ENDANGERED SPECIES IN AMERICAN SAMOA
AND
A CONSERVATION STRATEGY FOR THEIR PROTECTION

(An interim report)

NATURAL RESOURCES COMMISSION
AMERICAN SAMOA

1 June 1991
SUMMARY

The Natural Resources Commission was established to identify endangered and threatened species within the Territory of American Samoa and to develop management plans to protect them (Public Law 21-19).

This interim report describes the progress of the Commission to date. A list of almost 100 species of plants and animals was selected for evaluation, and 22 of these were completed for this interim report.

These species were evaluated and classified as one of the following: Endangered, Threatened, Special Concern, Locally Extinct, or Not of Immediate Concern. Four endangered and three threatened species have been identified thus far:

**ENDANGERED**
1. Paisua  
2. Lauamea'fa'ina  
3. Tofola  
4. Togo

**THREATENED**
1. Pe'a vao  
2. Manuma  
3. Fonu

The Commission will complete this review of species and develop a Territorial Conservation Strategy as requested by the Fono.
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMARY</td>
<td>2</td>
</tr>
<tr>
<td>PREFACE</td>
<td>4</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>5</td>
</tr>
<tr>
<td>METHODS</td>
<td>5</td>
</tr>
<tr>
<td>A. Definitions</td>
<td>5</td>
</tr>
<tr>
<td>B. Biological Assessment of Population Status</td>
<td>7</td>
</tr>
<tr>
<td>STATUS OF SPECIES IN AMERICAN SAMOA</td>
<td>7</td>
</tr>
<tr>
<td>PRIORITY SPECIES FOR MANAGEMENT</td>
<td>9</td>
</tr>
<tr>
<td>TERRITORIAL CONSERVATION STRATEGY</td>
<td>12</td>
</tr>
<tr>
<td>A. Ecosystem Conservation</td>
<td></td>
</tr>
<tr>
<td>1. Protected areas system planning</td>
<td></td>
</tr>
<tr>
<td>2. Habitat restoration</td>
<td></td>
</tr>
<tr>
<td>3. Eradication/control of pest species</td>
<td></td>
</tr>
<tr>
<td>4. Species enhancement</td>
<td></td>
</tr>
<tr>
<td>5. Cumulative impacts</td>
<td></td>
</tr>
<tr>
<td>6. Education strategy</td>
<td></td>
</tr>
<tr>
<td>B. Species Management Programs</td>
<td></td>
</tr>
<tr>
<td>1. Biological assessment</td>
<td></td>
</tr>
<tr>
<td>2. Hunting regulations</td>
<td></td>
</tr>
<tr>
<td>3. Education strategy</td>
<td></td>
</tr>
<tr>
<td>C. Suggested Legislation</td>
<td></td>
</tr>
<tr>
<td>1. Enactment</td>
<td></td>
</tr>
<tr>
<td>2. Enforcement</td>
<td></td>
</tr>
<tr>
<td>D. Institutional Needs and Funding Sources</td>
<td></td>
</tr>
<tr>
<td>1. Natural Resources Commission</td>
<td></td>
</tr>
<tr>
<td>2. American Samoa agencies</td>
<td></td>
</tr>
<tr>
<td>3. Non-government organizations</td>
<td></td>
</tr>
<tr>
<td>4. Federal government</td>
<td></td>
</tr>
<tr>
<td>REFERENCES</td>
<td>12</td>
</tr>
</tbody>
</table>

APPENDIX 1. Species worksheets......................... 13
APPENDIX 2. Newspaper advertisements.................. 39
APPENDIX 3. Species not yet evaluated.................. 40
PREFACE

The Natural Resources Commission (NRC) was established by the Fono in October 1990 and directed to identify endangered and threatened species within the Territory of American Samoa and to develop a conservation strategy to protect these species. Public Law 21-39 creates the NRC and identifies its duties as follows:

1. Identify endangered species within the Territory;
2. Identify threatened species within the Territory;
3. Identify species whose taking should be regulated, with suggested seasons or limits;
4. Identify programs for the conservation, protection, restoration, and propagation of endangered and threatened species within the Territory;
5. Identify sources of funding, private and public, for implementing this conservation program.

This report indicates the progress of the NRC on this project. We anticipate that additional species should be evaluated, and a vast array of additional information will be needed to fully develop a rational conservation policy. It is proposed that a final report will be completed by July 1992.
INTRODUCTION

The maintenance of biological diversity is of increasing economic concern to governments around the world. In Oceania, the land mass is very small, but the region has reportedly the world's highest proportion of endangered species per unit of land area. On a global scale, the region's natural heritage is thus of considerable significance. Within Oceania, natural resources are of no less importance and indeed ought to be seen as central to the long-term maintenance of the quality-of-life of island people and their cultures.

The growth rate of the human population in American Samoa is among the world's highest (3.7% per year), and the Territory's population has grown rapidly to almost 47,000 people in 1990. Most of these people live on Tutuila Island where the population has increased approximately 50% in the past 10 years.

As human use of the environment accelerates, conflicts with wildlife and land use increase, and immediate attention may be needed to restore or protect appropriate habitat types and control human interference. While larger islands in the Pacific region with low human densities and large, undisturbed natural areas may have the luxury of time to begin developing their long-range conservation strategies, more developed islands like American Samoa must undertake rapid steps to protect key species and ecosystems, as well as other natural features that may have significant educational, recreational, economic and/or biological values.

Species preservation requires a systematic approach to conservation planning that includes up-to-date field studies and consultation with government officials, traditional leaders, and local inhabitants. Critical information needed for conservation planning includes data regarding the historical and current abundance of particular species, their biology, habitat requirements, and a current inventory of remaining undisturbed habitat types.

The goal of the Natural Resources Commission (NRC) is therefore to (1) identify endangered and threatened species, (2) develop plans for their protection, and (3) develop long-term strategies for ecosystem conservation in American Samoa. Such planning must take into account the limited human and material resources available for continued monitoring and assessment of progress made towards the basic goals of conservation.

METHODS

The determination of "endangered" and "threatened" species in American Samoa involves biological data as well as value judgments. It is important to clearly identify these components so that the rationale for
listing a species as "endangered" is adequately documented and is a logical conclusion of the review process. The Commission would like to note, however, that some of the species evaluated had unique biological and/or cultural characteristics that did not rigidly conform to the definitions used, so some flexibility and subjectivity was occasionally required.

A. Definitions

A "species" is defined as a group of interbreeding individuals not normally able to interbreed with other such groups; it is a taxonomic unit and having two names in binomial nomenclature (e.g., Homo sapiens); similar and related species are grouped into genera. A species can be subdivided into subspecies, geographic races, or varieties.

The US Endangered Species Act defines endangered and threatened species as follows:

The term "endangered species" means any species which is in danger of extinction throughout all or a significant portion of its range, other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

The term "threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

While it is desirable to adopt the same definitions for American Samoa, some modifications are required because quantitative data about the abundances of plants and animals in American Samoa are generally lacking. Therefore, the definitions used in this assessment are:

1. "Endangered species" means any native species in the Territory of American Samoa that is thought to have declined significantly in abundance from historical levels, and is in danger of extinction throughout all or a significant portion of its range within the Territory.

2. "Threatened species" means any native species in the Territory of American Samoa that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the Territory.

3. Species of "special concern" refer to any native species present in low numbers, or whose status is uncertain but merits monitoring and/or further evaluation.
4. "Locally extinct" means any formerly resident species that is now absent or no longer maintains a viable breeding population in the Territory.

5. Species "not of immediate concern" include non-native species or native species whose evaluation indicates that their population status is not currently threatened.

One consequence of these modified definitions for American Samoa is that any species that has always been rare in the Territory (i.e., a species that was rare in the past and is rare today) may not be listed as an endangered species.

B. Biological Assessment of Population Status

In order to present and analyze information for species selected for review, a standardized worksheet was prepared for each species (Appendix 1). The source of information used in this summary included survey data gathered by the Department of Marine and Wildlife Resources (DMWR) or other researchers, information from historical literature (e.g., missionary reports), as well as subjective assessments made by people knowledgeable about a particular species in American Samoa. Input from the public was also invited by placing advertisements in local newspapers in November 1990 (Appendix 2), although only one response was received.

The goal of the worksheet format was to present as factual and non-controversial summary as possible for each species reviewed. The worksheet format also helped determine whether the available information was adequate to permit an evaluation of a species' historic and present abundance. On the basis of this analysis, a team of biologists then determined whether to list a species as endangered, threatened, of special concern, locally extinct, or not of immediate concern. The worksheets also provide a standardized format by which new candidate species can be evaluated.

STATUS OF SPECIES IN AMERICAN SAMOA

NRC identified a list of almost 100 plant and animal species or species groups whose population status in American Samoa should be evaluated. Of these, 22 were completed for this interim report (Appendix 1). The remainder are listed in Appendix 1.

Based on this review, recommendations for the 22 species or species groups are summarized in Table 1. The list of endangered or threatened species
<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SAMOAN NAME</th>
<th>SCIENTIFIC NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSangered SPECIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giant clam (a)</td>
<td>failua</td>
<td>Tridacna maxima/aguamosa</td>
</tr>
<tr>
<td>Hawkbill sea turtle</td>
<td>laumei failua</td>
<td>Eretmochelys imbricata</td>
</tr>
<tr>
<td>Oriental mangrove</td>
<td>togo</td>
<td>Bruguiera gymnorrhiza</td>
</tr>
<tr>
<td>Rumpback whale</td>
<td>tofoa</td>
<td>Megaptera novaeangliae</td>
</tr>
<tr>
<td>THREATENED SPECIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samoan fruit bat</td>
<td>pe'a vao</td>
<td>Pteropus samoensis</td>
</tr>
<tr>
<td>Many-color. fruit dove</td>
<td>manuma</td>
<td>Ptilinopus porcullii</td>
</tr>
<tr>
<td>Green sea turtle</td>
<td>fonu</td>
<td>Chelonis mydas</td>
</tr>
<tr>
<td>SPECIAL CONCERN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White-neck fruit bat</td>
<td>pe'a toga</td>
<td>Pteropus tonganus</td>
</tr>
<tr>
<td>Sheath-tailed bat</td>
<td>pe'a' ape'a'ai</td>
<td>Emballonura semicaudata</td>
</tr>
<tr>
<td>Pacific pigeon</td>
<td>lupe</td>
<td>Ducula pacifica</td>
</tr>
<tr>
<td>Purple-cap. fruit dove</td>
<td>manu tagi</td>
<td>Ptilinopus porphraceus</td>
</tr>
<tr>
<td>Red-called tropicbird</td>
<td>tava'e ula</td>
<td>Phaethon rubricalauda</td>
</tr>
<tr>
<td>Gray duck</td>
<td>toloa</td>
<td>Anus superciliossa</td>
</tr>
<tr>
<td>Pacific boa</td>
<td>gata</td>
<td>Candoa bibroni</td>
</tr>
<tr>
<td>land snail</td>
<td>sisi vao</td>
<td>Portulaca spp.</td>
</tr>
<tr>
<td>Monarch butterfly</td>
<td>pepe</td>
<td>Danaida plexippus</td>
</tr>
<tr>
<td>Milkwed</td>
<td>--</td>
<td>Asclepias curassavica</td>
</tr>
<tr>
<td>Paper mulberry</td>
<td>u'a</td>
<td>Broussonetia papyrifera</td>
</tr>
<tr>
<td>Milo tree</td>
<td>milo</td>
<td>Theopemia populnea</td>
</tr>
<tr>
<td>LOCALLY EXTINCT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mao</td>
<td>ma'ona'o</td>
<td>Gymnomysa samoensis</td>
</tr>
<tr>
<td>Giant clam (b)</td>
<td>falsua</td>
<td>Hippopus hippopus</td>
</tr>
<tr>
<td>NOT OF IMMEDIATE CONCERN</td>
<td>moa'sivao</td>
<td>Gallus gallus</td>
</tr>
</tbody>
</table>
included one invertebrate (giant clam), two mammals (fruit bat, humpback whales), one bird (fruit dove), one reptile (sea turtle), and one plant (mangrove tree).

It should be emphasized that several species of “special concern” may also be endangered, but due to the lack of available information, a defensible determination could not be made at this time. We should therefore not be complacent about species of “special concern” but rather initiate surveys to determine their actual status.

There will be a need to periodically review the status of all species listed as well as to consider new candidates for evaluation.

PRIORITY SPECIES FOR MANAGEMENT

In recognition of the limited funding and manpower available for species and ecosystem protection in American Samoa, NRC ranked the endangered and threatened species according to a variety of equally-weighted biological, cultural, and management considerations. The ranking scheme was based on subjective determinations of a species’ importance in 5 categories (listed below). (Thus, it should be noted that a federally protected species like the humpback whale might not receive a high rank when the other criteria are considered.)

For each species being reviewed, the 5 criteria were assigned a numeric value appropriate for that species (3 = high, 2 = medium, 1 = low). The sum of points from all criteria then determined the relative rank of the species being evaluated. The criteria were used as follows:

1. **Degree that the population is endangered**: this is an evaluation of the population status and likelihood of extinction of a species in American Samoa. Populations classified as endangered or threatened are in greatest jeopardy and thus received highest points in this category.

2. **Ecosystem value**: the value of a species as an integral part of a self-sustaining ecosystem. Species believed to have a significant role in the maintenance of an ecosystem received highest points. Example: fruit bats are key species in the rainforest ecosystem because of their important role in seed dispersal.

3. **Cultural/subsistence value**: Species consumed or used in other ways by Samoans received high points. Example: the paper mulberry (u'a) is important culturally because it was used to make tapa cloth.

4. **Vulnerability to human impacts**: Species likely to be negatively impacted in the foreseeable future by man’s activities received highest points here. Example: a significant source of mortality to
fruit bats and game birds is hunting.

5. Likelihood of successful management: If we can actually do something to help the species, high points were assigned.

The results of this ranking exercise are shown in Table 2. If an agency has limited resources available to protect endangered and threatened species in American Samoa, Table 2 indicates that fruit bats, giant clams, mangroves, fruit doves, pigeons, and sea turtles should be considered the highest priority species.
Table 2. Ranking of listed species (endangered, threatened, and special concern) in American Samoa (June 1991). Ranking: 3 = high, 2 = medium, 1 = low.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>Degree of threat</th>
<th>Ecosystem resilience</th>
<th>Vulnerability to humans</th>
<th>Likelihood of successful management</th>
<th>Sum of points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samoan fruit bat</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>14.0</td>
</tr>
<tr>
<td>Ilii clam</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>13.0</td>
</tr>
<tr>
<td>Oriental mangrove</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>13.0</td>
</tr>
<tr>
<td>Tongan fruit bat</td>
<td>1.5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Monk-sea dove</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>Purple-caps. dove</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>11.0</td>
</tr>
<tr>
<td>Hawksbill turtle</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>11.0</td>
</tr>
<tr>
<td>Green sea turtle</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>11.0</td>
</tr>
<tr>
<td>Pacific pigeon</td>
<td>1.5</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>10.3</td>
</tr>
<tr>
<td>Gray duck</td>
<td>2</td>
<td>0.5</td>
<td>1.5</td>
<td>3</td>
<td>9.0</td>
</tr>
<tr>
<td>Murea melas</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>9.0</td>
</tr>
<tr>
<td>Hilir tree</td>
<td>1.5</td>
<td>0.5</td>
<td>2</td>
<td>3</td>
<td>9.0</td>
</tr>
<tr>
<td>Pacific box</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Monarch butterfly</td>
<td>1</td>
<td>0.5</td>
<td>2</td>
<td>1</td>
<td>6.5</td>
</tr>
<tr>
<td>Lued amela</td>
<td>1.5</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>6.5</td>
</tr>
<tr>
<td>Humpback shaka</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3.5</td>
</tr>
<tr>
<td>Rain-tail, tropensid</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>0</td>
<td>3.5</td>
</tr>
<tr>
<td>Sheen-tail, bet</td>
<td>2.5</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3.5</td>
</tr>
</tbody>
</table>
TERRITORIAL CONSERVATION STRATEGY

(to be completed)

REFERENCES (to be completed)

Amerson et al. 1982
Balaza 1979
Banks 1984
Clapp 1968
Clunie 1984
Craig and Byron 1990
Engbring and Ramsey 1989
Little and Skolmen 1989
Muse and Muse 1982
Pratt et al. 1987
Setchall 1924
Sinavaiana 1990
Whistler 1976, 1984
Yanasaki et al. 1985
APPENDIX 1. Species worksheets (listed alphabetically by common name, if available).

Abbreviations used in worksheets:

1. **Species presence or abundance**
   - Low: Low abundance
   - Mod: Moderate abundance
   - C: Commonly found
   - P: Present
   - V: Visitor (migratory)
   - NP: Not present
   - LE: Locally extinct
   - ?: Unknown

2. **Locations**
   - AS: American Samoa
   - WS: Western Samoa
GIANT CLAM (3 species)
Faisau
Tridacna maxima
T. squamosa
Hippopus hippopus

REGIONAL DISTRIBUTION AND ABUNDANCE IN AS

<table>
<thead>
<tr>
<th></th>
<th>Tutuila</th>
<th>Aunu'u Ofu</th>
<th>Olosega</th>
<th>Ta'u Swains Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. maxima</td>
<td>Low</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>T. squamosa</td>
<td>Low</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>H. hippopus</td>
<td>LE</td>
<td>LE</td>
<td>LE</td>
<td>LE</td>
</tr>
</tbody>
</table>

1. HISTORICAL STATUS: Formerly abundant. Based on anecdotal information and market sampling data, reefs surrounding American Samoa supported a healthy population of giant clams at one time.

2. PRESENT STATUS: a) Low and overharvested populations remain for two of the giant clam species (T. maxima and T. squamosa). Only on rare occasions can these species be found for sale at market. Additionally, a recent series of dive surveys for the purpose of obtaining giant clam brood stock collection were unfruitful. T. maxima appears to be more abundant than T. squamosa, as is the general pattern in areas that are overfished, since T. squamosa is easier to harvest.

b) The third species (H. hippopus) is probably extinct in American Samoa. Although a few shells of this species have been (rarely) found on beaches, no sightings of a live specimen are on record.

c) Severe reductions in clam populations in several regions of the South Pacific have resulted giant clams being listed by CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), which thereby prohibits their importation or exportation among member countries.

3. BIOLOGICAL PROFILE: Giant clams are slow-growing, mature at 5 or more years, and live up to 20-60 years. The unique feature of this bivalve mollusk is that they obtain most of their food through photosynthesis rather than by filter feeding. Giant clams have a symbiotic relationship with dinoflagellate algae (zoanthellae), which are located in their mantle tissues and give the clam a colorful appearance. Giant clams are closely associated with corals and are susceptible to the same forms of habitat degradation such as siltation and eutrophication.

4. HUMAN USE: Clams have been harvested in American Samoa throughout history. Recent improvements in fishing technology such as the use of...
mask, fins, and SCUBA gear have increased harvest efficiency.

Clams continue to be a highly prized food in American Samoa and the scarcity of clams on the market is interpreted as insufficient supply to meet the demand, rather than a lack of demand.

5. RECOMMENDED STATUS:
   a. ENDANGERED for *Tridacna maxima* and *Tridacna squamosa*.
   b. LOCALLY EXTINCT for *Hippopus hippopus*.

Worksheet Update: 27 May 21
GRAY DUCK
Tolos
Anas superciliosa

1. HISTORICAL STATUS: It is unclear whether an abundant breeding population of gray ducks has ever occurred in AS. Specimens have been taken from Tutuila and Anu'u (Banks 1984). Andersen et al. (1982) reported that occasional sightings of this species have also been made on Otu, Olosega, Ta'u, and Swains islands.

2. PRESENT STATUS: Embring and Ramsey (1989) suggest that gray ducks may occasionally reach AS from Western Samoa. No confirmed sightings of this bird have been made during the past 5 years except in December 1990, when 19 gray ducks were seen flying over the freshwater marsh on Anu'u Island (however, the ducks were not observed there several months later).

The rarity of the gray duck in AS is likely due to loss of wetland habitat and overhunting.

3. ECOLOGICAL PROFILE: The gray duck prefers freshwater marshes, streams, lakes, and swamps. This species is a “dabbling duck” which feeds on waterweeds, algae, and invertebrates. In Fiji, this species breeds from October-April, nesting on the ground and producing a clutch of approximately 10 eggs (Clunie 1984).

4. HUMAN USE: This species has probably always been hunted in AS.

5. RECOMMENDED STATUS: SPECIAL CONCERN. Except for an occasional visitor gray duck, perhaps from Western Samoa, there is no evidence to suggest that a significant breeding population of this species existed in AS.

Worksheet update: 27May91
GREEN SEA TURTLE  
Fonu  
Chelonia mydas

<table>
<thead>
<tr>
<th>REGIONAL DISTRIBUTION</th>
<th>DISTRIBUTION AND ABUNDANCE IN AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widespread in tropic &amp; temperate seas</td>
<td>Tutuila</td>
</tr>
<tr>
<td>low</td>
<td>low</td>
</tr>
</tbody>
</table>

1. **HISTORICAL STATUS**: Formerly abundant in tropical and temperate seas worldwide.

2. **PRESENT STATUS**: Populations of green sea turtles have declined significantly worldwide due to overharvest, habitat destruction, and incidental kills in fishing gear. The species is listed as “threatened” by USFWS and thus afforded federal protection.

3. **ECOLOGICAL PROFILE**: Green sea turtles occur in the territorial waters of AS but only in low numbers (Balee 1975). For example, weekly surveys on Swains Island for 9 months documented only 8 sea turtle tracks (species not determined) present on the beaches. Small numbers also nest on the other islands.

4. **HUMAN USE**: Despite legal protection, sea turtles and their eggs are often eaten when found in AS.

5. **RECOMMENDED STATUS**: THREATENED. Populations of green sea turtles have been significantly reduced both in the territory and worldwide.

Worksheet update: 27May91
HAWKSBILL SEA TURTLE
Launel saiga
Eretmochelys imbricata

REGIONAL DISTRIBUTION

<table>
<thead>
<tr>
<th>Widespread in tropic seas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutuila</td>
</tr>
<tr>
<td>low</td>
</tr>
</tbody>
</table>

1. HISTORICAL STATUS: Formerly abundant in tropical seas worldwide.

2. PRESENT STATUS: Hawksbill populations have declined significantly worldwide due to overharvest, habitat destruction, and incidental kills in fishing gear. The species is listed as "endangered" by USFWS and thus afforded federal protection.

Hawksbills occur in territorial waters but only in low numbers (Bolass 1999). For example, weekly surveys on Swains Island for 5 months documented only 8 sea turtle tracks (species not determined) present on the beaches. Small numbers nest on Tutuila, Manu'a, and Rose islands.

3. BIOLOGICAL PROFILE: Sea turtles are long-lived (30-50 years) and slow maturing species (8-10 years). The primary foods of hawksbills are sponges and invertebrates.

4. HUMAN USE: Despite legal protection, sea turtles and their eggs are often eaten in AS.

5. RECOMMENDED STATUS: ENDANGERED. Populations of hawksbills are threatened with extinction both in the Territory and worldwide.

Worksheet update: 27 May 91
HUMPBACK WHALE  
Tetula  
Megaptera novaeangliae

<table>
<thead>
<tr>
<th>REGIONAL DISTRIBUTION</th>
<th>DISTRIBUTION AND ABUNDANCE TH AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutuila</td>
<td>Aunu’u &amp; OFU</td>
</tr>
<tr>
<td>Worldwide</td>
<td>P</td>
</tr>
</tbody>
</table>

1. **HISTORICAL STATUS**: Due to overharvest, the abundance of humpback whales in the southern hemisphere plummeted from 100,000 in 1934 to 3000 in 1966, when commercial whaling was banned. There are 5-6 stocks of humpbacks in the southern hemisphere. Whales that frequent American Samoa and Tonga presumably belong to the Antarctic Group V stock which decreased from a pre-exploitation abundance of 10,000 to 500. Whaling in Tonga ceased in 1976.

2. **PRESENT STATUS**: Present in small numbers in the territory, on a seasonal basis. No longer seen around Swains Island (W. Jennings, pers. comm.). All stocks of humpback whales in the world are currently listed as "endangered" by USFWS.

3. **BIOLICAL PROFILE**: Humpbacks are medium-sized baleen whales that can measure 50 feet and weigh 34 metric tons. They are mature at about 9 years and reproduce every 2 years thereafter. The Antarctic Group V stock feeds in antarctic waters during the austral summer, and then migrate northward past New Zealand to Tonga and American Samoa to breed and calve. Sightings of whales in American Samoa are most common from August through October, but some have been seen here from late June to mid January. Divers may be fortunate to hear their underwater singing.

4. **HUMAN USE**: Visual appreciation.

5. **RECOMMENDED STATUS**: ENDANGERED. The Group V stock found in American Samoa remains in low numbers following whaling exploitation.

Worksheet update: 27May91
LAND SNAILS
Sisi vao
Partula spp.

REGIONAL DISTRIBUTION

<table>
<thead>
<tr>
<th>DISTRIBUTION AND ABUNDANCE IN AS</th>
<th>Tutuila</th>
<th>Aunu'u</th>
<th>Ofu</th>
<th>Olosega</th>
<th>Ta'u</th>
<th>Swains</th>
<th>Rose</th>
</tr>
</thead>
</table>

1. HISTORICAL STATUS: Land snails (several species) were probably common in the Territory prior to the recent introduction of predatory snails.

2. PRESENT STATUS: There is an apparent decline in numbers of native land snails in the Territory, probably due to the introduction in the 1970s of other predatory snails (Engulindia rosea, Gonaxia kibwensis, and others) that were imported to control the African snail (Achuna fullica) and/or introduced ants. (The African snail is an introduced pest species that eats taro and other crops, and is also a threat to humans due to its role as a vector of encephalitic meningitis.)

After reports of African Snail outbreaks in Ta'u following Hurricane Ofa in 1990, Engulindia reportedly was taken to Ta'u.

3. BIOLOGICAL PROFILE: Many land snails help maintain the rainforest by eating fungus on living trees. Other details are unknown.

4. HUMAN USE: None.

5. RECOMMENDED STATUS: SPECIAL CONCERN. Surveys are needed to assess the population status of native land snails.

Worksheet update: 27May91
1. **HISTORICAL STATUS**: Evidence suggests that this species was significantly more abundant historically in AS than it is today. Missionary reports from the 1800’s state that pigeons and doves were hunted competitively among the villages in order to see which village could capture the most birds, suggesting that the numbers of these birds were very high at one time. Fifty specimens were taken by the Whitney South Sea Expedition in 1923-24 also indicating that the bird was relatively abundant then.

2. **PRESENT STATUS**: The many-colored fruit dove is considered rare in AS. Embbring and Ramsey (1989) reported 0-71 birds/ha on Tutuila and lower densities on the Manu islands.

   This species is a popular game bird and receives year-round hunting pressure. However, despite an increasing human population, some believe that hunting pressure on the bird is not as severe as it was historically. Thus, it is thought that the loss of suitable habitat (mature forests) is probably affecting this species rather than hunting. Habitat availability may be adequate on steeper portions of islands, but removal of mature forests and encroachment by humans is reducing habitat at lower elevations.

3. **BIOLOGICAL PROFILE**: This fruit dove is very secretive and seldom seen or heard. Existing data on the breeding season of the many-colored fruit dove is conflicting, but evidence suggests that year-round breeding may occur in AS, with a clutch consisting of 1-2 eggs (Banks 1984). In Fiji, breeding takes place from May-January (Clunies 1984).

   The many-colored fruit dove has a patchy distribution in AS and has been reported to exhibit a flocking-type of behavior. Flocking is believed to be related to distribution of fruiting trees (especially Ficus spp.). Flocking behavior in this bird may be implicated in its decline (as occurred with the passenger pigeon), but this aspect of its ecology has not yet been investigated.

   Recent bird surveys (Amerson et al. 1982, Embbring and Ramsey 1989) indicate that the many-colored fruit dove requires large tracts of mature forest. The role this species plays in seed dispersal and germination is unknown but believed to be an important component of reforest ecology.
4. HUMAN USE: The many-colored fruit dove is an important game bird in AS and is hunted year-round for recreation and subsistence, particularly prior to White Sunday in October.

F. percosii plays an important role in Samoan culture in that historically it was among the bird species hunters would capture during competitive hunts among villages held at "star mounds" (D. Hedrick, pers. comm.).

5. RECOMMENDED STATUS: THREATENED. The many-colored fruit dove is present in low numbers and may be further impacted by habitat loss and year-round hunting pressure.

Worksheet update: 27May91
MAO
Ra'ona'o
Gymomyra samoensis

| W. Samoa | LE7 | np | np | np | np | np | np |

1. HISTORICAL STATUS: The mao is endemic to the Samoan Islands, but little historical information exists for this terrestrial bird. In 1924, three specimens were taken on Tutuila by the Whitney South Seas Expedition. The last recorded observation of the mao on Tutuila was in 1977 (Pratt et al. 1987).

2. PRESENT STATUS: This species is probably extinct in American Samoa. During two recent intensive bird surveys, no mao were sighted (Amerson et al. 1982, Empiring and Ramsey 1989). However, unconfirmed reports of sightings and the loud call of the bird continue to be made occasionally.

3. BIOLOGICAL PROFILE: There is no available information on the biology or ecology of the mao. Two males collected on Tutuila in February 1924 had enlarged testes indicating that breeding may occur during this time of year (Banks 1984).

In Western Samoa this large honeyeater is found primarily in moist woody forests at upper elevations (Empiring and Ramsey 1989).

4. HUMAN USE: The mao plays an important cultural role, and many Samoans (at least historically) are superstitious about the bird, believing it is a messenger of a forthcoming calamity.

5. STATUS: LOCALLY EXTINCT. The mao is probably extinct in AS. With an increasing human population and associated loss of mature forest, the chance of re-establishing a breeding population in AS is slim.

Worksheet update: 27May91
**MILKWEED**

_Acrolepis curassavica_

<table>
<thead>
<tr>
<th>REGIONAL DISTRIBUTION</th>
<th>DISTRIBUTION AND ABUNDANCE IN AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutuila</td>
<td>Anau'u Off</td>
</tr>
<tr>
<td>Widespread in tropics</td>
<td>low</td>
</tr>
</tbody>
</table>

1. **HISTORICAL STATUS:** Previous abundance unknown. First reported in AS by botanists in 1867.

2. **PRESENT STATUS:** Apparent decline in abundance probably due to habitat loss. In Tutuila, former habitat of this pastureland species is being lost to human activities. It is found near Fayatele Bay in association with the Monarch butterfly.

3. **BIOLOGICAL PROFILE:** The milkweed plant is a pantropic weed native to tropical America and has occasionally been cultivated as an ornamental. It occurs occasionally in disturbed areas and pastures where it can spread rapidly by means of plumed seeds which float in the wind. The plant is poisonous to livestock. It is an important host plant to the Monarch butterfly.

4. **HUMAN USE:** None. The plant is poisonous.

5. **RECOMMENDED STATUS:** THREATENED. This species has declined noticeably in recent years (along with the Monarch butterfly which depends on it for food).

Worksheet update: 27May91
MILO TREE
Theopasia populnea

REGIONAL DISTRIBUTION

DISTRIBUTION AND ABUNDANCE IN AS
Tutuila Aunu'u Ofu Olosega Ta'u Swains Rose

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Tutuila</th>
<th>Aunu'u</th>
<th>Ofu</th>
<th>Olosega</th>
<th>Ta'u</th>
<th>Swains</th>
<th>Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widespread in</td>
<td>low</td>
<td>low-</td>
<td>mod</td>
<td>mod</td>
<td>mod</td>
<td>NF</td>
<td>NP</td>
</tr>
<tr>
<td>S. Pacific,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pantropic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. HISTORICAL STATUS: Common throughout the tropics, Milo is well known for its highly esteemed wood (Whistler 1984). Evidence suggests that this species was a common seashore tree, moderate to abundant in American Samoa at the turn of the century.

2. PRESENT STATUS: Moderate populations still exist in the Manu'a Islands, but due to habitat loss on Tutuila, the species is restricted to isolated shores and coves on the eastern, western, and northern sides of the island.

3. BIOLOGICAL PROFILE: Milo is an evergreen, small to medium sized tree commonly found in the littoral forest throughout the tropics. The species disperses by floating fruits and seed. Seeds have been found to germinate after floating a year in seawater (Little & Holman 1989).

4. HUMAN USE: The tree is well known as a carving wood and for its medicinal properties. Historically, the wood has also been used for making fire sticks and canoe paddles (Setchell 1924). As well, children have used the green fruit of Milo with a coconut rib for making spinning tops.

5. RECOMMENDED STATUS: SPECIAL CONCERN. Although populations appear healthy in the Manu'a Islands, this species has declined on Tutuila due to human development. A survey is necessary to assess the current population.

6. MANAGEMENT OPTIONS: While inaccessibility seems to have protected the species in the past, future development activities could threaten this species. A planting program could be initiated to replant Milo in more populated areas.

Worksheet update: 29May91
### REGIONAL DISTRIBUTION

<table>
<thead>
<tr>
<th>Worldwide, including S. Pacific islands</th>
<th>Tutuila</th>
<th>Amu'u Ofu</th>
<th>Olosega</th>
<th>Ta'u Swain's Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>low</td>
<td>?</td>
<td>?</td>
<td>np</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>np</td>
</tr>
</tbody>
</table>

1. **HISTORICAL STATUS:** Reported to be very abundant on Tutuila 10 years ago. Recalled as a common plaything of children who would tie a string around its thorax and "fly it" like a kite as they ran with it. First recorded on Tutuila by botanists in 1867.

2. **PRESENT STATUS:** Low. Apparent decline in abundance in recent years. Rarely seen except at one specific location near Fagatole Bay.

3. **BIOLOGICAL PROFILE:** The caterpillar of the Monarch butterfly feeds only on milkweed plants (Asclepias curassavica and Calotropis gigantea). The larva is green with black and yellow stripes, the pupa goes through green and gold stages, and the adult is orange with black lines on its wings.

4. **HUMAN USE:** None.

5. **RECOMMENDED STATUS:** THREATENED. This species has declined in recent years, but its actual status is uncertain.

Worksheet update: 27May91
ORIENTAL MANGROVE
Togo
Bruguiera gymnorhiza

<table>
<thead>
<tr>
<th>REGIONAL DISTRIBUTION</th>
<th>DISTRIBUTION AND ABUNDANCE IN AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tropical Asia</td>
<td>Tutulia, Aunu'u, Ofu, Olosega</td>
</tr>
<tr>
<td>W. Polynesia</td>
<td>Fa'u Swayne, Rose</td>
</tr>
</tbody>
</table>

|             | low | low | np | np | np | np | np |

1. **HISTORICAL STATUS:** Formerly more abundant, only 127 acres of mangrove forest (species combined) remained in AS in 1976, amounting to less than 0.5% of the total land area. The oriental mangrove was reported to be the most common of the two mangrove species found in AS (Whistler 1976).

2. **PRESENT STATUS:** Small to moderate patches of mangrove forests occur at 8 sites in AS (Pala Lagoon, Nasefau, Aunu'u, Leone, Asa, Aua, Vatia, Alofaa), but continued cutting and filling of mangrove areas occurs. All previous mangroves in Pago Pago harbor have been destroyed. A cursory survey by DMWR in 1990 indicated that almost 50% of the Leone mangrove has been lost since 1976. In Pala Lagoon, where there were 85 acres of mangrove swamp in 1976, 10 acres had been filled by 1976 (Yamazaki et al. 1985), and another 10 were filled in by 1990.

3. **BIOLOGICAL PROFILE:** The oriental mangrove, like other mangrove species, are restricted to lagoons and estuaries in brackish or salt water. They are found from slightly below the high tide mark to an elevation of 2 m above sea level. This species is characterized by numerous protruding, knobby breathing roots at the base of the tree. Most oriental mangroves reach a height of over 15 m and form remarkable climax forests in estuaries and swampy coastal areas of high islands. The seed germinates on the tree to produce ascot-shaped root up to 20 cm long.

4. **HUMAN USE:** Mangrove wood is used as fuel for "unu" cooking ovens. Larger trees were historically used in construction.

5. **RECOMMENDED STATUS:** ENDANGERED. Significant downward trend in abundance. Few viable patches of mangroves remain in the Territory.

Worksheet update: 27May91
### PACIFIC BOA SNAKE
**Dactyloa bibroni**

<table>
<thead>
<tr>
<th>REGIONAL DISTRIBUTION</th>
<th>DISTRIBUTION AND ABUNDANCE IN AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutuila</td>
<td>NP</td>
</tr>
<tr>
<td>Aunu'u</td>
<td>NP</td>
</tr>
<tr>
<td>Ofu</td>
<td>NP</td>
</tr>
<tr>
<td>Olosega</td>
<td>NP</td>
</tr>
<tr>
<td>Ta'u</td>
<td>P</td>
</tr>
<tr>
<td>Swains</td>
<td>NP</td>
</tr>
<tr>
<td>Rose</td>
<td>NP</td>
</tr>
</tbody>
</table>

#### 1. HISTORICAL STATUS:
Occasionally collected on Ta'u Island since at least the early 1900's.

#### 2. PRESENT STATUS:
Present in small numbers on Ta'u Island (Amerson et al. 1982)

#### 3. BIOLOGICAL PROFILE:
Not known for AS but information probably exists for this species occurring in other areas.

#### 4. HUMAN USE:
None.

#### 5. RECOMMENDED STATUS: SPECIAL CONCERN.
Although the Pacific boa appears to be uncommon on Ta'u, there is no available information to indicate a population trend for this species.

Worksheet update: 27May92

28
### Regional Distribution

| AS, NF, Tonga, Fiji, Kosrae, Pohnpei |
|-----------------------------|-----------------------------|

### Distribution and Abundance in AS

| Tutuala Aunu'u OFu Olosega Ta'u Swains Rose |
|-----------------------------|-----------------------------|
| low                        | 7                           |
| low                        | low                        |

### Historical Status

The Pacific pigeon is believed to be much less abundant now than it was historically. Missionary reports from the 1820s reported that pigeons and doves were hunted competitively among villages. Reports from the 1924 Whitney South Seas expedition reported that doves and pigeons were rare on Olosega Island, but were frequently seen on the other islands (Ranks 1984).

### Present Status

The most recent intensive bird survey (Engbring and Ramsey 1989) reported that the Pacific pigeon was "uncommon" on all the major islands in AS. Less intensive DNR surveys also found the bird to be uncommon. The pigeon is hunted year-round and there are no daily or seasonal limits; approximately 6000 pigeons are killed annually (DNR).

### Biological Profile

The pigeon occurs in varied forest habitats (rainforest, secondary forest, mixed forest, and cloud forest). Little is known about its biology and ecology. The pigeon is known to feed on fruits of large trees in the forest canopy. This species has been reported to flock, but this has not been observed in AS.

### Human Use

The Pacific pigeon is a popular game bird in AS and is the most important bird in Samoan culture (Engbring and Ramsey 1989).

### Recommended Status

Special Concern. Special concern is warranted because: 1) population numbers of the Pacific pigeon have probably declined substantially from historic levels; 2) significant numbers are harvested annually by hunters (unpubl. DNR data); and 3) increased human disturbance in the form of rainforest removal may have a serious negative impact on this species.

Worksheet update: 30May91

29
PAPER MULBERRY
U'a
Broussonetia papyrifera

REGIONAL DISTRIBUTION AND ABUNDANCE IN AS

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Tutuila</th>
<th>Aunu'u</th>
<th>Ofu</th>
<th>Olosega</th>
<th>Ta'u</th>
<th>Swains Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widespread in S. Pacific</td>
<td>low</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>NP</td>
<td>NP</td>
</tr>
</tbody>
</table>

1. HISTORICAL STATUS: Possibly a native of China, this eastern asiatic species was introduced and cultivated throughout Polynesia before European arrival (Sethall 1924). This well known and once commonly grown species is used to make tapa cloth. U'a was once cultivated in small plantations near every village. It has not been recorded in wild conditions in American Samoa.

2. PRESENT STATUS: Village plantations are no longer maintained today. A few plants can be found near private homes, and the FMOA (Territorial Administration on Aging) women's group maintain a small plot at the community college.

3. BIOLOGICAL PROFILE: This small tree is propagated from cuttings and root suckers. It is almost always cultivated in small plots, where management is required. In American Samoa, it is normally grown to a 2-3 centimeter diameter stem (2-3 years), then cut and processed. The root sprouts are then managed for the next crop.

4. HUMAN USE: The bark is peeled and beaten for making tapa cloth.

5. RECOMMENDED STATUS: SPECIAL CONCERN. Although this species is not native to American Samoa, it has been cultivated here for centuries, and is of significant cultural and historical interests to the territory.

6. MANAGEMENT OPTIONS: A planting program could be implemented, with small plots established at schools or in interested villages.

Worksheet update: 28May91
PURPLE-CAPPED FRUIT DOVE
Penulapta
Ptilinopus porphyreus

REGIONAL DISTRIBUTION

Tutuila
Anu'u
Olosegaa
Ta'u
Swains
Rose

Caroline, Wallis,
Putang, Fiji, RS,
Yomga, Niue, AS

DISTRIBUTION AND ABUNDANCE IN AS

<table>
<thead>
<tr>
<th></th>
<th>Tutuila</th>
<th>Anu'u</th>
<th>Olosegaa</th>
<th>Ta'u</th>
<th>Swains</th>
<th>Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c</td>
<td>?</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>np</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. HISTORICAL STATUS: Missionary reports from the 1800's state that pigeons and doves were hunted competitively among the villages in order to see which village could capture the most birds, suggesting that the numbers of these birds were very high at one time. The purple-capped fruit dove was likely one of the species hunted during "star round" hunting competitions. Members of the 1924 Whitney South Seas expedition reported that doves and pigeons were rare on Olosega Island, but were frequently seen on the other islands (Banks 1946).

2. PRESENT STATUS: Although the purple-capped fruit dove is a common resident in AS, it is believed to be much less abundant now than it was historically. Embry and Rassay (1988) reported an average density of 80-1 birds/sq km on Tutuila Island and lower densities on the Manua Islands.

3. BIOLOGICAL PROFILE: The purple-capped fruit dove is found in varied forest habitats (agro-forest, secondary, and mature) in contrast to the many-colored fruit dove (P. peruvius) which has a more limited distribution.

The purple-capped fruit dove is believed to breed from June-February (Banks 1984). A nest consists of thigs where a single egg is laid.

This species feeds on a variety of fruits, especially ricas spp. As with other doves and pigeons in AS, the purple-capped fruit dove probably plays an important role in the dispersal and germination of forest seeds. However, no studies have investigated this aspect of the bird's ecology.

4. NUMER USE: Popular game bird in AS. Although not as prized as the many-colored fruit dove (P. peruvius), the purple-capped fruit dove is hunted year-round, particularly prior to White Sunday in October. There are no regulations governing hunter harvest. Effects of hunting pressure on this species are not known. The annual hunter harvest of this species is monitored by DWF.

The purple-capped fruit dove is of cultural significance to Samoans in...
that it was undoubtedly among the birds sought during competitive intravillage "star mound" hunts. Moreover, Muse and Muse (1982) report that this species is still hunted using the old method of caged decoys.

5. RECOMMENDED STATUS: SPECIAL CONCERN. Although the purple-capped fruit dove is common in AS, its population size has apparently decreased substantially from historic levels. Additionally, because this species is a popular game bird hunted year-round, its status should be reviewed regularly.
RED-TAILED TROPICBIRD
Teva'a ulti, tava'e toto
Phaethon rubricauda

REGIONAL DISTRIBUTION
Tropical Pacific Ocean

DISTRIBUTION AND ABUNDANCE IN AS
Tutuila
Ahu' u Otu
Olosega
Ta'u Swains Rose

LE? np np np np V low

1. HISTORICAL STATUS: Little information exists about the historical status of this seabird in AS. Amerson et al. (1982) reported it as a rare resident on Rose Atoll where it nested. A single specimen was reported from Rosain Island (Clapp 1968). Indirect evidence suggests that this species once nested on Tutuila Island at Pola Islet (V. Knowles pers. comm., as reported in Engrin and Ramsey 1989).

2. PRESENT STATUS: In AS, this tropicbird is now found only at Rose Atoll where small numbers nest; probably year-round. An occasional flyover by this species may be observed on other islands in AS.

3. BIOLOGICAL PROFILE: On Rose Atoll, the red-tailed tropicbird has been observed nesting and/or with young in May, August, and October (Amerson et al 1982). A ground nest consisting of a single egg has been observed on Rose Atoll.

4. HUMAN USE: No current human use; however, the long slender tail feathers have been used for ornamental purposes in other parts of the Pacific.

5. RECOMMENDED STATUS: SPECIAL CONCERN. Although the red-tailed tropicbird is rare in AS, there is no available evidence to suggest that it is experiencing a population decline here. However, because of its low breeding population, concern is warranted for this species.

Worksheet update: 27May91
RED JUNGLE FOWL
Moa'ailvo
Gallus gallus

REGIONAL DISTRIBUTION

DISTRIBUTION AND ABUNDANCE IN AS

<table>
<thead>
<tr>
<th>Tutuila</th>
<th>Aunu'u Ofu</th>
<th>Closeya</th>
<th>Ta'u Swains Ross</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low/Lt?</td>
<td>7</td>
<td>np</td>
<td>np</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SE Asia, Micronesia, Polynesia</th>
</tr>
</thead>
</table>

1. HISTORICAL STATUS: Native to SE Asia, the red jungle fowl was introduced to AS by early Polynesians. No information exists on historical abundances in the Territory.

2. PRESENT STATUS: The status of this species in AS is not clear. Any remnants of a breeding population are probably not of a pure strain, as considerable interbreeding has occurred between the jungle species and domestic and feral fowl.

3. BIOLOGICAL PROFILE: This species generally prefers habitat consisting of remote undisturbed forests; however, Engdring and Ramsey (1989) report that it was seen around villages and residential areas (indicating they were probably domestic fowl rather than G. gallus). Muse and Masa (1982) state that it is difficult to tell the difference between G. gallus and domestic fowl since they are both essentially "wild."

4. HUMAN USE: The red jungle fowl has presumably been eaten since it was introduced to AS. Today hunters encountering fowl in the wild are likely to shoot it. Fowl are sometimes placed in plantations to keep insect populations low.

5. RECOMMENDED STATUS: NOT OF IMMEDIATE CONCERN. This species is not native to AS and therefore does not meet the adopted definition of "Endangered" status in AS. Biologically, however, the species is probably endangered or, due to a lack of genetic integrity, extinct in AS.

Worksheet update: 27May91
**SAMOA FRUIT BAT**
*Pe'a vao*
*Pteropus samoensis*

**NATIONAL DISTRIBUTION**

<table>
<thead>
<tr>
<th>Tutuila</th>
<th>Aumua'ufi</th>
<th>Ofu</th>
<th>Olosega</th>
<th>Ta'u Swaine Rose</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>low</td>
<td>low</td>
<td>low</td>
<td>np</td>
</tr>
</tbody>
</table>

**Limited to AS, WS, Fiji**

1. **HISTORICAL STATUS**: Anecdotal accounts indicate that fruit bats (2 species combined) were formerly more abundant in AS, but the previous abundance of *P. samoensis* alone is not known.

2. **PRESENT STATUS**: Low but believed to be relatively stable abundance in AS, but unknown status elsewhere in its limited range. Actual numbers in AS are not known but probably range in the hundreds to low thousands.

3. **PERSPECTIVE**: Since 1986, it has been illegal to export or commercially hunt this species. Despite regulations limiting hunting to a 3 month period (May-July), personal-use hunting occurs year-round because hunters are generally unaware of existing regulations and the regulations are not enforced.

4. **THE BIOLOGY**: This species is solitary, diurnal, and not very abundant (in contrast to *P. tonganus* which is colonial, nocturnal, and more abundant). Both fruit bat species are long-lived (perhaps 15 years) but have low reproductive rates (1 young/year) and thus require considerable time to increase in population size.

5. **HUMAN USE**: Fruit bats have played a role in Samoan culture (*Sinaualana 1990*) and are currently hunted for recreation and subsistence. Hunting occurs year-round despite existing regulations that limit the harvest. A rough estimate of the 1989 harvest of fruit bats (2 species combined) was 3000-6000 killed in AS (*Craige and Byron 1990*). Most hunters do not differentiate between *P. samoensis* and the more abundant *P. tonganus*, thereby complicating efforts to protect *P. samoensis*.

6. **RECOMMENDED STATUS**: THREATENED. Concern about this species is warranted because of its low abundance and limited distribution in the South Pacific.

Worksheet update: 27May91

35
1. **HISTORICAL STATUS:** Little information exists on this nocturnal, insect-eating bat. Amerson et al. (1982) reported more than 11,000 sheath-tailed bats in the territory in 1976.

2. **PRESENT STATUS:** The present status of sheath-tailed bats in AS is unclear. Despite occasional reports, no confirmed sightings have been made in the territory since before Hurricane Ofa in February 1990, when a known roosting cave was devastated.

3. **BIOLOGICAL PROFILE:** There is no available information on the biology or ecology of this species in AS. However, this information probably exists for other areas where the bat occurs. This species probably requires caves to roost in.

4. **HUMAN USE:** None, although some people have harvested guano from the Afonc bat cave to use as fertilizer.

5. **RECOMMENDED STATUS:** SPECIAL CONCERN. Although the population status of the sheath-tailed bat is not known, there is concern for this species because no confirmed sightings have been made recently.

Worksheet update: 29May91
WHITE-NECKED (Tongan) FRUIT BAT
Pteropus tonganus

1. HISTORICAL STATUS: Anecdotal accounts indicate that fruit bats (2 species combined) were formerly more abundant in AS. P. tonganus, due to its colonial nature, would be more likely than P. samoensis to have made up the bulk of these early observations.

2. PRESENT STATUS: Moderate but relatively stable abundance in AS, but unknown status elsewhere in the S. Pacific. Current numbers in AS are not known but probably range in the low to moderate thousands. Since 1986, it has been illegal to export or commercially hunt this species. Despite regulations limiting hunting to 3 months (May-July), personal-use hunting occurs year-round because hunters are generally unaware of existing regulations and the regulations are not enforced.

3. BIOLOGICAL PROFILE: The white-neck (Tongan) fruit bat is a colonial and nocturnal species (in contrast to P. samoensis which is solitary, diurnal, and much less abundant). During the daytime P. tonganus generally roosts in tree roosts at specific sites. Both fruit bat species are long-lived (perhaps 15 years) but have low reproductive rates (1 young/year) and thus require considerable time to increase in population size.

4. HUMAN USES: Fruit bats have played a role in Samoan culture (Siniaivala 1950) and are currently hunted for recreation and subsistence. Hunting occurs year-round despite existing regulations that limit the harvest. A
rough estimate of the 1989 harvest of fruit bats (2 species combined) was 3900-9000 killed in AS [Craig and Syron 1990]. Most hunters do not differentiate between the two fruit bat species, thereby complicating efforts to protect the less abundant species (P. samoensis).

5. RECOMMENDED STATUS: SPECIAL CONCERN. Although numbers of P. tonganus in AS are conceivably much lower than historical levels, the species is distributed widely in the South Pacific and is not threatened with extinction in the Territory at present.

Worksheet update: 27 May 91
Rare Species in American Samoa??

The Fono has listed the Natural Resources Commission of American Samoa to identify all rare ("endangered") species in the Territory. While our biologists can provide some data on birds, another valuable source of information are the people of American Samoa themselves.

You may have observed that same plants or animals are no longer as abundant as when you were younger. If so, we would like to hear from you.

What species are given that you usually include any plant, tree, bird, bat, insect, fish, whale, or other marine organisms.

Please send us the clipping below to the Department of Marine and Wildlife Resources (Room 3700, Pago Pago, AS 96799) or call us at 63-4406 by December 3, 1990. Thank you.

1. What species are no longer abundant in American Samoa?

2. Are any of these species important to you? If so, why?

3. (Optional) We might like to get more ideas from you, so please provide:
   Your name ______________________ and phone no. ______________________
APPENDIX 3. Species identified but not yet evaluated.

**BIRDS**
- Blue-crowned lory
- Fiji shrikebill
- Sooty rail
- Friendly ground dove
- Polynesian starling
- Reef heron
- Seabirds (petrels, shearwaters, boobies, noddies, frigatebirds, terns)

**REPTILES**
- Potted soil snake (an introduced species)

**INVERTEBRATES**
- Corals
- Trochus spp.

**PLANTS**
- 47 species suggested by Art Whistler