economic and social activities of the FSM take full account of impacts on and fully consider sustainability of biodiversity.* Activities are ongoing within the country to support both of these planning documents. At the regional and international level FSM is

a signatory to nine treaties regarding the environment[6]. The FSM government is also looking at ways to incorporate disaster risk reduction strategies into the National BSAP during the upcoming revision process.

The FSM government is working to better integrate information on the environment and biodiversity into the school system, while continuing and expanding public education and awareness programs. Some efforts are underway to better integrate biodiversity into the country's school systems. For example the climate change and biodiversity curriculum described under theme 8 above. In addition to mainstreaming biodiversity throughout the formal education system, national level stakeholders also pointed out the need to diversify channels for public awareness campaigns. For example increasing social media presence and expanding successful awareness building campaigns such as the Postal Service featuring the country's endemic animals on stamps.

Yap: In Yap discussion about mainstreaming during the workshops and meetings to prepare this report focused on how biodiversity considerations are incorporated into planning and activities at the community level with State support. Currently Yap has about fifteen community-led protected areas, in varying stages of legal demarcation. A prerequisite for each community-led protected area is a management plan. According to Yap State officials, discussions about effective resource management, which is not necessarily strict preservation in no-take-zones, are often at the forefront of community consultations given the importance of ecosystem services to everyday life at the village level. Another key feature of Yap protected area management plans are the identification of alternative income generating activities instead of overharvesting resources for sale. At the community level biodiversity conservation is being 'mainstreamed' into community planning alongside economic development under the banner of effective resource management in Yap.

At the Yap State level, economic development continues to be focal area for the government. However State actors recognize the need to involve environmental stewardship agencies in the permitting process for economic development projects. To meet this need the Resources Advisory Council Bill is pending with the Yap State legislature. This bill, if adopted, would establish a council with representatives from government as well as Yap traditional leaders to provide guidance to the Yap EPA when undertaking environmental impact assessments. Another bill, the Development and Review Process Bill, is also pending. If passed, it would establish a review process for private sector development projects, involving the Resources Advisory Council, and establish a permit system for significant development projects. While these bills are promising, similar pieces of legislation have not advanced within the past 20 years in Yap

[6] CBD; UN Framework Convention on Climate Change; Vienna Convention for the Protection of the Ozone Layer; Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal; Waigani Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes; UN Convention to Combat Desertification in those Countries Experiencing Drought and/or Desertification, Particularly Africa; UN Convention on the Law of the Seas; Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Central and Western Pacific Ocean; and Stockholm Convention on Persistent Organic Pollutants.

as the State continues to work out to what extent it can regulate the activities of private resource owners on their own property – which is particularly challenging in Yap since most of the land and nearshore areas are privately held.

Chuuk: The Chuuk State BSAP explicitly includes mainstreaming biodiversity as objective *4.6: All government departments and agencies will include biodiversity conservation in their planned activities.* During the consultations in Chuuk to prepare this report, stakeholders shared that biodiversity planning is now included in all State agencies that deal with environment, for example the Department of Marine Resources, the Department of Agriculture and the Division of Forestry, and the Environmental Protection Agency. In the last few years, the leadership within the Department of Commerce and Industry are also increasingly considering biodiversity and working with the other resource management agencies listed above. Overall, however Chuuk stakeholders recognized a continuing need to formalize the consideration of biodiversity into government strategies, workplans, and budgets. In addition to the Department of Commerce and Industry, Chuuk stakeholders also identified the Chamber of Commerce, and the Department of Education as key groups that should formalize biodiversity into their planning.

Pohnpei: The Pohnpei BSAP supports mainstreaming biodiversity conservation across its thematic areas. In particular Pohnpei is making considerable strides to mainstream biodiversity to address BSAP objective *2.10: Conduct research/resource assessment and develop a sustainable fish management plan*. To develop this plan researchers, State resource management agencies, and NGOs are partnering with the private sector to manage fisheries to balance fisheries conservation with its importance to the Pohnpei economy. The teams have a draft plan, elements of which are reflected in the Pohnpei State Strategic Development Plan, Fisheries Sector. This achievement represents a concerted long-term effort to integrate fisheries conservation with the State's economic development plans. (Pohnpei State Strategic Development Plan; Planning for Pohnpei's Sustainable Future as the World Park, 2013). The Pohnpei stakeholders also pointed to objective *6.5: Establish and implement regular consultation process between local and State governments and the Traditional Leadership Council.* This objective is being pursued, throughout frequent meetings with traditional leaders, community members, Municipal officials and natural resource agencies and NGOs. As a result biodiversity considerations are increasingly being incorporated into municipal and community-level work in the State.

Kosrae: This State has made significant progress to mainstream biodiversity since the 4th National Report. In 2013 the State created the Kosrae Conservation and Enforcement Taskforce to help coordinate enforcement efforts and share resources and skills to improve enforcement. The taskforce is made up of representatives from KIRMA, YELA, the Attorney General's Office, the Department of Resources and Economic Affairs, the Kosrae Conservation and Safety Organization, and Municipal officials. This initiative includes trainings as well as public awareness and deterrence campaigns. Another feature of mainstreaming enforcement in Kosrae is a regulation under title 19 allowing for KIRMA to identify potential conservation deputies. Once identified these community members are undergoing training in enforcement and compliance. If they pass these individuals can be deputized allowing them to issue citations for violations.

Mainstreaming biodiversity considerations is also incorporated in the State's new 10 year Strategic Development Plan for 2014 – 2023. The plan includes a detailed workplan for the Environment Sector. The Kosrae Environment Sector plan sets out 8 objectives and cites responsibility for implementation to be shared between State government, Municipal governments the private sector and communities. The objectives are: impact of coastal erosion is minimized; natural resources are effectively managed and conserved; effective waste management is achieved; introduction and spread of invasive species prevented and minimized; important ecosystems and biodiversity are protected, conserved, and sustainably managed; communities are resilient to impacts of climate change and disaster risks; community participation, commitment and support towards conservation programs are enhanced; and sustainable financing mechanism is established to support conservation and environmental protection efforts.

Out in the Chuuk Lagoon. Photo © Javier Cuetos-Bueno

Q9. How fully have the country's biodiversity strategic action plans been implemented?

In order to evaluate how fully the FSM's BSAPs have been implemented during the workshops held in each of the four States and at the National level participants discussed which planned activities have been carried out and the extent to which objectives have been met for each of the State-level BSAPs and the National BSAP. A key finding of these discussions was that the vast majority of objectives set over a decade ago remain relevant. Many are supported by iterative actions such monitoring ecosystems and controlling invasive species. Other objectives support long-term goals, such as establishing effective waste management systems throughout the country.

While a few objectives and activities include measurable outcomes, the National and State governments have not yet developed a specific set of indicators to measure progress towards the objectives within the BSAPs. Without set indicators or clear milestones for progress it is difficult to assess how fully the plans have been implemented. During the

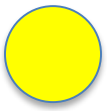
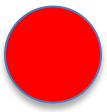
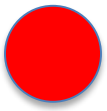
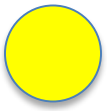
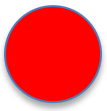
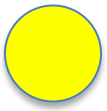
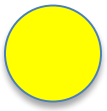
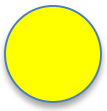
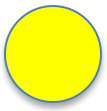
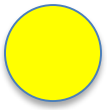
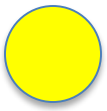
national-level workshop stakeholders recognized the need to develop specific targets for the National BSAP themes in the future. Where possible, these targets could be aligned with the Micronesia Challenge to avoid duplication.

The analysis in this section is therefore based on the collaborative discussions of the status of the BSAPs during the stakeholder workshops. It reflects the stage of implementation of activities, rather than progress towards indicators. Participants evaluated if actions proscribed in the National and State BSAPs are: 1) still in the initial planning phases with few activities underway; 2) if work is well underway, and finally; 3) if the objectives have been fully met. The below table summarizes the results using a 'stoplight' approach with the red circles indicating stage 1 and yellow circles indicating stage 2. No objectives were evaluated by stakeholders to be fully met. Please see the descriptions of each theme under Question 7 for more details about implementation.

As the below table indicates, the majority of activities under most National BSAP themes are well underway for 8 of the 11 National BSAP themes. The remaining three themes – Species Management, Genetic Resource Use, and Ecologically Sustainable Industry Development – represent areas in which the majority of work is still in either the planning phase and/or if activities are still in early stages. The low percentage for Species Management mainly reflects the baseline data challenges described under Question 7 above. Without sufficient species-specific information, stakeholders reported challenges prioritizing species protection and designing and implementing programming to protect vulnerable species. However, some progress is being made. As described above all four States within the FSM have passed shark protection legislation.

The Genetic Resource Use theme has the smallest number of sub-activities (only 9, whereas theme 1 Ecosystem Management has 19 and Human Resources and Institutional Development has 30) and most of these activities are still in the designing and planning phase, hence the lower score. Finally, activities under the Ecologically Sustainable Industry Development theme involve creating alternative incomes to reduce overharvesting and the development of a strong and environmentally friendly private sector. While there are a myriad of government programs and plans, not in the least of which is the FSM Strategic Development Plan that incorporates biodiversity considerations into private sector development initiatives, stakeholders throughout the country described progress towards objectives under this theme to be slow and not consolidated.

Table 9.1: Analysis of implementation of the FSM's National BSAP*.

	FSM National Biodiversity Strategic Action Plan Theme	"Stoplight" Progress
1	**Ecosystem Management:** A full representation of FSM's marine, freshwater and terrestrial ecosystems are protected, conserved and sustainable managed, including selected areas designed for total protection	
2	**Species Management:** FSM's native, endemic, threatened, and traditionally important species are protected and used sustainably for the benefit of the people of the FSM and the global community	
3	**Genetic Resource Use:** The FSM's genetic resources are accessible for utilization and all benefits derived are equitably shared amongst the stakeholders	
4	**Agrobiodiversity:** The conservation and sustainable use of Agro biodiversity contributes to the nation's development and the future food security of the FSM	
5	**Ecologically Sustainable Industry Development:** Economic development activities in the FSM meet the needs of the population while sustaining the resources for the benefit of future generations	
6	**Biosecurity:** Border control, quarantine and eradication programs are effectively protecting the FSM's native biodiversity from impacts of alien invasive species	
7	**Waste Management:** All human-generated wastes are effectively managed to prevent or minimize environmental degradation, pollution and loss of the nation's biodiversity	
8	**Human Resources and Institutional Development:** All citizens, residents and institutions of the nation are aware of the importance of biodiversity and have the technical knowledge, skills and capability to conserve, preserve and sustainably utilize, manage and develop all biodiversity within the nation	
9	**Resource Owners:** Traditional resource owners and communities are fully involved in the protection, conservation, preservation, and sustainable use of the nation's biodiversity	
10	**Mainstreaming Biodiversity:** All economic and social activities of the FSM take full account of impacts on and fully consider sustainability of biodiversity	
11	**Financial Resources:** Local regional and international financial sources provide for the long-term financial sustainability of all conservation and biodiversity related activities.	

*Yellow circles indicate that work is well underway, red that work is still in the initial planning phases with few activities ongoing.

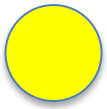
Sunset over the Pacific in the FSM.

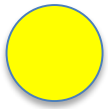
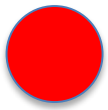
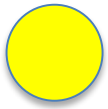
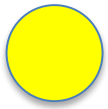
Part III – Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant Targets of the Millennium Development Goals

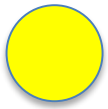
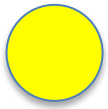
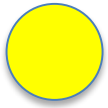
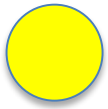
Q10: What progress has been made towards the implementation of the Strategic Plan for Biodiversity and its Aichi Biodiversity Targets?

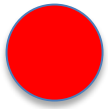
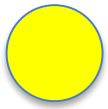
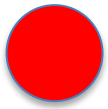
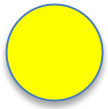
During each of the five stakeholder workshops held in preparation for this report the groups assessed whether or not work is being done to support each of the five SPB goals, and each Aichi Target. All States and the National government reported conducting activities that support each of the targets. However in the five stakeholder consultations the teams did uncover three areas – Aichi Targets 3, 10, and 12 – which are not being adequately addressed. The table below summarizes on going work towards each indicator and includes a 'stoplight' to visually reflect progress towards the indicator. A red circle indicates limited activities in support of the target and a yellow circle reflects substantial on going activities. No Aichi Targets were assessed to be achieved. Following this table are two case studies that highlight progress towards Aichi Targets 9 and 11.

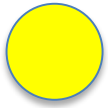
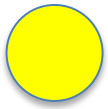
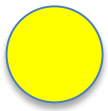
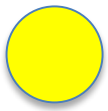
Table 10.1: FSM Progress towards the Aichi Targets*

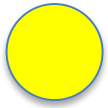
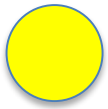
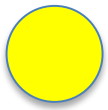
Aichi Targets	'Stop-light'	Progress Towards Achieving Targets in the FSM
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society		
1 By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably		FSM-wide: increasing inclusion of climate change/biodiversity into science curriculums in schools, public awareness/behavior change programs on going at community levels in each State. However stakeholders across the country stressed the importance of widening and deepening these efforts. Highlights: Rare Inc. Pride Campaigns conducted in each State, Conservation Society of Pohnpei's Green Road Show and Youth in Environment Campaigns

2	By 2020, at the latest, biodiversity values have been integrated into National and local development and poverty reduction strategies and planning processes and are being incorporated into National accounting, as appropriate, and reporting systems	 FSM-wide: The FSM Environment Sector Plan, part of the overall National Strategic Development Plan, integrates biodiversity values into development initiatives. At the National level however, stakeholders pointed out that more work needs to be done to incorporate biodiversity into accounting systems. Highlights: Environment Sector Plan part of the overall Kosrae Strategic Development Plan and draft Environment Sector Plan related to the Pohnpei Strategic Development Plan
3	By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account National socio economic conditions	 During each of the five stakeholder workshops, participants identified this indicator as not being fully considered in existing workplans. FSM-wide: Need to assess existing programs and policies to determine if they include negative incentives, and involve banks and the private sector in this process. Anecdotally, stakeholders shared that some development programs can/do have adverse impacts on the environment
4	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits	 FSM-wide: Four priority sectors for development in FSM have been identified; including fisheries, agriculture, energy, and tourism and the National Strategic Development Plan includes objectives/activities that consider biodiversity for these sectors. However, stakeholders across the country pointed out the need to continue/increase engagement with the private sector, including banks
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use		
5	By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced	 FSM-wide: Establishment of new and existing protected areas and implementation of SWARS workplans for forestry management. Highlights: watershed reforestation programs in Chuuk, delineation of phase II of Pohnpei Watershed Forest Area, coastal stabilization programs in Kosrae and Yap

6	By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems are within safe ecological limits		FSM-wide: Integration of biodiversity considerations into the Fisheries and Environment Sector of the National Strategic Development Plan. However need to define what are 'safe ecological limits' particularly for pelagic fish. Highlights: fisheries management plan in development in Pohnpei, ongoing biological monitoring programs in Chuuk, development of community-led management plans for protected areas that consider sustainability in Yap, Kosrae, Pohnpei, and Chuuk. Scientific work (by Houk, Rhodes, and Cuetos-Bueno to list a few) is also giving conservation actors good baseline data and trends for fisheries allowing for more informed management decisions
7	By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity		FSM-wide: States and the National government are working in outer islands to increase crop diversity, for example focusing on saltwater tolerant crops, to address food security and support genetic diversity. Highlights: MERIP and OFA aquaculture programs in Pohnpei, community engagement in Chuuk to improve agroforestry practices and yields, model farms on Kosrae and Yap
8	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity		FSM-wide: Jurisdictions throughout the FSM (National, State, municipal) are working to control pollution, including solid and wastewater management as well as agriculture/industrial effluents. Highlights: development of semi- anaerobic landfills in Pohnpei and Kosrae, planned landfill improvements in Yap. Kosrae has a robust recycling program including aluminum cans, plastic and glass bottles and some automotive parts, and the other States are developing their own programs
9	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment		FSM-wide: FSM along with other countries in the region are collaborating under the Micronesia Biosecurity Plan. Highlights: endorsement of the Micronesia Biosecurity Plan. Each State has invasive species management plans and taskforces (in varying stages of implementation). Pohnpei reported reaching control targets for 4 out of 5 selected invasive species

10	By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning		FSM-wide: This indicator is outside of the manageable control of the FSM, as a small developing country in the Pacific. That being noted, during the five workshops, stakeholders identified this as an area in which existing BSAPs and actions do not fully consider; and suggested additional or revised objectives to reflect this target to reflect work already underway in the country
Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity			
11	By 2020, at least 17 percent of terrestrial and inland water, and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative, and well connected systems of protected areas and other effective are-based conservation measures, and integrated into the wider landscape and seascapes		FSM-wide: The country is participating in the regional Micronesia Challenge to effectively conserve 30% of near-shore marine resources and 20% of terrestrial resources by 2020. Highlights: the FSM has over 50 planned and existing marine and terrestrial protected areas across Yap, Chuuk, Pohnpei, and Kosrae, including the Yela conservation easement in Kosrae, the first of its kind in the region. See case study below for more information on progress towards improving protected area management
12	By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained		During each of the five stakeholder workshops, participants identified this indicator as not being fully considered in existing workplans. Overall, there is a lack of comprehensive baseline data about both terrestrial and marine species. Without this information, stakeholders are not able to evaluate the status of endangered species, and in some cases even determine with confidence if a species is endangered or not. To address this issue, during each of the five workshops the participants discussed ways to more directly address this target, including updating BSAPs and prioritizing survey work. Highlight: All four States passed shark protection legislation
13	By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity		FSM-wide: Activities throughout the country are promoting safeguarding genetic diversity, particularly through agroforestry and food security programs. Highlights: State seed banks and model agroforestry/agriculture farms incorporating numerous varieties of food crops including ethnobotany programs in Yap and Pohnpei

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services			
14	By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and wellbeing, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable		FSM-wide: The restoration of ecosystems to safeguard and improve ecosystem services is ongoing in each State. Highlight: Pohnpei is working to develop a Nett Watershed Fund to improve watershed management, to be funded directly through payments for ecosystem services. A recent feasibility study shows overall willingness to bear an increase in water utility cost to initiate the fund
15	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 percent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification		FSM-wide: as of 2014 there are about 25 different donor-funded projects/NGOs working to mitigate climate change and identify and implement adaptation programs. Highlights specifically for restoring degraded ecosystems include: Pandanus and mangrove planting programs conducted by women's, youth, church, and community groups in each of the four States with support from resource management agencies and NGOs
16	By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with National legislation		FSM-wide: FSM ratified the protocol, one of only four Pacific countries to have done so far. At the National and State levels work is being done to create access and benefits sharing frameworks, for example Pohnpei recently developed a draft framework, and Chuuk stakeholder suggested adding objectives to address this issue to their State BSAP
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building			
17	By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated National biodiversity strategy and action plan		In order to initiate the process for updating the five relevant BSAPs for the FSM, and gather information for this report, workshops were held in each of the four States and at the National level. Relevant actors within the FSM plan to meet this target by completing the update process by 2015

18	By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to National legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels		FSM-wide: Throughout each of the four States and at the National level traditional knowledge is highly respected, as traditional systems of natural resource management, including but not limited to agroforestry, fisheries, and traditional medicine, formed the basis for livelihoods. Note residents of the FSM do not make a distinction between indigenous and non-indigenous peoples. Highlights: Actors in all States are routinely involving communities, traditional leaders, women's youth and church groups in conservation programming
19	By 2020, knowledge, the science base and technologies related to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied		FSM-wide: stakeholders throughout the country reported this to be a critical target that requires additional effort at the National and State levels. While the FSM does have a clearinghouse mechanism, it is underutilized, and there are plans to create a more robust and user-friendly database. In addition to housing and sharing needs, stakeholders in the FSM cited a need to prioritize research and most agreed there is a need for more baseline data across the country
20	By 2020, at the latest, the mobilization of financial resources for effective implementation of the Strategic Plan 2011-2020 from all sources and in accordance with the consolidation and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties		FSM-wide: Identifying and securing sustainable financing is critical for the FSM as a whole to meet its biodiversity conservation goals. Highlights: The FSM drafted a sustainable finance plan that identifies funding sources and gaps. FSM has also already begun funding an endowment to provide perpetual financing for conservation activities. Also at the National level the country developed the Overseas Development Assistance plan. In 2014 the Yela conservation easement endowment was established, and also in 2014 in Pohnpei a youth group (in Awak) is initiating the country's first revolving fund for conservation

*A red circle indicates limited activities in support of the target and a yellow circle reflects substantial on going activities.

Coverpage art of the iSTOP strategic action plan 2013 – 2017
(invasive Species Task Force Of Pohnpei, 2013)

Aichi Target 9 Case Study – invasive Species Task Force Of Pohnpei (iSTOP)

Aichi Target 9 sets out the goal of managing pathways, controlling, or eradicating invasive species by 2020. As described in Part II of this report, each of the FSM States are undertaking activities to control the spread of invasive species, and notably the National government has signed onto the regional Micronesia Biosecurity Plan. This case study looks specifically at the work of one State taskforce, the iSTOP, to illustrate how sustained efforts over a 14-year period have resulted in significant successes in Pohnpei.

The first taskforce in Pohnpei dedicated to the control and eradication of an invasive species, False Sakau, was set up in 2000. By 2002 the taskforce efforts had expanded to target five additional species including: Chain of Love, Ivy Gourd, Mile-a-Minute, Honolulu Rose, and the Feral Pigeon. More were added in 2010, including the Octopus

Tree. The results have been dramatic. iSTOP reported that the total populations of the six originally targeted species have dropped – ranging from total species decline of 50% all the way up to 95% removed, and that the Octopus Tree has been completely eradicated (invasive Species Task Force Of Pohnpei, 2013).

In 2012 the Invasive Species Control Plan for Pohnpei State was passed, with the Pohnpei Office of Economic Affairs-Agriculture identified as the lead agency for iSTOP. By 2013 the taskforce initiated activities under its 4th strategic plan for 2013 – 2017. Building on its successes to date, iSTOP set a goal of totally eradicating six species by 2017: False Sakau, Ivy Gourd, Chain of Love, Bengal Trumpet Vine, Honolulu Rose, and the Feral Pigeon. The iSTOP strategic action plan identified other species for management and control, including: Mile-a-Minute, Koster's Curse, African Tulip, and the Tree Sparrow. iSTOP is also expanding their efforts into the waters around Pohnpei, by targeting four new marine species for management and control by 2017: Crown of Thorns Starfish, Eel Catfish, Milk Fish, and Tilapia.

Over the past 14 years the iSTOP team has transformed from a small and loose collaboration to a team comprised of and supported by 20 different State agencies, local NGOs, regional conservation groups, and international donor organizations. iSTOP has also made significant demonstrable progress towards managing pathways, controlling, and in one case to-date eradicating, disruptive invasive species. This process is on-going, requiring continual commitment from State natural resource management agencies, NGO partners, and community control, management, and eradication teams. This long-term effort is paying off. As results to date show, iSTOP efforts in Pohnpei are consistent with the goals and timing of Aichi Target 9.

Aichi Target 11 Case Study – Strengthening the management of protected areas

Per State and the National BSAPs, and in line with the Micronesia Challenge, actors across the FSM are managing protected areas. Protected areas support Aichi Target 11 of conserving terrestrial and aquatic zones. Aichi Target 11 also calls for the establishment of effective management of protected areas. The improvement of management is a key area of focus in the FSM in the years since the 4th National Report. In the country the majority of protected area sites are community managed, with support from State natural resource management agencies and NGOs. The capacity of management teams to achieve protected area conservation goals through activities, use of data, and enforcement varies widely throughout the country (Isechal, Koshiba, & Rehm, 2014). In order to help protected area teams to identify and address management capacity, the Micronesia Challenge supported the development of the Marine Protected Area Management Effectiveness (MPAME) tool.

The MPAME tool, which is equally useful for terrestrial sites, is a scorecard that contains a series of yes/no and multiple-choice questions and is designed to assess the appropriateness, efficiency and effectiveness of protected area operational frameworks in 12 management areas. The results of the assessments provide protected area teams with information about management strengths and weaknesses and helps guide decision making and capacity building efforts. The use of this innovative tool is helping create the type of management set out in Aichi Target 11.

First tested in 2011, in 2013 the Palau International Coral Reef Center and The Nature Conservancy, with support from local NGOs and participation by protected area management

teams, used the scorecard again to evaluate protected area management in selected sites: three in Pohnpei, three in Chuuk, three in Yap, and two in Kosrae. The results identify areas of improvement for management to focus in the near term, while also providing an illustrative snapshot of the differences in capacity and management effectiveness between the four States. The below table shows the average results per State, with green indicating a category score above 50% and red indicating a category score below 50%. Scores below 50% represent areas of weakness. Information to create the below table was taken from the Palau International Coral Reef Center and The Nature Conservancy report "Assessing the Management Effectiveness of Marine Protected Areas in Micronesia" (Isechal, Koshiba, & Rehm, 2014).

Table 10.2: MPAME Tool average State-level results from 2013 assessment

Management Area		Chuuk	Yap	Pohnpei	Kosrae
1	Biophysical				
2	Conservation effect				
3	Ecosystem services				
4	Enforcement				
5	Finance				
6	Infrastructure/equipment				
7	Legal				
8	Planning				
9	Socio-economic				
10	Staffing				
11	Stakeholder engagement				
12	Traditional knowledge				

Q11: What has been the contribution of actions to the achievement of the relevant 2015 targets of the Millennium Development Goals?

The activities described in this report broadly support Millennium Development Goal 7: *Ensure Environmental Sustainability*, specifically targets 7.1: *Integrate the principals of sustainable development into country policies and programmes and reverse the loss of environmental resources*; and 7.2: *Reduce biodiversity loss, achieving by 2010 a significant reduction in the rate of loss.*

The sustainable management and use of biological resources is of fundamental importance to wellbeing of FSM citizens and the country's overall economic development. Recognizing this fact, biodiversity conservation and management considerations (supporting Millennium Development target 7.1) are included throughout the country's strategic development plans. This includes, but is not limited to, the environment sector plan in the FSM's Strategic Development Plan, in the Kosrae Strategic Development Plan, and the draft Pohnpei Strategic Development Plan, and other government plans for development in Yap and Chuuk. Please see Question 8 for a full description of how biodiversity is being mainstreamed throughout the country.
Millennium Development target 7.2 includes six indicators, three of which are relevant for this report: 7.2.a: *Proportion of land area covered by forest and proportion of species*

threatened with extinction; 7.2.d: *Proportion of fish stocks within safe biological limits*; and 7.2.f: *Proportion of terrestrial and marine areas protected*. As described in Part II of this report the FSM has designed and is implementing activities in support of each of these issue areas, summarized below:

- 7.2.a: The 2010 SWARS includes updated information on the status of forests within each of the four States and includes State-specific action plans to reduce the rate of forest degradation, fragmentation, and loss. However, endangered species-specific conservation work is hampered by a lack of comprehensive baseline information about which species are in critical need of conservation.

- 7.2.d: Fishing is a vital source of revenue and protein in the FSM. Fisheries management is a priority issue for the National government, particularly commercial fishing for migratory species. At the State, Municipal, and community level natural resource management agencies and conservation NGOs are monitoring reef fish numbers/biomass, protecting and rehabilitating critical spawning grounds, and increasingly are working to establish size limits for species, rotations, and/or seasonal closures for certain species.

- 7.2.f: Under the Micronesia Challenge, the FSM has committed to effectively conserving 30% of its nearshore marine resources and 20% of its terrestrial resources by 2020. Work is underway in each of the four States to designate protected areas, particularly in places that are of biological significance. The States are almost halfway to these goals.

Q12: What lessons have been learned from the implementation of the Convention and what key actions remain?

Stakeholders throughout the FSM pointed to one lesson learned over the past few decades of conservation work to being central to achieving results: partnering. Working directly with local NGOs, community based organizations, traditional leaders and individual resource owners is a key component to the success of conservation initiatives. Strong local NGOs exist now in each of the four States: Conservation Society of Pohnpei, Yap Community Action Program (parastatal), Chuuk Conservation Society, and Kosrae Conservation and Safety Organization. These local partners are consistently cited as key actors helping link State resource management agencies with communities. They are also partnering with regional groups such as the Micronesia Conservation Trust to fund activities, as well as international donor and conservation groups and learning networks including the Micronesians in Island Conservation and the Pacific Islands Marine Protected Areas Community. Please see the discussion of engaging resource owners under Question 7 above for further details about the importance of partnering in the FSM.

Additional lessons learned cited by stakeholders when preparing this report include:

- **Identify Alternative Livelihoods:** One of the key drivers of the overexploitation of natural resources in the FSM is the imperative to earn incomes. Work is underway to develop the country's economy in an ecologically friendly way, with

a focus on fisheries, agriculture, tourism, and energy. However stakeholders agreed that this remains a priority issue for the country and progress towards reducing overexploitation will remain challenging unless alternative income sources are spread throughout the country. In a positive development, the private sector in the FSM is increasingly involved. As described above for example the FSM Vital PetroCorp is planning coconut industry development based on a successful community model from Pingelap.

The next generation of FSM citizens, photo © Javier Cuetos-Bueno

- **Continue Work Towards Sustainable Funding for Conservation Activities:** While there have been some significant gains in this area, notably the partial funding of the Micronesia Challenge endowment for the FSM, resource management agencies and conservation NGOs continue to point to the need to identify additional sustainable funding sources. Specifically payments for ecosystem services, such as the Pohnpei Nett Watershed fund, should continue to be explored to supplement resource management agency budgets. The launch in 2014 of the Awak Youth Organization's Piggery Waste Management Revolving Fund is another example of an innovation in financing conservation work that could be expanded to other areas in the FSM.

- **Share Information and Avoid Redundancy:** Information sharing emerged as a clear area for improvement during all the workshops. There is a need for a system for information sharing about what agencies, communities, and NGOs are already doing or planning in each State. In Yap for example currently no one is tasked with compiling information on activities and coordinating work. Similarly, groups throughout the FSM reported a lesson learned about the importance of avoiding overlap in community consultations. One strategy could be that the State collects key information about communities and available research/reports stemming from

work done in country and makes it available to regional organizations, donors, and/or researchers to avoid multiple trips to the same resource agencies and communities to collect similar information. The regional data collection, storage, and sharing programs that are being undertaken as part of the Micronesia Challenge are a good foundation for the FSM to build on as well.

- **Prioritize:** The National BSAP has over 190 activities, in addition to the work called for in each State BSAP. A lesson learned is to prioritize and focus in on objectives that are manageable within the country's given level of resources and capacity. This would require a clear assessment of the human, technical, and financial resources necessary to be able to reach these goals. While the country is making considerable progress, a related lesson learned is to identify specific, measurable, achievable, realistic, and time-bound targets for objectives.

- **Emerging issues:** While a lesson learned is to prioritize, stakeholders also pointed out a need to be flexible in order to address emerging issues, such as ocean acidification, that may come up during the implementation of strategic plans.

During the workshops to gather information for this report, participants were also asked to suggest key actions – in addition to incorporating the lessons learned listed above – needed to achieve FSM and State-level biodiversity targets and to fully address the Strategic Plan for Biodiversity and the Aichi Targets. Given the variety of responses, Appendix V contains summary tables with descriptions of those actions identified as important for each State and at the National level.

Appendix I - Information concerning the reporting Party and preparation of the Fifth National report.

There are five primary governing structures within the FSM: the National government, and the Yap, Chuuk, Pohnpei and Kosrae State governments. Responsibilities for managing natural resources and the environment are shared between the States and the National level. Each State, as owner of its surrounding natural resources out to 12 nautical miles, manages its resources through policies and plans, notably State Biodiversity Strategic Action Plans (State BSAPs) as well as State-specific strategic development plans and environmental legislation and regulations. The National government is also responsible for managing resources from 12 to 200 nautical miles and is the signatory for multilateral conservation and environment commitments such as the CBD and the United Nations Framework Convention on Climate Change.

This 5th National Report was prepared through a collaborative process. The primary method of data collection to inform the report was a series of five two-day stakeholder workshops held in each of the four States of FSM with one at the National level, as well as individual meetings with key stakeholders. Over a three month period the report team met with over 100 biodiversity conservation stakeholders; 96 of which are listed below, including representatives from 60 National and State government resource management agencies, local NGOs, members of communities, traditional leaders, educational institutions, the private sector and regional and international donor and conservation organizations. During these workshops and meetings, stakeholders were asked a selection of the questions in the CBD's outline for the 5th National Report. The first table below lists the stakeholders consulted between July and October 2014, and the second table includes a sample agenda for the workshops.

Table 1: List of stakeholders by place of consultation, name, and organizational affiliation.

FSM National Level		
1	Alissa Takesy	Department of Resources and Development
2	Allan Bourgoin	College of Micronesia – FSM
3	Bill Raynor	The Nature Conservancy
4	Cindy Ehmes	Office of Environment and Emergency Management
5	Willy Kostka	Micronesia Conservation Trust
6	Memorina Sablan	Philatelic Bureau
7	Jo Lynne Gallen	Micronesia Conservation Trust
8	Leo Lokopwe	Department of Transportation, Communications, and Infrastructure
9	Mario Abello	Department of Education
10	Marlyter Silbanuz	Department of Resources and Development
11	Pasha Carruthers	Secretariat of the Pacific Community
12	Patterson Shed	UN Small Grants Program
13	Tilson Kephas	Office of Environment and Emergency Management

14	X-ner Luther	Department of Health and Social Affairs
15	Shinmaysin Gonzaga	Department of Health and Social Affairs; Environmental Health Division
16	Randy Abraham	Federated State of Micronesia Development Bank
17	Stacy Yleizah	Department of Foreign Affairs
	Chuuk	
1	Curtis Graham	Deputy Director; Department of Marine Resources
2	Bradford Mori	Technical Support, Environmental Protection Agency
3	Julita Albert	Representative of Environmental Protection Agency
4	Kind Kanto	Director of College of Micronesia-Chuuk Campus
5	Kiki Stinnett	President; Chuuk Women's Council
6	Wisney Nakayama	Executive Officer; Chuuk Conservation Society
7	Anesty Mori	Representative of the Department of Agriculture
8	Berden Berdon	Representative of Historic Preservation Office
9	J.D.	Deputy Chief of Budget
10	Jonas M. Paul	Deputy Director; Department of Administrative Service
11	Kalvin Assito	Community Agent; College of Micronesia- Cooperative Research and Extension
12	Pauline Penno	Officer of UFO Women's Association/Conservation Society
13	Peter Aten	Director, Commerce and Industry
14	Robert Iwo	Representative of the Department of Agriculture
15	Sabino Asor	Attorney General; Attorney General's Office
	Yap	
1	Tamdad Sulog	Chief of Agriculture, Division of Agriculture and Forestry
2	Berna Gorong	Yap Networker
3	Christina Fillmed	Director, Environmental Protection Agency
4	Genevieve Gilmoon	Assistant Manager, Yap Fishing Authority
5	James Yinug	Chief, Marine Resources Management Division, Yap R&D
6	Jonathan M. Tun	Attorney General
7	Sean Kadannged	Representative, Tamil Resources Conservation Trust
8	Margie Falanruw	Director, Yap Institute of Natural Science
9	Steven Young-Uhk	Coordinator, COM – Cooperative and Research Extension
10	Tiffany Holloman	Assistant Attorney General
11	Eva Buthung	YapCAP
12	Rachael Nash	State Grant Writer
13	Frank Haregaichig	Director, Department of Resources and Development
14	Francis Ruegorong	Wildlife Coordinator, Division of Agriculture and Forestry
15	Anthony Tareg	LT Governor, Governor's Office

16	Francis Liyeg	Invasive Coordinator, Division of Agriculture and Forestry
17	Graham Gaines	Marine Environment Specialist, Marine Resources Management Division
18	Pius Liyagel	State Forester, Division of Agriculture and Forestry
19	Raymond Pitmag	Representative, Tamil Resources Conservation Trust
20	Ryan Talken	Environment Specialist, Division of Agriculture and Forestry
21	Thomas Gorong	Nimpal Channel Protected Area Officer
	Kosrae	
1	Blair Charley	GIS Specialist/ Forest Legacy Program. Coordinator, KIRMA
2	Simpson Abraham	Coordinator, FSM Pacific Adaptation to Climate Change program
3	Carlos Jose Cianchini	Awareness Coordinator, FSM Pacific Adaptation to Climate Change program
4	Andy George	Executive Director, Kosrae Conservation and Safety Organization (KCSO)
5	Marston Luckymis	Representative, KCSO
6	Murtanel Tolenna	Chief of Agriculture, Division of Agriculture (DREA)
7	Grant Ishmael	Administrator, Kosrae Visitor's Bureau
8	Robert Jackson	Director, Kosrae Island Resource Management Authority (KIRMA)
9	Steven George	Director, Department of Resource and Economic Affairs (DREA)
10	William K. William	Project Manager, Yela Environment Landowners Authority
11	Emily Gibson	Environmental Lawyer, KIRMA
12	Jackson Albert	Extension Agent, COM – Cooperative Research Extension
13	Jeffrey Tilfas	Assistant Attorney General, Attorney General's Office
14	Lyndon Jackson	Governor, Kosrae State
15	Maria Stephens	Operator, Kosrae Recycling Program; Owner/Manager, Pacific Treelodge
16	Mary Livaie	President, Kosrae Women's Association
17	MMME	Site visit
18	Palikkun Kilafwasru	Economist, DREA
19	Rinson Phillip	Chairman, Kosrae Conservation and Enforcement Taskforce
20	Robinson Timothy	Judge, Kosrae State Land Court
21	Sen. Josaiah Waguk	R&D Committee Chair, Kosrae State Legislature
22	Shrue Kephas	Representative, Kosrae Women's Association
	Pohnpei	
1	Eugene Joseph	Executive Director, Conservation Society of Pohnpei
2	Jorg Anson	Marine Division, Conservation Society of Pohnpei
3	Francisca Sohl Obispo	Terrestrial Division, Conservation Society of Pohnpei
4	Henry Susaia	Environmental Specialist, Pohnpei EPA
5	Monalisa Jack Tara	Office Manager, Island Food Community of Pohnpei

6	Joseph Simon	Administrator, Office of Fisheries and Aquaculture
7	Pius Hadley	Director, Department of Lands and Natural Resources
8	Adelino Lorens	Chief, Agriculture, Office of Economic Affairs, Agriculture
9	Clayton Lawrence	Assistant Attorney General, Attorney General's Office
10	Edward Roland	Agriculurist, Office of Economic Affairs, Agriculture
11	Jeffery Perkins	Agriculture Extension, Office of Economic Affairs, Agriculture
12	Joel Keper	Conservation Law Officer, Fish and Wildlife
13	Judah Johnny	Pohnpei State Attorney General
14	Mike Helgenberger	Fisheries Specialist, Office of Fisheries Administration
15	Neilynn Walter	Member, Pohnpei Women's Advisory Council
16	Petrick Ringlen	Chairperson, Local Chief, Madolenihmw Municipal Government - Mayor
17	Quirino Loyola	Pohnpei Foreign Investment
18	Saimon Lihpai	Chief, Pohnpei Forestry
19	Simon Mix	President, Pohnpei Farmers' Association
20	Susana Sohs	President, Pohnpei Women's Advisory Council
21	Tony Pernet	Chief, Department of Public Safety, Fish and Wildlife

Table 2: Agenda for stakeholder workshops

Time	Activity
8:30 – 9:00 am	Greeting / background of workshop. • Convention of Biological Diversity, requirement to prepare 5th National Report • Overview of the 5th National Report
9:00 – 10:30 am	Discussion of the following questions (Part II of 5th National Report): • What are the biodiversity targets set within your State/organization? (Agency/NGO workplans, State BSAPs, NBSAP, National SWARS, etc.) • How have your State/organizations' action plans been updated since the NBSAP and/or 2010 to include these targets?
10:30 – 10:45	Coffee Break

10:45 – 12: 30 pm	Discussion of the following questions: • Since 2010, what are actions/policies/legislation that your State/organization has put in place to reach the targets? • How has your State/organization incorporated biodiversity considerations into other programs/actions – mainstreamed biodiversity? Is biodiversity conservation reflected in poverty reduction strategies, economic development planning, etc.?
12:30 – 1:15 pm	Lunch
1:15 – 1:30 pm	Presentation about the Strategic Plan for Biodiversity for 2011 – 2020 and the Aichi Biodiversity Targets
1:30 – 3:30 pm	Discussion of the following questions: • What progress has been made by your State/organization that supports the Strategic Plan for Biodiversity and the Aichi targets? What Aichi targets are not being addressed? • How fully has your State/organization's strategic plans that relate to biodiversity been implemented? (2004 State BSAPs, workplans, etc.)
3:30 – 3:45 pm	Break
3:45 – 5:00 pm	Discussion of the following questions: • What lessons have been learned by your State/organization when setting targets and implementing biodiversity programming? • What key actions still need to be undertaken to achieve biodiversity targets/goals?
DAY 2	
8:30 – 9:00 am	Greeting and overview of day's agenda
9:00 – 10:30 am	Discussion of the following questions: • What major changes have taken place in the status of biodiversity since 2010 in your State?
10:30 10:45 am	Break

10:45 – 12:30	Discussion of the following question: • What are the main threats to biodiversity in your State?
12:30 – 1:45 pm	Lunch
1:45 – 2:45 pm	Discussion of the following question: • What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?
2:45 – 3:30 pm	Summary discussion, closing remarks

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FSM BSAPs are available on the CBD website, links below:

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(2004). *Yap State Biodiversity Strategic Action Plan*

Appendix III - National implementation of the thematic programmes of work and plans under the CBD

Activities are currently underway throughout the FSM that supports each of the thematic programmes and cross cutting issues, to varying degrees. This appendix includes a table that highlights where sections of the National BSAP align with the CBD's thematic areas and crosscutting issues. This table is not designed to be a comprehensive list, but to provide the reader with a snapshot for how the National plan lines up with CBD work.

Alignment between National BSAP and CBD thematic programme areas		
CBD Thematic Area	**National BSAP Thematic Area**	**Selected Activities**
Agricultural biodiversity	Theme 4: Agro biodiversity: The conservation and sustainable use of Agro biodiversity contributes to the nation's development and the future food security of the FSM	4.1.a: Promote methodologies for sustainable use of agro biodiversity. And 4.1.b: Eliminate unsustainable agro biodiversity use.
Marine and coastal biodiversity	Theme 1: Ecosystem Management: A full representation of FSM's marine, freshwater and terrestrial ecosystems are protected, conserved and sustainable managed, including selected areas designed for total protection	1.2.a: Further develop and implement management plans for the existing marine and terrestrial conservation areas within the nation. And 1.2.d: Incorporate large conservation areas to include more than one ecosystem (e.g. mangroves, sea grass beds, lagoon systems and barrier reefs).
Biodiversity of inland waters	Theme 1: Ecosystem Management: A full representation of FSM's marine, freshwater and terrestrial ecosystems are protected, conserved and sustainable managed, including selected areas designed for total protection	1.2.g: To identify and conserve critical watershed areas. And 1.2.h: Develop and implement programs for the restoration of degraded aquatic and terrestrial ecosystems, prioritizing those of endemic, endangered and threatened species.
Forest biodiversity	Theme 1: Ecosystem Management: A full representation of FSM's marine, freshwater and terrestrial ecosystems are protected, conserved and sustainable managed, including selected areas designed for total protection	1.2.a: Further develop and implement management plans for the existing marine and terrestrial conservation areas within the nation. And 1.2.d: Incorporate large conservation areas to include more than one ecosystem (e.g. mangroves, sea grass beds, lagoon systems and barrier reefs).
Biodiversity of dryland and sub-humid lands	Not addressed as separate area in the National BSAP	From the Yap State SWARS biodiversity objective 4: Develop wildfire vulnerability maps and prioritize community eligibility for development of wildfire plans, training, and equipment
Island biodiversity	Not addressed as separate area in the National BSAP	Note: The landmass of the FSM is entirely composed of islands
Mountain biodiversity	Not addressed as separate area in the National BSAP	Note: Falls under forest biodiversity for the country

Alignment between National BSAP and CBD Cross-cutting issues		
CBD	**National BSAP Objective**	**Selected Activities**
Access and benefit-sharing	3.1: Equitable Sharing of Benefits of Genetic Resources: to develop and implement appropriate National and State legislation and measures to effectively access genetic resources and carry out fair and equitable sharing of benefits from the use of these resources	3.1.a: Develop National and State bio prospecting legislation. And 3.1.c: Develop and implement appropriate benefit sharing mechanism and legislation for all holders of traditional knowledge and owners of resources utilized in bio prospecting.
Biodiversity for development	2.3: Sustainable Use and Management of Species: to ensure the sustainable use and management of species for social and economic development. Also Theme 5	5.1.a: Promote the development of ecologically sustainable and economically profitable enterprises utilizing and conserving the nation's biodiversity and utilizing economic incentives (e.g. tax breaks) to promote expansion of these activities while removing all incentives for non-compliant industries.
Climate change and biodiversity	4.4: Food and Health Security: to enhance and strengthen food and health security through the use of sustainable agro biodiversity practices	See also the National Climate Change Strategy
Invasive alien species	6.2: Control and Eradication: to identify and develop appropriate programs to ensure effective control and eradication of species threatening biodiversity	6.2.e: Organize invasive species task force and develop rapid response plans in each State.
Global taxonomy initiative	1.2: Research and Monitoring: to undertake research and resource assessment/evaluation for the identification, documentation and monitoring of the FSM's ecosystems for the implementation of appropriate resource management programs, including conservation and protected areas	1.2.a: Undertake comprehensive biological resource surveys of the nation's terrestrial, marine and freshwater biodiversity. And 1.1.e: Publish all research and monitoring documents and develop a database available to the public.
Global Plant Conservation Strategy	1.2 Research and Monitoring: to undertake research for the identification, documentation and monitoring of species contributing to the implementation of appropriate conservation and management programs	1.2.d: Develop monitoring programs to evaluate, document, and implement appropriate actions on all possible threats to the biodiversity of the nation.
Sustainable use/biodiversity and tourism	All of Theme 5: Ecologically Sustainable Industry Development: Economic development activities in the FSM meet the needs of the population while sustaining the resources for the benefit of future generations	5.2.a: Identify and implement appropriate programs to promote and support sustainable income generating activities at the community level and provide financial incentives and capacity building to assist in the development of these programs.

Communication, education and public awareness	8.3: Public Awareness and Education: to promote, encourage and strengthen the awareness and understanding of all stakeholders (local resource owners, traditional leaders, communities, government agencies, academic institutions, NGO's and policy makers) of the importance of protecting, preserving and ensuring sustainability of the biodiversity of the FSM	8.3.a: Develop, promote and conduct public awareness campaigns and programs though media, workshops/seminars and information material for National and State government agencies, municipal councils and relevant targets groups including resource owners on the functions and benefits of conserving and sustainable utilization of the nation's biodiversity.
Incentive measures	5.1: Ecologically Sustainable Industries: to develop long-term ecologically sustainable industries that provides attractive incomes while minimizing the exploitation and impact on natural resources	5.1.e: Establish incentive based programs for "environmentally friendly" community development, including economic incentives and financial assistance for these activities.
Impact assessment	2.2: Research and Monitoring: to undertake research for the identification, documentation and monitoring of species contributing to the implementation of appropriate conservation and management programs	2.2.d: Develop monitoring programs to evaluate, document, and implement appropriate actions on all possible threats to the biodiversity of the nation.
Ecosystem Approach	2.1: Conservation Areas: to enhance the management of existing CAs and establish new CAs to achieve a full representation of the FSM's ecosystems	2.1.d: Incorporate large conservation areas to include more than one ecosystem (e.g. mangroves, sea grass beds, lagoon systems and barrier reefs).
Biodiversity and gender	Not addressed as a separate objective are in the National BSAP	Communities, including women, play an important and increasing role in biodiversity conservation - as described elsewhere in this report
Traditional knowledge, innovations and practices	9.1: Traditional Knowledge, Practices and Innovations: preserve traditional knowledge and practices of cultures of the FSM that are important for the protection, conservation, preservation and sustainable use of biodiversity	9.1.c: Develop programs that integrate traditional knowledge, practice and innovation with modern scientific technology and methodologies to promote conservation and sustainable use of biodiversity.

Appendix IV - Suggested revisions to the FSM National BSAP and each of the four State BSAPs

Over a three-month period in 2014, the 5th National Report team conducted five workshops with Stakeholders in each State and at the National level. During these workshops the groups reviewed and made initial suggested revisions to the four State BSAPs and the National BSAP. Below is a summary analysis of suggested updates, including how suggested updates support the Strategic Plan for Biodiversity 2011 – 2020 at the National and State levels. After this summary are tables that list the specific suggested revisions.

FSM NBSAP: During the workshop to prepare this report, stakeholders suggested revising multiple objectives within the NBSAP to more fully address the SPB. Overall, the existing NBSAP from 2002 already incorporates objectives that are aligned with all five of the SPB's goals. Main suggested revisions include:

- Clarifying roles and responsibilities for research and monitoring, aligned with SPB *Strategic Goal E: Enhance implementation through participatory planning, knowledge management, and capacity building*
- Refining activities under the sustainable use of ecosystems objective, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*
- Expanding the coral bleaching mitigation objective to include ocean acidification and other climate change considerations, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*
- Clarifying support for the implementation of State invasive species taskforces and integrating elements of the Micronesia Biosecurity Plan, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*
- Integrate private sector more explicitly within existing mainstreaming objectives (theme 10 of the NBSP), aligned with SPB *Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*

Yap State BSAP: During the workshop in Yap State, stakeholders suggested more than 25 revisions and additions to their BSAP. The group noted that the 2004 BSAP contains objectives and activities that align with each of the five SPB goals. Organized by thematic area, these suggested revisions include:

- Three revisions to BSAP Theme 1: Institutional Arrangements including creating a position to oversee implementation of Micronesia Challenge and Protected Areas Network-related programming, aligned with SPB *Strategic Goal E: Enhance implementation through participatory planning, knowledge management, and capacity building*
- Three revisions to BSAP Theme 2: Secure and Enhance Traditional Knowledge including promoting traditional agriculture practices to increase food security, aligned with SPB

Strategic Goal B: reduce the direct pressures on biodiversity and promote sustainable use

- 11 revisions to BSAP Theme 3: Inventory and Monitoring including conducting surveys to identify endangered species in Yap, aligned with SPB *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*
- 7 revisions to BSAP Theme 4: Addressing Threats including revisions to invasive species control objectives, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*
- 3 revisions to BSAP Theme 6: including creating a network of protected areas in Yap, aligned with SPB *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

Chuuk State BSAP: In Chuuk, participants in the workshop suggested over 20 initial revisions, including the addition of 12 new objectives to reflect on-going work included in State agency/NGO workplans that is not reflected in the 2004 BSAP. The group noted that the 2004 BSAP contains objectives and activities that align with each of the five SPB goals. Organized by thematic area, these suggestions include:

- 14 revisions to BSAP Theme 1: People Related including multiple programs addressing food security and climate change, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use* and *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*
- 1 revision to BSAP Theme 2: Assistance Related to strengthen intellectual property rights in relation to research and development work, aligned with the Nagoya Protocol and SPB *Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services*
- 3 revisions to BSAP Theme 3: Management Related including creating a Chuuk protected areas network, aligned with SPB *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*
- 3 revisions to BSAP Theme 4: Control Related including strengthening fisheries management, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*

Pohnpei State BSAP: During the stakeholder workshop to prepare this report, the group identified 12 areas for possible revision. The group noted that the 2004 BSAP contains objectives and activities that align with each of the five SPB goals. Suggested initial revisions organized by thematic area include:

- Revise the entire BSAP Theme 1: Develop a 20 Year Vision for the State of Pohnpei and complete the community visioning process in at least two municipalities to instead reflect mainstreaming biodiversity considerations into planning documents, like the Pohnpei State Strategic Development Plan. This is aligned with SPB *Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*

- 4 revisions to BSAP Theme 2: Establish and implement a Comprehensive Pohnpei Lagoon Conservation Area Plan, including the development of a Marine Protected Area Network and more effective management/enforcement of existing and new marine laws. One suggested revision was to integrate climate change mitigation strategies into protected area planning, aligned with SPB *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

- 1 revision, creating a series of mangrove forest reserves, to BSAP Theme 3: Establish effective management of Pohnpei's Watershed Forest Reserve and at least two mangrove reserves, with supporting local and State policies and day-to-day maintenance by local communities. This is aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use* and *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

- 1 revision, clarifying continuing support to the Pohnpei invasive species task force, to BSAP Theme 4: Address the invasive species problem in Pohnpei State by strengthening the quarantine program and controlling and/or eradicating at least five (5) selected species. This is aligned with SPB *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

- 2 revisions to Theme 5: Increase awareness on proper (organic and inorganic) waste disposal and recycling, pollution control, fuel and energy reduction/alternatives, including the adoption of at least one model of effective "best practices" management in each of the areas. One suggested revision was to identify locally available alternatives to plastics and Styrofoam. This is aligned with SPB *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

- 1 revision to Theme 6: Revive, maintain and utilize relevant Traditional Knowledge, which supports biodiversity conservation and improves community leadership and participation in conservation and development plans and initiatives, namely to strengthen intellectual property rights in relation to research and development work, aligned with the Nagoya Protocol and SPB *Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services*

Kosrae State BSAP: In Kosrae, participants in the workshop suggested 26 initial revisions, including the addition of 12 new objectives to reflect on-going work included in State workplans, particularly the Kosrae State Strategic Development Plan, Environment Sector workplan that is not reflected in the 2004 BSAP. The group noted that the 2004 BSAP contains objectives and activities that align with each of the five SPB goals. Organized by thematic area, these suggestions include:

- 6 revisions to Theme 1: To develop, review, and enforce policies and regulations for sustainable harvesting of natural resources, including the enforcement of regulations governing protected areas within the State. This is aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use* and *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

- 2 revisions to Theme 2: To create and implement educational and awareness programs in the community that address biodiversity conservation, including mandating the inclusion of education and public awareness activities into the workplans of all State resource management agencies. This is aligned with SPB *Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*
- 6 revisions to Theme 3: To improve, manage and preserve vital ecosystems all related to improved management and sustainable development, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*
- 5 revisions to Theme 4: To minimize waste contributing to the pollution of our environment, including expanding the type of materials in Kosrae's recycling program, aligned with SPB *Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*
- 1 revision to Theme 5: To implement programs and practices for the security of our genetic resources and local knowledge, namely to document publically available traditional knowledge, aligned with SPB *Strategic Goal E: Enhance implementation through participatory planning, knowledge management, and capacity building*
- 6 revisions to Theme 6: To develop programs for restoring biodiversity and species habitat, including promoting sustainable agroforestry/agriculture practices, aligned with SPB *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use* and *Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*

The below five tables provide the initial draft edits to each BSAP summarized above.

Table 1: Initial suggested revisions to the FSM NBSAP

			FSM NBSAP Original Objective	Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
1			**Ecosystem Management:** A full representation of FSM's marine, freshwater and terrestrial ecosystems are protected, conserved and sustainable managed, including selected areas designed for total protection	N	
	1.1		Research and Monitoring: to undertake research and resource assessment/evaluation for the identification, documentation and monitoring of the FSM's ecosystems for the implementation of appropriate resource management programs, including conservation and protected areas	N	
		c	Develop and implement a long term monitoring program for all ecosystems within the nation to provide scientific information on the status of the nation's biodiversity through time.	Y	Since 2004 States, not the National government, are tasked with developing long term monitoring programs to reflect their specific needs of each State. Therefore this activity could be revised to reflect multiple long term monitoring programs, not just one
		d	Develop priority research topics and monitoring techniques to be addressed, taught and utilized by all natural resource management agencies and relevant institutions.	Y	Similar to the above, there is not a National-level capacity building program. Instead capacity development is done at the natural resource management agency-level. Nor is there a national research program
	1.3		Sustainable Use of Ecosystems: to develop and implement effective management programs that promotes income-generating activities and use of biodiversity resources sustainably within all FSM's ecosystems	N	
		e	Increase the number of mooring buoys located within designated marine areas in each State for large vessels, especially the tuna fishing fleet.	Y	Discussed revising the objective to be: Increase the number, improve and maintain mooring buoys located within designated marine areas in each State for large vessels, especially the tuna fishing fleet
2			**Species Management:** FSM's native, endemic, threatened, and traditionally important species are protected and used sustainably for the benefit of the people of the FSM and the global community	N	
	2.2		Research and Monitoring: to undertake research for the identification, documentation and monitoring of species contributing to the implementation of appropriate conservation and management programs	N	
		e	Support and develop a monitoring program to evaluate the impact of coral bleaching and crown of thorns starfish on coral reefs.	Y	In addition to monitoring coral bleaching and crown of thorns starfish, during the workshop discussed revising this to include monitoring water temperature and ocean acidification

FSM NBSAP Original Objective			Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
6	**Biosecurity:** Border control, quarantine and eradication programs are effectively protecting the FSM's native biodiversity from impacts of alien invasive species		N	
	6.2	Control and Eradication: to identify and develop appropriate programs to ensure effective control and eradication of species threatening biodiversity	N	
		e Organize invasive species task force and develop rapid response plans in each State.	Y	Task forces and plans have been created, this objective could be revised to be implement invasive species task force and develop rapid response plans in each State and Regionally.
10	**Mainstreaming Biodiversity:** All economic and social activities of the FSM take full account of impacts on and fully consider sustainability of biodiversity		N	
	10.2	Policy: to integrate concepts of conservation and sustainable use of biodiversity into all relevant sectorial policies, programs and plans	N	
		b To incorporate a population policy providing information pertaining to environmental and resource carrying capacities and poverty alleviation.	Y	Suggested during the workshop to change 'poverty alleviation' to economic hardships to better reflect the FSM's strategic development plan
	10.3	Multi-Sectorial Collaboration: to strengthen and develop multi-sectorial collaboration in promoting conservation, preservation, and sustainable use of biodiversity in the FSM	N	
		a Enhance and strengthen the linkages between National, State and Municipal government agencies, NGO's and private sector to provide information on the conservation and management of the FSM biodiversity (e.g. Pohnpei Resource Management Committee, Yap Environmental Stewardship Consortium and the Kosrae Resource Management Committee).	Y	Suggest updating to link foreign investment boards and the respective chambers of commerce in each States to more directly engage the private sector.

Table 2: Initial suggested revisions to the Yap BSAP

	Yap 2004 BSAP Original Objective/Activity	Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
1	**Institutional Arrangements ("Getting our act together")**		
1.7	Develop disaster plan	Y	Developed in 2010. New objective is to integrate the plan into relevant agency workplans, and revise and update the 2010 draft
	Under the Yap State disaster plan, integrate Government Agencies' and NGO responses to natural disaster, continue a training program	Add	
	Identify and hire a Micronesia Challenge Coordinator	Add	
2	**Secure and Enhance Traditional Knowledge (Build on What We Already Know)**		
2.3	Inventory and promote the planting of full range of taro varieties as part of typhoon Sudal recovery effort	Y	Inventory portion has been completed. The new objective is focus on implementation of planting taro varieties
2.8	Develop 'Pacific Solutions' component of Pacific Alternative program	Y	This program is no longer funded but its goals remain relevant. Suggested new objective - Identify and promote Yap self-reliance (sustainable energy for example)
	Conduct food security programming, including an inventory of local plants promoting sustainable agriculture practices	Add	
3	**Inventory and Monitoring ("Counting our Blessings" and Identifying Problems)**		
3.4	Hold workshop on use of GIS in environmental planning	Y	Expand GIS capabilities within Yap to use, analyze and interpret GIS data for decision making
3.8	Surveys of 4 potential MPAs	Y	Continue surveying potential and existing MPAs in Yap
3.9	Develop vegetation map for outer islands	Y	Conduct food security surveys in all the islands of Yap
3.11	Conduct forest inventory (FIA) and incorporate results into Yap GIS system	Y	Conduct follow-up forest inventory/vegetation mapping and assess changes
3.19	Conduct baseline survey of at least 1 terrestrial protected area	Y	Conduct baseline surveys of all terrestrial protected areas in Yap
3.20	Conduct baseline survey of at least 4 marine protected areas	Y	Conduct baseline and follow-on surveys of all marine protected areas in Yap
	Develop a comprehensive watershed management program	Add	
	Develop monitoring program of species using indicators for both marine and terrestrial species	Add	
	Develop monitoring program of climate change impact in Yap	Add	
	Identify species in peril in Yap (endangered species)	Add	

	Yap 2004 BSAP Original Objective/Activity	Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
	Develop monitoring program of endangered species in Yap	Add	
4	**Addressing Threats: Biosecurity, Earthmoving, Water Quality, Solid Waste and Hazardous Materials**		
4.5	Eradicate 2 priority invasive species and monitor results with GIS	Y	Eradicate/combat invasive species as they arise and monitor results with GIS
4.11	Pest and disease survey	Y	Connect the results of pest and disease surveys into quarantine policies
4.23	Install composting toilets in outer islands to prevent contamination of water lens	Y	Develop a program of waste management, including sewage, and utilization of waste (biofuels, fertilizers) in outer Islands
4.28	Groundwater quality assessment	Y	Conduct groundwater and freshwater quality assessments
4.32	Outer island water lens assessment	Y	Develop community/household water catchment systems/freshwater resource programs in outer islands to provide alternatives to using freshwater lens
	Mangrove monitoring program - track areas of mangrove decline and support mangrove reclamation	Add	
	Develop a program to manage feral animals in Yap	Add	
6	**Stewardship Plans and Ecologically Sustainable Industries**		
6.10	Establish at least 1 savanna restoration trial	Y	Create a system of trails in support of eco-tourism
	Create a network of protected areas in Yap	Add	
	Document traditional management and evaluate best blend of traditional and scientific management system	Add	

Table 3: Initial suggested revisions to the Chuuk BSAP

Chuuk 2004 BSAP Original Objective/Activity	Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
1 People Related		
1.1 By 2006 at least one environmental NGO will be established and operational	Y	Support the establishment of additional NGOs in Chuuk that have biodiversity conservation goals, including community-based organizations (CBOs) and women's groups
1.2 By 2006 at least two environmental clubs will be fully established in the schools to promote awareness on biodiversity issues and active participation in conservation activities	Y	Continue establishing environmental clubs in schools to promote awareness on biodiversity issues and active participation in conservation activities
1.4 By 2007 at least three communities will each designate surrounding marine areas to be protected.	Y	Establish protected areas covering 30% of marine near-shore areas (need to register MPAs at the State level, including those that are currently registered under Municipal Ordinances)
1.5 By 2007 at least two communities will each designate surrounding terrestrial or land based areas to be protected	Y	Establish protected areas covering 20% of terrestrial areas (need to register terrestrial PAs at the State level, including those that are currently registered under Municipal Ordinances)
Improve solid waste management in Chuuk	Add	
Improve community resilience to climate change through coastal fisheries management	Add	
Conduct integrated water management	Add	
Reforest watersheds in the High Islands	Add	
Promote sustainable agroforestry practices to address food security, climate change issues	Add	
Conduct coastal stabilization programs (see Chuuk SWARS)	Add	
Remove unexploded ordinance on sunken ships	Add	
Develop alternative fishing methods/incentives to replace dynamite fishing	Add	
Reestablish farms on larger atolls in the outer islands to provide food for smaller atolls when needed - reestablish program from the 1970s	Add	
Designate outer island sites to receive food security support	Add	
2 Assistance Related		

	Chuuk 2004 BSAP Original Objective/Activity	Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
2.4	By 2007 a system of 'resource user's fee' for conservation of the marine environment will be established, managed, and used for the conservation and maintenance of our marine biodiversity	N	
	Create a fee system for scientific research conducted in Chuuk, and for sharing of intellectual property rights that result from studies conducted in Chuuk	Add	
3	**Management Related**		
3.8	By 2008 there will be at least three fully established and protected marine areas some of which are listed under the ABS	Y	Continue to establish protected marine areas in Chuuk, including those listed as Areas of Biological Significance (ABS)
3.9	By 2008 there will be at least two fully established and protected terrestrial or land based areas some of which are listed under the ABS	Y	Continue to establish protected terrestrial areas in Chuuk, including those listed as Areas of Biological Significance (ABS)
	Create a Chuuk network of protected areas, linking as possible existing PA s together as part of the Micronesia Challenge to bring 20% terrestrial resources and 30% near-shore marine resources under management	Add	
4	**Control Related**		
4.1	By 2006 there will be improved strict control of alien species into the State that may be detrimental to our biodiversity	Y	Continue strict control of alien species into the State that may be detrimental to our biodiversity, and also support implementation of Micronesia-wide Biosecurity Measures
4.6	By 2006 all government departments and agencies will include biodiversity conservation in their planned activities	Y	By 2006 all government departments and agencies will include biodiversity conservation and sustainable resource use considerations in their planned activities
4.7	By 2006 exportation of reef fish and other reef products for commercial purposed will be fully banned	Y	Determine appropriate controls/measures and put them in place regarding reef fish exports from Chuuk

Table 4: Initial suggested revisions to the Pohnpei BSAP

	Pohnpei 2004 BSAP Original Objective/Strategy	Revise? (Y/N)	Initial suggested revision discussed during 5th National Report workshop
1	**Develop a 20 Year Vision for the State of Pohnpei and complete the community visioning process in at least two municipalities**	Y	Revise this goal and the related two objectives to reflect the integration of environmental and biodiversity considerations into the Pohnpei State Strategic Development Plan
1.1	Gain State and Municipal Government buy-in to the visioning process through a high-level workshop involving external consultants by 2005	Y	Revise to reflect consultations for the Environment Sector Plan which is being development as part of the Strategic Development plan
1.2	Develop Community Visioning Steering Committee and conduct Community Visioning in all municipalities, followed by a State-wide program and pilot long-term vision and sustainable development plans for at least 2 municipalities in Pohnpei State by 2008	Y	Revise to reflect consultations for the Environment Sector Plan which is being development as part of the Strategic Development plan
2	**Establish and implement a Comprehensive Pohnpei Lagoon Conservation Area Plan, including the development of a Marine Protected Area Network and more effective management/enforcement of existing and new marine laws**		
2.3	Expand the MPA Network by establishing at least one community led MPA per municipality by 2005	Y	Continuing expanding and enforcing community led MPAs in Pohnpei
2.5	Reef resilience to climate change-caused coral bleaching will be integrated into the MPA network design process in Pohnpei by 2009	Y	Identify action plans to mitigate the effects of coral bleaching and integrate reef resilience to climate change into the MPA network design process in Pohnpei
2.11	Identify no more than two dredging sites for the State of Pohnpei and close all other existing sites and impose a moratorium banning all new dredging sites by 2005	Y	Improve impact assessments of dredging applications and improve the management and oversight of dredging activities
2.15	Establish at least one environmentally sustainable pilot mariculture/aquaculture venture (i.e. sponge farms, pearl farms, etc..) as an alternative source of income to marine resource extraction/exploitation by 2007	Y	Expand environmentally sustainable pilot mariculture/aquaculture ventures (i.e. sponge farms, pearl farms, etc..) as alternative source of income to marine resource extraction/exploitation
3	**Establish effective management of Pohnpei's Watershed Forest Reserve and at least two mangrove reserves, with supporting local and State policies and day-to-day maintenance by local communities**		
3.18	Establish at least one pilot community based mangrove reserve by 2006	Y	Continue to establish community based mangrove protected areas in Pohnpei

4	**Address the invasive species problem in Pohnpei State by strengthening the quarantine program and controlling and/or eradicating at least five (5) selected species**			
	4.2	Formally establish and fund inter-agency Invasive Species Task Forces to deal with priority invasive species by 2005	Y	Continue funding and supporting the operations of the Pohnpei invasive species taskforce (iSTOP)
5	**Increase awareness on proper (organic and inorganic) waste disposal and recycling, pollution control, fuel and energy reduction/alternatives, including the adoption of at least one model of effective "best practices" management in each of the areas**			Rate of pollution - new sources of pollution increasing population
	5.6	At least one local handicraft/industry within Pohnpei designing and developing shopping bags by 2006	Y	Identify sustainable, environmentally friendly, and locally available alternatives to plastic bags and Styrofoam containers
	5.19	At least one new public building will integrate at least one alternative energy source (solar, wind, hydro-electric) to generate 50% of its energy needs by 2009	Y	Continue to integrate alternative energy sources into government buildings
6	**Revive, maintain and utilize relevant Traditional Knowledge, which supports biodiversity conservation and improves community leadership and participation in conservation and development plans and initiatives**			
		Establish a framework to protect intellectual property rights of Pohnpeian resources and traditional knowledge (Access and Benefits Sharing Framework)	Add	

Table 5: Initial suggested revisions to the Kosrae BSAP

	Kosrae 2004 BSAP Original Objective/Activity	Revise? (Y/N)	If yes, what is the new objective (target) /activity?
1	**To develop, review, and enforce policies and regulations for sustainable harvesting of natural resources**		
1.2	Ban use of poisonous chemicals such as bleach, cyanide, local plant roots (Paraderris elliptica), leafs (Callicarpa candicans), and other destructive fishing methods as in the use of dynamite and electrocution devices	Y	Enforce legislation banning the use of poisonous chemicals such as bleach, cyanide, local plant roots (Paraderris elliptica), leafs (Callicarpa candicans), and other destructive fishing methods as in the use of dynamite and electrocution devices
1.4	Ban the use of modern fishing equipment and devices such as scuba gear and FADS	Y	Ban the use of modern fishing equipment and devices such as scuba gear
1.5	Regulate exportation of significant species such as crabs, lobster, and other species considered threatened	Y	Sustainable manage commercially valuable species (could include developing aquaculture programs and setting size limits on fish)
	Enforcement of protected areas included under Kosrae State laws and regulations	Add	
	Develop new regulations, based on scientific research, to protect fish spawning aggregations	Add	
	Develop management plan for species and protected ecosystems (for those who don't have them), for example sea cucumbers and protected areas	Add	
2	**To create and implement educational and awareness programs in the community that address biodiversity conservation**		
2.2	Create committee to implement educational and awareness programs on local biodiversity conservation with the utilization of available media services and technology	Y	Agencies with responsibility for oversight/management of natural resources incorporate education and awareness programs into their activities
	Scale-up Rare-style Pride Campaigns, increase focus on behavior change communications	Add	
3	**To improve, manage and preserve vital ecosystems**		

Kosrae 2004 BSAP Original Objective/Activity		Revise? (Y/N)	If yes, what is the new objective (target) /activity?
3.1	Prevent destructive development of terrestrial, freshwater, and marine/aquatic areas	N	
	a. Enforce sustainable development of vital areas	Y	Manage sustainable development in Areas of Biological Significance and other vulnerable areas
	b. Enforce development regulations for vital areas	Y	Enforce development regulations
	c. Restrict development of highly erodible areas	Y	Manage development in highly erodible areas
3.4	Designate more conservation areas	Y	Effectively manage existing protected areas and establish new protected areas in support of Micronesia Challenge targets
	Improve enforcement of existing environmental laws, including existing PA regulations, and prosecution of violators through the creation and implementation of an inter-agency enforcement task force	Add	
	Standardize data collection methods to improve on-the-ground decision making (based on indicators sets by the Micronesia Challenge Measures Working Group - Marine, Terrestrial, Socio-economic, and the MPAME tool)	Add	
4	**To minimize waste contributing to the pollution of our environment**		
4.2	Strengthen and enforce existing pollution regulations	N	
	a. Prevent development of pigpen and poultry farm on or along coastal areas	Y	Effectively manage the waste from pigpens, throughout the island (including riverine areas/coast)
4.3	Upgrade and comply with sewage discharge systems to meet United States EPA standards	Y	Develop and implement a waste-water management plan
4.6	Implement educational and awareness programs to increase awareness of littering law and pollution regulations	Y	Implement educational and awareness programs to increase awareness of littering law and pollution regulations, and for sustainable land management (composting). Also include public campaigns about the health effects of burning plastic/chemicals as part of agency/NGO programs
	Ban plastic bags and polystyrene food service containers	Add	
	Expand the existing recycling program to include more recyclable materials	Add	
5	**To implement programs and practices for the security of our genetic resources and local knowledge**		

	Kosrae 2004 BSAP Original Objective/Activity	Revise? (Y/N)	If yes, what is the new objective (target) /activity?
	Document the traditional and cultural uses of plants (all uses) while respecting family systems of passing on knowledge.	Add	
6	**To develop programs for restoring biodiversity and species habitat**		
6.1	Establish mangrove tree planting programs in each municipality	Y	Establish and implement mangrove and coastal zone tree planting programs in each municipality
6.3	Initiate quarterly underwater and on-land community cleanups	Y	Continue periodic underwater and on-land community cleanups
6.5	Promote establishment of on-island research facilities	Y	Expand on-island research activities to benefit communities
	Improve monitoring and evaluations of environmental programs to ensure effectiveness	Add	
	Promoting sustainable farming methods within Kosrae	Add	
	Establish regulation providing for forest management plans within communities	Add	

Appendix V – Action areas for consideration in updated BSAPs

During the workshops to gather information for this report, participants were also asked to suggest key actions – in addition to incorporating the lessons learned listed under Part III of this report – needed to achieve FSM and State-level biodiversity targets and to fully address the Strategic Plan for Biodiversity and the Aichi Targets. Given the variety of responses, this Appendix contains summary tables with descriptions of those actions identified as important for each State and at the National level. Issues are presented in the order in which they were discussed; they are not ranked in terms of relevant importance.

Table 12.1: Key actions identified by FSM National-level stakeholders

Suggested actions by National-level stakeholders to advance biodiversity targets
Integrate the lessons learned into the NBSAP updates State BSAPs. Revisit policies/strategic plans - legislation/regulations, implementation
Use the update process for the NBSAP and State BSAPs to do a comprehensive status update
Need to collect the right data and enough data to be able to inform decisions. Increase information sharing between stakeholders - also increase staff capacity to use data/knowledge management
Need to build political will to support conservation bills
Need to cultivate and capitalize on local champions - for example the Yela has strong champions. Also involve traditional leaders who are vocal - for example Nett Watershed supported by traditional leader
Always link in sectors - continuing to promote mainstreaming. For example involve the Postal Service for awareness (stamps featuring endemics). Foreign affairs promoting biodiversity consideration for investment. Development Banks for local communities (joint-ventures, lending schemes) to maximize efforts.
Address systemic challenges (staff/finances) through mainstreaming - cost sharing, outsourcing
Continue to look at innovative efforts - Telecom phone cards - tax incentives – and learning lessons from neighbors through continuing learning exchanges at the senior level
Need to have qualifiers, quantify - recognize the need for green accounting, come up with a value system to be able to justify policy interventions. Advocate more for the resource mobilization. Need to be able to assess values - develop market values for land/natural resources in FSM
Provide guidance on how to manage land usage rights at State level - issues of property rights impacting conservation programming. Also enforcing contracts an issue at State level impacting private sector development. Also has a bearing on infrastructure development

Table 12.2: Key actions identified by Yap State stakeholders

Suggested actions to achieve biodiversity targets in Yap
Need for marine invasive species programs
Setting Yap State priorities
Need to set more realistic timelines for how long it will take to implement activities
Procedure manual for the fiscal process of the Yap State government as well as the National government
Build up the CBOs, NGOs in the State which can have more flexibility to access and use resources
Build financial management capacity within grantees - have a grants officer that can be shared between organizations. Projects that could go through one single manager
Strengthen public awareness. Need a communications campaign to build public support (radio ads). Possibly an environment fair, similar to food day, to increase public awareness of existing programming by government, communities, and NGOs
Had a workshop and drafted a communications plan, endorsed by Governor, but hasn't been funded? Need for a specific communications plan that will work in Yap
Having staff/2-3 people funded and working full time to coordinate efforts and push for implementation of plans that are adopted
Protect staff time. Start saying 'no'
Incorporating environmental considerations in the foreign investment permitting process. At the State and the National level and ensure that at both levels they complement each other
Need to involve communities in survey/scientific work to give them the information that they need to be able to make sustainable harvest decisions. For example how much timber can be harvested? How many birds can be taken? What about sand/coral removal? Be able to make linkages between activities with environmental consequences
Need to translate and document what communities are and have been doing for conservation/biodiversity management. 'Past performance' for biodiversity/conservation management practices.
Need to emphasize community facilitation but recognizing that this is a full time position - after hours and weekends to be able to meet with communities
Need for a streamlined process to get contracts with communities. Getting better for fire grant funding because it goes directly to Yap and bypasses the National government
Need for a financial grants manager to facilitate payments/contracts. Also could help Yap secure funding directly from donors
Need for more local resources to do follow-ups - for example digitizing information that is already available to be able to compare surveys in the past to current conditions

Table 12.3: Key actions identified by Chuuk State stakeholders

Suggested actions to achieve biodiversity targets in Chuuk
Need to improve capacity for drafting environmental laws and regulations in order to hasten/streamline the process for introducing and passing legislation
Better inform the budget review committee about the work that is ongoing for conservation. More transparency with the R&D committees in the legislature so that the politicians are informed.
Need to have a larger and more effective lobby in Chuuk for conservation related legislation. Explain the 'why' behind mainstreaming biodiversity to State agencies not currently incorporating it into their plans. Need to improve communication strategies to bring in community leaders/community members to participate in conservation programming, better public awareness in general
Need to do more scientific research and assessment to backup conservation budgets/legislation/activities. Need to be able to show in black and white what the issues are using data. Not just biological/ecological data, but also socio-economic data to strengthen the argument for particular policies
Need for additional human resources and capacity building. Issue of staff retention due to low salaries. Need to raise salaries and also strengthen a system of merit-based hiring and promotion based on skills and education
Need to provide professional development opportunities for staff, continuing training while on-the-job
Need to set realistic priorities with sufficiently long time frames included that are agreed at the State level (budget security for longer-term activities)
Policy: create a working group of policy makers and CCS and State agencies to review existing legislation and pending laws to ensure that critical issues are being addressed, and that laws are feasible/realistic and reflect community contexts and conservation priorities. Also examine enforcement and compliance; are laws able to be enforced?
Documentation and reporting: create user-friendly and replicable templates for reporting and documentation of conservation activities to insure that information is not lost and that activities are recorded. Backups and copies of reports are maintained. Also that successes are documented. Useful for future plans and for justifying budgets
Secure long-term sufficient funding for conservation activities. By 1) allowing for longer-term goals in performance-based budgets to avoid budget cuts based on no short-term results; 2) securing additional funding from outside donors due to declines in compact funding; 3) strategy to improve State applications for donor funding in a way that is streamlined, and projects would build on ongoing Chuukese-driven conservation initiatives
Create economic incentives for resource owners to conserve biodiversity. Based on example of the Yela conservation easement in Kosrae, Payments for Ecosystem Services in other countries/States, for example paying entry fees for protected areas.

Suggested actions to achieve biodiversity targets in Chuuk
Need for more alternative livelihoods programming - creative programs to balance economic development with conservation. Build on agro-forestry programs, do more comprehensive research into market demand for products that can be produced in Chuuk. Need to develop systems for more equitable sharing of revenue from Chuukese resources sold internationally Given the increasing collaboration between State agencies/NGOs/CBOs in Chuuk, need to define roles/responsibilities between conservation actors to avoid redundancy and synchronize efforts Work to build support of traditional leaders (empower traditional leaders) in conservation efforts – by involving them to help with enforcement, compliance, maintains traditional ways of life, and builds commitment within communities for biodiversity conservation. Community ownership/community driven projects can reflect Chuukese culture of sustainable resource use

Table 12.4: Key actions identified by Pohnpei State stakeholders

Suggested actions to achieve biodiversity targets in Pohnpei
Need to clearly define roles/responsibilities of State/Municipal/FSM National actors. Fundamental structure of governance between different levels. Who is responsible, who has the mandate at address which issues Need to streamline the work of actors engaged in conservation Ensure coordination - need to coordinate and continue the dialogue that has started for resource management. Not clear yet. But need to involve all levels of Government/NGOs. To reduce replication of activities Decision makers for resource management at the Municipal level are elected (short-term). They have the say - but no office at the Municipal level that deals with natural resource managements. Non-specialists making decisions about resource management, and these positions also turn over. Action to create resource management positions within each Municipality that are permanent Need to revisit plans/ideas for sustainable financing. Some good ideas that didn't have traction but are still relevant Issue of age of retirement being 60 years, important resources that are forced out. Consider how to get access to retired specialists. Mechanism to access the skills/knowledge of retired people so as not to lose access to gifted people Need to strengthen institutional knowledge - so when a person leaves/retires he/she doesn't leave with precious knowledge Improve/strengthen enforcement. Issue of prosecuting violators. 21 laws/regulations from the State but issue of not being able to prosecute the cases Continue to network together traditional leaders, church groups, Women's Groups, CBOs, with NGOs and conservation agencies/departments. Information sharing critical. Need to share what government departments/agencies are doing with communities

Table 12.5: Key actions identified by Kosrae State stakeholders

Suggested actions to achieve biodiversity targets in Kosrae
Set size limits for fish to reduce taking juvenile fish off the reef before they can reproduce
Add new marine reserves, in every village. Depending on community needs can be no-take-zones, seasonal closures, or just species specific. Example the Trochus sanctuary
Sustainable financing for biodiversity/ecosystems programs. Sustainable financing plan is in place for several sites, but the mechanisms for implementing the plan are not in place.
Pending legislation needs to be advanced, partly lack of public awareness and support, partly not a priority at the legislature. Example is draft legislation on environmental fund, so that any penalties that come into the fund will be spend on environment also facilitate the management of environmental projects – with the legislature for over a year
Increase human capacity to analyze data and use it for decision making. Lots of data, but limited capacity to make use of that data
Change in mindset/cultural practices of not enforcing/reporting because of social/community/family connections
Need for funding to implement all components of the solid waste management plan - collection, landfill improvement, recycling
Fill gaps in the littering law. Amend the littering law to include dumping (including in private property). Also clarify who is responsible for management of medical waste and clarifying who is responsible for the landfill
Need for additional equipment and skilled personnel. Especially for pest management
Issue of a lack of a unified database. Need to revive a clearinghouse mechanism within the FSM and regionally. If not being used at the FSM level, why not bring it down to the State level and give State actors more control over the clearinghouse. Dropbox, or a website more readily accessible to users
Fines and penalties – people need to be made aware of these fines, for more effective deterrence
Important that the prosecutors understand the laws themselves, if the prosecutor doesn't have an interest in the case then they won't be as motivated to prosecute