

Recovery Outline for American Samoa Species

Scientific Name/ Samoan Name/ and/or Common Name

MAMMALS

Emballonura semicaudata semicaudata/ pe`ape`a vai/ Pacific sheath-tailed bat

BIRDS

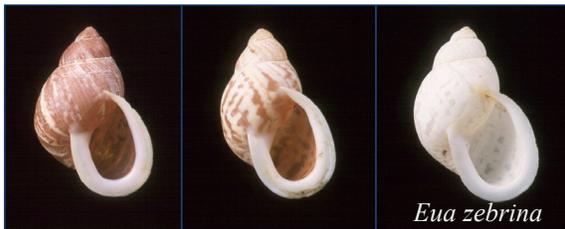
Gymnomyza samoensis/ ma`oma`o/ mao

Gallicolumba stairi/ tu`aimeo friendly (shy) ground-dove (distinct population segment)

MOLLUSKS

Eua zebrina [no common name]

Ostodes strigatus [no common name]



Listing Status and Date Endangered; September 22, 2016 (81 FR 65466)

Lead Agency/Region U.S. Fish and Wildlife Service, Interior Region 12

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Purpose of the Recovery Outline: This document lays out a preliminary course of action for the survival and recovery of one mammal, two forest birds, and two mollusks in the Territory of American Samoa, all of which were listed as endangered under the Endangered Species Act (ESA) in 2016 (USFWS 2016). Recovery outlines include background information about the species, previous conservation efforts, and a list of recovery actions needed to meet recovery criteria. This recovery outline will address the recovery needs of these five species. To achieve recovery of these species, the recovery plan will designate management units encompassing all or portions of the ecosystems on which the species depend. Recovery actions within these management units will be prioritized based on criteria developed within the Pacific Islands Fish and Wildlife Office since funding is not available to manage all units or threats simultaneously.

This outline is meant to serve as interim guidance to direct recovery efforts and inform consultation and permitting activities until a comprehensive recovery plan has been completed. Recovery outlines are intended primarily for internal use by the U.S. Fish and Wildlife Service (Service); formal public participation will be invited with the release of the draft recovery plan and the Service will consider any new information during the recovery planning process. For more information on Federal recovery efforts for the five newly listed species, or to provide comments, interested parties may contact the lead field office for these species at the above address and phone number.

Scope of Recovery and Available Information: The scope of this effort is the multiple islands of American Samoa. This recovery outline is based on the best available scientific data contained in the final listing rule (USFWS 2016) and the proposed listing rule (USFWS 2015), and information in our files for the five species listed above. Based on the best available scientific data and analysis at the time of listing, an assessment of critical habitat could not be completed (USFWS 2016). Accordingly, there currently is no designated critical habitat for these species. Major threats to these species and their habitats include nonnative species such as invasive plants, feral ungulates and other nonnative mammals, and a predatory snail and predatory flatworm. While some research has been conducted on the five species, little information beyond current status and existing threats is available. Additional research is needed to fully understand what is required for the recovery of these species, including their distribution and range,

especially with regard to the impacts of climate change. Uncertainties associated with the specific habitat needs and biology of these species will be resolved to the extent possible through the course of the recovery process, and the recovery plan may need to be periodically updated. The recovery strategy will include recommendations to address these uncertainties with specific habitat needs and the biology of the species, and will contribute to adaptive management.

I. Overview

A. BIOLOGICAL ASSESSMENT

1. Species Description and Life History

Species descriptions and life history are contained in the final listing decision ([USFWS 2016](#)) and the proposed listing rule ([USFWS 2015](#)) for the five newly listed species.

2. Historical and Current Population Status

The historical and current population status of these species also are contained in the listing decision (USFWS 2016) and the proposed listing rule (USFWS 2015) for the five species (Table 1). Table 1 provides a summary of the current status and distribution of the species in American Samoa.

Table 1. Current status and distribution of the five endangered species in the Territory of American Samoa across the four islands comprising the territory.

			Current and Historical Distribution				
Species	# of populations	# of individuals	Tutuila	Ofu	Olosega	Tau	Other
MAMMALS							
Pacific sheath-tailed bat (<i>Emballonura semicaudata semicaudata</i>)	unknown		H ³				Samoa, Fiji Tonga, Vanuatu
BIRDS							
Mao (<i>Gymnomyza samoensis</i>)	7	<500 (2006)	H ⁴				Samoa
Friendly (shy) ground-dove (<i>Gallicolumba stairi</i>) ¹	1	<100 (2015)		✓	✓		
MOLLUSCS							
<i>Eua zebrina</i> ²	2	1,102 (1998)	✓	✓			
<i>Ostodes strigatus</i> ²	unknown		H ⁵				

✓ = Currently known populations

H = Known only historically

1 = American Samoa Distinct Population Segment (DPS) (the species is also found in Fiji, Samoa, Tonga, and Wallis and Futuna Islands).

2 = Both *Eua zebrina* and *Ostodes strigatus* are endemic to American Samoa

3 = Sheath-tailed bat: Two individuals were last seen in 1998 on Tutuila. It is rare or extirpated in Samoa and Tonga, and populations in Fiji have declined significantly in recent years.

4 = Mao: Last collected in 1920 on Tutuila. Unconfirmed sightings are occasionally reported on Tutuila.

5 = *Ostodes strigatus*: Last surveyed and observed in 1992 on Tutuila.

3. Habitat Description and Landownership

The five newly listed species are known from three terrestrial ecosystems found in American Samoa: lowland, montane, and cloud forest (Table 2). In American Samoa, these species and their habitats occur on lands owned by local villages, the American Samoa Government, and lands leased to the National Park Service.

4. Summary of Biological Assessment

The endangered Pacific sheath-tailed bat and endangered bird mao are extirpated in American Samoa, and declining throughout the remainder of their range outside U.S. boundaries. The endangered land snail *Ostodes strigatus* was last observed in 1992, and its status is currently unknown. Currently, without habitat protection, predator control and improved biosecurity measures, the endangered land snail *Eua zebrina* and endangered friendly (shy) ground-dove are vulnerable to extirpation in American Samoa as described below.

Systematic surveys are needed to assess the current distribution of these species and their habitat requirements, so recovery areas can be expanded beyond current and historical distributions. Modeling based on species requirements and known distributions will assist in selecting additional areas needed for recovery. Models incorporating climate change projections need to be developed to map potential future distributions.

Resiliency, Representation, and Redundancy:

Representation, resiliency, and redundancy (“the 3Rs”) comprise key characteristics that collectively contribute to a species’ ability to sustain secure populations over the long term. When combined across populations, they measure the health of the species as a whole. The more we can identify and break down the constituent elements contributing to resiliency, representation, and redundancy, the better we can understand what contributes to, and is necessary for, the long-term health of a species. Representation contributes to the adaptability and evolutionary capacity of a species over time, to accommodate long-term issues like climate change. Resiliency speaks to an individual population’s ability to tolerate environmental and demographic stochasticity, such as fluctuations in temperature or genetic drift. Redundancy contributes to the ability of population types to withstand catastrophic events (hurricanes, wildfires, etc.). The 3Rs are interconnected and overlapping. For example, populations must be resilient in order to contribute to redundancy or representation. Likewise, redundant populations within a representative genotype or ecological setting contribute to the maintenance of the representation contributing to the species’ adaptive and evolutionary capacity. As with all things biological, evaluation of the 3Rs for any species must be considered in the context of the species’ life history and ecology.

- **Low to Moderate Resiliency**

Each of the species have small populations that exhibit low to moderate resiliency, and are vulnerable to extirpation. Climate change will exacerbate hurricanes and flooding (USFWS 2016) as a result of moderate increases in rainfall and increased intensity of storms, and will continue to threaten populations with extirpation.

- **Low to Moderate Redundancy**

With a current distribution on two islands, *Eua zebrina* and the friendly (shy) ground-dove have low to moderate redundancy as populations remain small and isolated and have a low to moderate probability of persistence. Redundancy is assumed low for *Ostodes strigatus*, as the species was previously known only from southwestern Tutuila and has not been observed since 1992.

- **Low Representation**

Eua zebrina and the friendly (shy) ground-dove are both restricted to single populations on the islands on which they occur. Deforestation, invasive species, and climate change have contributed to habitat loss and fragmentation and resulted in limited habitat on each island for these two species. Overall representation is low for *Eua zebrina* and the friendly (shy) ground-dove based on single populations with low to moderate resiliency and limited habitat. For these reasons, the overall viability for *Eua zebrina* and the friendly (shy) ground-dove is low to moderate, defined by a moderate to high probability of becoming extinct in the next 10 years.

B. THREATS ASSESSMENT

1. Listing Factors/Primary Threats to the Species

As identified in the final listing rule (USFWS 2016), the threats to the five species and their habitats are deforestation, nonnative ungulates, nonnative plant species, predation by rats, hurricanes, demographic and genetic consequences of small populations, and the effects of climate change (Table 2). The effects of climate change directly affect bat roosting caves, which are susceptible to sea-level rise, and may exacerbate the impacts of hurricanes and flooding on the other species. Over collection for commercial purposes is a threat to *Eua zebrina*. In addition, cats are a threat to forest birds and bats, human disturbance is a threat to the bat, and flooding and nonnative invertebrates are threats to the snails. With the exception of stochastic events and climate change, for the most part these threats can be addressed by outreach and ecosystem-level management.

A description of each of these threats is presented in the final listing rule (USFWS 2016); each is classified according to the five listing/delisting factors identified in section 4 of the Endangered Species Act (“Act”; 16 USC 1531 *et seq.*).

2. Summary Threats Assessment

No new threats to the five newly listed species have been identified since the final listing rule was published and all threats will be addressed in the recovery plan.

Our analyses include consideration of ongoing and projected changes in climate. The terms “climate” and “climate change” are defined by the Intergovernmental Panel on Climate Change (IPCC). “Climate” refers to the mean and variability of meteorological conditions (*e.g.*, temperature, precipitation) in a particular region over time, with 30 years being a typical period, although shorter or longer periods also may be used (IPCC 2007, p. 78). The term “climate change” refers to a change in the mean or variability of one or more measures of climate that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007, p. 78). Changes in climate can have direct or indirect effects on species and the effects can be positive, neutral, or negative and may change over time, depending on the species and other factors, such as the potential interaction of climate and other variables (*e.g.*, habitat fragmentation) (IPCC 2007, pp. 8–14 and 18–19). In our analyses, we use expert judgment to weigh relevant information, including uncertainty, in considering how various aspects of climate change threaten the recovery of the species herein.

Most of the species included in this recovery outline have specialized microhabitat requirements or limited dispersal opportunities or abilities, making them vulnerable to climate change. For example, relative humidity and temperature are critical at Pacific sheath-tailed bat roosts and beneath the forest canopy where *Eua* and *Ostodes* occur (Grant *et al.* 1994, p. 135; O’Shea and Valdez 2009, pp. 77–78; Gouveia 2012, p. 29). Applying climate envelope modeling and recovery planning tools will help prioritize habitat protection actions, such as where to conduct what type of invasive species control, and highlight links between current and future habitat. This information will facilitate setting management priorities for necessary recovery areas in a warming climate.

Table 2. Summary of habitats used by, and the threats affecting, the five listed species found on American Samoa. Factor A = The present or threatened destruction, modification, or curtailment of the species habitat or range. Factor B = Overutilization for commercial, recreational, scientific, or educational purposes. Factor C = Disease or predation. Factor D = Inadequacy of existing regulatory mechanisms. Factor E = Other natural or manmade factors affecting the species continued existence.

Species	Habitat	Factor A						Factor B	Factor C			Factor D	Factor E
		Deforestation – ag/urban development	Nonnative plants	Pigs	Goats	Landslides or flooding	Climate change	Overutilization	Predation by rats	Predation by cats	Predation by nonnative invertebrates	Inadequacy of existing regulatory mechanisms	Other species-specific threats
MAMMALS													
Pacific sheath-tailed bat (<i>Emballonura s. semicaudata</i>)	Cave, Forest (Lowland, Montane)	✓			✓	F	SL		✓			✓	HD, H, LN, MP
BIRDS													
Mao (<i>Gymnomyza samoensis</i>)	Forest (Lowland, Montane, Cloud)	✓	✓	✓					✓	✓		✓	H, LN
Friendly (shy) ground-dove (<i>Gallicolumba stairi</i>)	Forest (Lowland, Montane)	✓							✓	✓		✓	H, LN
MOLLUSKS													
<i>Eua zebrina</i>	Forest (Lowland and Montane)	✓	✓	✓		F		✓	✓		EU, FW	✓	H, LN
<i>Ostodes strigatus</i>	Forest (Lowland and Montane)	✓	✓	✓		F			✓		EU, FW	✓	H, LN

EU = *Euglandina rosea*, F = flooding, FW= New Guinea flatworm, H = hurricanes, HD = human disturbance, LN = low number of individuals, MP = breakdown of metapopulation dynamics via fragmentation, loss of subpopulations, etc., SL = sea-level rise

C. CONSERVATION ASSESSMENT

1. Conservation Efforts:

The National Park of American Samoa (NPSA) was established to preserve and protect the tropical forest and archaeological and cultural resources, to maintain Pacific sheath-tailed bat habitat, to preserve the ecological balance of the Samoan tropical forest, and, consistent with the preservation of these resources, to provide for the enjoyment of the unique resources of the Samoan tropical forest by visitors from around the world (Public Law 100-571, Public Law 100-336). Under a 50-year lease agreement between local villages, the American Samoa Government, and the Federal Government, approximately 8,000 acres (ac) (3,240 hectares (ha)) of forested habitat on the islands of Tutuila, Tau, and Ofu are protected and managed, including suitable habitat for the five species (NPSA Lease Agreement 1993).

Several programs and partnerships to address the threat of nonnative plant species have been established and are ongoing in American Samoa. Since 2000, the NPSA has implemented an invasive plant management program focusing on monitoring and removal of nonnative plant threats. The nonnative plant species prioritized for removal include: *Adenantha pavonina* (lopa), *Castilla elastica* (pulu mamoe), *Falcataria moluccana* (tamaligi), *Leucaena leucocephala* (lusina), and *Psidium cattleianum* (strawberry guava; Togia 2015). In particular, efforts have focused on the removal of tamaligi from within the boundaries of the NPSA as well as in adjacent areas (Hughes *et al.* 2012).

The thrip *Liothrips urichi* is an insect that was introduced to American Samoa in the 1970s as a biocontrol for the weed *Clidemia hirta* (Tauilili and Vargo 1993, p. 59). This thrip has been successful at controlling *Clidemia* on Tutuila. Though *Clidemia* is still common and widespread throughout Tutuila, thrips inhibit its growth and vigor, preventing it from achieving ecological dominance (Cook 2001, p. 143).

In 2004, the American Samoa Invasive Species Team (ASIST) was established as an interagency team of nine local government and Federal agencies. The mission of ASIST is to reduce the rate of invasion and impact of invasive species with the goals of promoting education and awareness of invasive species and preventing, controlling, and eradicating invasive species. In 2010, the U.S. Forest Service conducted an invasive plant management workshop for Territorial and Federal agencies, and local partners (PII 2010). More recently, the NPSA produced a field guide of 15 invasive plants that the park and its partners target for early detection and response (NPSA 2012,).

In 1996, the NPSA initiated a feral pig control program that includes fencing and removal of pigs using snares in the Tutuila and Tau island units. Since 2007, two fences have been constructed and several hundred pigs have been removed (Togia 2015, pers.

comm.). The program is ongoing and includes monitoring feral pig activity twice per year and additional removals as needed (Togia 2015, pers. comm.).

The Government of Samoa Ministry of Natural Resources and Environment (MNRE) developed a recovery plan for the mao. The recovery plan identifies goals of securing the mao, maintaining its existing populations on Upolu and Savaii, and reestablishing populations at former sites (MNRE 2006). The plan has eight objectives: (1) manage key forest areas on Upolu and Savaii where significant mao populations remain; (2) carry out detailed surveys to identify the numbers of pairs and establish monitoring; (3) increase understanding of the breeding and feeding ecology; (4) establish populations on rat-free islands or new mainland sites (including feasibility of reintroduction to American Samoa); (5) evaluate development of a captive-management program; (6) develop a public awareness and education program; (7) develop partnerships to assist in mao recovery; and (8) establish a threatened bird recovery group to oversee the implementation and review of this recovery outline and recovery plans of other priority bird species. These objectives have not all been met, and funding has not been available to update the plan (Stirnemann 2016, pers. comm). In 2012, a detailed study provided information on the mao's diet, habitat use, reproductive success, and survival, which can be used to design and implement recovery efforts (Butler and Stirnemann 2013).

The Two Samoas Environmental Collaboration Initiative aims to bring together government agencies, nongovernmental organizations, and institutions from American Samoa and Samoa, and to focus efforts to manage threats to environmental resources such as land-based sources of pollution, climate change, and invasive species as well as the management of endangered species and fisheries (MNRE 2014, p. 67). In 2010, a Memorandum of Understanding establishing the collaborative effort between the two countries was signed by the two agencies responsible for conservation of species and their habitats, MNRE (Samoa) and the Department of Marine and Wildlife Resources (DMWR; American Samoa). This initiative established a framework to recover the mao in American Samoa and Samoa.

A project to eradicate the Polynesian rat (*R. exulans*) to benefit mao and other priority species was attempted on the uninhabited islands of Nuutele (267 ac (108 ha)) and Nuulua (62 ac (25 ha)) off the eastern end of Upolu, Samoa (Tye 2012). The demonstration project used aerial delivery of rodenticide bait; however, post-project monitoring detected rats on Nuutele, indicating that rats survived the initial eradication effort or were able to recolonize the island (Tye 2012).

In collaboration with the Department of Marine and Wildlife Resources, the Tropical Monitoring Avian Productivity and Survivorship (TMAPS) program has conducted surveys on the islands of Tutuila, Ofu, Olosega, and Tau since 2012. Surveys focused on five Samoan land bird species: Samoan shrikebill (*Clytorhynchus [vitiensis] powelli*), Samoan starling (*Aplonis atrifusca*), wattled honeyeater (*Foulehaio*

carunculata), Pacific kingfisher (*Todiramphus sacer*), and Polynesian starling (*Aplonis tabuensis*). These surveys provide annual indices of adult population size and post-fledging productivity, estimates of adult population densities, adult survival rates, and proportions of residents, relate avian demographic data to weather and habitat, identify proximate and ultimate causes of population change, use monitoring data to inform management, and assess the success of management actions in an adaptive management framework. In 2016, monitoring of the friendly (shy) ground-dove on Ofu and Olosega was added to the surveys and is permitted under a recovery permit issued to Dr. Peter Pyle of the Institute for Bird Populations under section 10(a)(1)(A) of the Act. Capture of friendly (shy) ground-dove has confirmed the age and sex criteria for this species in American Samoa (Pyle *et al.* 2016, 2017), and has provided critical information on breeding condition, biometrics, and weights. In addition, feather, blood, and swab samples have allowed for investigation of genetic differentiation, pathogens, and diet. In the future, use of playbacks and tracking devices may be used to better understand home-range sizes, movement patterns, population size, and nesting behavior.

2. Summary Conservation Assessment

Overall, populations of the five newly listed species are declining and their ranges are highly restricted. Many of the threats to the species can be addressed by well-developed management actions such as fencing and controlling ungulates, invasive plants, and predators. By mitigating the previously outlined threats and initiating research to provide much-needed life history information, population trends can be reversed and recovery can be achieved. Refining protocols to minimize disturbance to sensitive areas, developing cost-effective strategies, coordinating efforts among partners, and obtaining sufficient funding are critical for the recovery of these species.

II. Preliminary Recovery Program

A. Recovery Priority Numbers

Recovery priority numbers (RPNs) are based on the degree of threat, the potential for recovery, and their status as full species (USFWS 1983a,b) and range from 1C (highest, “C” indicating the potential for conflict with human economic activities) to 18 (lowest). All of the species addressed herein have a high degree of threat to their habitat and continued existence (Table 2).

The mao, *Eua zebrina*, and *Ostodes strigatus* are assigned a RPN of 5C based on a high degree of threat, a low potential for recovery due to the small number of individuals with some threats that are well understood and easily mitigated while others are currently difficult to mitigate, and their status as full species. The Pacific sheath-

tailed bat is assigned a RPN of 6 based on a high degree of threat, a low potential for recovery due to the small number of individuals with some threats that are well understood and easily mitigated while others are currently difficult to mitigate, and its status as a subspecies. The friendly (shy) ground-dove is assigned a RPN of 9 based on a high degree of threat, a high potential for recovery with threats that are well understood and easily mitigated, and its status as a Distinct Population Segment (DPS).

B. RECOVERY GOAL AND OBJECTIVES

The goal of this recovery outline is to establish a framework within which recovery actions are undertaken to ensure the long-term survival and recovery of the five newly listed species by controlling or reducing threats to the extent that these species no longer require protection under the Act. These are conservation-reliant species and some form of management will be required to ensure the species' viability unless ungulates, rodents, and nonnative plants are eradicated. Although subject to change, full recovery of the five species is currently envisioned as follows: viable populations will persist on protected and managed habitat throughout the species' historical ranges in American Samoa; and threats to the species, primarily habitat loss and degradation and predation by nonnative species, will be sufficiently mitigated to ensure a high probability of survival.

C. INITIAL RECOVERY ACTION PLAN

The goal of the American Samoa recovery plan will be to reverse population declines and increase the range of the five species. The objectives of the recovery plan will be to:

1. Protect ecosystems and control threats
 - 1.1. Identify and survey extant populations for all species and the habitats in which they occur
 - 1.2. Develop fine-scale climate models to identify future suitable habitat based on existing and historical ranges and to determine potential future climate conditions
 - 1.3. Identify and prioritize areas necessary for recovery, including critical habitat, and delineate representative management units
 - 1.4. Ensure long-term protection of management units
 - 1.4.1. Identify threats specific to the management units

- 1.4.2. Within management units, construct and maintain fencing and remove ungulates, and identify a funding stream to maintain fences and maintain their ungulate-free status
- 1.4.3. Control or eradicate habitat-modifying invasive plants from management units
- 1.4.4. Develop and implement a rodent control program in management units; for habitats where this is feasible (*e.g.*, offshore islets) or where rodent exclusion fencing can be installed, implement a rodent eradication program
- 1.4.5. Protect management units from human disturbance as necessary
- 1.4.6. Control other threats as appropriate
- 1.5. Monitor management responses and use results to adapt management as needed
2. Control species-specific threats
 - 2.1. Implement current control for cats and rats, and update as new technology becomes available
 - 2.2. Implement current control for nonnative invertebrates (*Euglandina rosea*, *Platydemus manokwari*), and update as new technology becomes available
 - 2.3. Control other threats as appropriate
 - 2.4. Monitor management and use results to adapt management actions
3. Expand the distribution of existing wild populations and establish additional populations to increase resilience
 - 3.1. Develop habitat and microclimate models to identify areas within management units appropriate for establishing or augmenting populations
 - 3.2. Conduct an assessment or feasibility study on translocation and captive husbandry for the mao and Pacific sheath-tailed bat
 - 3.3. Select populations for augmentation or sites for reintroduction
 - 3.4. Prepare reintroduction sites
 - 3.5. Propagate genetically appropriate individuals for augmentation or reintroduction

- 3.6. Release genetically appropriate individuals
- 3.7. Monitor success of release and use results to adapt management actions
4. Develop regulations and policy to address species' recovery
 - 4.1. Enact legislation to ensure protection of endangered species under Territorial law
 - 4.2. Develop and implement a biosecurity plan to prevent the influx of new pests and invasive species into the Territory and between islands
5. Conduct additional research essential to recover species and restore the habitats on which they depend
 - 5.1. Conduct studies on the range, demography, and dispersal of each species
 - 5.2. Conduct population viability analyses (PVA) for each species as data becomes available
 - 5.3. Evaluate research results and implement adaptive management as necessary
6. Develop and implement a detailed monitoring plan for each species
7. Develop downlisting and delisting criteria at the species and habitat level as necessary to validate recovery objectives
8. Partner with key stakeholders to develop and accomplish above objectives
9. For all recovery actions, evaluate management and research results and implement adaptive management as necessary

D. RECOVERY ACTIONS

The recovery effort for the five listed species should build on the conservation and monitoring efforts described above. Specific actions that should be undertaken or at least initiated early in the recovery planning process include:

- Confirm the distribution, current status, and potential future distribution of existing habitats and determine the most intact sites for management. Make use of landscape modeling, spatial analysis, remote sensing technology, and existing

survey data to better understand species distributions and priority areas for targeting future surveys for habitat.

- Prioritize and initiate control of habitat-modifying threats, such as ungulates and invasive plant species, as soon as possible within the highest priority management units.
- Protect all remaining extant populations by controlling species-specific threats (as indicated in section C, Recovery Action Plan, #2). Conduct systematic surveys in areas of suitable habitat for additional populations. Make use of landscape modeling, spatial analysis, remote sensing technology, and existing survey data to better understand distributions and priority areas for targeting future surveys for the species.
- Prevent the influx of new invasive species into recovery areas. Develop and implement biosecurity measures and prevent inter-island movement of harmful pest species.
- Prioritize research that provides information and tools to mitigate threats to habitats and species, as well as techniques for captive propagation.
- Increase outreach efforts and coordination with American Samoa Government agencies, National Park of American Samoa, Office of Insular Affairs, and villages regarding ecosystem conservation. Promote opportunities to assist in the recovery of these species through habitat conservation plans, safe harbor agreements, Federal action agency section 7(a)(1) and 7(a)(2) obligations under the Act, and through various conservation partnerships funded by American Samoa Government and Federal agencies and private organizations.

III. Preplanning Decisions

A. PLANNING APPROACH

A recovery plan for the five species listed in 2016 will be prepared pursuant to section 4(f) of the Endangered Species Act. The Pacific Islands Fish and Wildlife Office will prepare the recovery plan with involvement of stakeholders as described below.

B. INFORMATION MANAGEMENT

All information relevant to the recovery of the five species listed in 2016 will be housed in the Pacific Islands Fish and Wildlife Office's administrative files. The Recovery Program will be responsible for maintaining a complete administrative record for the recovery planning and implementation process for these species.

C. RECOVERY PLAN SCHEDULE

Public Review of Draft Recovery Plan	2021
Public Comment Period	60 days
Final Recovery Plan	2022

D. STAKEHOLDER INVOLVEMENT

Key stakeholders:

- Villages that are currently or historically occupied by any of the five listed species or with habitat types suitable for establishing new populations
- American Samoa Government and Federal agencies that manage lands currently or historically occupied by any of the five listed species or with habitat types suitable for establishing new populations
- American Samoa Department of Marine and Wildlife Resources staff
- Office of Samoan Affairs (Village chiefs and County mayors)
- National Park of American Samoa (NPSA) staff
- American Samoa Attorney General staff
- Samoa Ministry of Natural Resources and Environment staff
- American Samoa Community College researchers
- Dr. Rebecca Stirnemann, mao researcher
- American Samoa Department of Marine and Wildlife Resources staff
- Conservation organizations

E. Stakeholder Involvement Strategy

Landowners and land managers that may be affected by the listing and recovery of the five listed species will be invited to participate in the recovery planning process. A mailing list will be maintained and the Pacific Islands Fish and Wildlife Office will foster open and ongoing communications with all interested parties. Service biologists working on these species as well as other American Samoa resource management issues will continue to develop strong working relationships with stakeholders. Early in the recovery planning process, interested parties will be encouraged to exchange status information, identify recovery issues, and to identify additional cooperators. Information from this process will help identify those organizations or individuals who could participate in recovery efforts. Interested stakeholders will be asked to participate, on an ongoing basis, in the recovery planning and implementation effort. Stakeholders will be afforded an opportunity to review and comment on a draft of the recovery plan before it is finalized.

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Approved:

Acting Mary M. Heenan
Regional Director, Interior Region 12
U.S. Fish and Wildlife Service

9 Dec 2019
Date

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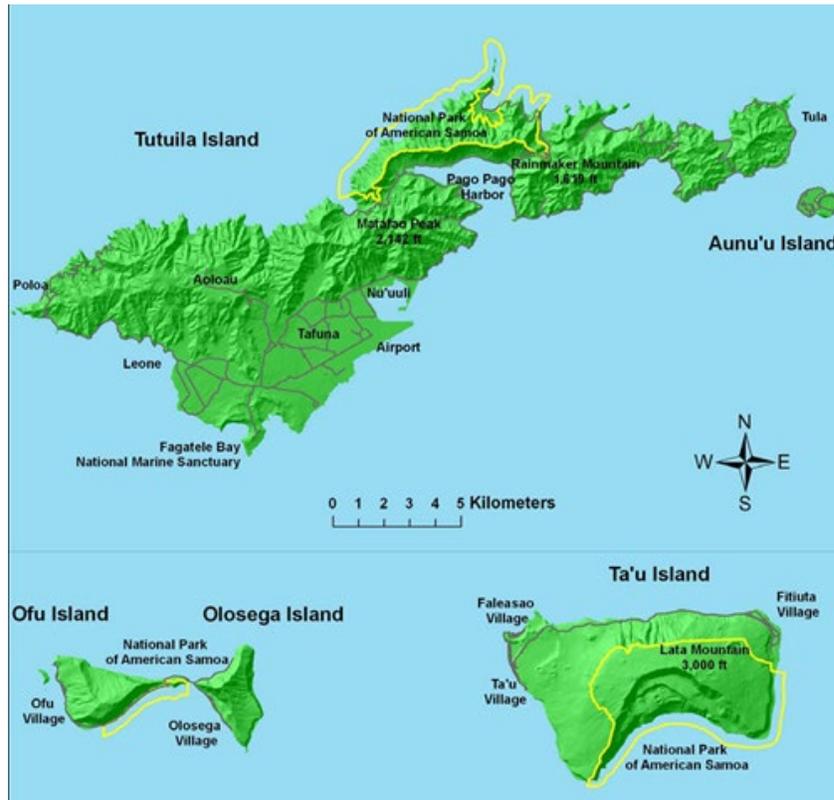
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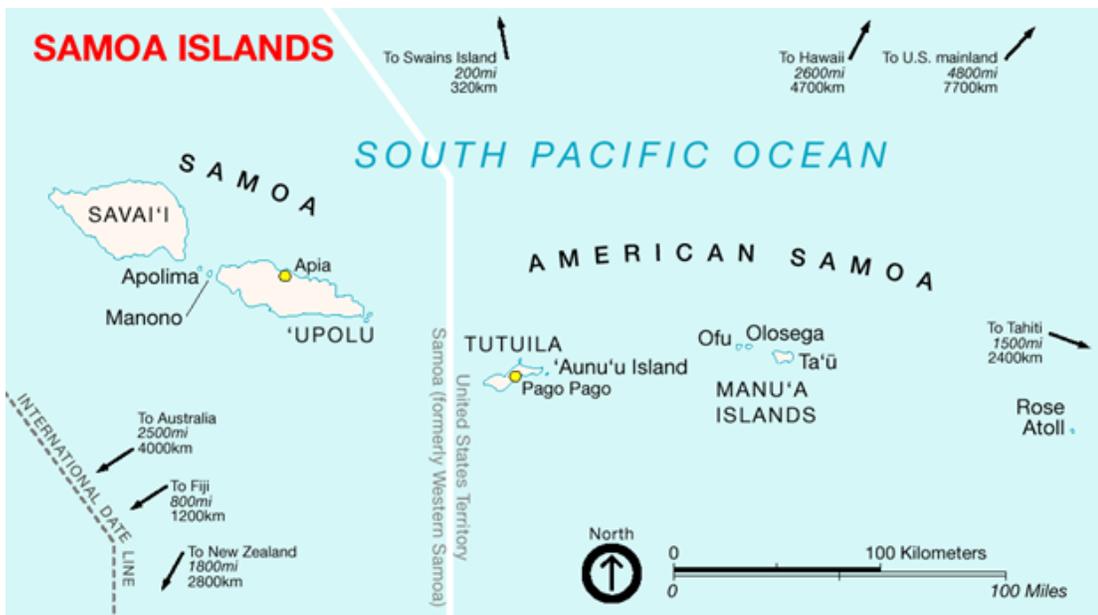
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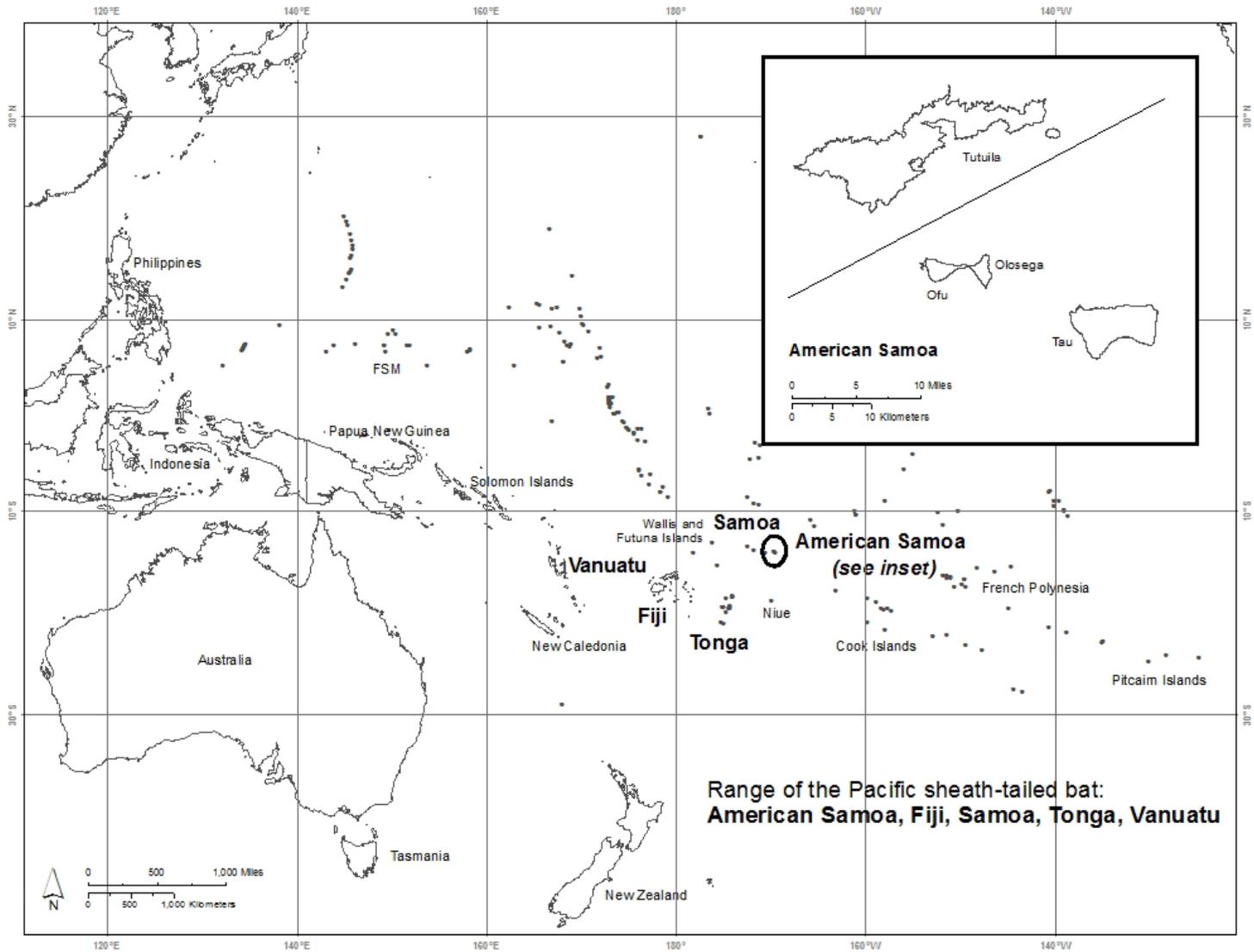
Appendix 1. Maps.



(a) Islands of American Samoa.



(b) Islands of Samoa and American Samoa.



(c) Range of the Pacific sheath-tailed bat.