



The current status and distribution of freshwater fishes, land snails and reptiles in the Pacific Islands of Oceania

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CRITICAL ECOSYSTEM
PARTNERSHIP FUND



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This publication has been made possible in part by funding from the Critical Ecosystem Partnership Fund (CEPF) and the Fonds Pacifique.

Published by: IUCN, Gland, Switzerland

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Citation: Pippard, H (2012). *The current status and distribution of freshwater fishes, land snails and reptiles in the Pacific Islands of Oceania*. Gland, Switzerland: IUCN. 76pp.

ISBN: 978-2-8317-1569-8

Cover photo: Ulong Island, Palau © Helen Pippard

Produced by: IUCN Oceania Regional Office

Printed by: Star Printery, Suva, Fiji

Additional information available from:

IUCN Oceania Regional Office
Private Maila Bag, 5 Ma'afu Street
Suva
Fiji
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The text of this book is printed on 9 Lives 90 gsm made from 100% recycled paper

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Acknowledgements

IUCN's Red Listing process relies on the willingness of scientists to contribute and pool their collective knowledge on species, in order to make the most reliable and up-to-date estimates of a species' status. Without such commitment, this kind of regional overview would not be possible.

We would therefore like to acknowledge and thank the following people who gave their time and valuable expertise during this project. First of all, to those specialists who attended the training workshop and created the draft species assessments: Gary Barker, David Boseto, Gilianne Brodie, Robert Fisher, Helen Larson, Kinikoto Mailautoka, Diarmaid O'Foighil, Rebecca Rundell and Oliver Tallowin. Secondly to those people who came together at a workshop to evaluate the species: Allen Allison, Gary Barker, Robert Cowie, Alison Hamilton, Doug Hoesel, Philippe Keith, Helen Larson, Oliver Tallowin and Kostas Triantis, who also spent a great deal of their own time carrying out edits and amendments to the final accounts. Particular thanks are due to Gary Barker and Helen Larson who acted as assessor or reviewer to the majority of their respective species assessed and whose guidance and expertise was pivotal to the project's success.

For each species assessment (which will be made available on the IUCN Red List website), the specific contribution of each scientist is acknowledged.

Thanks also to the following participants for their attendance and contribution at the workshops: Jeremy Bird, Lekima Copeland, Philippe Gerbeaux, Peter Harlow, Aaron Jenkins, Hilda Sakitiwaqa, Richard Singh and Nunia Thomas.

From IUCN's Global Species Programme, workshop training, facilitation and support were provided by Emma Brooks, Neil Cox, Nieves Garcia and Caroline Pollock. In addition, we would like to thank David Allen, Will Darwall and Kevin Smith for providing guidance and technical support throughout the course of the project. The insight and experience provided by Ian Harrison in the early stages of the project was invaluable. We would also like to thank Mia Comeros-Raynal, Heather Harwell and Beth Polidoro for assistance with marine and estuarine species.

The species distribution maps were digitized through the combined efforts of all of the experts mentioned above, along with Lia Bogitini and Mereseini Raiwalui (University of the South Pacific). We are grateful to IUCN Species Programme staff for finalizing the species distribution and richness maps: in particular, Jemma Able, Emma Brooks, Vineet Katariya and Marcelo Tognelli.

This work was generously supported by the Critical Ecosystem Partnership Fund and the Fonds Pacifique.



Participants at the Training Workshop, Lami, Fiji: February 2011.



Participants at the Evaluation workshop, IUCN Oceania Regional Office, Suva, Fiji: September 2011.

Executive Summary

Resources in the Pacific Islands are vulnerable to over-harvesting, deforestation, coastal development and agricultural expansion, with habitat degradation and invasive alien species presenting serious threats to many species. This in turn affects Pacific Islanders who rely on these species for their livelihoods. Therefore, effective conservation measures are needed to safeguard ecosystems and the species they contain. The lack of basic data on species, out-of-date information, and poorly studied areas means that often little is known about species in the region making it difficult to implement conservation plans. In order to conserve the species that are so vital for the health, culture and livelihoods of Pacific Islanders, our knowledge of these species must be improved.

This report summarizes the conservation status of 167 freshwater fishes, 166 land snails and 157 reptiles native to the Pacific Islands of Oceania (Micronesia, Polynesia and Melanesia). It identifies Pacific Island species that are threatened with extinction at the global level, according to the IUCN Red List Categories and Criteria – the world's most widely accepted methodology for measuring extinction risk. The status of species is based on evaluations made by a regional network of experts, who were trained to carry out biodiversity assessments according to the IUCN Red List Categories and Criteria. Complete assessments are freely available on the IUCN Red List website: <http://www.iucnredlist.org>. Major threats are identified for each taxonomic group, and recommendations for conservation action are suggested.

Land snails are found to be the most highly threatened group, with 70% of the assessed species threatened: half of all threatened species are listed as Critically Endangered, and many also qualify for Possibly Extinct, as no live or dead shells have been found in recent times. Land snails also have the highest number of species found nowhere else, with 86% of species recorded from a single country. In Fiji, three quarters of all assessed species are endemic, and in Palau, over 90% of species are unique to the archipelago. These restricted range species are especially vulnerable to the presence of invasive species such as the giant African snail, Rosy wolf snail and predatory mammals like rats and mongooses, which are decimating native snail populations. Habitat destruction for logging, agriculture and development has also been identified as a major threat.

The threatened freshwater fishes are confined to single or few river systems and are severely impacted by the existence of dams (e.g. Futuna's emperor, *Akihito futuna* (CR) from the island of Futuna) and by pollution from deforestation, agriculture and mining effluents - for example, *Stiphodon discotorquatus* (CR) from the Tubuai Islands in French Polynesia and *Sicyopterus eudentatus* (EN) from the Federated States of Micronesia). Whilst many fish species are not listed as threatened (due to their larger range and ability to occupy a variety of freshwater, estuarine and marine habitats), a large number (40%) are listed as Data Deficient.

Almost one fifth of assessed reptiles are listed as threatened, impacted by invasive mammals and plants, and by habitat degradation (e.g. the Pohnpei Forest skink, *Emoia ponapea* (EN) and the Fijian banded iguana, *Brachylophus bulabula* (EN)). Some species are affected by hunting and trade (e.g. the widespread Pacific Boa, *Candoia bibroni* (LC) and the endemic Fijian Crested Iguana, *Brachylophus vitiensis* (CR)). Future impacts from climate change may affect the thermo-regulation of some reptiles such as the Polynesian slender tree skink, *Emoia tongana* (LC). *Tachygyia microlepis*, previously recorded from Tonga, has been driven to extinction as a result of habitat loss, human colonization and invasive predators such as dogs, pigs and rats.

This report highlights the enormous strain on our natural environments. The project results are particularly important for guiding decision-making and conservation activities of Pacific Island governments, NGOs and the private sector, and for enabling direct action on the ground. The results must now be utilized to inform regional and national policies, to identify priority sites for biodiversity conservation and to prepare and implement species recovery plans for the identified threatened species.

This project is the beginning of a process that aims to comprehensively assess species of the Pacific Islands, according to the IUCN Red List Categories and Criteria. This first stage has focussed on Red List assessments for freshwater fishes, land snails, and reptiles. Future work is planned on other taxonomic groups such as select invertebrates, plants and coral reef fishes in order to create a comprehensive dataset to guide conservation actions in the Pacific Islands.

Commonly-used abbreviations

Red List Categories

EX	Extinct
EW	Extinct in the Wild
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
NT	Near Threatened
LC	Least Concern
DD	Data Deficient
NE	Not Evaluated

Country codes

AS	American Samoa
CK	Cook Islands
FJ	Fiji
FM	Federated States of Micronesia
GU	Guam
KI	Kiribati
MH	Marshall Islands
MP	Northern Mariana Islands
NC	New Caledonia
NR	Nauru
NU	Niue
PG	Papua New Guinea
PN	Pitcairn Islands
PF	French Polynesia
PW	Palau
SB	Solomon Islands
TK	Tokelau
TO	Tonga
TV	Tuvalu
VU	Vanuatu
WF	Wallis and Futuna
WS	Samoa

Chapter 1: Background

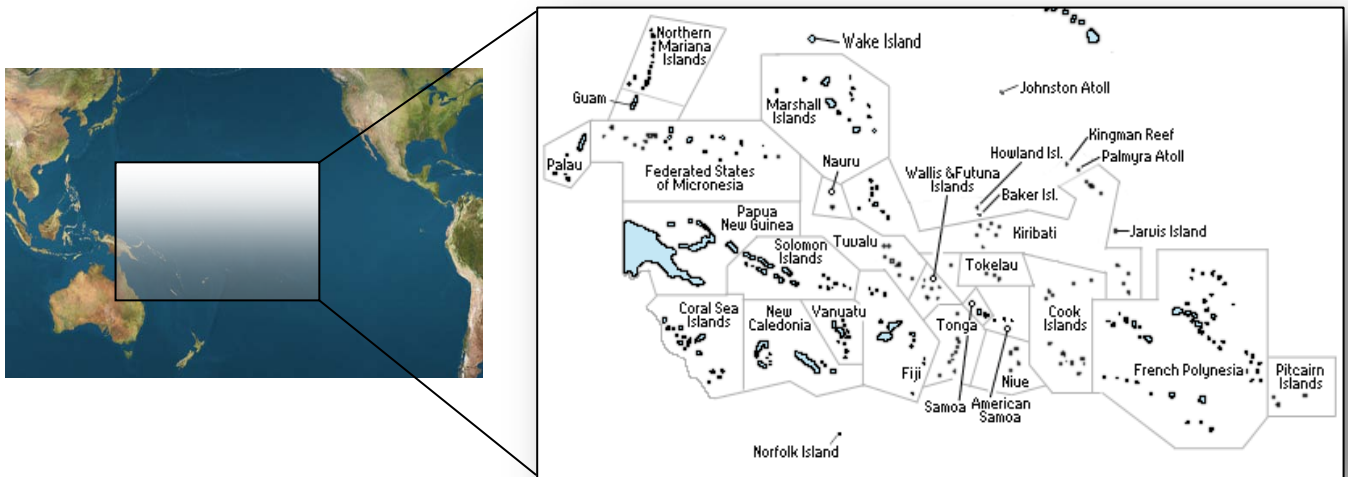
1.1 The diverse Pacific Islands

IUCN's Oceania region covers Australia, New Zealand and the 22 countries and territories of the Pacific Islands making up Melanesia, Micronesia and Polynesia. Oceania's ecosystems are diverse, ranging from the offshore marine realms, coral reefs, shoreline atolls, mangroves, coastal plains, lowland forests and wetlands of Pacific Island nations, to the mountains, fjords and glaciers of New Zealand and the grasslands and inland deserts of Australia. In the Pacific Islands, the size and ecological diversity of the islands generally decreases from southwest to northeast, tapering from the high, forested islands of Melanesia to scores of tiny, sparsely vegetated atolls scattered across the central and eastern Pacific. Due to the many thousands of isolated islands, varying climates and a wide geographic range, the oceanic islands of the region support a great diversity of terrestrial and aquatic habitats and associated species. The western Micronesian islands, which are closer to Papua New Guinea and other islands of Melanesia, tend to be more species rich than the isolated islands in the eastern parts of Polynesia. This is largely due to the underlying plate tectonics. The Pacific plate subducts under the Australian plate east of Fiji, Tonga and Vanuatu, and north of Solomon Islands and Papua New Guinea, which has led to eastern islands arising through the ocean,

whereas islands to the west are larger, higher and even fragments of Gondwana land (Ellison, 2009). This equates to a much higher species biodiversity in Melanesia compared to the true islands in the east of the region, although these more eastern islands have proportionately more endemic species because of their isolation.

Economic growth and a rising human population (now approximately 7 million people), is placing ever-increasing demands on the natural resources of Pacific Island countries. Resources are vulnerable to over-harvesting, deforestation, coastal development and agricultural expansion: habitats are being degraded, fragmented, or completely destroyed. Added to this are the increasing impacts of invasive alien species and climate change, which present serious threats to the many rare and endemic species found in the Pacific, and which in turn affect the people who rely on these species for their livelihoods. There is therefore an urgent need to implement effective conservation measures to safeguard the ecosystem resources of the region. However, the lack of basic data on species, out-of-date information, and often poorly studied areas means that very little is known about the majority of species in the region: without this baseline data, it is extremely difficult, if not impossible, to implement conservation plans.

Countries of Melanesia, Micronesia and Polynesia



1.2 Project Objectives

In 2007, IUCN Oceania, in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP), and Conservation International, initiated a process to build capacity and improve knowledge and information on Pacific Island species. A species' conservation status is one of the most useful signs for assessing the condition of an ecosystem and its biodiversity, and this process would therefore provide much needed baseline data to enable governments, communities and other organizations to implement effective on-the-ground conservation management. Funding was received from the Critical Ecosystem Partnership Fund (CEPF) and the Fonds Pacifique to begin this process, by carrying out biodiversity assessments for freshwater fishes, land snails and reptiles.

The project aimed to do the following:

- 1) Establish a regional network of experts and train them in carrying out biodiversity assessments.
- 2) Collate information in order to assess a species' conservation status and distribution throughout the Pacific Islands.
- 3) Analyze, manage and make available the resulting biodiversity information describing the conservation status of Pacific Island species, through IUCN's Red List of Threatened Species™.
- 4) Utilize the resulting biodiversity information to identify major threats and habitats in need of conservation action, and assist with regional conservation planning and management.

The two major outputs have been:

- 1) This summary report on the status and distribution of species in the Pacific Islands, detailing the major threats and recommending conservation actions.
- 2) A freely available database which holds the baseline data for monitoring the status and distribution of species in the Pacific Islands.

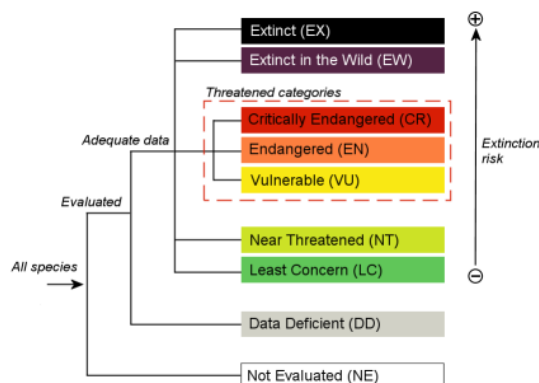
The data presented here are based on the knowledge available at the time of writing, and this information shall continue to be updated. The information shall be disseminated widely to relevant decision makers in order to ensure on the ground action – this will be made possible by utilizing IUCN's extensive network of government partners, NGOs, scientists and other organizations.

1.3 The IUCN Red List of Threatened Species™

The threatened status of animals and plants is one of the most useful signs for assessing the condition of an ecosystem and its biodiversity. The IUCN Red List of Threatened Species™ (IUCN Red List) is widely recognized as the most comprehensive, apolitical approach for assessing and monitoring the status of biodiversity. It provides taxonomic, conservation and distribution data on taxa that have been evaluated using the IUCN Red List Categories and Criteria (see Figures 1.1 and 1.6). The resulting species assessments provide a relative risk of extinction and highlight those species that are more at risk of extinction – i.e. those species listed as threatened: Critically Endangered, Endangered and Vulnerable. Taxa that cannot be evaluated due to a lack of information are determined Data Deficient, and those which almost meet the thresholds for threatened species are categorized as Near Threatened. Species that are classified as Least Concern are deemed to have a lower risk of extinction. Prior to 2003, Least Concern species did not appear on the Red List, however, in order to put threatened species in context, all Least Concern assessments are now included (IUCN, 2012).

The IUCN Red List Categories and Criteria enable the extinction risk to be estimated for the species' global population. In some circumstances, species are assessed at the regional level in addition to the global listing. Evaluating species at regional levels allows for more appropriate conservation priority setting relevant to the region or country of interest. In addition, widespread species may have a different category assigned at the global level compared to the regional level, depending on various factors acting on them at these different levels. This project carried out global assessments for all species. For endemic species, the status and category is the same, as a global level listing is identical to a country level listing.

Figure 1.1: The IUCN Red List Categories and Criteria



1.4 Assessment Methodology

1.4.1 Training workshop and preliminary assessments

Specialists and Experts from within Oceania and beyond (as necessary), were identified by IUCN, project partners and IUCN's Species Survival Commission. Specialists came together at a training workshop in Fiji in February 2011, where they were given an introduction to the IUCN Red List, how to apply the IUCN Red List Categories and Criteria (IUCN, 2001) for global Red List assessments, and to understand the type of data needed to carry out Red List assessments (see Figure 1.2 for examples from the workshop and Figure 1.3 for participants).

Specialists were introduced to IUCN's species database – the Species Information Service (SIS) - as well as learning how to create distribution and threat maps using Geographic Information Systems (GIS) for digitally mapping distributions. Following the training workshop, Specialists compiled and amended the species list for freshwater fishes in Polynesia-Micronesia and Melanesia. Specialists then gathered all recent data on the status of each individual species, and entered this information into the IUCN SIS database – this has standardized data fields for collating species information, so as to enable consistency when analyzing different taxonomic or geographic groups. All species were given a draft assessment according to the IUCN Red List Categories and Criteria (2001).

The data required to make the assessments were as follows:

- **Taxonomy:** Information on any taxonomic issues related to the species.
- **Geographic range and Distribution:** A summary of the global distribution of the species, along with a GIS shapefile, was produced for each species.
- **Population:** Size, abundance, any fragmentation, and trends in abundance over time.
- **Habitat and ecology:** Habitat preferences, species size, reproductive biology, age at maturity, growth, diet, life history.

- **Major threats:** Any known, probable or potential major threats - e.g. fisheries, trade, habitat destruction, pollution, or climate change.
- **Conservation actions:** Those in existence, (e.g. protected species status, protected areas that encompass part or all of a species' range), and those required in the future (within 5 years).
- **Key literature references**

Figure 1.2: Examples of draft species assessments

Placostylus guanensis, a land snail endemic to Fiji, is assessed as EN. At the training workshop, specialists were learning how to apply the Categories and Criteria, and a different category was assigned.

Redigobius leveri, a fish endemic to Fiji, is assessed as DD. At the training workshop, specialists assigned a different category. There are currently no known major threats to this species, but due to a lack of information on population size, trends and potential threats, it is difficult to assess according to the IUCN Red List Categories and Criteria, and it is therefore listed as Data Deficient.

Figure 1.3: Participants at the Training Workshop held in Suva, Fiji in February 2011.



Freshwater Fish specialists L-R Kinikoto Mailautoka, David Boseto, Helen Larson © Helen Pippard



Land snail specialists Clockwise from top left Rebecca Rundell, Lia Bogitini, Gary Barker, Diarmaid O'Foighil © Helen Pippard

1.4.2 Evaluation workshop and post-workshop editing

A second workshop was held in September 2011, where each species assessment (and accompanying map) was reviewed by a second group of Experts (see Figure 1.4). This ensured that the information contained in the assessments was accurate and complete, and that the Red List Categories and Criteria had been correctly applied. Following this review workshop, the data were edited and outstanding questions were resolved through communications with the Experts, Specialists and members of relevant Species Survival Commission Specialist Groups (e.g. Freshwater Fishes Specialist Group, Mollusc Specialist Group, Iguana Specialist Group). Consistency in the use of IUCN Criteria was checked by IUCN staff from the IUCN Red List Unit and relevant Red List Authorities. The resulting finalized IUCN Red List assessments are a product of scientific consensus concerning species status and are backed by relevant literature and data sources.

Figure 1.4: Participants at the Evaluation workshop held in Suva, Fiji in September 2011.



Freshwater Fish evaluations clockwise from top left: Mereseini Raiwalui, Helen Pippard, Doug Hoese, Helen Larson © Nieves Garcia



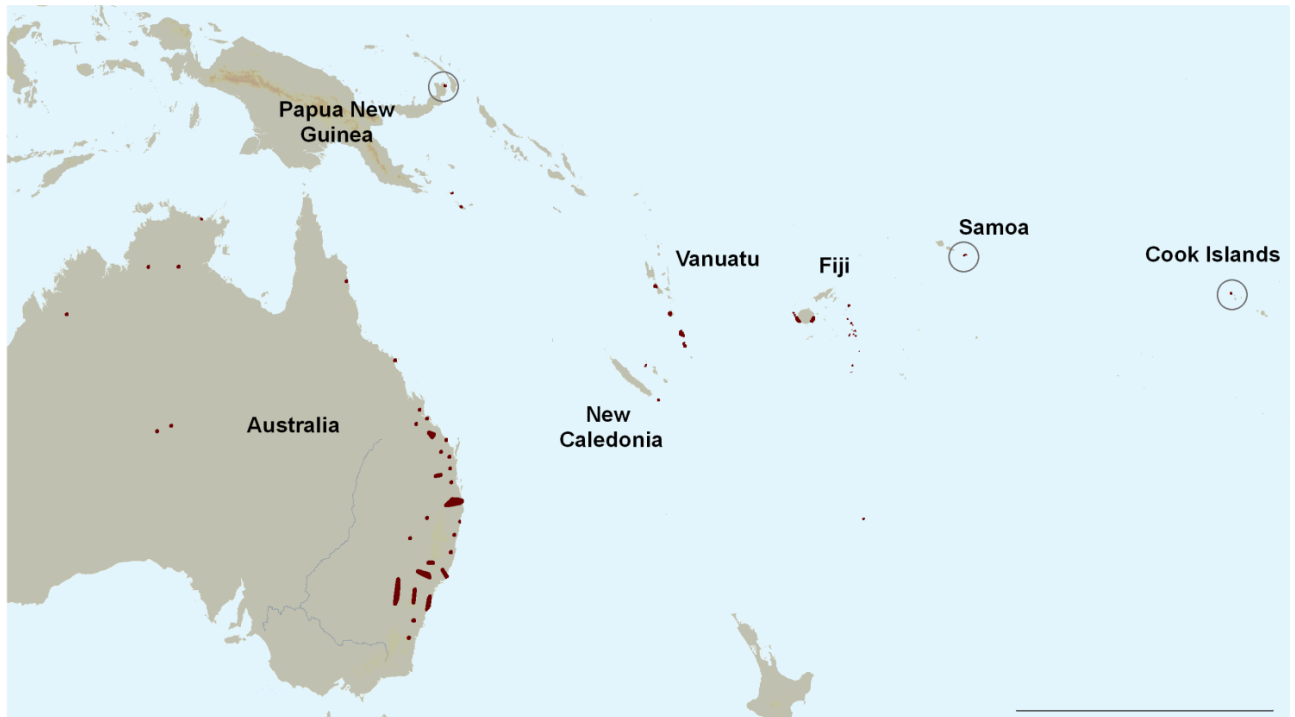
Reptile evaluations L-R Neil Cox, Alison Hamilton, Oliver Tallwin, Allen Allison © Nieves Garcia

1.5 Species Mapping

Where available, point localities (the latitude and longitude where the species has been recorded), and other published data were used to identify areas that are currently known to contain each species. Using expert opinion, distribution records and unpublished literature, it was possible to create distribution maps for species that do not have point locality information. In some cases, it was also possible to map where species are "probably" present. An example of a map is seen in Figure 1.5.

Species distributions for freshwater fishes were mapped to individual river basins, as delineated by HydroSHEDS (Hydrological data and maps based on Shuttle Elevation Derivatives as multiple Scales) using GIS software. River basins were selected as the spatial units for mapping species distributions as, although a species range may not extend throughout a river basin, it is generally accepted that the river basin or catchment is the most appropriate management unit for inland waters.

Figure 1.5: Example of a species map



Discocharopa aperta

LEGEND

- Native (resident)
- Possibly Extinct
- Presence Uncertain
- Extinct
- cities
- national boundaries
- subnational boundaries
- lakes, rivers, canals
- salt pans, intermittent rivers



Figure 1.6: Summary of the five criteria (A-E) used to evaluate if a species belongs in a category of threat (Critically Endangered, Endangered or Vulnerable).

Use any of the criteria A-B	Critically Endangered	Endangered	Vulnerable
A. Population reduction Declines measured over the longer of 10 years or 3 generations			
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%
A1. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased, based on and specifying any of the following:			
(a) direct observation			
(b) an index of abundance appropriate to the taxon			
(c) a decline in AOO, EOO and/or habitat quality			
(d) actual or potential levels of exploitation			
(e) effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.			
A2. Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on (a) to (e) under A1			
A3. Population reduction projected or suspected to be met in the future (up to a maximum of 100 years) based on (b) to (e) under A1.			
A4. An observed, estimated, inferred, projected or suspected population reduction (up to a maximum of 100 years) where the time period must include both the past and the future, and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on (a) to (e) under A1.			
B. Geographic range in the form of either B1 (extent or occurrence) AND/OR B2 (area or occupancy)			
B1. Extent of occurrence	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following:			
(a) Severely fragmented or number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			
C. Small population size and decline			
Number of mature individuals	< 250	< 2,500	< 10,000
AND either C1 or C2:			
C1. An estimated continuing decline of at least:	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations
(up to a maximum of 100 years)			
C2. A continuing decline AND (a) and/or (b):			
a (i) # mature individuals in each subpopulation:	< 50	< 250	< 1,000
a (ii) or % individuals in one sub-population at least	90%	95%	100%
(b) extreme fluctuations in the number of mature individuals			
D. Very small or restricted population			
Either:			
Number of mature individuals	< 50	< 250	D1. <1,000
			AND/OR
VU D2 Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.			D2. typically AOO < 20 km ² or # locations ≤ 5
E. Quantitative Analysis			
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations (100 years max)	≥ 20% in 20 years or 5 generations (100 years max)	≥ 10% in 100 years

Chapter 2: The status and distribution of Freshwater Fishes in the Pacific Islands

2.1 Diversity of Pacific Island freshwater fishes

Wetlands have not been well studied in the Pacific Islands. On the larger volcanic islands there are significant areas of wetlands including freshwater lakes, marshes, swamps, rivers and intertidal mangrove forests. Large mangrove forests are found in coastal areas of Melanesia, as well as the Federated States of Micronesia (FSM), and Palau (CEPF, 2007); smaller areas are found in parts of Tonga and Samoa. Mangrove forests provide a vital habitat for many species of fish (especially juveniles), and for other fauna such as invertebrates and birds. The smaller atoll countries and islands generally have few, if any, wetlands other than reef systems.

At the global level, freshwater ecosystems are among the most productive and diverse ecosystems and are estimated to support over 10,000 species of fish (Nelson, 1996). In Oceania, diversity is far lower, ranging from approximately 300 species in Papua New Guinea (Allen (1991) estimated 329 species) to over 90 species in Fiji and Solomon Islands (Boseto, 2006), and 60+ species in New Caledonia (Marquet *et al.* 2003) and Vanuatu (Keith *et al.* 2011). Moving eastwards into Polynesia, the diversity decreases further, with less than ten species recorded in the Cook Islands (Ryan, 1991).

It is likely that this low freshwater fish diversity is due to factors such as island age, size, availability

of habitat, and isolation. Many native and endemic fishes on the high islands are of marine origin adapted to freshwater conditions (Ellison, 2009). In addition, a bias towards a select number of countries exists - to date, most research has been focussed on Papua New Guinea, Fiji, and the Solomon Islands (Boseto *et al.*, 2007) and more recently on French Polynesia, Vanuatu, New Caledonia and Wallis and Futuna (P. Keith pers. comm. 2011). Many islands remain largely unexplored. This is especially true of the interiors of the high islands of Melanesia (e.g. Solomon Islands, Bismarcks in Papua New Guinea, and Vanuatu), and the more isolated higher islands of Micronesia and Polynesia (e.g. Samoas, Palau). Our understanding of the regional freshwater fish diversity and distribution is therefore far from complete.

Froese and Pauly (2012) list 134 species of freshwater fishes for the countries of Polynesia and Micronesia and 377 for Melanesia (Papua New Guinea, Solomon Islands, Vanuatu and New Caledonia), estimating a total of 433 unique freshwater species in the region. However, some are not solely confined to freshwaters, spending a point of their life cycle in marine or brackish environments. Obtaining a standard and reliable estimate of the total number of freshwater fishes is therefore difficult and the currently recognized number of freshwater fishes is likely to be an under-representation of the true diversity of the Pacific Islands.



Stenogobius watsonii, DD. © G.Allen
This species was recorded from three small islands in Milne Bay, Papua New Guinea. There is no information available on its ecological requirements, population size and distribution, nor on any threats. It is therefore listed as Data Deficient.

2.2 Selection of priority taxa

2.2.1 Geographic scope

Assessments for freshwater fishes were primarily focussed on the Polynesia-Micronesia Hotspot as defined by the Critical Ecosystem Partnership Fund (CEPF, 2007 and www.biodiversityhotspots.org) with a particular focus on endemic species. The Polynesia-Micronesia hotspot includes the following countries: American Samoa, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, Niue, Northern Mariana Islands, Palau, Pitcairn Islands, Samoa, Tonga, Tokelau, Tuvalu, Wallis and Futuna. Where expertise was available, species found in Melanesia (Solomon Islands, Vanuatu, Papua New Guinea, New Caledonia and Norfolk Island) and wider-ranging species were also assessed.

For the purpose of this assessment, freshwater fishes are defined as those species that spend all or a critical part of their life cycle in freshwaters. The species list was therefore compiled to reflect this. However, some species which are found in a variety of habitats (marine, brackish, estuarine, marine) were assessed where expertise allowed,

to try and complete assessments for entire families.

2.3.2 Taxonomic scope

The list of 134 freshwater fish species compiled by Froese and Pauly (2012) was used as the starting point for compiling the species list for this project. Amendments were made by the Specialists and Experts and the finalized species list contained 218 species. Of these, 52 species have not been assessed by this project, due to a variety of reasons. In some cases there was a lack of expertise or data to attempt an assessment (e.g. *Mesopristes kneri*); in other cases (e.g. *Smilosicyopus mystax*) taxonomic uncertainties needed resolving prior to any assessment being conducted. Further, a number of species were assessed (or shall be assessed) by complementary projects. For example, some of the predominantly estuarine fishes will be assessed by IUCN's Freshwater Biodiversity Unit – e.g. eels such as *Anguilla megastoma* - and some predominantly marine species will be assessed by the Global Marine Biodiversity Unit (for example pipefishes such as *Hippichthys cyanospilos*). The full list of species assessed during this project can be seen in Appendix 1.



Stiphodon julieni, EN.
Endemic to French Polynesia, this species is known from three locations (3 rivers) on the small island of Rapa. It is experiencing a continuing decline in the quality of its habitat, largely caused by deforestation.

© E. Vigneux

2.3 Conservation status of freshwater fishes

Assessments were carried out for 167 species of freshwater fishes native to Micronesia, Polynesia and Melanesia.

The majority of species (91 species, representing 53%) have been assessed as Least Concern (LC) (see Figure 2.1). Generally, these species are widely distributed with no known major threats impacting them and have a lower risk of extinction.

The extinction risk could not be evaluated for 63 species (39%), which have been categorized as Data Deficient. Some species are only known from a single or very few specimens, rendering it impossible to assign a Category of threat to the species. Other species (e.g. *Stiphodon semoni*, (Papua New Guinea) and *Redigobius leverii* (Fiji)) have taxonomic issues that need to be resolved. As many rivers in the region are poorly explored, this lack of information is perhaps not surprising.

Of the species for which sufficient data are available, 12 species (8%) are considered to be threatened (in categories Critically Endangered, Endangered or Vulnerable) – see Figure 2.1 and Table 2.1). Three species (2%) are assessed as Critically Endangered (CR) – the highest level of threat that can be assigned to a species in the wild; eight species (5%) have been assessed as Endangered (EN) and one species is assessed as Vulnerable (VU). A further two species almost meet the thresholds for threatened species and are listed as Near Threatened (NT). The Red List Category of threat assigned to each of the 167 species is given in Appendix 1.



Stiphodon semoni, DD, is reported from Australia, Philippines, Indonesia and Melanesia. It is often mis-identified and further taxonomic study is required. © G.Allen



Stenogobius keletaona, endemic to the island of Futuna in Wallis and Futuna is assessed as Vulnerable under criteria D2: the species and its preferred habitat is rare, and despite a lack of major threats at present, any future threats to its coastal and estuarine habitat could drive the species to extinction in a very short time. © P.Keith

Figure 2.1: All species assessed by conservation status
n=167

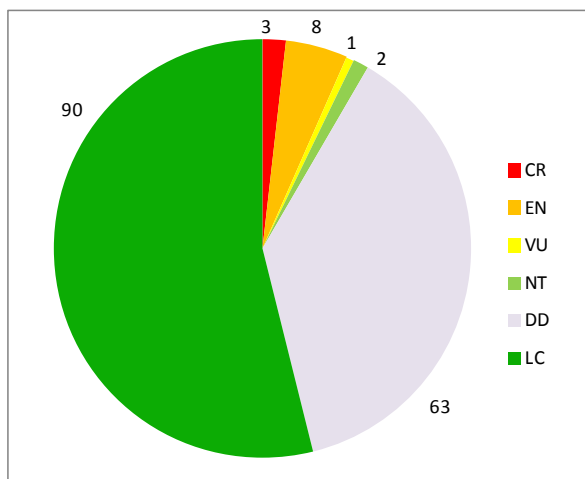


Figure 2.2: Endemic species assessed by conservation status
n=43

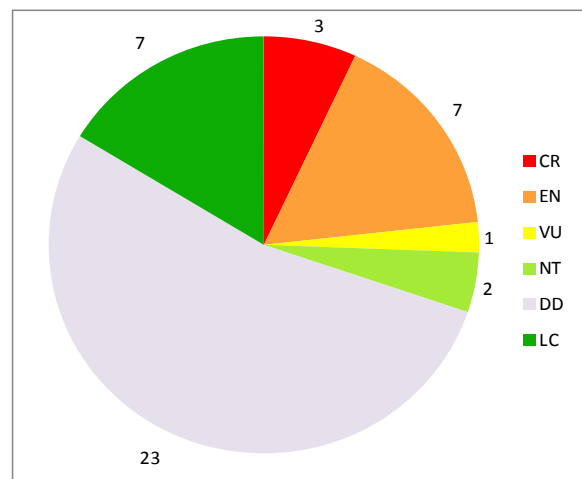


Table 2.1: Summary of freshwater fishes listed as threatened

Order	Family	Species	Category	Country(s)
Osmeriformes	Galaxiidae	<i>Galaxias neocaledonicus</i>	EN	New Caledonia
Perciformes	Gobiidae	<i>Akihito futuna</i>	CR	Wallis and Futuna
Perciformes	Gobiidae	<i>Sicyopterus eudentatus</i>	EN	Federated States of Micronesia
Perciformes	Gobiidae	<i>Sicyopterus rapa</i>	EN	French Polynesia (Tubuai Islands)
Perciformes	Gobiidae	<i>Sicyopterus sarasini</i>	EN	New Caledonia
Perciformes	Gobiidae	<i>Smilosicyopus sasali</i>	EN	Wallis and Futuna
Perciformes	Gobiidae	<i>Stenogobius keletaona</i>	VU	Wallis and Futuna
Perciformes	Gobiidae	<i>Stiphodon discotorquatus</i>	CR (PE)	French Polynesia (Tubuai Islands)
Perciformes	Gobiidae	<i>Stiphodon rubromaculatus</i>	CR	Wallis and Futuna
Perciformes	Gobiidae	<i>Stiphodon julieni</i>	EN	French Polynesia (Tubuai Islands)
Perciformes	Pomacentridae	<i>Neopomacentrus aquadulcis</i>	EN	Papua New Guinea and Solomon Islands
Perciformes	Rhyacichthyidae	<i>Protogobius attiti</i>	EN	New Caledonia

2.4 Spatial distribution of freshwater fishes

2.4.1 Species richness

Geographically, the highest diversity of freshwater fishes is seen in the west of the region (Melanesian countries) and generally declines eastwards from Micronesia into Polynesia, as Figures 2.5. and 2.6 highlight. Some of the observed variation in species richness is a result of differences in sampling intensity: Melanesia, French Polynesia, Wallis and Futuna and the Samoan islands have been sampled more frequently in recent years and more data are therefore available. In addition, many of the islands in Micronesia and Polynesia are low-lying and contain fewer river systems, which means that fish diversity is skewed towards the high island countries of the western Pacific. Figure 2.3 shows the number of species assessed by country.

2.4.2 Threatened species

The twelve threatened species are found in the French Territories of the region (French Polynesia, Wallis and Futuna and New Caledonia), Federated States of Micronesia, Solomon Islands and Papua New Guinea – see Table 2.1. All of these species have a restricted range – known from single islands, single river systems, or from a small number of islands or rivers – and any threats can therefore impact the entire river system. By country, Wallis and Futuna contains the highest number of threatened species.

2.4.2 Data Deficient species

As with the patterns of species richness, Melanesia, the French territories of French Polynesia and Wallis and Futuna and the Samoan islands also contain higher numbers of Data Deficient species than other parts of the region, as seen in Figures 2.7 and 2.8. The higher sampling effort means that although there is a lack of available information to estimate extinction risk, the species are at the very least described, and often exist in museum collections.

2.4.3 Endemic species

A quarter of assessed species are endemic to single countries - see Figure 2.4 - and often to single islands within countries. For example, *Stiphodon julieni* (EN) is only recorded from the island of Rapa in the Tubuai Islands of French Polynesia; *Stenogobius alleni* (DD) is known only from the island of New Britain in the Bismarck archipelago of Papua New Guinea; and *Akihito vanuatu* (LC) is restricted to the islands of Ambae and Pentecost in Vanuatu. By country, French Polynesia contains the highest number of assessed endemic species. A further 40% of species are regionally endemic to the Pacific Islands region as seen in Table 2.2.

All fishes listed as threatened (aside from *Neopomacentrus aquadulcis* from the Solomon Islands and Papua New Guinea) are endemic to a single country - see Table 2.2. The number of Least Concern species is far lower for endemics than for freshwater fishes as a whole – 16% of endemics compared to 90% for all assessed fishes – see Figures 2.1 and 2.2. This is indicative of endemic/restricted range species being more susceptible to threats than wider-ranging species.

Figure 2.3: All species assessed by country and conservation status

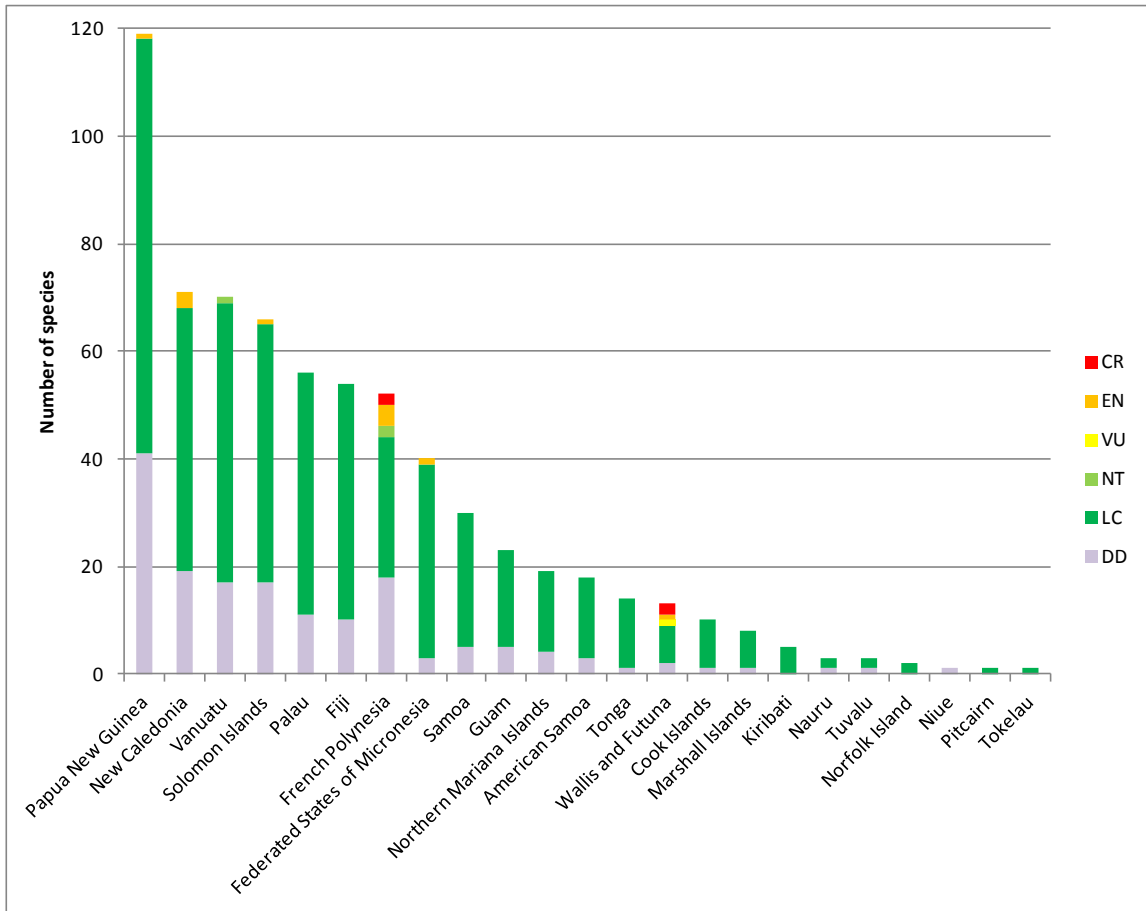


Figure 2.4: Endemic species by country and their threat status

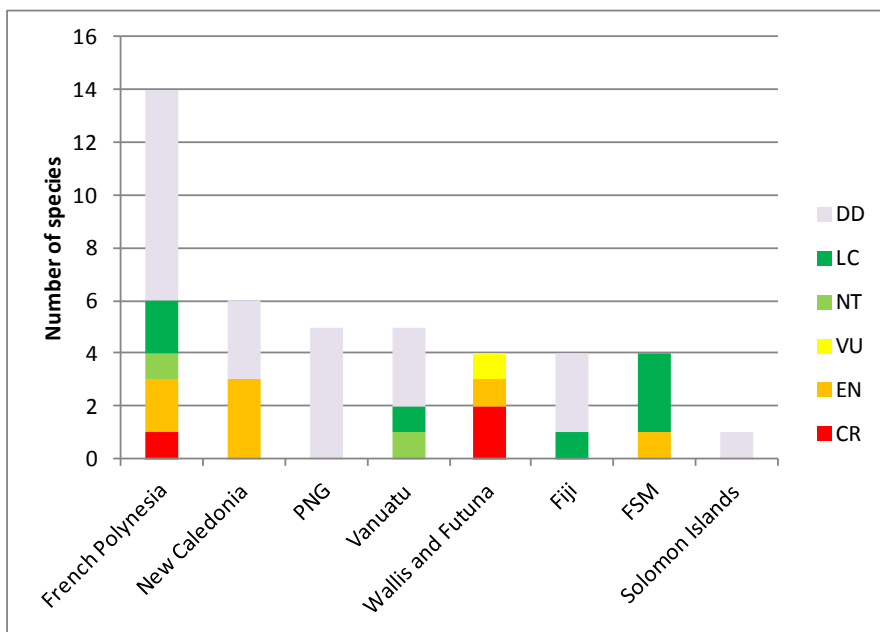


Figure 2.5: Species Richness in Melanesia and Micronesia

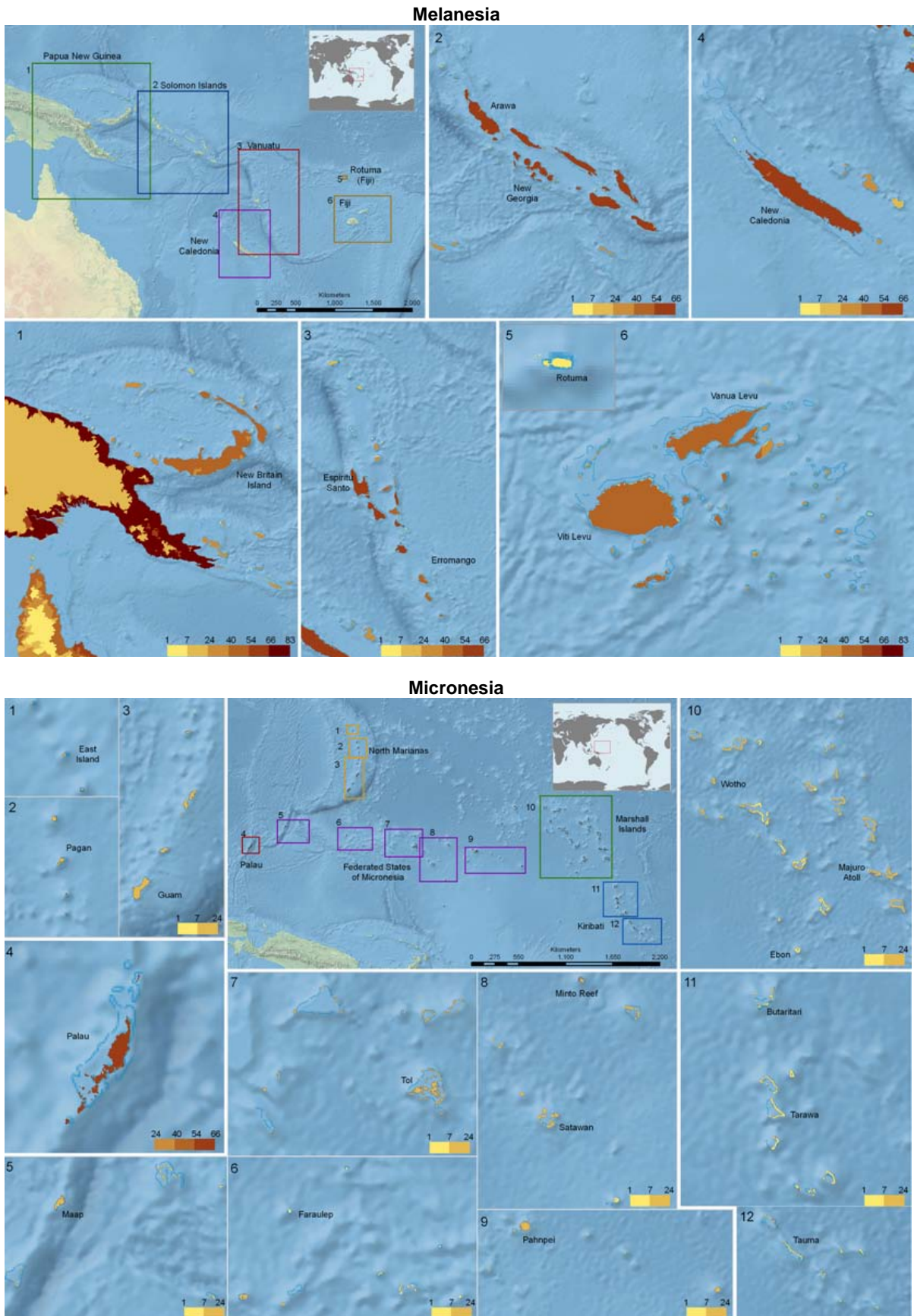
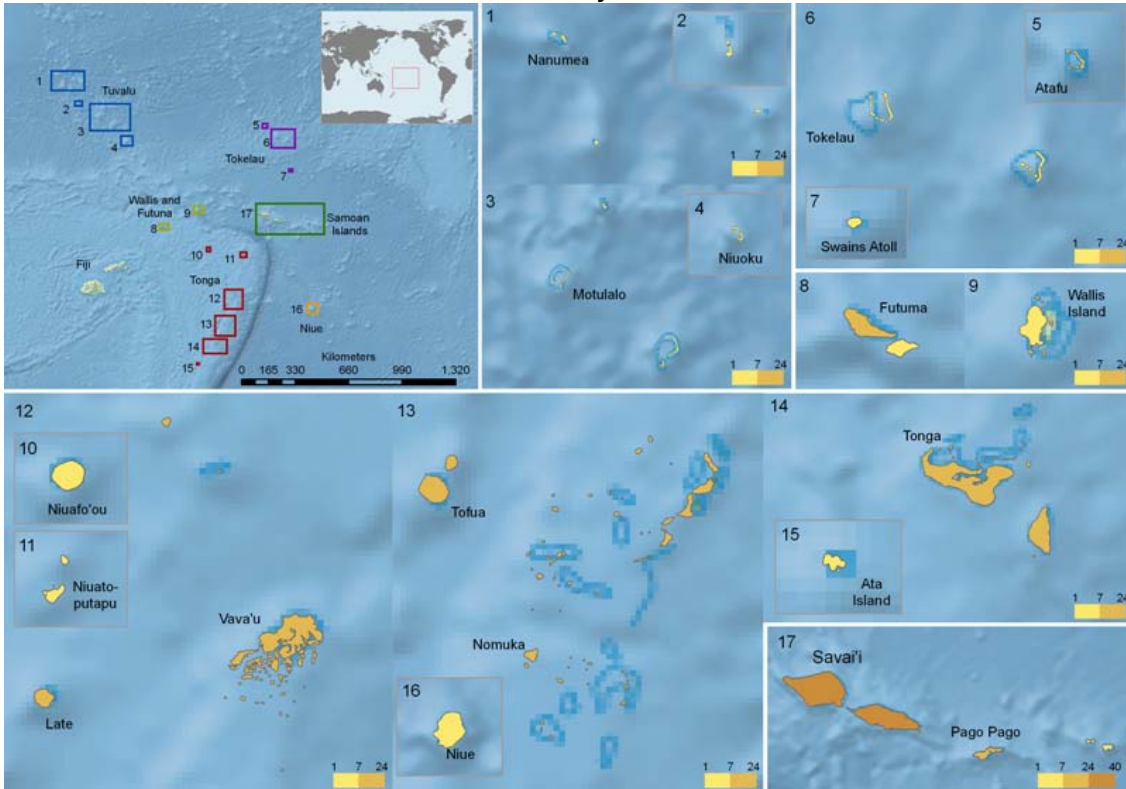


Figure 2.6: Species Richness in Western and Eastern Polynesia

Western Polynesia



Eastern Polynesia

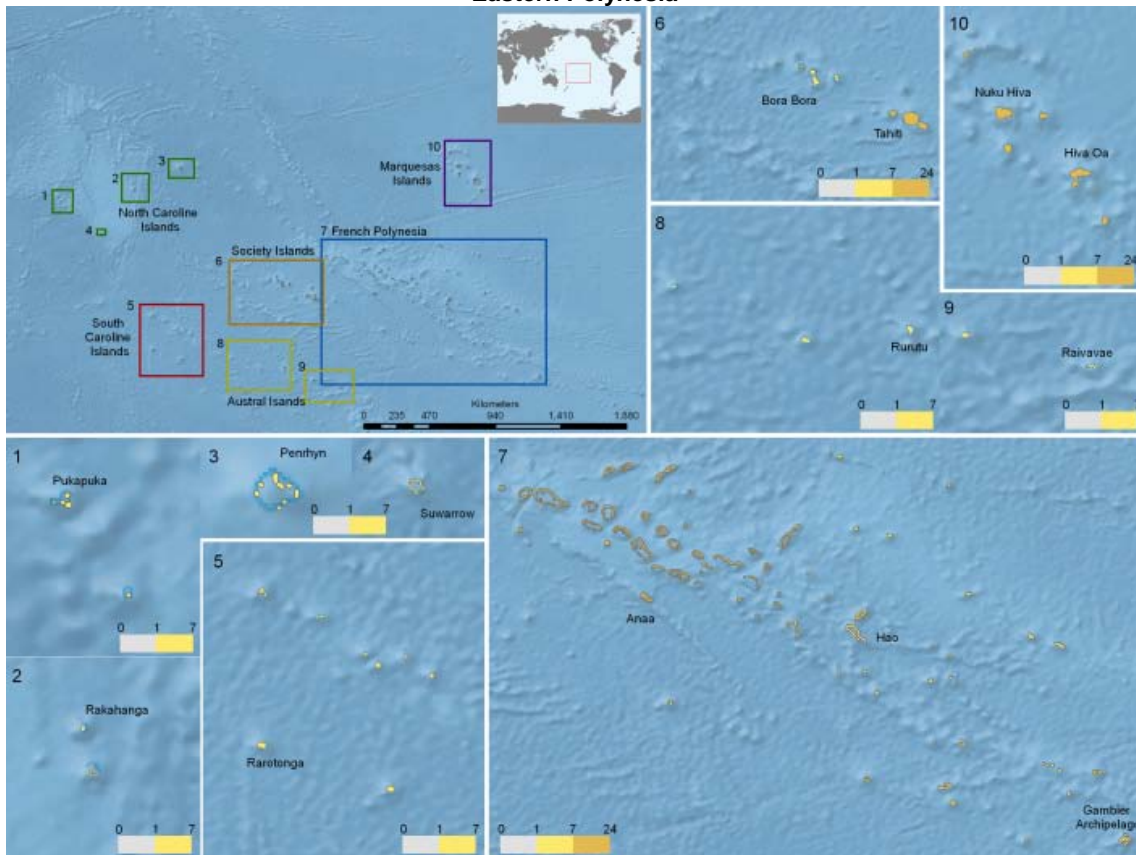


Figure 2.7: Data Deficient Species in Melanesia and Micronesia

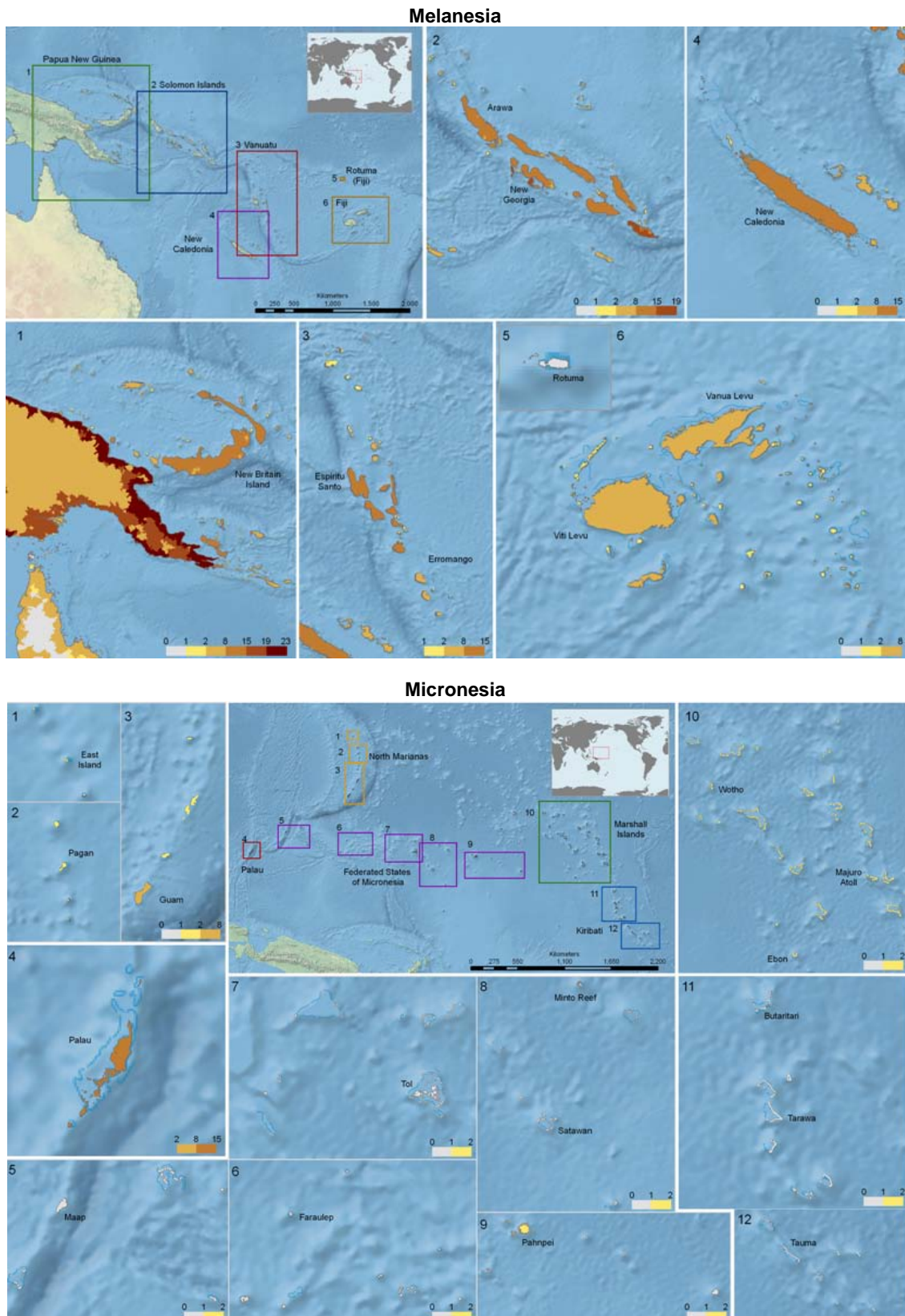


Figure 2.8: Data Deficient Species in Western and Eastern Polynesia

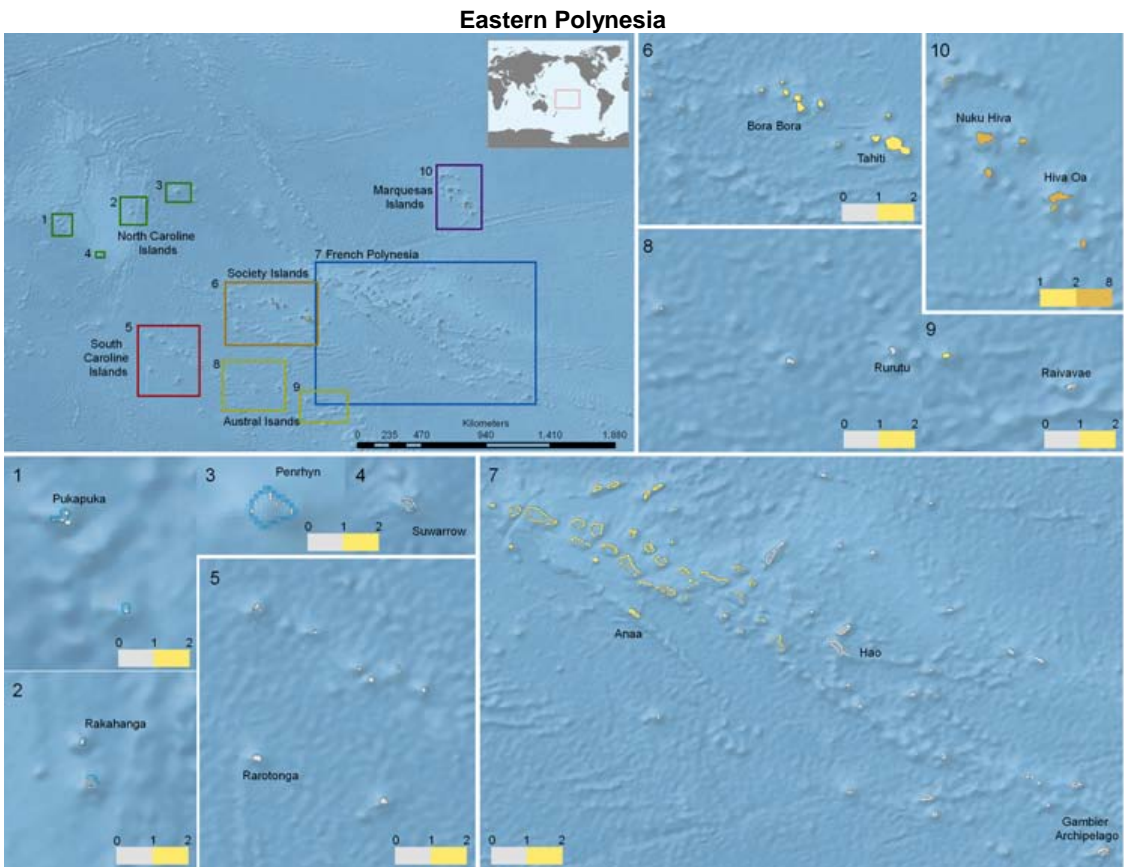
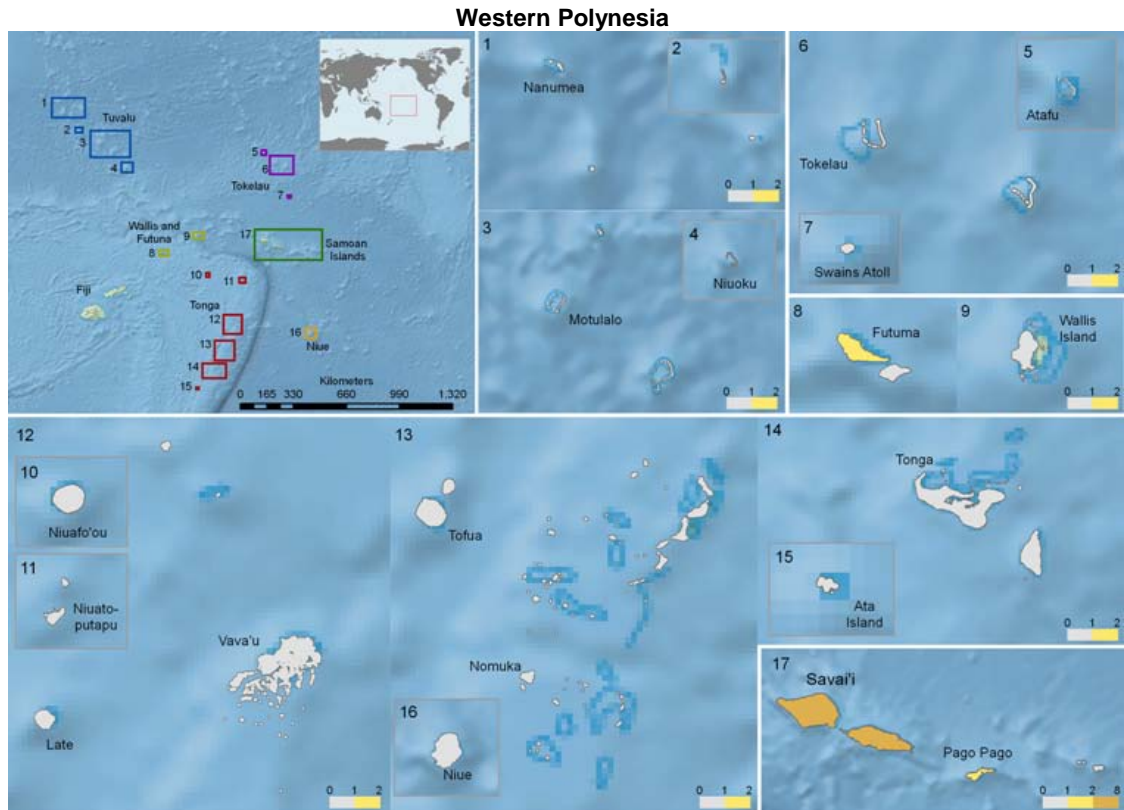


Table 2.2: Species endemic to Melanesia, Micronesia and/or Polynesia

Species	Melanesia					Micronesia				Polynesia						Red List Category
	PG	SB	VU	NC	FJ	GU	MP	FM	PW	WF	WS	AS	TO	CK	PF	
<i>Neopomacentrus aquadulcis</i>	x	x														EN
<i>Rhyacichthys guilberti</i>			x	PE												DD
<i>Smilosicyopus chloe</i>			x	x												LC
<i>Smilosicyopus pentecost</i>			x	x												DD
<i>Stenogobius yateiensis</i>			x	x												LC
<i>Stiphodon mele</i>			x	x												DD
<i>Stiphodon sapphirinus</i>			x	x												LC
<i>Lentipes venustus*</i>	x															DD
<i>Awaous guamensis</i>			x	x	x	x	x									LC
<i>Sicyopus fehlmanni</i>								x	x							LC
<i>Stenogobius fehlmanni</i>								x	x							LC
<i>Kuhlia salelea</i>											x	x				DD
<i>Sicyopterus pugnans</i>											x				x	LC
<i>Stiphodon elegans</i>										x	x			x	x	LC
<i>Stiphodon hydroreibatus</i>										x	x	x				DD
<i>Awaous ocellaris</i>	x	x		x	x					x	x			x	x	LC
<i>Lentipes kaaea</i>		x	x	x	x					x						LC

**Lentipes venustus* is potentially endemic to PNG as its presence is uncertain from Irian Jaya (Indonesia).

2.4.4 Distribution by habitat

The majority of species live in permanent freshwater rivers, and in estuarine and mangrove areas: 83% inhabit freshwater and/or estuarine habitats, 42% of which are confined solely to freshwaters, as seen in Figure 2.9. Over half of all assessed species are migratory, moving from freshwater rivers to the sea for spawning. Figure

2.10 shows the habitat types within each major system that all species are recorded from. The twelve threatened species and most endemic species are confined to freshwaters and/or estuarine areas. As these are restricted range species, found in only a small number of river systems, it is not surprising that any major threats would impact them.

Figure 2.9: Species distribution by major system

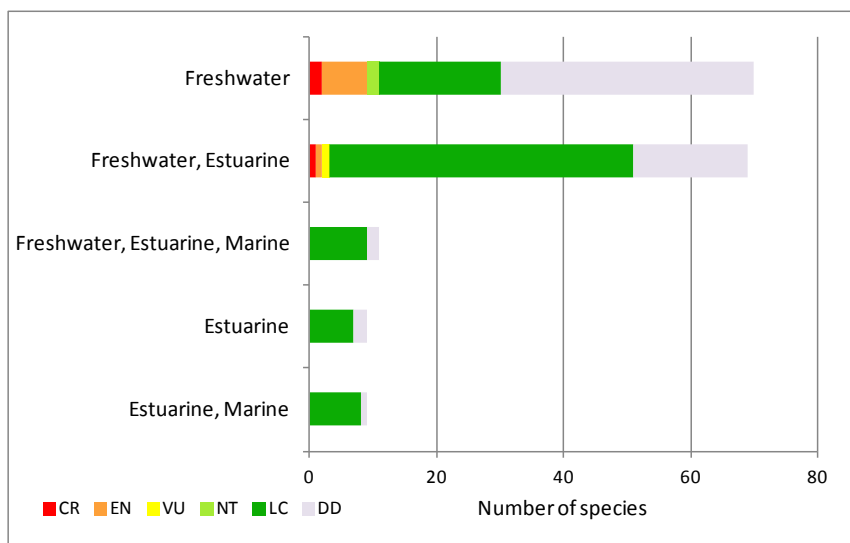
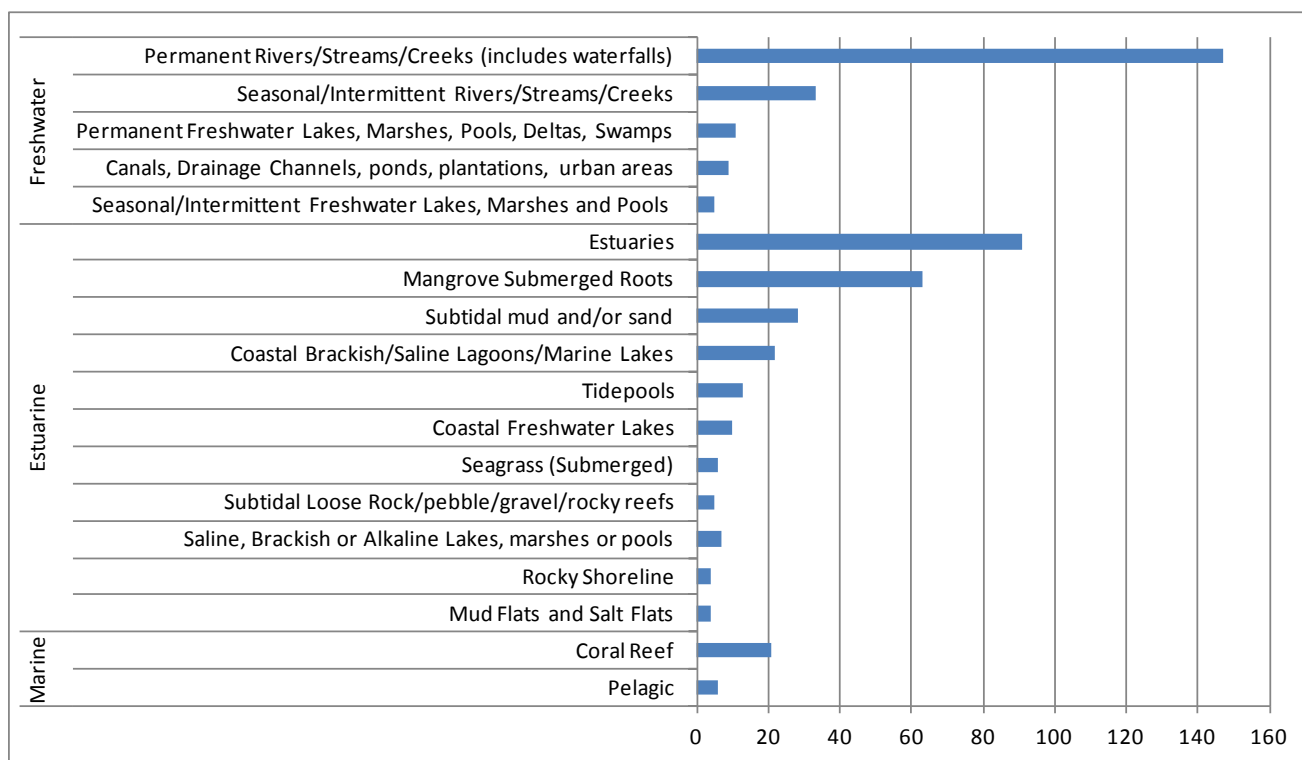


Figure 2.10: Habitat types of all species



2.5 Major threats to freshwater fishes

The major threats to each species were coded using the IUCN Threats Classification Scheme and are discussed in each species' account available on the IUCN Red List website. The major threats identified include the following:

Sedimentation from deforestation and agriculture

The removal of forest cover, and the conversion of land for agriculture (small and large scale), and farming, can result in sedimentation, which is a serious threat to many fish species. All migratory fishes rely on a controlled water flow for their passage up and downstream, and some species (e.g. gobies), also require clear rocks and river bottoms to physically move along the river bed. Sedimentation interferes with this passage, causing fishes great difficulty in their migration, and potentially preventing such movement altogether.

Pollution from agriculture and mining

Pollution often results from the use of herbicides and pesticides in small holder farming and subsistence farming, for example in the production of Taro (Wallis and Futuna) and for Sakau (Federated States of Micronesia). The effects of this can have a detrimental impact on the overall health of river systems, and directly cause injury or mortality to fish populations. Some river systems (e.g. in New Caledonia) are currently at risk from mining: waste material can

result in the level of river beds rising, the clogging of stream beds, and cause flooding downstream. Deltas and estuarine areas can undergo huge changes as a result of an increase in sediment and nutrient loads.

The existence or construction of dams

As many fishes require long distance migrations to fulfil their life cycles, the existence of dams can block the movement down or upstream. Fishes in Futuna (Wallis and Futuna) and New Caledonia have already been affected by the construction of dams acting as a barrier to their migratory movements. If they are well conceived, fish ladders can mitigate this impact, and allow migratory fishes to migrate further upriver. However, until now, these possible fish passages are rarely (if ever) in existence.



Dam in Futuna © G.Marquet

Biological resource use: Fishing and harvesting

Although not seen as a major threat to many species, the harvesting of fishes for subsistence or for the aquarium trade is something that should be monitored in the future. A number of fishes are currently caught by humans for food, often as small fry during their upstream migration – for example, *Ambassis interrupta* (LC), which spawns near estuaries before migrating to freshwaters, and *Kuhlia rupestris* (LC), which generally inhabits freshwaters, but moves towards estuaries and the sea in adulthood. No species appear to be experiencing declines as a result of harvesting in the Pacific at this time, but interest for the aquarium trade could pose future threats to some species. For example, gobies such as *Neopomacentrus taeniurus*, *Redigobius balteatus* and *Stenogobius watsoni* are found in trade, and it is unknown whether harvesting is having any significant impacts on their populations.



Redigobius balteatus (LC) found in the pet trade
© P.Keith

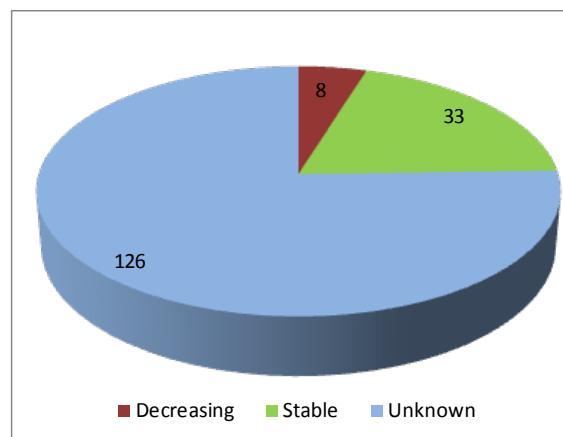
Introduction of alien invasive species Whilst alien fish species pose a major threat to indigenous fish populations in many parts of the world, their impacts are not well known in the Pacific. The invasive species most often seen in the Pacific is Tilapia – *Oreochromis spp.* - which is often introduced in order to enhance fisheries.

2.6 Population trends

Being able to determine a species' population trend is critical to assessing a species' conservation status. Approximately 5% of the freshwater fish species assessed are thought to be declining; 20% are considered stable, and no populations were thought to be increasing – see

Figure 2.11. However, due to the large number of species for which there are no population data, the trends for three quarters of the fishes assessed are unknown.

Figure 2.11: Population trends



2.7 Research and conservation needs

As part of each species assessment, research and conservation actions were identified: these are summarized in Figures 2.12 and 2.13. Almost every species requires further information on population size, distribution and trends (161 out of 167 species). Just over a quarter of all species require further taxonomic work. Improving our understanding of basic ecology, life history, and threats is vital to enable us to conserve and protect freshwater fishes and their habitats. The number of identified conservation actions is low, because it is difficult to assess such requirements without the existence of species-specific data. Two thirds of freshwater fishes are not thought to occur in any existing protected areas – these are generally the more restricted range fishes found in freshwaters. Wider-ranging species are often afforded some protection from designated marine protected areas in parts of their range. That said, some species do occur in specific protected areas such as Ramsar sites – e.g. *Redigobius leverii* which is found in the Upper Navua Conservation Area in Viti Levu, Fiji.

Figure 2.12: Identified research and monitoring needs

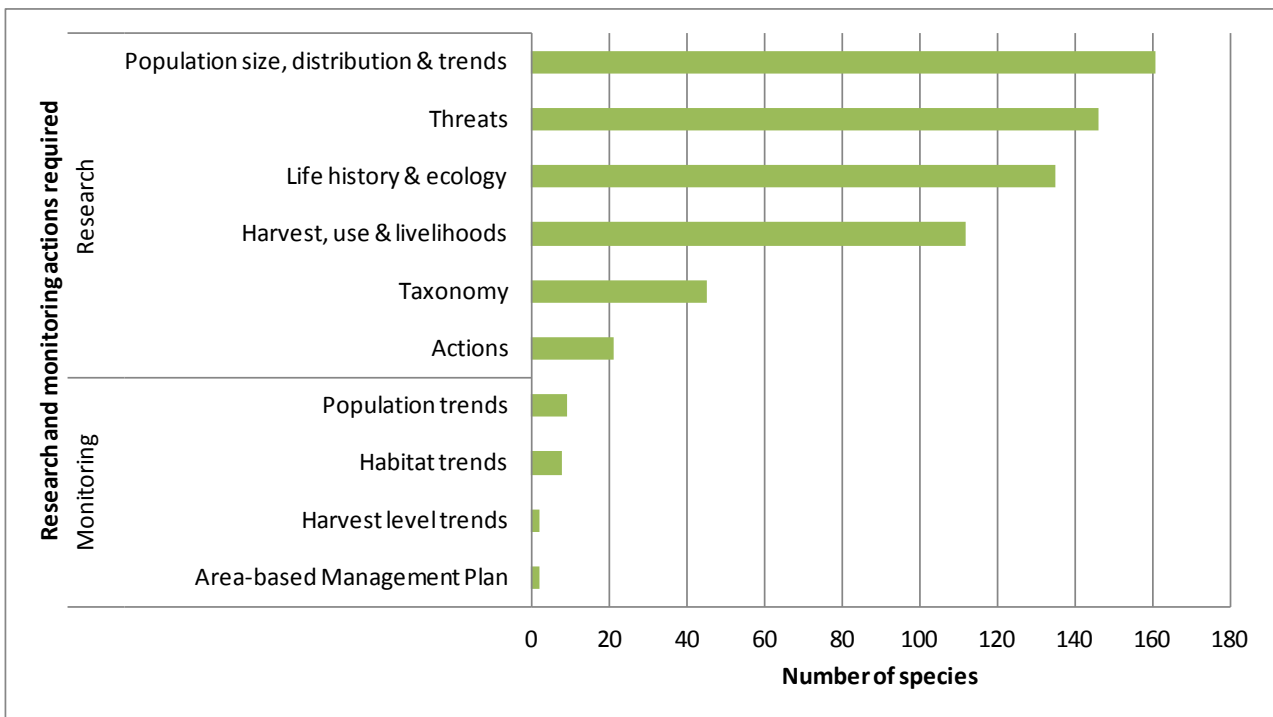
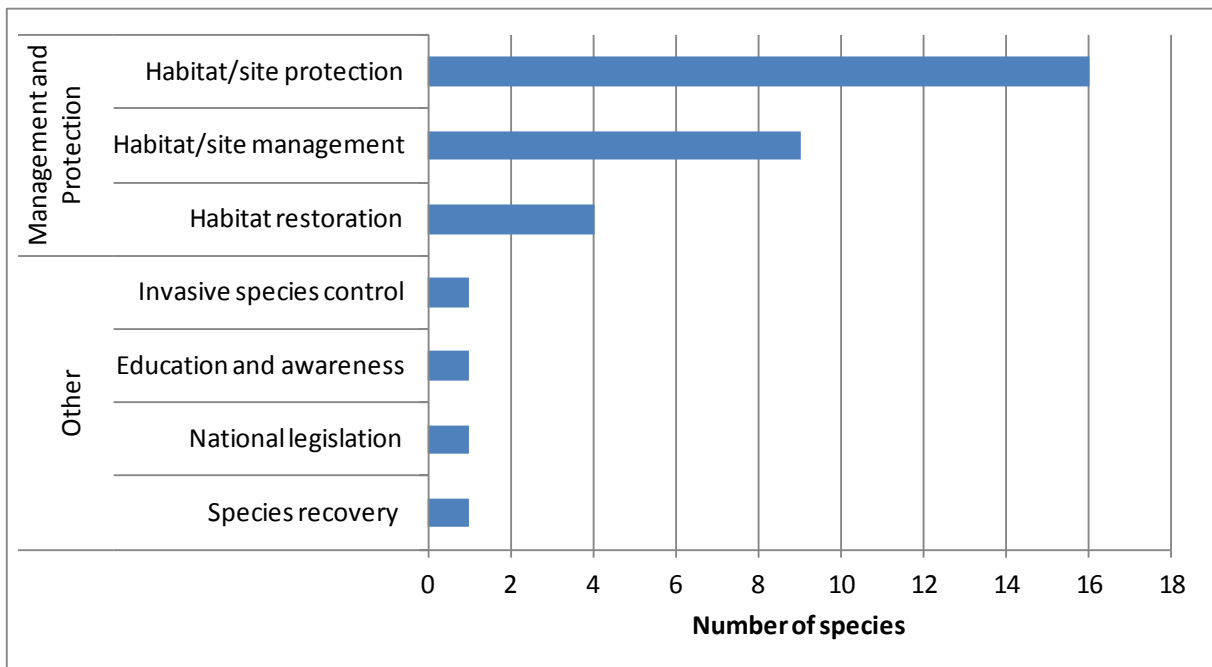


Figure 2.13: Conservation Actions identified from species assessments



2.8 Conclusions

Despite a lack of data for many species, by analyzing the identified threats, actions can be suggested that will enable us to move towards better protection of freshwater fishes and their habitats in the Pacific.

2.8.1: Recommendations to address threats

The following conservation recommendations are suggested:

- Modification of habitat, including agriculture
To protect species and habitats from sedimentation, regeneration of vegetation should be promoted. Planting of natural vegetation adjacent to river systems will stabilize and protect river margins from run-off due to deforestation and agriculture.
- Pollution from agriculture and mining
Pollution laws should be enacted and enforced, best agricultural practices should be adopted, and effluent treatment plants be constructed for industry such as mining.
- Dams
Any new dam construction should be managed to ensure the provision of fish passage, and the option of fish ladders should be investigated for existing and new dams.
- Overharvesting
Stakeholders should be educated in sustainable biological resource use, and relevant legislation to protect and

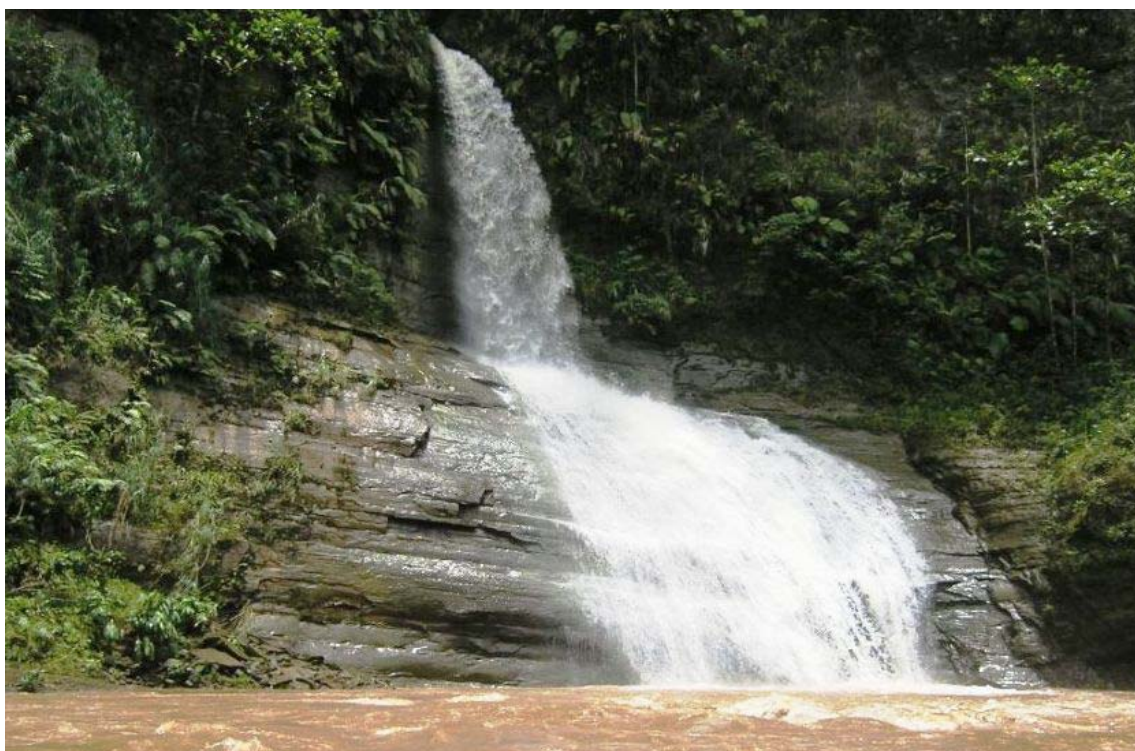
conserve freshwater fishes and their habitats should be developed and implemented.

- Invasive species
Future introductions of invasive species should be prevented by imposing strict legislation covering rivers and lakes where they are not native. Further studies should be conducted to determine the impact and spread of such invasive fish populations in regional rivers.

2.8.2: Recommendations for future work

To fill the remaining gaps in our knowledge, and to monitor any changes, stakeholders should work to:

- Carry out further research on population, threats, ecological requirements and taxonomy, in order to complete assessments for fishes not included in this project and for threatened and Data Deficient species. This will enable the production of a comprehensive dataset for freshwater fishes across the Pacific Islands.
- Regularly revise the data for freshwater fishes assessed, in order to monitor the changing status of populations and to ascertain whether any recommended conservation measures put in place are working.
- Examine species' distributions in more detail in order to identify key priority areas for conservation and protection of freshwater fishes and their habitats.



Upper Navua Conservation Area, Viti Levu, Fiji's Ramsar site. © Rivers Fiji

Chapter 3: The status and distribution of land snails in the Pacific Islands

3.1 Diversity of Pacific Island land snails

Land snail species richness and endemism is extremely high on many Pacific Islands (e.g. Solem, 1976 and 1983; Cowie, 1996 and Rundell, 2008). However, basic information on the number of extant species is lacking for many island groups. It is estimated that there are in excess of 4000 species of land snail in the Pacific, with a number of families (endemic and non-endemic) dominating the group (Cowie, 2000). The species of the north and eastern Pacific (Micronesia and Polynesia) are generally better known. Lydeard *et al* (2004) provide the following diversity estimates: Hawaii, 752 species (Cowie *et al*, 1995), Samoa, 94 species (Cowie, 1998), Pitcairn Islands, 30 species (Preece, 1995), French Polynesia, ~240 species (Solem, 1983), and Northern Mariana Islands, 39 species. Due to a lack of survey efforts in Melanesia, the distribution of species throughout the western Pacific is far less well known. Solem (1959) estimated 130 species in

Vanuatu and 110 in New Caledonia, although it is likely that this represents only a third of the actual number. Obtaining a standard and reliable estimate of the total number of land snails is therefore extremely difficult and the currently recognized number is likely to be an under-representation of the true diversity of the Pacific Islands.

Pacific Island land snails have suffered greatly from extinctions in the recent past, and populations continue to be threatened by anthropogenic impacts such as habitat destruction and the introduction of invasive species. Snail faunas of Hawaii, Samoa and French Polynesia have all experienced huge losses in native snail faunas with often up to 90% of described species now believed to be extinct (Cowie, 1992 and 2001). Overall, it is believed that 50% of the land snail fauna of the Pacific islands has disappeared in recent times (Lydeard *et al*, 2004).



Palau diplommatinid land snails. © Jesse Czekanski-Moir and Rebecca Rundell

3.2 Selection of priority taxa

This project was initially designed to carry out assessments for the Polynesia-Micronesia Hotspot as defined by the Critical Ecosystem Partnership Fund (CEPF, 2007) with a particular focus on snails from the Partulidae family. Partulids make up approximately 10% of the land snail fauna of South Pacific Islands, and it is only in the Society Islands that they make up a conspicuous component of the fauna (P. Bouchet, pers. comm. 2011). Therefore, it was apparent that the approach to focus only on Partulidae would be a missed opportunity for producing a set of meaningful data for Pacific Island land snails.

At the training workshop held in Fiji in February 2011, the contracted Specialists worked on a strategic approach for assessing Pacific Island land snails, which combined a mixture of taxon-based and geographic-based assessments. In other words, due to the limited but specialized expertise available, it was decided to focus on species in key taxa across the Pacific, as well as selected but standardized taxa at the country level. The taxa were selected because of a wide occurrence across the Pacific, the inclusion of many local endemics, and because they were reasonably well known taxonomically. The geographic-based assessments utilized the complementary knowledge of island-group faunas, whilst acknowledging that the Specialist and Expert network did not have the knowledge or resources to carry out assessments for the entire Pacific Islands region.

Assessments therefore focussed on Fiji and Palau geographically, and on completing assessments for as many wider-ranging families in these two countries as expertise and data allowed. This dual strategy allowed a robust, unbiased assessment of extinction threat among land snails in the Pacific.



Palau helicarionid snail © Jesse Czekanski-Moir and Rebecca Rundell

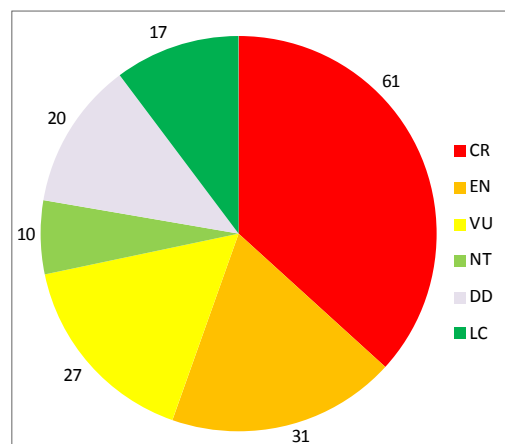
3.3 Conservation status of land snails

Assessments were carried out for 166 species of land snail native to the Pacific Islands of Oceania (Micronesia, Polynesia and Melanesia).

The majority of land snails (119 species or 72%) have been assessed as threatened (in categories Critically Endangered, Endangered and Vulnerable) as shown in Figure 3.1. 61 (37%) have been assessed as Critically Endangered – the highest level of threat that can be assigned to a species in the wild. 31 species (19%) have been assessed as Endangered and 27 species (16%) have been assessed as Vulnerable. Disturbingly, a large number of Critically Endangered species have also been assigned the tag of Possibly Extinct (PE). For these 23 species (e.g. *Aadonta angaurana*; *Diplommatina alata* and *Lauopa mbalavuana* to name a few), no live or dead shells have been found in recent years. Often they are known only from a single locality or the type specimen, and further surveys are urgently needed in order to determine whether or not these species are still extant. Unfortunately, optimism is generally low for most species, especially based on previous extinctions that have occurred throughout the Pacific. No species are listed as Extinct or Extinct in the Wild, although as stated above, a number of species do carry the tag of PE.

The majority of threatened species are assessed under Criterion B, which concerns a species' geographic range (see Figure 1.6). Most of these snails are endemic (often to single small islands) and have a very small (and usually declining) Area of Occupancy (AOO) and/or Extent of Occurrence (EOO). In addition, many are experiencing declines in the extent and quality of available habitat.

Figure 3.1: All species assessed by conservation status n=166



To which Category each species is assigned, depends on the size of the species' range, and the number of locations or islands the species is known from. For example, *Ouagapia ratusukuni* (Critically Endangered (B1ab(ii,iii))) is a Fijian endemic known from a single location with an EOO of less than 100km² in size, most of which is undergoing severe habitat decline in the form of deforestation and village settlements. *Placostylus kantavuensis* is listed as Endangered (B1ab(iii)+2ab(iii)): it is recorded from three locations on the island of Kadavu in Fiji, where its total EOO and AOO are less than 500 km². Its forest habitat is declining in quality because of introduced invasive species (rats and pigs) and due to the increase in human settlements and associated agricultural activities. *Palaina strigata* is listed as Vulnerable (B1ab(iii)+2ab(iii)): it has been recorded from eight different islands in Palau and although its AOO is smaller than some species' listed as CR (<30km²), the number of locations is greater and it qualifies for a lower Category of Threat.

Other species have been categorized using Criterion D, which refers to a small or restricted population. For example, *Videna pumila* was previously known from two islands in Palau: Peleliu and Ulong. However, recent surveys have only harboured a very small number of live specimens of this species on Peleliu and the species is therefore listed as CR (D). A number of species have been assigned the Category of Vulnerable under criterion D2. These species are known from a single small location, and are at risk from plausible future threats such as invasive species that could impact the species and drive it to CR or EX in a very short time – e.g. *Fijianella calciphila*, *Sinployea recursa* and *Zyxyx donta alata*.

A further ten species (6%) have been assigned the category of Near Threatened (NT). These species are close to qualifying for a threatened category. Seventeen species (10%) are listed in the lowest Category of threat – LC. These species are either widespread, occurring across numerous countries in the region (e.g. *Lamellida oblonga*, *Truncatella guerinii*) or widely occurring in a single country (e.g. *Omphalotropis cheynei* in Palau and *Placostylus morosus* in Fiji). Generally, the widespread distribution can be seen as affording the species' some protection from major threats.

Due to a lack of information, the extinction risk could not be evaluated for 20 species (12%), and these have all been categorized as Data Deficient (DD). Some DD species are only known from a single specimen (often from the original description) or very few specimens, and without basic or detailed information, it is impossible to assign a Category of threat to the species – e.g. *Palaina quadrata* and *Trochomorpha*

latimarginata. Other species such as *Partula carteriensis* from the Solomon Islands, are listed as DD due to taxonomic uncertainties – further study is required in order to determine whether or not these species are con-specific with others, or whether they are valid species.

The Red List Category of threat assigned to each of the 166 assessed species is given in Appendix 2. This Appendix also lists other land snail species assessed prior to 2011 as part of other projects: in total, 395 species of terrestrial land snails have now been assessed for inclusion on the IUCN Red List.

3.4 Spatial distribution of land snails

3.4.1 Species richness

Figure 3.2 shows the number of species assessed by country and by conservation status. However, as the majority of assessments focussed on Fiji and Palau (95 and 56 species respectively), it is difficult to make generalizations for Melanesia, Micronesia or Polynesia: most other countries in the region have had assessments completed for less than ten species (an average of seven).

Maps of species richness have been produced for Fiji and Palau as these are the countries where the majority of assessments focussed - see Figure 3.4. In Fiji, the highest concentration of different species are seen on the island of Viti Levu (especially in the centre) and in the Lau group. Whilst this could be indicative of a natural higher diversity, these areas have also been sampled more frequently. In Palau, diversity is fairly uniform throughout the archipelago, although the large island of Babeldaob in the north and the island of Ulong to the west do contain a lower number of records. As the islands have been surveyed extensively in recent times, this lower diversity could be indicative of threats acting on snail populations there.



Palau diplommatinid land snail.
© Rachael Orben and Rebecca Rundell

3.4.2 Distribution of endemic species

Of the 166 land snails, 143 (86%) are endemic to a single country in the region: 72 of these are endemic to Fiji and 52 to Palau. The 16 endemic species assessed from other countries are seen in Table 3.1. Most species are endemic to single islands or even single ridges, especially on the high islands of the region. Figure 3.3 shows the total number of endemic species and their conservation status, and also compares the threat

status for endemic species from Fiji and Palau. However, not all land snails are so narrowly endemic: species can loosely be divided into two groups: those found on low islands and the shore zone of higher islands; and those found in forest habitats of high islands. The former tend to have a wider distribution, dominating coral atolls and other low islands in the Pacific (Cooke, 1928; Solem, 1959). Such regional endemics are seen in Table 3.1.

Figure 3.2: All species assessed by country and conservation status

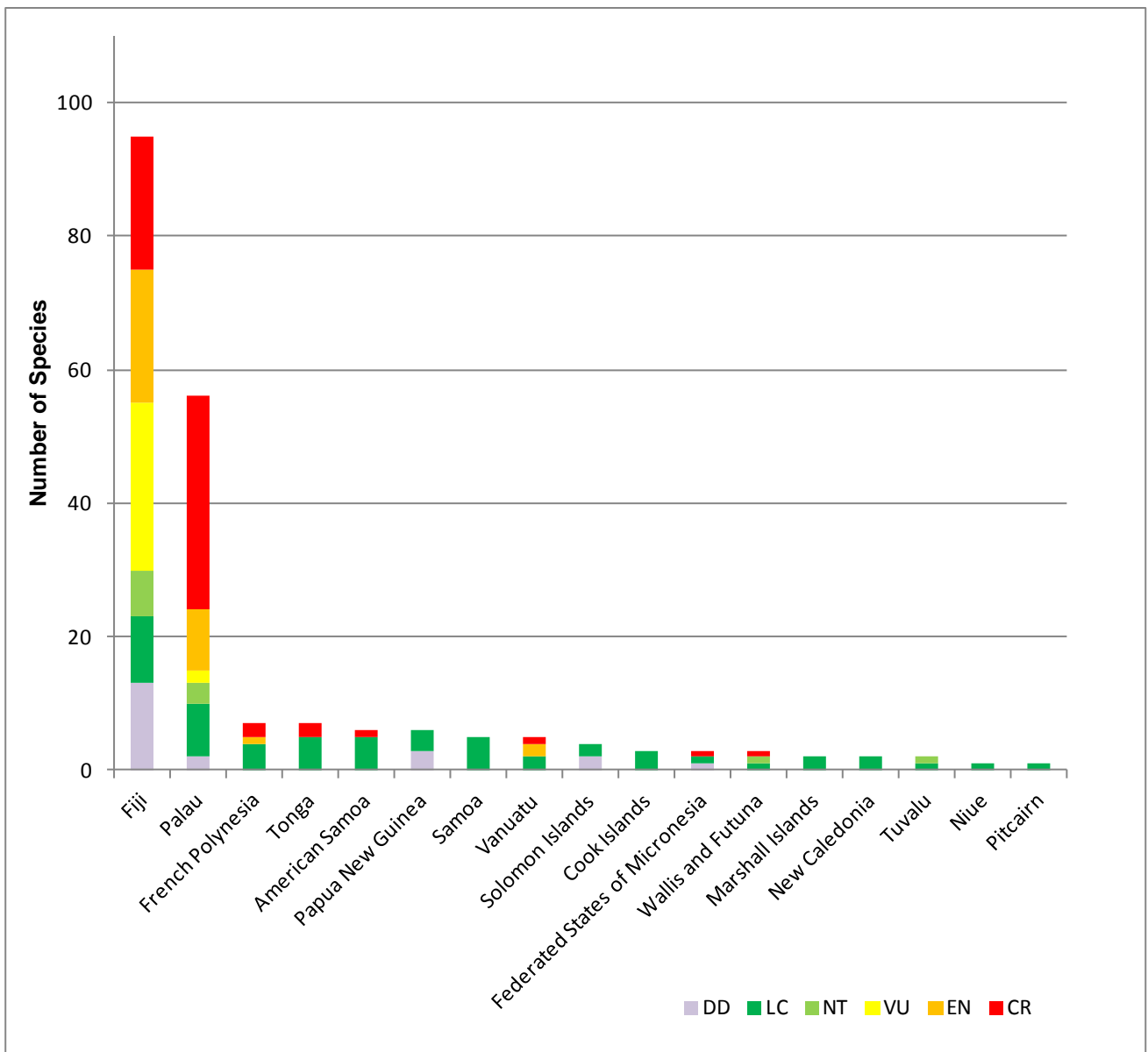


Figure 3.3: Number of endemic species assessed

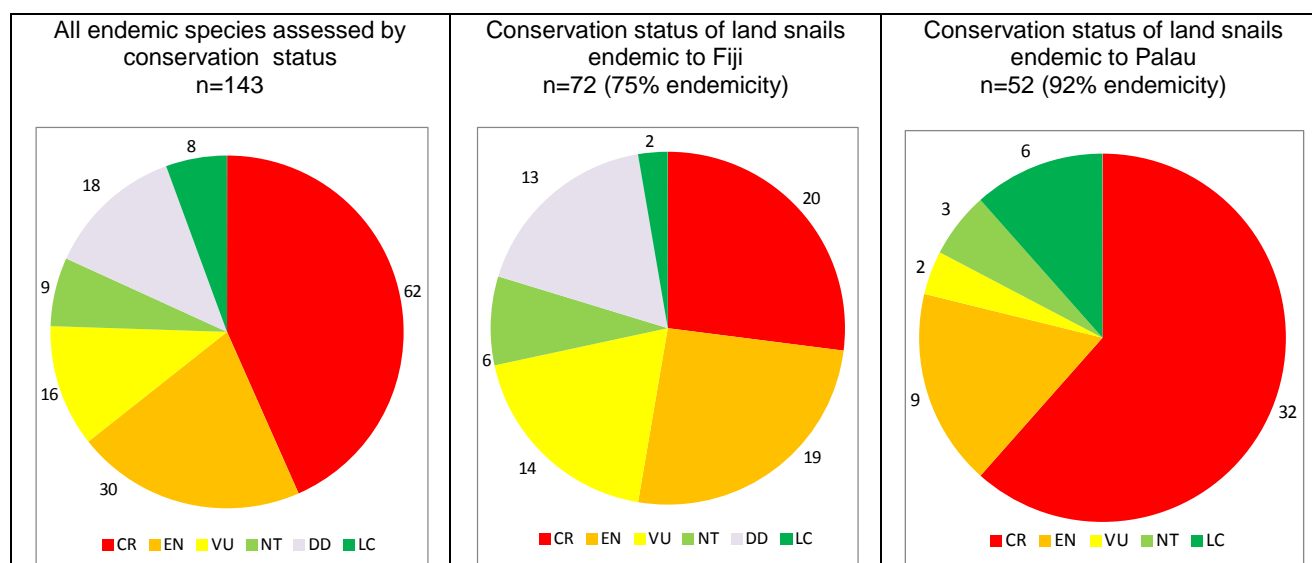
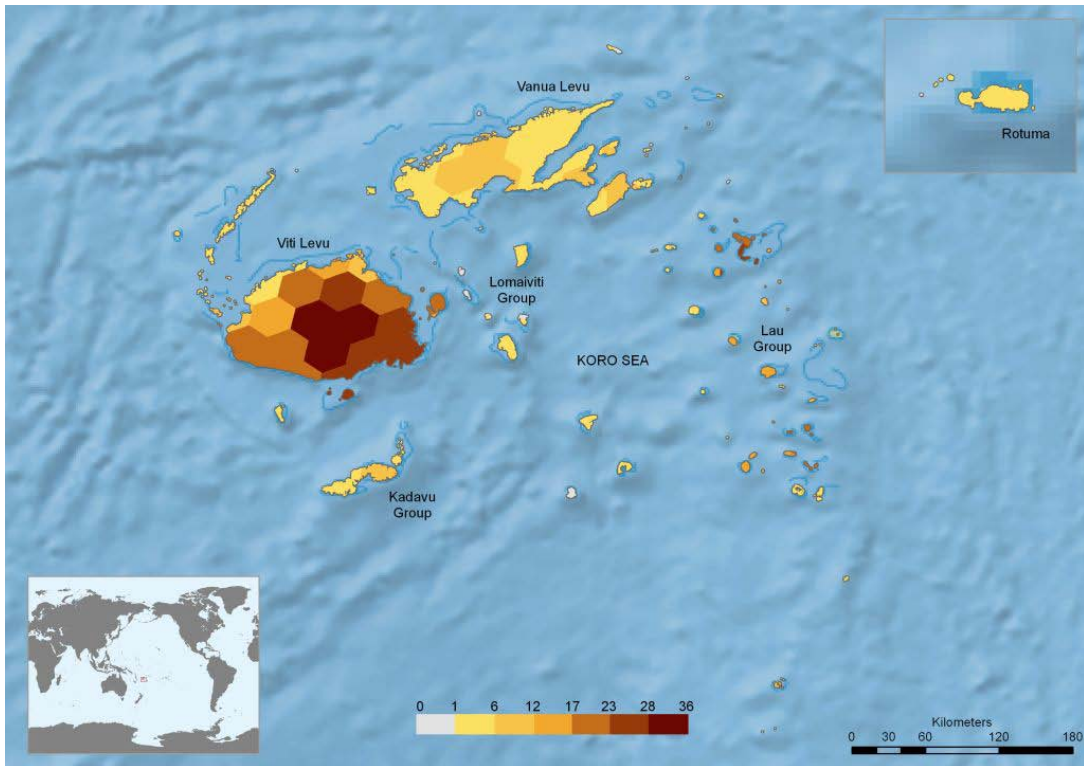


Table 3.1: Endemic species assessed

	Melanesia			Micronesia			Polynesia							Red List Cat.			
	PG	SB	VU	FJ	FM	MH	PW	AS	PF	TO	WF	CK	TV		NU	PN	WS
<i>Eua globosa</i>											x						CR
<i>Partula auraniata</i>			x														EN
<i>Partula carteriensis</i>	x																DD
<i>Partula coxi</i>		x															DD
<i>Partula cramptoni</i>		x															DD
<i>Partula dorseyi</i>	x																DD
<i>Partula emersoni</i>					x												CR
<i>Partula guamensis</i>					x												CR
<i>Partula milleri</i>			x														CR
<i>Partula similaris</i>	x																DD
<i>Partula subgonochila</i>											x						CR
<i>Samoana abbreviata</i>								x									CR
<i>Samoana burchi</i>									x								CR
<i>Samoana cramptoni</i>										x							CR
<i>Samoana diaphana</i>									x								EN
<i>Samoana meyeri</i>									x								CR
Regional endemics																	
<i>Lamellidea oblonga</i>				x				x	x			x	x		x	x	LC
<i>Lamellidea pusilla</i>		x	x	x		x	x	x	x	x		x		x		x	LC
<i>Omphalotropis bifilaris</i>				x				x		x						x	LC
<i>Omphalotropis moussoni</i>				x						x							LC
<i>Omphalotropis parva</i>				x						x	x						LC
<i>Omphalotropis zelriolata</i>				x							x		x				NT
<i>Ouagapia perryi</i>			x	x													EN
<i>Partula micans</i>	x	x															LC

Figure 3.4: Species richness distribution for Fiji and Palau

Fiji species richness



Palau species richness

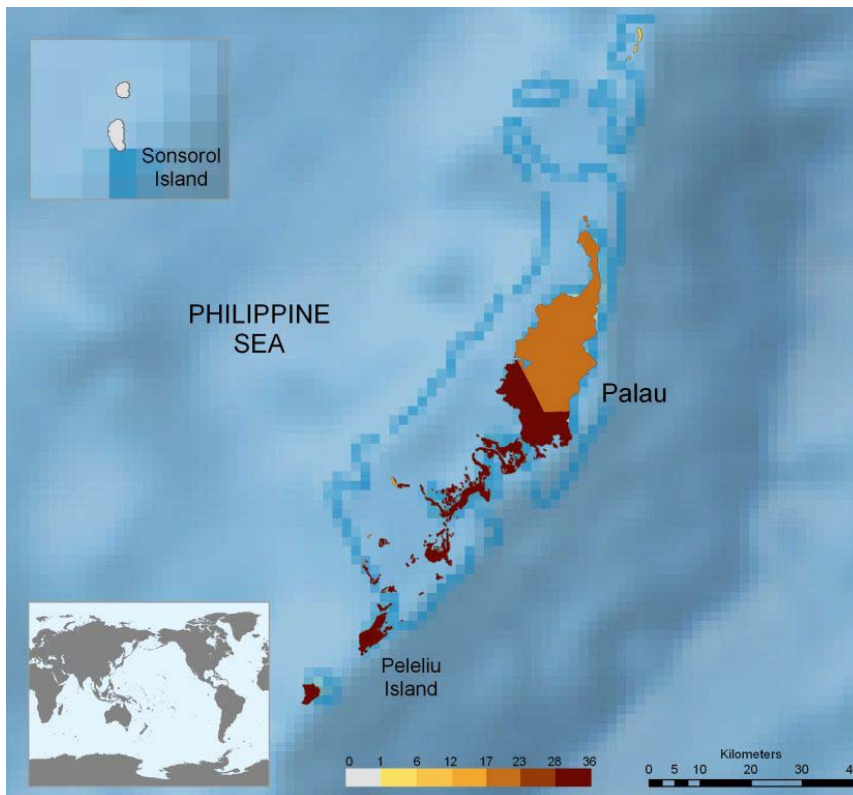
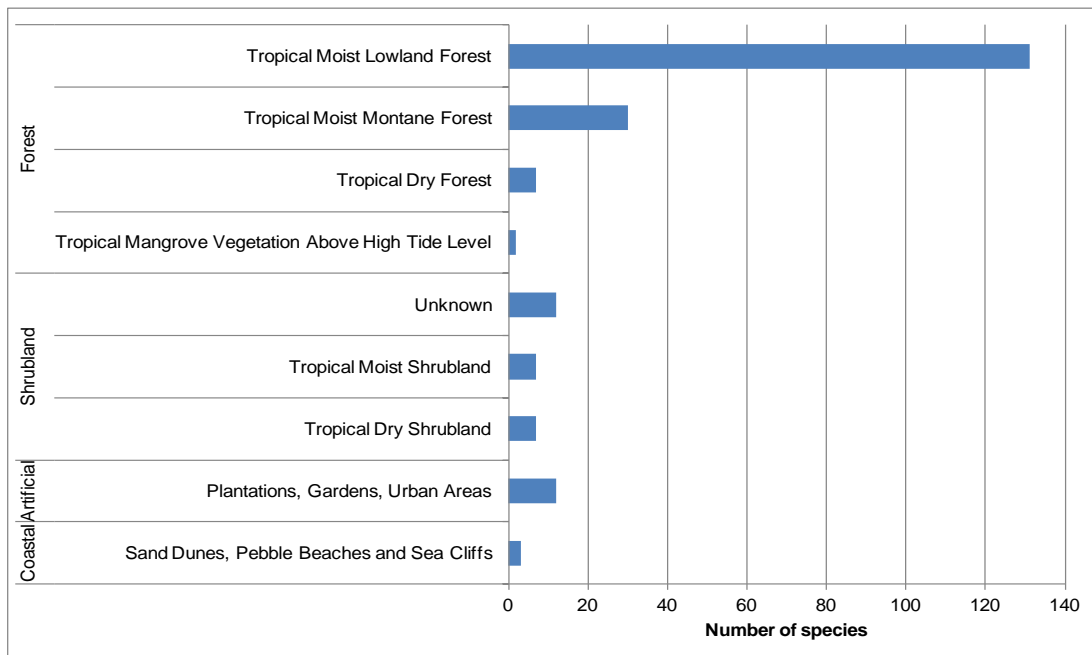


Figure 3.5: Major habitat types for land snails



3.4.3 Distribution by habitat

Of the assessed species, the overwhelming majority are confined to tropical moist forest habitats, particularly lowland forests – see figure 3.5. A small proportion of species are found in other habitats, such as shrublands, dry forests and other areas inhabited by humans (e.g. gardens and urban areas). These latter areas are generally inhabited by wider-ranging Least Concern species, which are more tolerant to habitat disturbance and therefore able to survive in a variety of habitats.

3.5 Major threats to land snails

The major threats to each species were coded using the IUCN Threats Classification Scheme (see <http://www.iucnredlist.org/technical-documents/classificationschemes>). The major threats are seen in Figure 3.6.

Biological Resource use

Many species of land snail are affected by the destruction, modification or loss of their native forest habitat. This destruction of forests for intentional or unintentional use of timber and forest products (including logging) is a major threat to land snails assessed by this project – just over half of all species (87 species) are affected by biological resource use resulting in a loss of their forest habitat.

Agriculture (non-timber crops, livestock)

Many species are subjected to habitat loss through deforestation for various agricultural activities. Some species are affected by the practice of shifting cultivation of non-timber crops

for subsistence purposes – for example *Delos gardineri* (CR), a Fijian endemic from the island of Rotuma; and *Omphalotrophis subsoluta* (EN), from the Fijian Lau group, which is experiencing ongoing pressure from human activities, especially for subsistence food production. Other species are affected by the clearing of land for the raising of livestock: for example, *Placostylus graeffei* (EN) from Viti Levu, whose forest habitat is cleared for cattle grazing

Invasive species

The invasive Giant African snail (*Achatina fulica*), Rosy wolf snail (*Euglandina rosea* – see Figure 3.7) and *Gonaxis spp.* are threats to land snails throughout the Pacific. The Giant African snail breeds prolifically and has the potential to displace indigenous land snails. In an ill-conceived biological control programme initiated in the 1950s, the predatory Rosy wolf snail and *Gonaxis spp.* were introduced to many Pacific Islands to control the Giant African snail, with devastating consequences for indigenous land snail faunas (Cowie, 2001 and Barker and Efford, 2004). The predatory flatworm, *Platydemus manokwari*, of New Guinea origin, also continues to spread throughout the Pacific, impacting adversely on land snail communities (ISSG, 2011).

Many islands (e.g. the larger Fijian Islands of Vanua Levu, Viti Levu and Ovalau) have introduced predatory mammals: of immediate concern are Pacific rat (*Rattus exulans*), black rat (*Rattus rattus*), the mouse (*Mus musculus*) and mongooses (*Herpestes fuscus* and *H. auropunctatus*) - both Indian carnivorous mammals. Various invasive ant species such as

the Yellow crazy ant are also of concern. Domestic fowl (*Gallus gallus domesticus*) and both domestic and feral pigs (*Sus scrofa*) are additional pressures through predation and disturbance of the forest floor litter.

Urban and residential development, including tourism

For species that are found in the more densely human populated islands of the region, land clearance and alteration due to developmental pressures are a common threat. The construction of roads, building of homes and businesses and associated services require the conversion and often destruction of native forest areas. In Palau, the construction of the paved Compact Road around the large island of Babeldaob has placed the habitat of many species' under direct threat from forest clearance or modification – this is especially true for species that are restricted to

single or few localities – e.g. *Palaina rubella* (CR). In coastal areas of some islands, the development of tourism services is also a threat – e.g. *Fijiopoma liberata* (EN) found on the most densely populated Fijian island of Viti Levu in low elevation coastal areas popular with visitors.

Other threats: Wars

Land snails recorded from the Palauan islands of Koror (Oreor) and Peleliu (Beliliou) such as *Pseudopalaina polymorpha* (CR) and *Kubaryia pilikia* (CR), were impacted strongly during the World Wars. Much of the native forest on these islands was destroyed or substantially modified by human habitation during the World War II and post-WWII era, and these impacts were significantly accelerated by bomb-induced destruction (Hinz, 1995; Crombie and Pregill, 1999).

Figure 3.6: Major threats to land snail species

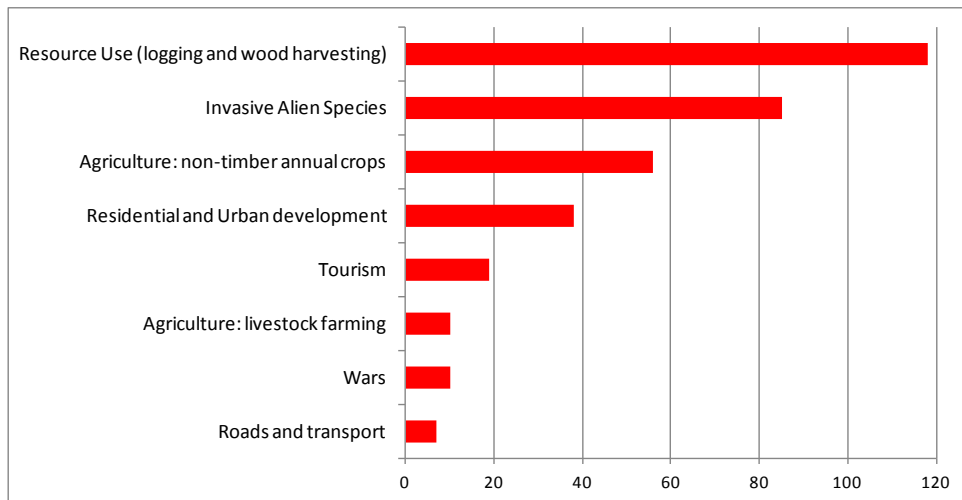


Figure 3.7: Examples of invasive species impacting land snail populations in the Pacific Islands



Rattus exelans © LR Heaney/The Field Museum



H. auropunctatus (Indian mongoose) in Viti Levu, Fiji © Helen Pippard

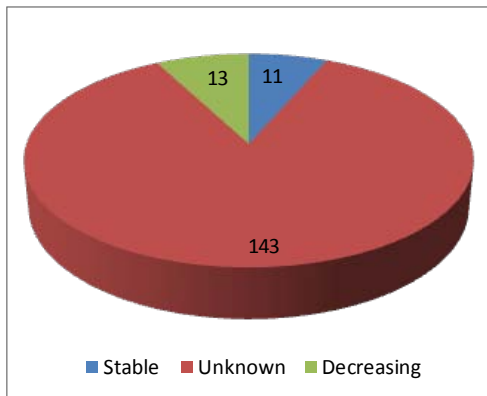


Rosy Wolf Snail © Bill Frank www.biosecurity.govt.nz

3.6 Population Trends

Being able to determine a species' population trend is critical to assessing a species' conservation status. Approximately 8% of species assessed are thought to be declining and 6% are considered stable, as seen in Figure 3.8. No populations were thought to be increasing. However, due to the large number of species for which there are no population data on size or trends, the trends for over three quarters of the snail species assessed are unknown.

Figure 3.8: Population trends



3.7 Research and conservation needs

As part of each species assessment, research and conservation actions were identified: these are summarized in Figures 3.9 and 3.10. The majority of species require further research and survey work to clarify their population size, distribution and trends. This is due in many cases to the lack of recent records of the species and the need to ascertain whether or not a species is in fact still extant - a third of all species assessed as Critically Endangered also carry the tag "Possibly Extinct".

In terms of conservation action, monitoring of habitat trends and ensuring that habitats are protected are the major priorities for land snail conservation. This is to be expected given the severe impacts experienced by the destruction, removal or modification of forest habitats. The control and/or eradication of invasive species is also seen as a high priority. Again, this reflects the high proportion of land snails that are being negatively impacted by the presence of invasive species.

Figure 3.9: Research and monitoring needs

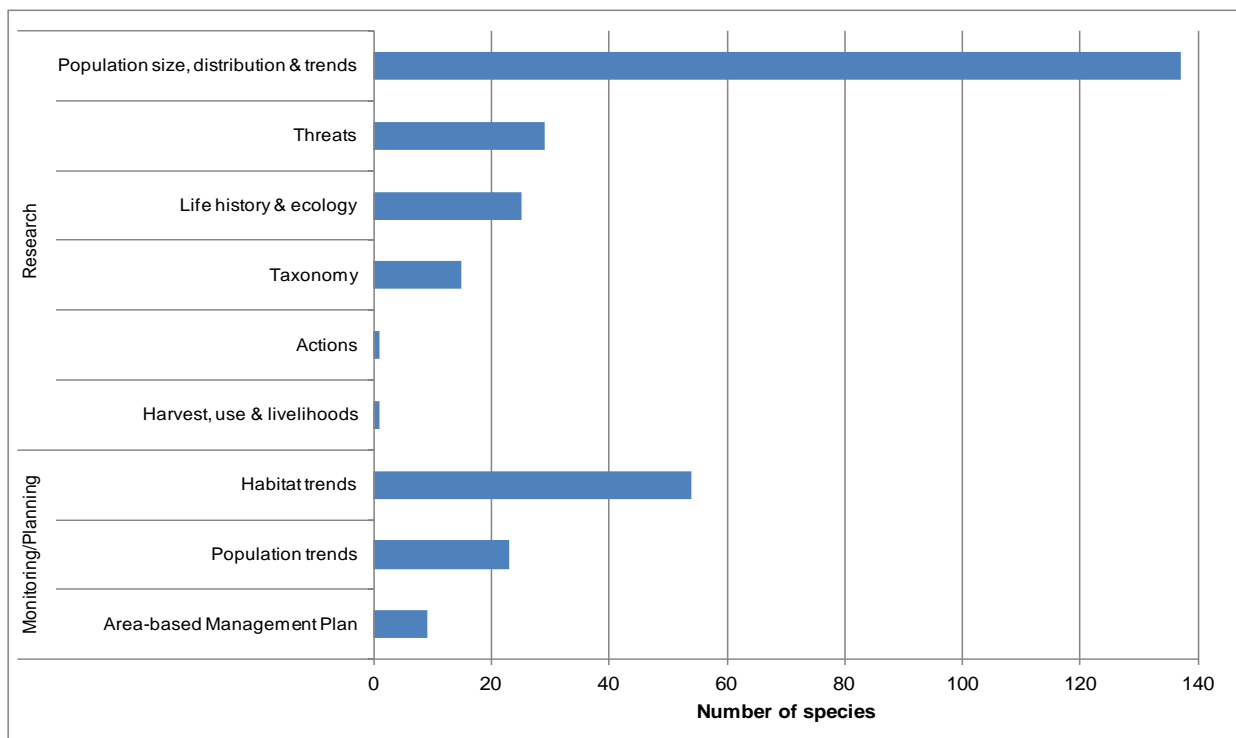
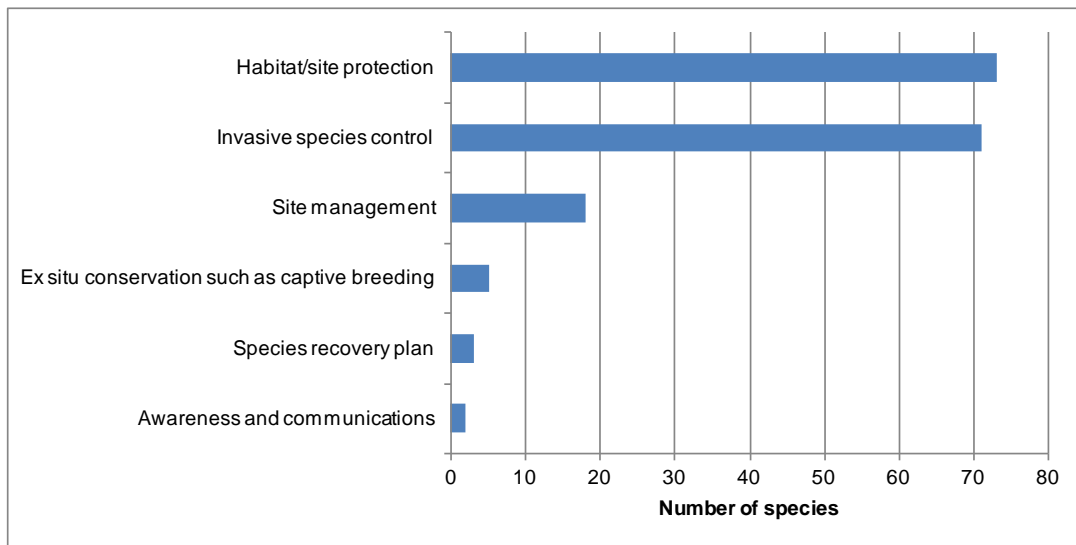


Figure 3.10: Conservation Actions identified from species assessments



3.8 Conclusions

By analyzing the identified threats, actions can be suggested to enable us to move towards better protection of land snails and their habitats in the Pacific Islands.

3.8.1 Recommendations to address threats

The following conservation recommendations are suggested, which attempt to address the major threats identified:

- Modification of habitat (including biological resource use and agriculture) To protect species from habitat modification and destruction, stakeholders should be educated in sustainable biological resource use and relevant legislation to protect, wisely utilize and conserve habitats should be developed and implemented.
- Invasive species Accidental introductions (and distribution to different localities) are increasingly likely throughout the Pacific, due to the transport of soil and organic debris (where snail eggs may be present), plants and produce. Future introductions of invasive species should be prevented by ensuring increased biosecurity vigilance at land, air and sea entry points throughout the Pacific.

- Urban and residential development Relevant laws and policies, including environmental impact assessments, should be adopted to ensure best practice in any urban, tourism or large-scale residential developments.

3.8.2 Recommendations for future work

To fill the remaining gaps in our knowledge, and to monitor any changes, stakeholders should work to:

- Carry out further research on population, threats, ecological requirements, and taxonomy, for species not included in this project, and especially for Critically Endangered (Possibly Extinct) and Data Deficient species, and in areas less well studied. This will enable the production of a comprehensive dataset for land snails across the entire Pacific Islands region.
- Regularly revise the data for land snails assessed, in order to monitor the changing status of populations and to ascertain whether any recommended conservation measures put in place are working.
- Examine species' distributions in more detail in order to identify key priority areas for conservation and protection of land snails and their habitats.

Chapter 4: The status and distribution of Reptiles in the Pacific Islands

4.1 Diversity of Pacific Island reptiles

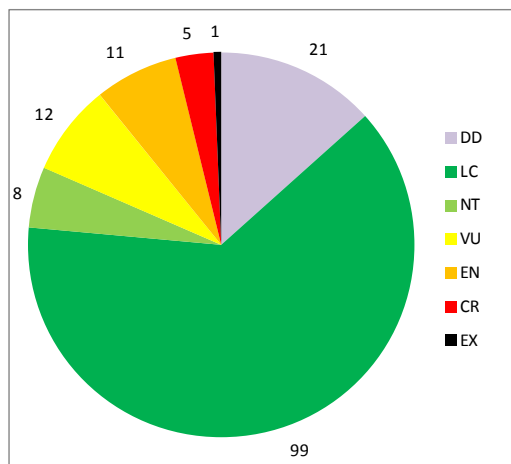
Uetz (2012) estimates approximately 432 species of reptile to be found in the Pacific Islands. Species richness is highest on the island of New Guinea: Papua New Guinea contains over 250 species. In general, species richness decreases from New Guinea eastwards: through Melanesia, 115 species are recorded in New Caledonia, 98 in Solomon Islands, 43 in Fiji and 38 in Vanuatu. Richness decreases further into Polynesia, east of Fiji and Tonga (Bauer, 1988; Allison, 1996). Tonga, Samoa and Cook Islands all contain less than 30 species.

Species diversity on isolated and small islands throughout the region is always low – e.g. in the atoll countries of Nauru, Tuvalu and Niue, which have ten, seven and four recorded reptiles respectively, the majority of which are marine turtles or snakes. It is clear that the composition of an island's reptile fauna is largely due to its size, topography, age and distance from New Guinea – the major source of reptiles in the Pacific (Allison, 1996).

4.2 Selection of priority taxa

Assessments for reptiles focussed on species found throughout the Pacific Islands, with particular attention to endemic species. The majority of accounts concentrated on the Melanesian countries (especially Papua New Guinea and Solomon Islands) where a greater amount of expertise was available and where more known records exist. Where expertise allowed, species recorded from Polynesia and Micronesia were also assessed, as were some wider-ranging species.

Figure 4.1: All species assessed by conservation status
n=157



4.3 Conservation status of reptiles

This project carried out assessments for 157 species of reptiles native to Micronesia, Polynesia and Melanesia. In the Red List update of October 2012, twenty of the assessed reptile species have been included – these are highlighted in Appendix 1. For the remaining reptiles, no major changes are envisaged, however it must be noted that the assigned Categories and Criteria presented in this report remain provisional and could potentially change prior to their publication on the Red List (expected during 2013). Appendix 1 highlights the Red List Category of threat assigned to each assessed species, and indicates whether or not the assessment is currently published.

The majority of reptiles (99 species or 63%) have been assessed as Least Concern (LC) - see Figure 4.1. Generally, these species are widely distributed with no known major threats, and therefore have a lower risk of extinction. 28 species (17%) have been classified as threatened (in categories Critically Endangered (CR), Endangered (EN) and Vulnerable (VU)). Five species have been assessed as Critically Endangered – the highest level of threat that can be assigned to a species in the wild; 11 species have been assessed as Endangered and 12 species have been assessed as Vulnerable. A further eight species (5%) have been assigned the category of Near Threatened (NT). These species are close to qualifying for a threatened category. Due to a lack of information (such as very few known records, or little data available on population size and distribution), the extinction risk could not be evaluated for 21 species (13%), and these have been categorized as Data Deficient (DD). One species (*Tachygia microlepis* from Tonga) has been listed as Extinct.



Emoia concolor (NT) Endemic to Fiji © Helen Pippard

4.4 Spatial distribution

4.4.1 Species richness

Figure 4.2 shows the number of species assessed by country and by conservation status. Geographically, the highest diversity of reptiles is seen in the west of the region (Melanesian countries) and generally declines eastwards from

Micronesia into Polynesia as seen in Figures 4.3 and 4.4. Whilst this distribution pattern is expected, some of the observed variation in species richness may be due to differences in sampling intensity and expertise: more data have been collected in the Melanesian islands, especially Papua New Guinea and Solomon Islands.

Figure 4.2: All species assessed by country and conservation status

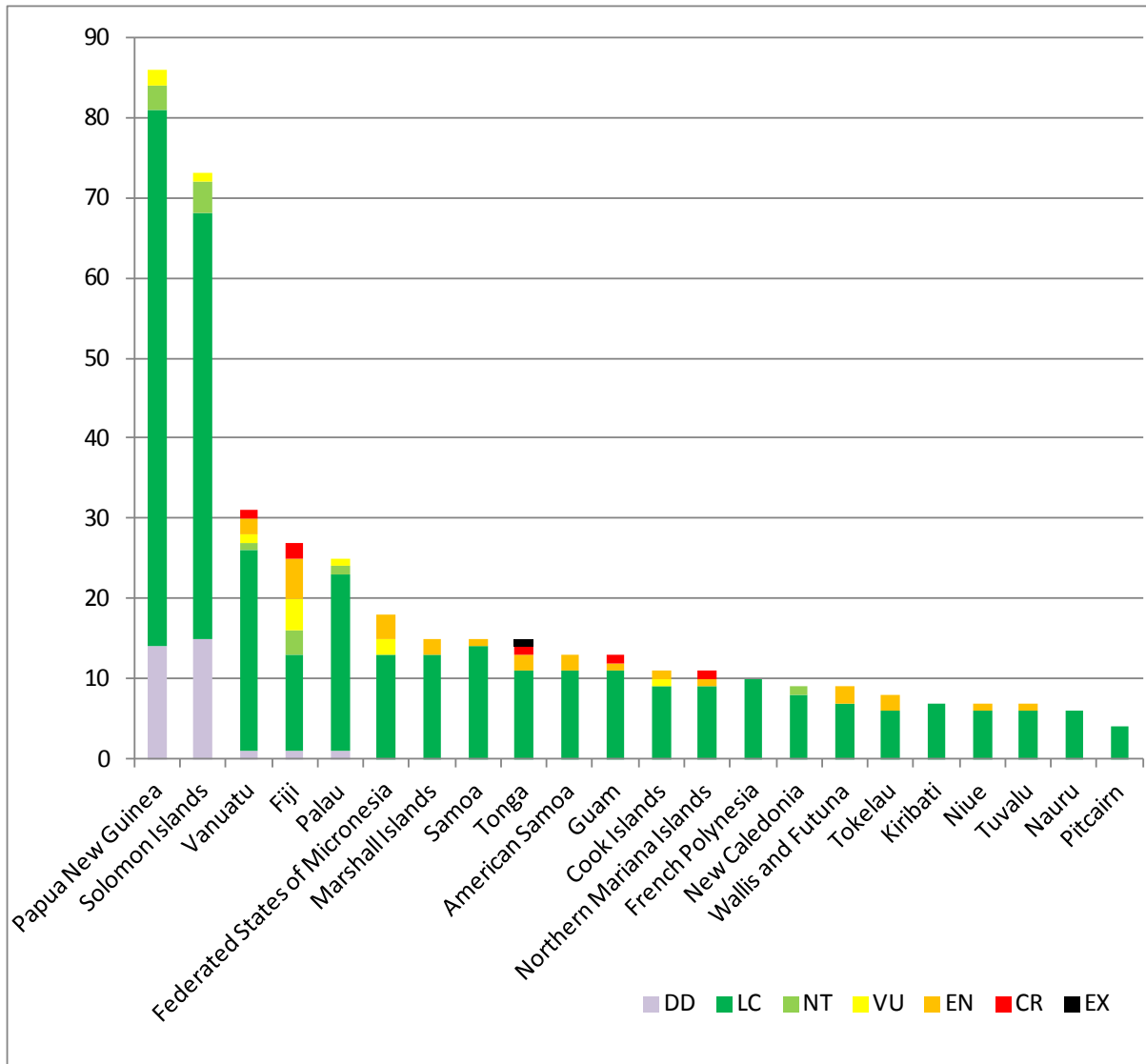


Figure 4.3: Species Richness maps for Melanesia and Micronesia

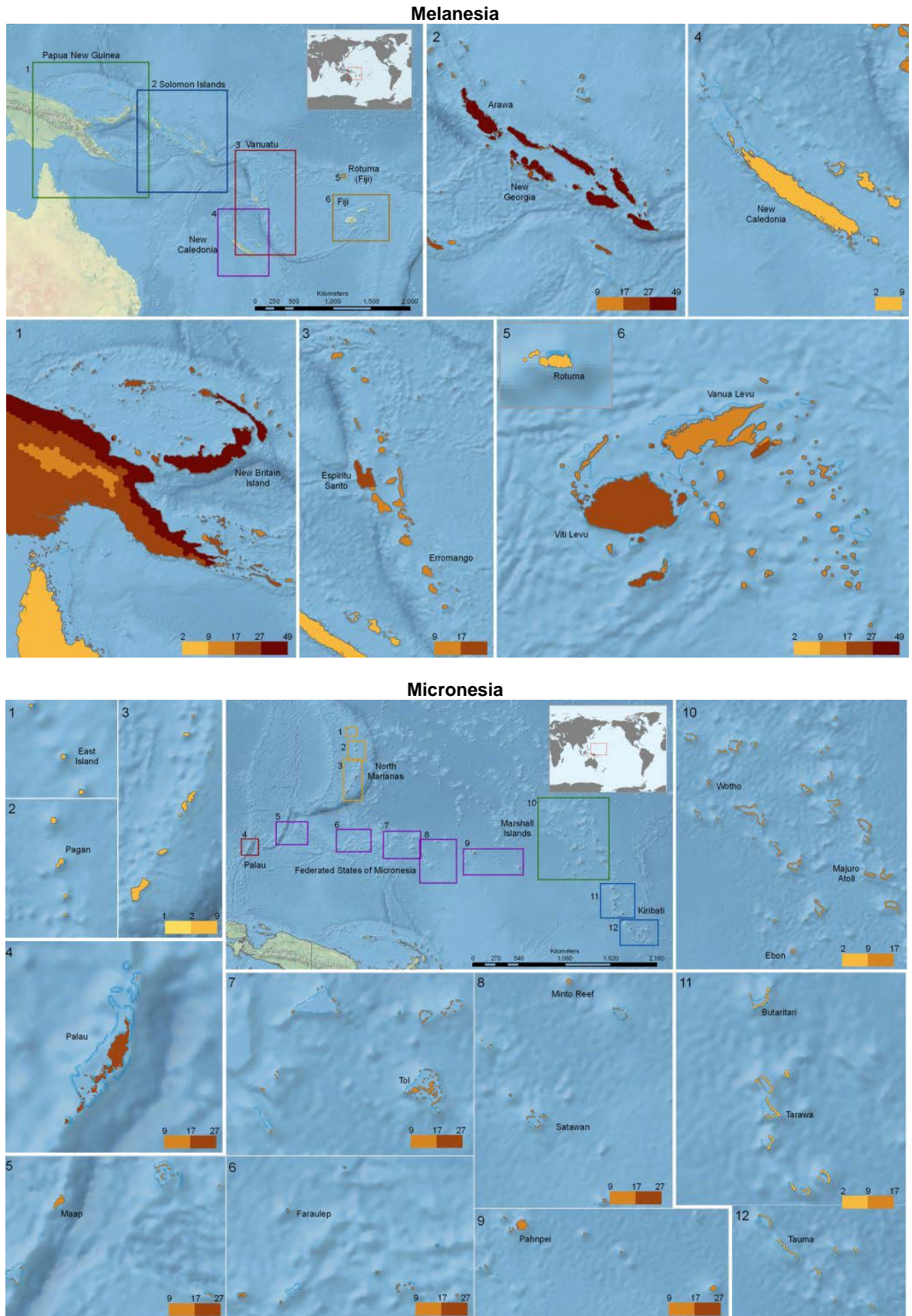
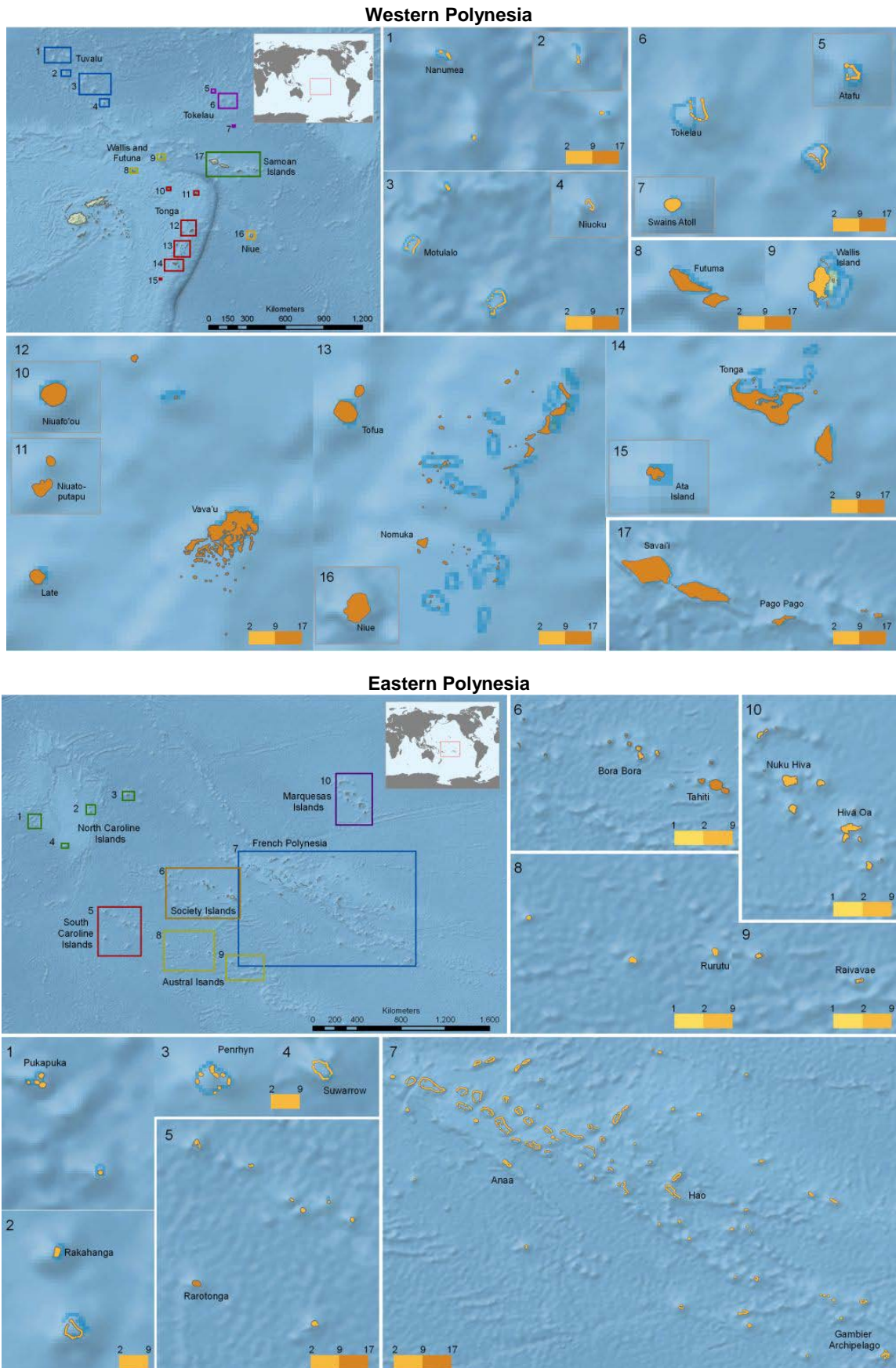


Figure 4.4: Species Richness maps for Western and Eastern Polynesia



4.4.2 Endemic species

Of the 157 assessed reptiles, 66 (42%) are endemic to a single country in the region. Figure 4.5 shows the assessed endemic species by conservation status, whilst Figure 4.6 shows the number of assessed endemic species by country and conservation status. By country, Papua New Guinea contains the highest number of assessed endemic species, whilst Fiji, Vanuatu and Tonga contain the highest number of endemic threatened species. A further 50 species (31%) are regionally endemic to the Pacific Islands as seen in Figure 4.7. Over half of these are found only in the Solomon Islands and Papua New Guinea: *Acutotyphlops infralabialis*, *Acutotyphlops kunuaensis*, *Acutotyphlops solomonis*, *Bothrochilus boa*, *Corucia zebrata*, *Cyrtodactylus salomonensis*, *Dendrelaphis salomonis*, *Emoia flavigularis*, *Emoia pseudocyanura*, *Geomyersia glabra*, *Hypsilurus longi*, *Lepidodactylus mutahi*, *Lepidodactylus woodfordi*, *Parapistocalamus hedigeri*, *Ramphotyphlops depressus*, *Ramphotyphlops mansuetus*, *Salomonelaps par*, *Sphenomorphus concinnatus*, *Sphenomorphus cranei*, *Sphenomorphus fragosus*, *Sphenomorphus tanneri*, *Sphenomorphus taylori*, *Sphenomorphus transverses*, *Tribolonotus blanchardi*, *Tribolonotus ponceleti*, *Tribolonotus pseudoponceleti*, *Varanus spinulosus*.

Figure 4.5: Endemic species assessed by conservation status
n=66

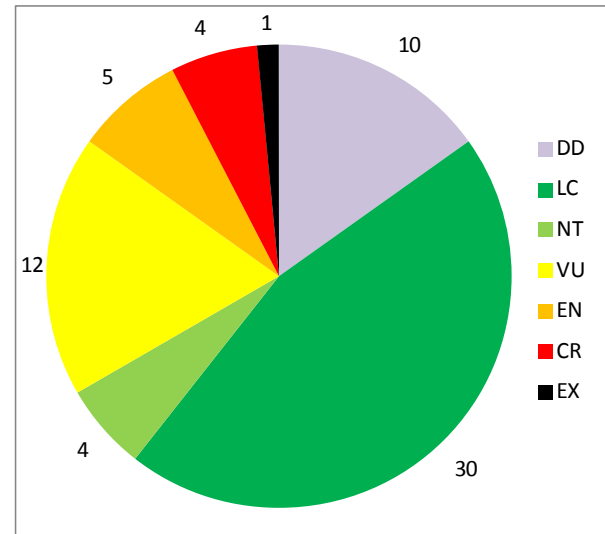


Figure 4.6: Number of endemic species by country and conservation status

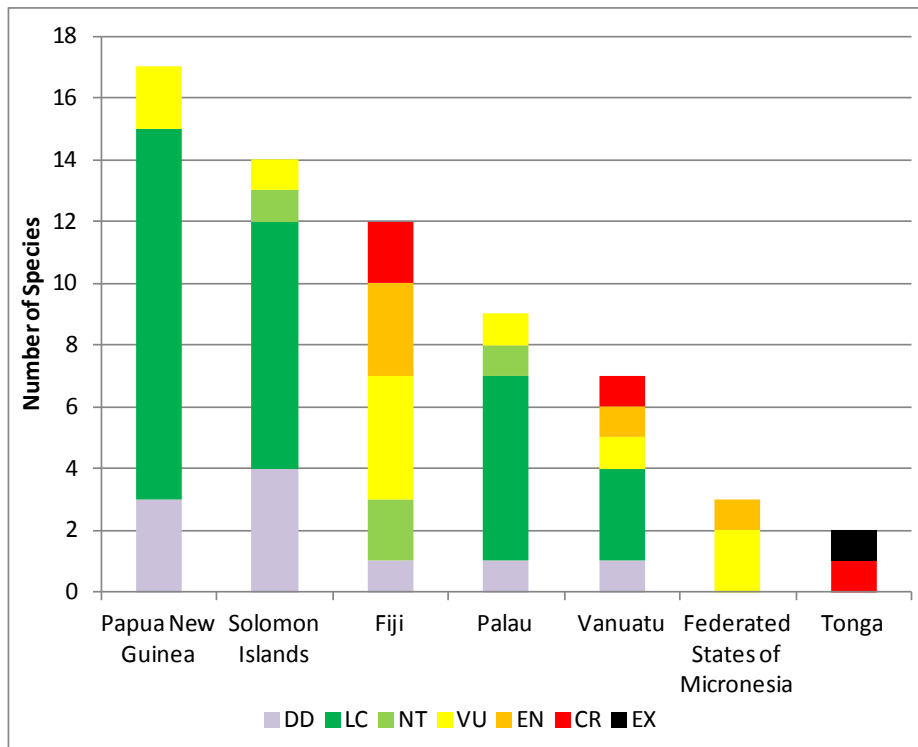


Figure 4.7: Regionally endemic species

	Melanesia					Micronesia					Polynesia									
	PG	SB	VU	FJ	NC	PW	MP	GU	MH	FM	TO	WS	AS	WF	NU	NR	TK	TV	CK	PF
<i>Emoia cyanogaster</i>	x	x	x																	
<i>Lepidodactylus guppyi</i>	x	x	x																	
<i>Emoia rufilabialis</i>		x	x																	
<i>Emoia sanfordi</i>		x	x																	
<i>Nactus multicaudatus</i>		x	x																	
<i>Emoia taumakoensis</i>		x	x																	
<i>Gehyra vorax</i>			x	x	x															
<i>Caledoniscincus atropunctatus</i>			x		x															
<i>Eugongylus albobasialis</i>	x	x								x										
<i>Emoia nigra</i>	x	x	x	x							x	x	x							
<i>Brachylophus fasciatus</i>				x							x									
<i>Emoia trossula</i>				x										x						
<i>Nactus pelagicus</i>			x	x	x	x		x			x	x	x		x		x		x	x
<i>Candoia bibroni</i>		x	x	x	x						x	x	x	x			x			
<i>Emoia boettgeri</i>									x	x										
<i>Emoia slevini</i>							x	x												
<i>Lepidodactylus moestus</i>						x			x	x										
<i>Emoia amoensis</i>						x			x	x						x				
<i>Emoia adspersa</i>												x	x	x			x	x		
<i>Emoia lawesi</i>											x		x		x		x			
<i>Emoia samoensis</i>												x	x							
<i>Emoia tongana</i>											x	x		x						

*not including the 27 species found in Solomon Islands and Papua New Guinea as highlighted in the text.



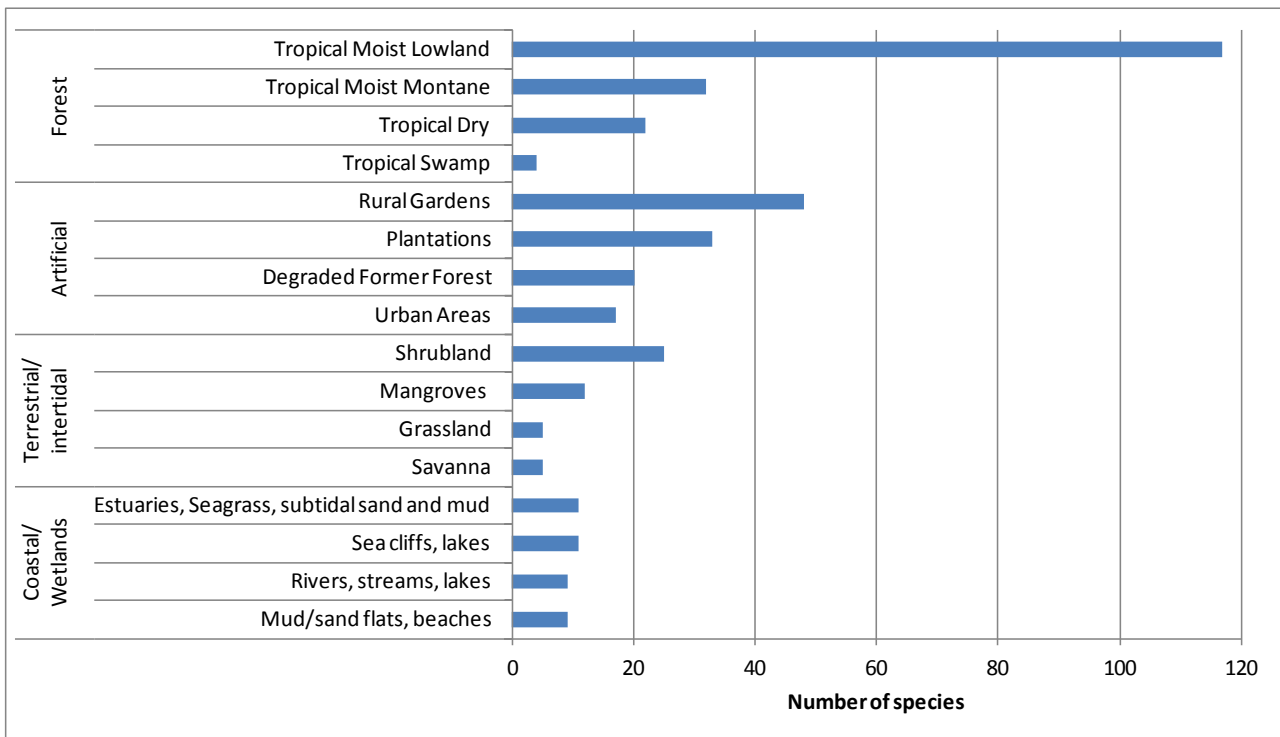
Dendrelaphis salomonsis, DD. Endemic to the Solomon Islands © Bishop Museum/Fred Kraus

4.4.3 Distribution by habitat

Of the assessed species, the overwhelming majority are confined to tropical moist forest habitats, particularly lowland forests - see Figure 4.8. Many species are found in more disturbed areas inhabited by humans, such as gardens, plantations, degraded forests and urban areas – these areas generally contain wider-ranging Least

Concern species, which are more tolerant to habitat disturbance and therefore able to survive in a variety of different environments - Figure 4.8 displays the number of species recorded in each habitat type, and shows that some species are able to survive in a variety of habitats and ecosystems.

Figure 4.8: Species distribution by major habitat



4.5 Major threats to reptiles

The major threats to each species were coded using the IUCN Threats Classification Scheme (see <http://www.iucnredlist.org/technical-documents/classificationschemes>) and are summarized in Figure 4.9.

Invasive species

Island ecosystems are especially vulnerable to the impacts of invasive alien species, being highly specialized, small, and defenceless against introduced species. Many islands have introduced predatory mammals: e.g. Pacific rat (*Rattus exulans*), black rat (*Rattus rattus*), mouse (*Mus musculus*) and mongooses (*Herpestes fuscus* and *H. auropunctatus*). Domestic pigs, goats and feral cats are also of concern, especially to small reptiles. The spread of invasive plants can also have a detrimental impact on preferred forest habitats.

Biological resource use - logging

Many species are affected by the destruction, modification or loss of their native forest habitats. This destruction of forests for intentional or unintentional use of timber and forest products (including logging) is a major threat – approximately one third of all species (53 species) are affected by humans utilizing timber and consequently causing loss or degradation to forest habitats.

Biological resource use - hunting

Some reptiles are sought after in the pet trade (e.g. snakes such as the Pacific Island Boa, *Candoia bibroni* (LC). Often animals are exported but sometimes they are held captive in their country of origin – for instance the Fijian Crested Iguana, *Bracylophus vitiensis* (CR), which has been seen at resorts in Fiji. Other reptiles are persecuted by humans, who are frightened of them - this is especially true of snakes such as the Palau bevel-nosed Boa, *Candoia superciliosa* (LC).

Agriculture

Many species are subjected to habitat loss through deforestation for various agricultural activities. Some species are affected by the practice of shifting cultivation of non-timber crops for subsistence purposes; others are affected by the clearing of land for the raising of livestock, and by the burning and conversion of land for plantations.

Urban, residential and tourism development

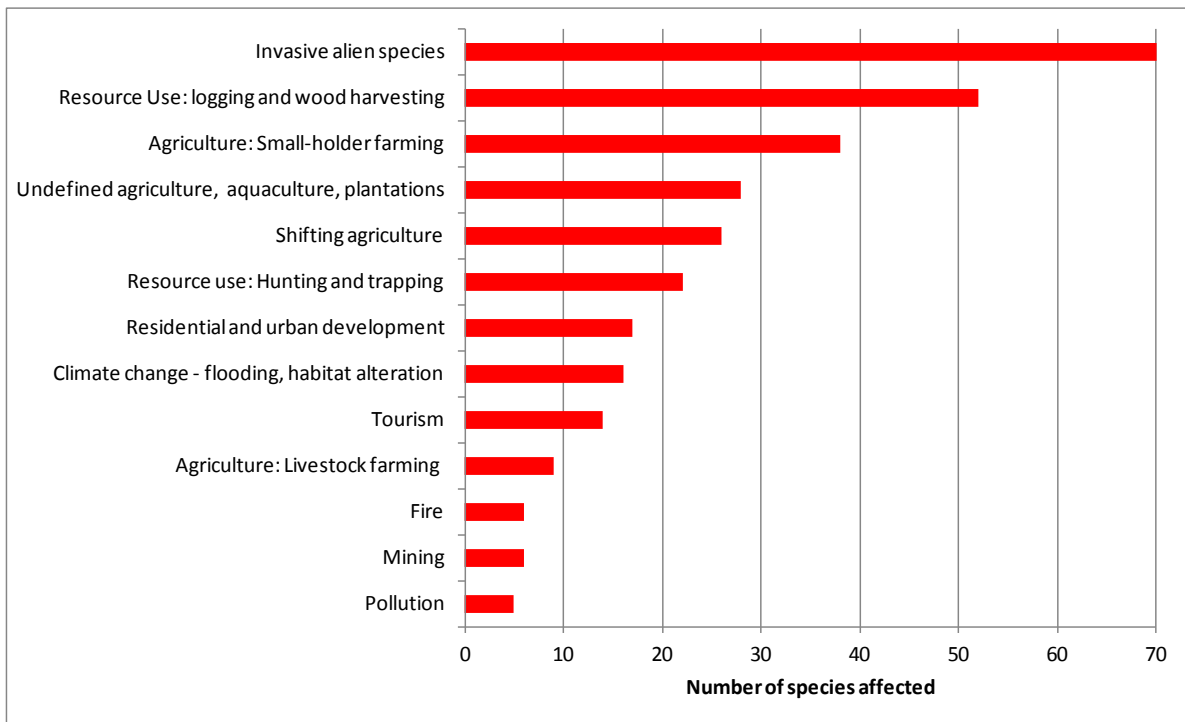
For reptiles found in the more densely human populated islands of the region, land clearance due to developmental pressures is a threat. The construction of roads, building of homes and

village expansion, requires the conversion and often destruction of native forest areas. In coastal areas of higher islands and on smaller islands, the development of tourism services is also a threat.

Climate Change

Reptiles may be affected by alteration of habitats or flooding as a result of climatic changes. As reptiles are so temperature-dependent, any changes in climate and air temperature could negatively impact populations: for instance, temperature increases could affect reproductive biology and thermo-regulation, thus impacting reptile distribution, physiology and behaviour.

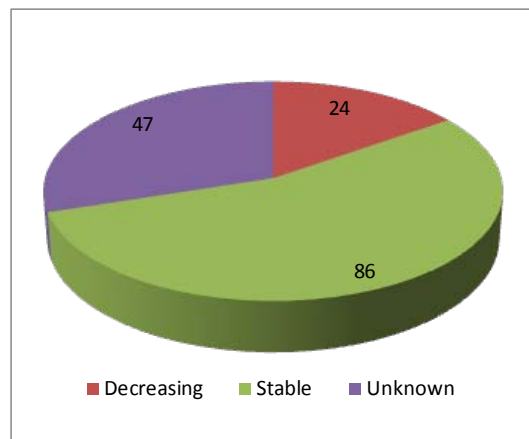
Figure 4.9: Major threats to reptiles



4.6 Population Trends

Being able to determine a species' population trend is critical to assessing a species' conservation status. The majority of species (54%) are thought to have fairly stable populations, as seen in Figure 4.10. These are generally Least Concern species, and their stability is encouraging. Approximately 15% of species assessed are thought to be declining in numbers (generally those in threatened categories). For 30% of species there are no population data and the trends are therefore unknown.

Figure 4.10: Population trends



4.7 Research and conservation needs

As part of each species assessment, research and conservation actions were identified: these are summarized in Figures 4.11 and 4.12. Many species require further research and survey work to clarify their population size, distribution, trends, ecological requirements and potential threats. This is due in many cases to a lack of recent survey work either for the species itself or in-country – for example, parts of Melanesia have been studied more extensively.

In terms of conservation needs, monitoring population and habitat trends and ensuring that habitats are protected are the major priorities. This is to be expected given the severe impacts experienced by the destruction, removal or modification of many species' forest habitats. The control and/or eradication of invasive species is also seen as a high priority. Again, this reflects the high proportion of island reptiles that are being negatively affected by the presence of invasive species.

Figure 4.11: Research and monitoring needs

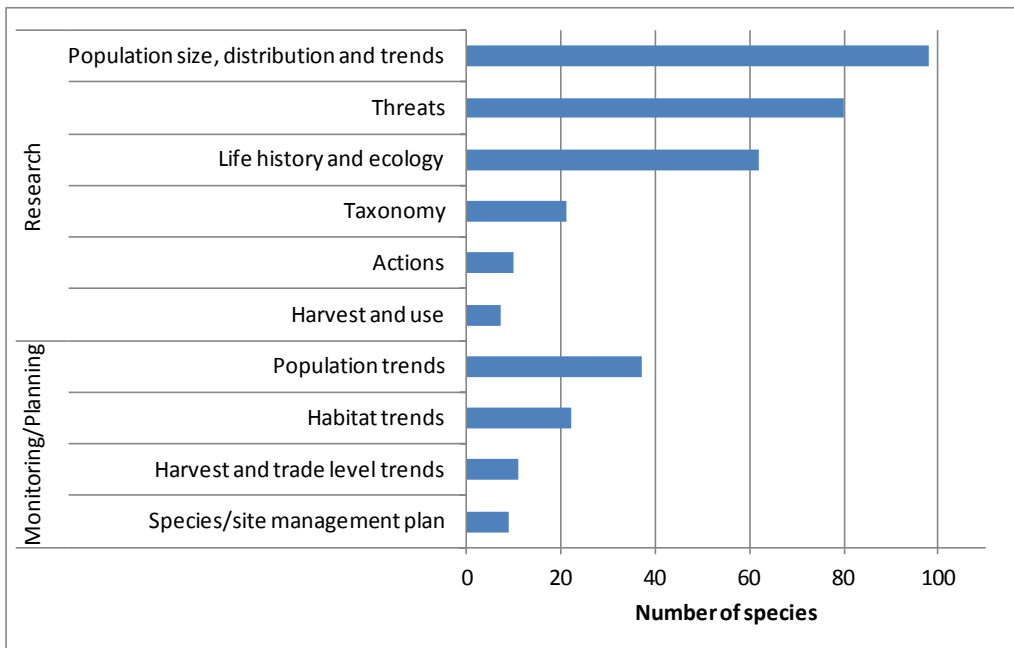
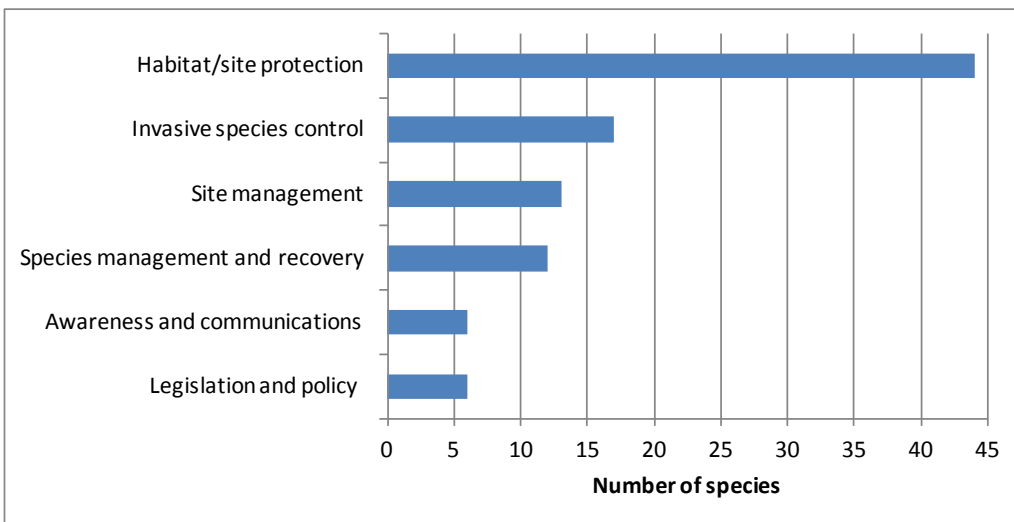


Figure 4.12: Conservation Actions identified from species assessments



4.8 Conclusions

By analyzing the identified threats, actions can be suggested to enable us to move towards better protection of reptiles and their habitats in the Pacific.

4.8.1 Recommendations to address threats

The following conservation recommendations are suggested, which attempt to address the major threats identified:

- Modification of habitat (including biological resource use and agriculture) To protect species from habitat modification or destruction, stakeholders should be educated in sustainable biological resource use and relevant legislation to protect, wisely utilize and conserve habitats should be developed and implemented.
- Invasive species Accidental introductions (and distribution to different localities) are increasingly likely throughout the Pacific, due to the observed movement of animals and plants. Future introductions of invasive species should be prevented by ensuring increased biosecurity vigilance at land, air and sea entry points throughout the Pacific.

- Urban and residential development Relevant laws and policies, including environmental impact assessments, should be adopted to ensure best practice in any urban, tourism or large-scale residential developments.

4.8.2 Recommendations for future work

To fill the remaining gaps in our knowledge, and to monitor any changes, stakeholders should work to:

- Carry out further research on population, threats, ecological requirements and taxonomy, in order to complete assessments for reptiles not included in this project and for the threatened and Data Deficient species. This will enable the production of a comprehensive dataset for reptiles across the entire Pacific Islands region.
- Regularly revise the data for reptiles assessed, in order to monitor the changing status of populations and to ascertain whether any recommended conservation measures put in place are working.
- Examine species' distributions in more detail in order to identify key priority areas for conservation and protection of reptiles and their habitats.



Cyrtodactylus louisiadensis, LC © Bishop Museum/Fred Kraus

5. Conclusions and recommendations

5.1 Overview and recommendations for conservation measures

Land snails are found to be the most highly threatened group, with 70% of the assessed species threatened: half of all threatened species are listed as Critically Endangered, and many also qualify for Possibly Extinct. Invasive species are decimating snail populations, and habitat destruction for logging, agriculture and development has been identified as a major threat.

Whilst many fish species are not assessed as threatened (due largely to often extensive ranges and their ability to occupy a variety of freshwater, estuarine and marine habitats), a large number (40%) are listed as Data Deficient. We urgently need information on these species in order to evaluate their conservation status.

Almost one fifth of reptiles have been assessed as threatened, and are impacted by invasive mammals and plants, habitat degradation, hunting and trade. *Tachygyia microlepis*, previously recorded from Tonga, has been driven to extinction as a result of habitat loss, human colonization and invasive predators.

Conservation actions are urgently needed to address the most common threats, which are related to modification and destruction of habitats, and the impact of invasive species. The following recommendations are common to all taxonomic groups:

- Stakeholders should be educated in sustainable biological resource use
- Relevant legislation to protect, wisely utilize and conserve habitats should be developed and implemented
- Regeneration and preservation of vegetation and forests should be

promoted where degradation or destruction has already occurred

- Biosecurity vigilance should be increased at land, air and sea entry points throughout the Pacific to prevent the spread of invasive species.
- Relevant laws and policies, including environmental impact assessments, should be adopted to ensure best practice in any urban, tourism or large-scale residential developments

5.2 Application of project results

The information gathered for each species is freely available to download from the IUCN Red List website (www.iucnredlist.org). The compiled data can be used to support future research, and enable monitoring and conservation action at national and Pacific-wide levels. This is especially true for Data Deficient species, and species in a threatened or Near Threatened Category. As new information or data become available over time, species will be re-assessed and data contained in the Red List will be amended.

The data in each species account provides a key resource for decision-makers, policy-makers, resource managers, environmental planners and NGOs. Many Pacific Island countries are signatory to international Conventions aimed at conserving biodiversity which are particularly relevant to the conservation and protection of species and their habitats (see Table 5.1). The challenge now is to ensure that results from this project are used to inform such Conventions and policies, to identify priority sites for biodiversity conservation and to prepare and implement species recovery plans for the identified threatened species in the Pacific Islands.

Table 5.1: Select biodiversity Conventions ratified by Pacific Island countries

	CK	FM	FJ	FR	GB	KI	MH	NR	NZ	NU	PW	PG	WS	SB	TO	TV	US	VU
Apia Convention	✓		✓	✓								✓	✓					
Convention on Biological Diversity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Convention on the Conservation of Migratory Species	✓			✓	✓				✓		✓		✓					
SPREP Convention	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	
Ramsar Convention			✓		✓		✓		✓		✓	✓	✓				✓	
Convention on International Trade in Endangered Species			✓	✓	✓				✓		✓	✓	✓	✓			✓	✓

5.3 Future work

By compiling data on three taxonomic groups across the region, several knowledge gaps have been identified. There are significant geographical and taxonomic biases in the quality and quantity of data available, such that some areas are far better known than others, which have thus far been poorly studied. The recommendations presented in this report aim, amongst other things, to allow this discrepancy in our knowledge to be addressed. For example, for all species groups there is a need to:

- Carry out further research on population, threats, ecological requirements and taxonomy, in order to complete assessments for species not included in this project, and for Data Deficient species, to enable the production of a comprehensive dataset across the entire Pacific Islands region.
- Regularly revise the data for species assessed, in order to monitor the changing status of populations and to ascertain whether any recommended conservation measures put in place are working.

- Examine species' distributions in more detail, in order to identify key priority areas for conservation and protection of species and their habitats.

By fulfilling the above recommendations, it is hoped that the species assessed during this project will ultimately be protected from extinction.

This project is the beginning of a process that aims to comprehensively assess species of the Pacific Islands, according to the IUCN Red List Categories and Criteria. This first stage has focussed on assessments for freshwater fishes, land snails, and reptiles. Future work is planned on other taxonomic groups such as select invertebrates, plants and coral reef fishes in order to create a comprehensive dataset to guide conservation actions in the Pacific Islands.

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Note: for the extensive literature used to compile each species assessment, please see each species account on the IUCN Red List (www.iucnredlist.org).

Appendix 1a: Current Red List status of Pacific Island Freshwater Fishes

Order	Family	Species	Red List Category	Criteria	Regional endemic	Single country endemic
Anguilliformes	Muraenidae	<i>Gymnothorax polyuranodon</i>	LC			
Anguilliformes	Ophichthidae	<i>Lamnostoma orientalis</i>	LC			
Anguilliformes	Ophichthidae	<i>Lamnostoma polyophthalma</i>	LC			
Atheriniformes	Atherinidae	<i>Bleheratherina pierucciae</i>	DD			New Caledonia
Beloniformes	Hemiramphidae	<i>Zenarchopterus caudovittatus</i>	DD		Yes	
Beloniformes	Hemiramphidae	<i>Zenarchopterus dispar</i>	LC			
Beloniformes	Hemiramphidae	<i>Zenarchopterus gilli</i>	LC			
Elopiformes	Megalopidae	<i>Megalops cyprinoides*</i>	DD			
Mugiliformes	Mugilidae	<i>Cestraeus goldiei</i>	DD			
Mugiliformes	Mugilidae	<i>Cestraeus oxyrhynchus</i>	DD			
Mugiliformes	Mugilidae	<i>Cestraeus plicatilis</i>	DD			
Mugiliformes	Mugilidae	<i>Chelon macrolepis</i>	LC			
Mugiliformes	Mugilidae	<i>Chelon melinopterus</i>	LC			
Mugiliformes	Mugilidae	<i>Crenimugil crenilabis</i>	LC			
Mugiliformes	Mugilidae	<i>Crenimugil heterocheilos</i>	LC			
Mugiliformes	Mugilidae	<i>Liza tade</i>	DD			
Mugiliformes	Mugilidae	<i>Mugil cephalus</i>	LC			
Osmeriformes	Galaxiidae	<i>Galaxias neocaledonicus</i>	EN	B1ab(iii,v)+2ab(iii,v)		New Caledonia
Perciformes	Ambassidae	<i>Ambassis interrupta</i>	LC			
Perciformes	Ambassidae	<i>Ambassis macracanthus</i>	DD			
Perciformes	Ambassidae	<i>Ambassis miops</i>	LC			
Perciformes	Ambassidae	<i>Ambassis nalua</i>	LC			
Perciformes	Ambassidae	<i>Ambassis urotaenia</i>	LC			
Perciformes	Ambassidae	<i>Ambassis vachellii</i>	LC			
Perciformes	Apogonidae	<i>Apogon amboinensis</i>	DD			
Perciformes	Apogonidae	<i>Apogon hyalosoma</i>	LC			
Perciformes	Apogonidae	<i>Ostorhinchus lateralis</i>	LC			
Perciformes	Blenniidae	<i>Meiacanthus anema</i>	DD			
Perciformes	Blenniidae	<i>Omobranchus ferox</i>	LC			
Perciformes	Blenniidae	<i>Omx biporos</i>	DD			
Perciformes	Eleotridae	<i>Belobranchus belobranchus</i>	DD			
Perciformes	Eleotridae	<i>Bostrychus sinensis*</i>	LC			
Perciformes	Eleotridae	<i>Bostrychus zonatus</i>	DD			
Perciformes	Eleotridae	<i>Bunaka gyrioides</i>	LC			
Perciformes	Eleotridae	<i>Butis amboinensis</i>	LC			
Perciformes	Eleotridae	<i>Butis butis</i>	LC			
Perciformes	Eleotridae	<i>Eleotris acanthopoma</i>	LC			
Perciformes	Eleotridae	<i>Eleotris fusca</i>	LC			
Perciformes	Eleotridae	<i>Eleotris melanosoma</i>	LC			
Perciformes	Eleotridae	<i>Giuris margaritacea</i>	LC			
Perciformes	Eleotridae	<i>Hypseleotris cyprinoides</i>	DD			
Perciformes	Eleotridae	<i>Ophiocara porocephala*</i>	LC			
Perciformes	Gerreidae	<i>Gerres filamentosus*</i>	LC			
Perciformes	Gobiidae	<i>Akihito futuna</i>	CR	B1ab(ii,iii)		Wallis and Futuna
Perciformes	Gobiidae	<i>Akihito vanuatu</i>	LC			Vanuatu
Perciformes	Gobiidae	<i>Awaous acritosus</i>	LC		Yes	

Perciformes	Gobiidae	<i>Awaous guamensis</i>	LC		Yes	
Perciformes	Gobiidae	<i>Awaous ocellaris</i>	LC		Yes	
Perciformes	Gobiidae	<i>Caragobius urolepis</i> *	LC			
Perciformes	Gobiidae	<i>Drombus halei</i>	LC		Yes	
Perciformes	Gobiidae	<i>Exyrias puntang</i>	LC			
Perciformes	Gobiidae	<i>Glossogobius aureus</i>	LC			
Perciformes	Gobiidae	<i>Glossogobius bicirrhosus</i>	LC			
Perciformes	Gobiidae	<i>Glossogobius celebius</i>	DD			
Perciformes	Gobiidae	<i>Glossogobius giurus</i> *	LC			
Perciformes	Gobiidae	<i>Lentipes kaaea</i>	LC		Yes	
Perciformes	Gobiidae	<i>Lentipes rubrofasciatus</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Lentipes solomonensis</i>	DD			Solomon Islands
Perciformes	Gobiidae	<i>Lentipes venustus</i>	DD		Yes	
Perciformes	Gobiidae	<i>Mangarinus waterousi</i>	DD			
Perciformes	Gobiidae	<i>Mugilogobius cavifrons</i>	LC			
Perciformes	Gobiidae	<i>Mugilogobius fuscus</i>	DD			Papua New Guinea
Perciformes	Gobiidae	<i>Mugilogobius notospilus</i>	LC		Yes	
Perciformes	Gobiidae	<i>Mugilogobius platystoma</i>	LC			
Perciformes	Gobiidae	<i>Oligolepis acutipennis</i>	DD			
Perciformes	Gobiidae	<i>Oligolepis stomias</i>	DD			
Perciformes	Gobiidae	<i>Psammogobius biocellatus</i>	LC			
Perciformes	Gobiidae	<i>Pseudogobius poecilosoma</i>	LC			
Perciformes	Gobiidae	<i>Redigobius balteatus</i>	LC			
Perciformes	Gobiidae	<i>Redigobius bikolanus</i>	LC			
Perciformes	Gobiidae	<i>Redigobius chrysosoma</i>	LC			
Perciformes	Gobiidae	<i>Redigobius lekutu</i>	DD			Fiji
Perciformes	Gobiidae	<i>Redigobius leverii</i>	DD			Fiji
Perciformes	Gobiidae	<i>Redigobius oyensi</i>	DD			
Perciformes	Gobiidae	<i>Redigobius tambujon</i>	LC			
Perciformes	Gobiidae	<i>Schismatogobius fuligimentus</i>	DD			New Caledonia
Perciformes	Gobiidae	<i>Schismatogobius vanuatuensis</i>	DD			Vanuatu
Perciformes	Gobiidae	<i>Schismatogobius vitiensis</i>	LC			Fiji
Perciformes	Gobiidae	<i>Sicyopterus aiensis</i>	NT			Vanuatu
Perciformes	Gobiidae	<i>Sicyopterus cynocephalus</i>	DD			
Perciformes	Gobiidae	<i>Sicyopterus eudentatus</i>	EN	B1ab(ii,iii,iv)		FSM
Perciformes	Gobiidae	<i>Sicyopterus lagocephalus</i>	LC			
Perciformes	Gobiidae	<i>Sicyopterus lividus</i>	LC			FSM
Perciformes	Gobiidae	<i>Sicyopterus longifilis</i>	DD			
Perciformes	Gobiidae	<i>Sicyopterus marquesensis</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Sicyopterus micrurus</i>	DD			
Perciformes	Gobiidae	<i>Sicyopterus ouwensi</i>	DD			
Perciformes	Gobiidae	<i>Sicyopterus pugnans</i>	LC			
Perciformes	Gobiidae	<i>Sicyopterus rapa</i>	EN	B1ab(iii)+2ab(iii)		French Polynesia
Perciformes	Gobiidae	<i>Sicyopterus sarasini</i>	EN	B2ab(ii,iii)		New Caledonia
Perciformes	Gobiidae	<i>Sicyopus discordipinnis</i>	DD			
Perciformes	Gobiidae	<i>Sicyopus nigriradiatus</i>	LC			FSM
Perciformes	Gobiidae	<i>Sicyopus zosterophorus</i>	LC			
Perciformes	Gobiidae	<i>Smilosicyopus bitaeniatus</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Smilosicyopus chloe</i>	LC		Yes	

Perciformes	Gobiidae	<i>Smilosicyopus fehlmanni</i>	LC			
Perciformes	Gobiidae	<i>Smilosicyopus leprurus</i>	DD		Yes	
Perciformes	Gobiidae	<i>Smilosicyopus sasali</i>	EN	B1ab(ii,iii)+2ab(ii,iii)		Wallis and Futuna
Perciformes	Gobiidae	<i>Stenogobius alleni</i>	DD			Papua New Guinea
Perciformes	Gobiidae	<i>Stenogobius beauforti</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stenogobius caudimaculosus</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Stenogobius fehlmanni</i>	LC			
Perciformes	Gobiidae	<i>Stenogobius genivittatus</i>	LC			French Polynesia
Perciformes	Gobiidae	<i>Stenogobius hoesei</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stenogobius keletaona</i>	VU	D2		Wallis and Futuna
Perciformes	Gobiidae	<i>Stenogobius laterisquamatus</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stenogobius marqueti</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Stenogobius psilosinionus</i>	DD		Yes	
Perciformes	Gobiidae	<i>Stenogobius randalli</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Stenogobius squamosus</i>	DD			French Polynesia
Perciformes	Gobiidae	<i>Stenogobius watsoni</i>	DD			Papua New Guinea
Perciformes	Gobiidae	<i>Stenogobius yateiensis</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stiphodon astilbos</i>	DD			Vanuatu
Perciformes	Gobiidae	<i>Stiphodon atratus</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stiphodon birdsong</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stiphodon caeruleus</i>	LC			FSM
Perciformes	Gobiidae	<i>Stiphodon discotorquatus</i>	CR	B1ab(ii,iii)+2ab(ii,iii)		French Polynesia
Perciformes	Gobiidae	<i>Stiphodon elegans</i>	LC			
Perciformes	Gobiidae	<i>Stiphodon hydroleibatus</i>	DD			
Perciformes	Gobiidae	<i>Stiphodon julieni</i>	EN	B1ab(iii)+2ab(iii)		French Polynesia
Perciformes	Gobiidae	<i>Stiphodon kalfatak</i>	DD			Vanuatu
Perciformes	Gobiidae	<i>Stiphodon larson</i>	DD			Papua New Guinea
Perciformes	Gobiidae	<i>Stiphodon mele</i>	DD		Yes	
Perciformes	Gobiidae	<i>Stiphodon oatea</i>	NT			French Polynesia
Perciformes	Gobiidae	<i>Stiphodon pelewensis</i>	DD			
Perciformes	Gobiidae	<i>Stiphodon percnopterygionus</i>	DD			
Perciformes	Gobiidae	<i>Stiphodon rubromaculatus</i>	CR	B1ab(ii,iii)		Wallis and Futuna
Perciformes	Gobiidae	<i>Stiphodon rutilaureus</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stiphodon sapphirinus</i>	LC		Yes	
Perciformes	Gobiidae	<i>Stiphodon semoni</i>	DD			
Perciformes	Gobiidae	<i>Stiphodon tuivi</i>	LC			French Polynesia
Perciformes	Gobiidae	<i>Taenioides cirratus</i>	DD			
Perciformes	Haemulidae	<i>Plectorhinchus gibbosus</i>	LC			
Perciformes	Haemulidae	<i>Pomadasys argenteus</i>	LC			
Perciformes	Kuhliidae	<i>Kuhlia malo</i>	DD			French Polynesia
Perciformes	Kuhliidae	<i>Kuhlia marginata</i>	LC			
Perciformes	Kuhliidae	<i>Kuhlia mugil</i>	LC			
Perciformes	Kuhliidae	<i>Kuhlia munda</i>	DD			
Perciformes	Kuhliidae	<i>Kuhlia rupestris</i>	LC			
Perciformes	Kuhliidae	<i>Kuhlia salelea</i>	DD			
Perciformes	Leiognathidae	<i>Aurigequula fasciata</i>	LC			
Perciformes	Leiognathidae	<i>Eubleekeria splendens</i>	LC			
Perciformes	Leiognathidae	<i>Gazza minuta</i>	LC			
Perciformes	Leiognathidae	<i>Leiognathus equulus</i>	LC			

Perciformes	Pomacentridae	<i>Neopomacentrus aquadulcis</i>	EN	B2ab(ii,iii)	Yes	
Perciformes	Pomacentridae	<i>Neopomacentrus taeniurus</i>	DD			
Perciformes	Ptereleotridae	<i>Parioglossus formosus</i>	LC			
Perciformes	Ptereleotridae	<i>Parioglossus lineatus</i>	DD			
Perciformes	Ptereleotridae	<i>Parioglossus neocaledonicus</i>	DD			New Caledonia
Perciformes	Ptereleotridae	<i>Parioglossus palustris</i>	LC			
Perciformes	Ptereleotridae	<i>Parioglossus rainfordi</i>	LC			
Perciformes	Ptereleotridae	<i>Parioglossus raoi</i>	LC			
Perciformes	Ptereleotridae	<i>Parioglossus taeniatus</i>	LC			
Perciformes	Ptereleotridae	<i>Parioglossus triquetrus</i>	DD			Fiji
Perciformes	Rhyacichthyidae	<i>Protogobius attiti</i>	EN	B2ab(i,ii,iii)		New Caledonia
Perciformes	Rhyacichthyidae	<i>Rhyacichthys aspro</i>	DD			
Perciformes	Rhyacichthyidae	<i>Rhyacichthys guilberti</i>	DD		Yes	
Perciformes	Siganidae	<i>Siganus vermiculatus</i>	LC			
Perciformes	Terapontidae	<i>Mesopristes argenteus</i>	LC			
Perciformes	Terapontidae	<i>Mesopristes cancellatus</i>	LC			
Perciformes	Toxotidae	<i>Toxotes jaculatrix</i>	LC			
Pleuronectiformes	Soleidae	<i>Pardachirus poropterus</i>	DD			
Scorpaeniformes	Tetrarogidae	<i>Tetraroge niger</i>	LC			
Syngnathiformes	Syngnathidae	<i>Hippichthys spicifer</i>	LC			
Syngnathiformes	Syngnathidae	<i>Microphis leiaspis</i>	LC			
Syngnathiformes	Syngnathidae	<i>Microphis spinachioides</i>	DD			Papua New Guinea

*Submitted to Red List by GMSA or FBU

Appendix 1b: Freshwater Fish species not assessed in this project

Order	Family	Species	Category	Why not assessed?
Anguilliformes	Anguillidae	<i>Anguilla australis</i>	NE	Eels to be assessed by another project
Anguilliformes	Anguillidae	<i>Anguilla bicolor</i>	NE	Eels to be assessed by another project
Anguilliformes	Anguillidae	<i>Anguilla celebesensis</i>	NE	Eels to be assessed by another project
Anguilliformes	Anguillidae	<i>Anguilla marmorata</i>	LC	Assessed by another project
Anguilliformes	Anguillidae	<i>Anguilla megastoma</i>	NE	Eels to be assessed by another project
Anguilliformes	Anguillidae	<i>Anguilla obscura</i>	NE	Eels to be assessed by another project
Anguilliformes	Anguillidae	<i>Anguilla reinhardtii</i>	NE	Eels to be assessed by another project
Anguilliformes	Moringuidae	<i>Moringua abbreviata</i>	NE	Eels to be assessed by another project
Anguilliformes	Moringuidae	<i>Moringua microchir</i>	NE	Eels to be assessed by another project
Anguilliformes	Ophichthidae	<i>Lamnostoma kampeni</i>	NE	Eels to be assessed by another project
Anguilliformes	Ophichthidae	<i>Lamnostoma mindora</i>	NE	Eels to be assessed by another project
Carcharhiniformes	Carcharhinidae	<i>Carcharhinus leucas</i>	NT	Assessed by another project
Clupeiformes	Engraulidae	<i>Stolephorus indicus</i>	NE	Predominantly marine and/or estuarine
Clupeiformes	Engraulidae	<i>Thryssa baelama</i>	NE	Predominantly marine and/or estuarine
Clupeiformes	Engraulidae	<i>Thryssa scratchleyi</i>	NE	Predominantly marine and/or estuarine
Gonorynchiformes	Chanidae	<i>Chanos chanos</i>	NE	Predominantly marine and/or estuarine
Lophiiformes	Antennariidae	<i>Antennarius biocellatus</i>	NE	Predominantly marine and/or estuarine
Perciformes	Carangidae	<i>Caranx sexfasciatus</i>	LC	Assessed by another project
Perciformes	Gobiidae	<i>Awaous melanocephalus</i>	NE	NE
Perciformes	Gobiidae	<i>Parioglossus marginalis</i>	NE	Predominantly marine and/or estuarine
Perciformes	Gobiidae	<i>Periophthalmus kalolo</i>	NE	Predominantly marine and/or estuarine
Perciformes	Gobiidae	<i>Periophthalmus argentilineatus</i>	NE	Predominantly marine and/or estuarine
Perciformes	Lutjanidae	<i>Lutjanus argentimaculatus</i>	NE	Predominantly marine and/or estuarine
Perciformes	Lutjanidae	<i>Lutjanus fulvus</i>	NE	Predominantly marine and/or estuarine
Perciformes	Lutjanidae	<i>Lutjanus fuscescens</i>	NE	Predominantly marine and/or estuarine
Perciformes	Lutjanidae	<i>Lutjanus goldei</i>	NE	Predominantly marine and/or estuarine
Perciformes	Lutjanidae	<i>Lutjanus johnii</i>	NE	Predominantly marine and/or estuarine
Perciformes	Lutjanidae	<i>Lutjanus russellii</i>	NE	Predominantly marine and/or estuarine
Perciformes	Monodactylidae	<i>Monodactylus argenteus</i>	NE	Predominantly marine and/or estuarine
Perciformes	Ptereleotridae	<i>Parioglossus galzini</i>	NE	Predominantly marine and/or estuarine
Perciformes	Ptereleotridae	<i>Parioglossus senoui</i>	NE	Predominantly marine and/or estuarine
Perciformes	Scatophagidae	<i>Scatophagus argus</i>	LC	Assessed by another project
Perciformes	Terapontidae	<i>Mesopristes kneri</i>	NE	NE
Synbranchiformes	Synbranchidae	<i>Ophisternon bengalensis</i>	NE	Predominantly marine and/or estuarine
Synbranchiformes	Synbranchidae	<i>Ophisternon gutturale</i>	NE	Predominantly marine and/or estuarine
Syngnathiformes	Syngnathidae	<i>Hippichthys albomaculosus</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Hippichthys cyanospilos</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Microphis brevidorsalis</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Microphis retzii</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Microphis argulus</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Microphis brachyurus</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Microphis cruentus</i>	NE	Pipefishes to be assessed by another project
Syngnathiformes	Syngnathidae	<i>Microphis manadensis</i>	NE	Pipefishes to be assessed by another project

Syngnathiformes	Syngnathidae	<i>Microphis mento</i>	NE	Pipefishes to be assessed by another project
Tetraodontiformes	Diodontidae	<i>Diodon liturosus</i>	NE	Predominantly marine and/or estuarine
Tetraodontiformes	Tetraodontidae	<i>Arothron hispidus</i>	NE	Predominantly marine and/or estuarine
Tetraodontiformes	Tetraodontidae	<i>Arothron immaculatus</i>	NE	Predominantly marine and/or estuarine
Tetraodontiformes	Tetraodontidae	<i>Arothron manilensis</i>	NE	Predominantly marine and/or estuarine
Tetraodontiformes	Tetraodontidae	<i>Arothron reticularis</i>	NE	Predominantly marine and/or estuarine
Tetraodontiformes	Tetraodontidae	<i>Marilyna pleurostictus</i>	NE	Predominantly marine and/or estuarine

Appendix 2: Current Red List Status of Pacific Island Terrestrial Land Snails (in Class Gastropoda)

Notes:

i) **Species in bold** are published in IUCN's Red List version 2012:2.

ii) Assessments carried out in 1996 and 2000 used the previous Red List Categories and Criteria (Version 2.3) and are therefore out-of-date.

Order	Family	Species	Previous Year assessed	Previous Red List Category	Previous Red List Criteria	Most recent assessment	Current Category	Current Criteria
Architaenioglossa	Diplommatinidae	<i>Diancta macrostoma</i>				2011	VU	B1ab(iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina alata</i>	1996	DD		2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina aurea</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina crassilabris</i>	1996	DD		2011	CR	B2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina gibboni</i>	1996	DD		2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina inflatula</i>	1996	DD		2011	EN	B2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina lamellata</i>	1996	DD		2011	NT	
Architaenioglossa	Diplommatinidae	<i>Diplommatina lutea</i>	1996	DD		2011	NT	
Architaenioglossa	Diplommatinidae	<i>Diplommatina pyramis</i>	1996	DD		2011	EN	B1ab(iii)+2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Diplommatina ringens</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Hungerfordia pelewensis</i>	1996	DD		2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Macropalaina pomatiaeformis</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Moussonia fuscula</i>				2011	NT	
Architaenioglossa	Diplommatinidae	<i>Palaina albata</i>	1996	DD		2011	CR	B1ab(ii,iii)+2ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Palaina chrysalis</i>				2011	DD	
Architaenioglossa	Diplommatinidae	<i>Palaina dimorpha</i>	1996	DD		2011	NT	
Architaenioglossa	Diplommatinidae	<i>Palaina dohrni</i>	1996	DD		2011	not valid	
Architaenioglossa	Diplommatinidae	<i>Palaina godeffroyana</i>				2011	VU	B1ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Palaina graeffei</i>				2011	DD	
Architaenioglossa	Diplommatinidae	<i>Palaina martensi</i>				2011	NT	
Architaenioglossa	Diplommatinidae	<i>Palaina moussoni</i>	1996	DD		2011	CR	B1ab(ii,iii)+2ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Palaina patula</i>	1996	DD		2011	CR	D
Architaenioglossa	Diplommatinidae	<i>Palaina platycheilus</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii); D
Architaenioglossa	Diplommatinidae	<i>Palaina pupa</i>	1996	DD		2011	CR	B1ab(iii); D
Architaenioglossa	Diplommatinidae	<i>Palaina pusilla</i>	1996	DD		2011	NE	Not a valid species
Architaenioglossa	Diplommatinidae	<i>Palaina quadrata</i>				2011	DD	

Architaenioglossa	Diplommatinidae	<i>Palaina rubella</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii); D
Architaenioglossa	Diplommatinidae	<i>Palaina strigata</i>	1996	DD		2011	VU	B1ab(iii)+2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Palaina striolata</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Palaina subregularis</i>				2011	VU	B1ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Palaina taeniolata</i>				1996	DD	
Architaenioglossa	Diplommatinidae	<i>Palaina taviensis</i>				2011	EN	B2ab(ii,iii)
Architaenioglossa	Diplommatinidae	<i>Palaina tuberosa</i>				2011	DD	
Architaenioglossa	Diplommatinidae	<i>Palaina wilsoni</i>	1996	DD		2011	EN	B1ab(iii)+2ab(iii)
Architaenioglossa	Diplommatinidae	<i>Pseudopalaina ascendens</i>				2011	DD	
Architaenioglossa	Diplommatinidae	<i>Pseudopalaina polymorpha</i>				1996	DD	
Architaenioglossa	Diplommatinidae	<i>Pseudopalaina polymorpha</i>				2011	CR	B1ab(iii)+2ab(iii)
Architaenioglossa	Neocyclotidae	<i>Fijiopoma diatreta</i>				2011	VU	B2ab(ii,iii)
Architaenioglossa	Neocyclotidae	<i>Fijiopoma liberata</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Architaenioglossa	Neocyclotidae	<i>Gonatorhaphe intercostata</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Architaenioglossa	Neocyclotidae	<i>Gonatorhaphe lauensis</i>				2011	CR	B1ab(ii,iii)
Architaenioglossa	Neocyclotidae	<i>Gonatorhaphe stricta</i>				2011	EN	B2ab(ii,iii)
Architaenioglossa	Pupinidae	<i>Pupina complanata</i>				1996	DD	
Architaenioglossa	Pupinidae	<i>Pupina difficilis</i>	1996	DD		2011	LC	
Cycloneritimorpha	Helicinidae	<i>Palaeohelicina heterochroa</i>				2011	LC	
Cycloneritimorpha	Helicinidae	<i>Pleuropoma pelewensis</i>				2011	LC	
Cycloneritimorpha	Hydrocenidae	<i>Georissa biangulata</i>				1996	DD	
Cycloneritimorpha	Hydrocenidae	<i>Georissa elegans</i>				1996	DD	
Cycloneritimorpha	Hydrocenidae	<i>Georissa laevigata</i>				1996	DD	
Littorinimorpha	Assimineidae	<i>Fijianella calciphila</i>				2011	VU	D2
Littorinimorpha	Assimineidae	<i>Fijianella cornucopia</i>				2011	VU	D2
Littorinimorpha	Assimineidae	<i>Fijianella laddi</i>				2011	VU	B2ab(ii,iii)
Littorinimorpha	Assimineidae	<i>Kubaryia pilikia</i>				2011	CR	B1ab(iii)
Littorinimorpha	Assimineidae	<i>Omphalotropis bifilaris</i>				2011	LC	
Littorinimorpha	Assimineidae	<i>Omphalotropis cheynei</i>				2011	LC	
Littorinimorpha	Assimineidae	<i>Omphalotropis circumlineata</i>				2011	NT	
Littorinimorpha	Assimineidae	<i>Omphalotropis costulata</i>				2011	VU	B1ab(ii,iii)+2ab(ii,iii)
Littorinimorpha	Assimineidae	<i>Omphalotropis hispida</i>				2011	DD	

Littorinimorpha	Assimineidae	<i>Omphalotropis ingens</i>				2011	CR	B1ab(ii)+2ab(ii)
Littorinimorpha	Assimineidae	<i>Omphalotropis layardiana</i>				2011	DD	
Littorinimorpha	Assimineidae	<i>Omphalotropis longula</i>				2011	VU	B2ab(ii,iii)
Littorinimorpha	Assimineidae	<i>Omphalotropis moussoni</i>				2011	LC	
Littorinimorpha	Assimineidae	<i>Omphalotropis parva</i>				2011	LC	
Littorinimorpha	Assimineidae	<i>Omphalotropis rosea</i>				2011	VU	B1ab(ii,iii)+2ab(ii,iii)
Littorinimorpha	Assimineidae	<i>Omphalotropis subsoluta</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Littorinimorpha	Assimineidae	<i>Omphalotropis zelriolata</i>				2011	NT	
Littorinimorpha	Truncatellidae	<i>Truncatella guerinii</i>				2011	LC	
Stylommatophora	Achatinellidae	<i>Elasmias quadrasi</i>				1996	DD	
Stylommatophora	Achatinellidae	<i>Elasmias apertum</i>				2011	LC	
Stylommatophora	Achatinellidae	<i>Elasmias ovatum</i>				2011	EN	B2ab(iii)
Stylommatophora	Achatinellidae	<i>Lamellidea microstoma</i>				1996	DD	
Stylommatophora	Achatinellidae	<i>Lamellidea oblonga</i>				2011	LC	
Stylommatophora	Achatinellidae	<i>Lamellidea pusilla</i>				2011	LC	
Stylommatophora	Achatinellidae	<i>Lamellidea subcylindrica</i>				1996	DD	
Stylommatophora	Achatinellidae	<i>Tornatellinops ponapensis</i>				1996	DD	
Stylommatophora	Camaenidae	<i>Papustyla pulcherrima</i>				1996	DD	
Stylommatophora	Charopidae	<i>Ba humbugi</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Charopidae	<i>Discocharopa aperta</i>				2011	LC	
Stylommatophora	Charopidae	<i>Himeroconcha fusca</i>				1996	DD	
Stylommatophora	Charopidae	<i>Himeroconcha lamlanensis</i>				1996	DD	
Stylommatophora	Charopidae	<i>Himeroconcha quadrasi</i>				1996	DD	
Stylommatophora	Charopidae	<i>Himeroconcha rotula</i>				1996	DD	
Stylommatophora	Charopidae	<i>Jokajdon callizonus</i>				1996	DD	
Stylommatophora	Charopidae	<i>Jokajdon tumidulus</i>				1996	DD	
Stylommatophora	Charopidae	<i>Kondoconcha othnius</i>				1996	CR	B1+2abcd
Stylommatophora	Charopidae	<i>Kubaryellus kubaryi</i>				1996	DD	
Stylommatophora	Charopidae	<i>Ladronellum mariannarum</i>				1996	DD	
Stylommatophora	Charopidae	<i>Lagivala minusculus</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Charopidae	<i>Lagivala vivus</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Charopidae	<i>Lauopa mbalavuana</i>				2011	CR	B1ab(ii,iii)

Stylommatophora	Charopidae	<i>Libera subcavernula</i>				1996	EX	
Stylommatophora	Charopidae	<i>Libera tumuloides</i>				1996	EX	
Stylommatophora	Charopidae	<i>Maafu thaumasius</i>				2011	CR	B1ab(iii)
Stylommatophora	Charopidae	<i>Mautodontha acuticosta</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha boraborensis</i>				1996	CR	A1c
Stylommatophora	Charopidae	<i>Mautodontha ceuthma</i>				1996	CR	A1c
Stylommatophora	Charopidae	<i>Mautodontha consimilis</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha consobrina</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha maupiensis</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha parvidens</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha punctiperforata</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha saintjohni</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha subtilis</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha unilamellata</i>				1996	EX	
Stylommatophora	Charopidae	<i>Mautodontha zebrina</i>				1996	EX	
Stylommatophora	Charopidae	<i>Microcharopa mimula</i>				2011	VU	B2ab(ii,iii)
Stylommatophora	Charopidae	<i>Norfolcioconch iota</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Norfolcioconch norfolkensis</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Opanara altiapica</i>				1996	CR	B1+2abc
Stylommatophora	Charopidae	<i>Opanara areaensis</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Opanara bitridentata</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Opanara caliculata</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Opanara depasoapicata</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Opanara duplidentata</i>				1996	CR	A2e
Stylommatophora	Charopidae	<i>Opanara fosbergi</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Opanara megomphala</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Opanara perahuensis</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Orangia cookei</i>				1996	EN	A2e, B1+2c
Stylommatophora	Charopidae	<i>Orangia maituatensis</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Orangia sporadica</i>				1996	EN	A2e, B1+2c
Stylommatophora	Charopidae	<i>Palikirus cosmetus</i>				1996	DD	
Stylommatophora	Charopidae	<i>Palikirus ponapicus</i>				1996	DD	

Stylommatophora	Charopidae	<i>Palline micramyla</i>				1996	DD	
Stylommatophora	Charopidae	<i>Palline notera</i>	1996	DD		2011	CR	B1ab(i,iii)+2ab(i,iii)
Stylommatophora	Charopidae	<i>Penescosta mathewsi</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Penescosta sororcula</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Rhysconcha atanuiensis</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Rhysconcha variumbilicata</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Roimontis tolotomensis</i>				1996	DD	
Stylommatophora	Charopidae	<i>Ruataru koarana</i>				1996	CR	A2e, B1+2c
Stylommatophora	Charopidae	<i>Ruataru oparica</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Russatus nigrescens</i>				1996	DD	
Stylommatophora	Charopidae	<i>Semperdon heptptychius</i>				1996	LR/lc	
Stylommatophora	Charopidae	<i>Semperdon kororensis</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii)
Stylommatophora	Charopidae	<i>Semperdon rotanus</i>				1996	DD	
Stylommatophora	Charopidae	<i>Semperdon uncatus</i>	1996	DD		2011	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Charopidae	<i>Semperdon xyleborus</i>	1996	DD		2011	CR	D
Stylommatophora	Charopidae	<i>Sinployea adposita</i>				2011	VU	B2ab(ii,iii)
Stylommatophora	Charopidae	<i>Sinployea angularis</i>				2011	CR	B1ab(ii,iii)
Stylommatophora	Charopidae	<i>Sinployea canalis</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea decorticata</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea godeffroyana</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Charopidae	<i>Sinployea harveyensis</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea inermis</i>				2011	VU	B2ab(ii,iii)
Stylommatophora	Charopidae	<i>Sinployea kusaieana</i>				1996	DD	
Stylommatophora	Charopidae	<i>Sinployea lauenis</i>				2011	VU	B1ab(ii,iii)+2ab(ii,iii); D2
Stylommatophora	Charopidae	<i>Sinployea monstrosa</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Charopidae	<i>Sinployea navutuenis</i>				2011	CR	B1ab(iii)+2ab(iii)
Stylommatophora	Charopidae	<i>Sinployea otareae</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea pitcairnensis</i>				1996	VU	D2
Stylommatophora	Charopidae	<i>Sinployea planospira</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea princei</i>				2011	EN	B1ab(iii)+2ab(iii)
Stylommatophora	Charopidae	<i>Sinployea proxima</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea recursa</i>				2011	VU	D2

Stylommatophora	Charopidae	<i>Sinployea rotumana</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Charopidae	<i>Sinployea rudis</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea tenuicostata</i>				1996	EX	
Stylommatophora	Charopidae	<i>Sinployea youngi</i>				1996	EX	
Stylommatophora	Charopidae	<i>Taipidon anceyana</i>				1996	EX	
Stylommatophora	Charopidae	<i>Taipidon marquesana</i>				1996	EX	
Stylommatophora	Charopidae	<i>Taipidon octolamellata</i>				1996	EX	
Stylommatophora	Charopidae	<i>Trukcharopa trukana</i>				1996	DD	
Stylommatophora	Charopidae	<i>Vatusila kondoi</i>				2011	CR	B1ab(iii)
Stylommatophora	Charopidae	<i>Vatusila nayauana</i>				2011	CR	B1ab(iii)
Stylommatophora	Draparnaudiidae	<i>Draparnaudia anniae</i>				1996	CR	B1+2c
Stylommatophora	Draparnaudiidae	<i>Draparnaudia subnecata</i>				1996	CR	A1c, B1+2c
Stylommatophora	Endodontidae	<i>Aaadonta angaurana</i>	1996	DD		2011	CR	B1ab(iii)+2ab(iii)
Stylommatophora	Endodontidae	<i>Aaadonta constricta</i>	1996	DD		2011	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta constricta ssp. babelthuapi</i>				2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta constricta ssp. constricta</i>				2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta constricta ssp. komakanensis</i>				2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta fuscozonata</i>	1996	DD		2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta fuscozonata ssp. depressa</i>				2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta fuscozonata ssp. fuscozonata</i>				2011	CR	D
Stylommatophora	Endodontidae	<i>Aaadonta irregularis</i>	1996	DD		2011	CR	B2ab(ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta kinlochi</i>	1996	DD		2011	CR	B2ab(ii,iii)
Stylommatophora	Endodontidae	<i>Aaadonta pelewana</i>	1996	DD		2011	CR	D
Stylommatophora	Endodontidae	<i>Priceconcha tuvuthaensis</i>				2011	CR	B1ab(iii)
Stylommatophora	Endodontidae	<i>Thaumatodon corrugata</i>				2011	CR	B1ab(iii)
Stylommatophora	Endodontidae	<i>Thaumatodon hystricelloides</i>				1996	EN	A2ce
Stylommatophora	Endodontidae	<i>Thaumatodon laddi</i>				2011	VU	D2
Stylommatophora	Endodontidae	<i>Thaumatodon multilamellata</i>				1996	EX	
Stylommatophora	Endodontidae	<i>Thaumatodon spirrhymatum</i>				2011	CR	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Endodontidae	<i>Thaumatodon subdaedalea</i>				2011	EN	B1ab(ii,iii)
Stylommatophora	Endodontidae	<i>Zyzyxdonta alata</i>				2011	VU	D2

Stylommatophora	Euconulidae	<i>Dendrotrochus ponapensis</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Kusaiea frivola</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Lamprocystis denticulata</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Lamprocystis fastigata</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Lamprocystis hornbosteli</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Lamprocystis misella</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Liardetia tenuisculpta</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Palaua babelthuapi</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Palaua margaritacea</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Palaua minor</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Palaua minor</i>				2011	LC	
Stylommatophora	Euconulidae	<i>Palaua ngarduaisi</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Palaua straminea</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Palaua wilsoni</i>				1996	DD	
Stylommatophora	Euconulidae	<i>Ryssota pachystoma</i>				1996	DD	
Stylommatophora	Helicarionidae	<i>Advena campbelli</i>				1996	EX	
Stylommatophora	Helicarionidae	<i>Advena charon</i>				1996	EN	B1+2c
Stylommatophora	Helicarionidae	<i>Buffetia retinaculum</i>				1996	VU	B1, D2
Stylommatophora	Helicarionidae	<i>Coneuplecta turrata</i>				2011	CR	D
Stylommatophora	Helicarionidae	<i>Diastole matafaoi</i>				1996	EX	
Stylommatophora	Helicarionidae	<i>Diastole tenuistriata</i>				1996	VU	D2
Stylommatophora	Helicarionidae	<i>Dolapex amicus</i>				1996	EN	B1+2c
Stylommatophora	Helicarionidae	<i>Iredaleoconcha caporaphe</i>				1996	VU	D2
Stylommatophora	Helicarionidae	<i>Kororia palaensis</i>				2011	LC	
Stylommatophora	Helicarionidae	<i>Lutilodix imitatrix</i>				1996	EN	B1+2c
Stylommatophora	Helicarionidae	<i>Mathewsoconcha belli</i>				1996	EN	B1+2c
Stylommatophora	Helicarionidae	<i>Nancibella quintalia</i>				1996	EX	
Stylommatophora	Helicarionidae	<i>Panulena perrugosa</i>				1996	EX	
Stylommatophora	Helicarionidae	<i>Philonesia filiceti</i>				1996	VU	D2
Stylommatophora	Helicarionidae	<i>Philonesia pitcairnensis</i>				1996	VU	D2
Stylommatophora	Helicarionidae	<i>Pittoconcha concinna</i>				1996	VU	D2
Stylommatophora	Helicarionidae	<i>Quintalia flosculus</i>				1996	EX	

Stylommatophora	Helicarionidae	<i>Quintalia stoddartii</i>				1996	EX	
Stylommatophora	Helicarionidae	<i>Tubuaia fosbergi</i>				1996	VU	D2
Stylommatophora	Orthalicidae	<i>Leucocharis pancheri</i>				1996	CR	B1+2d
Stylommatophora	Orthalicidae	<i>Leucocharis loyaltiensis</i>				1996	EX	
Stylommatophora	Orthalicidae	<i>Leucocharis porphyrocheila</i>				1996	EX	
Stylommatophora	Orthalicidae	<i>Placostylus eddystonensis</i>				1996	VU	A1ab
Stylommatophora	Orthalicidae	<i>Placostylus elobatus</i>				2011	VU	B1ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus fibratus</i>				1996	VU	A1cde
Stylommatophora	Orthalicidae	<i>Placostylus fulguratus</i>				2011	LC	
Stylommatophora	Orthalicidae	<i>Placostylus garretti</i>				2011	DD	
Stylommatophora	Orthalicidae	<i>Placostylus graeffei</i>				2011	EN	B1ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus guanensis</i>				2011	EN	B1ab(iii)+2ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus hoyti</i>				2011	EN	B1ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus kantavuensis</i>				2011	EN	B1ab(iii)+2ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus koroensis</i>				2011	CR	B1ab(ii,iii)
Stylommatophora	Orthalicidae	<i>Placostylus malleatus</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Orthalicidae	<i>Placostylus mbengensis</i>				2011	CR	B1ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus morosus</i>				2011	LC	
Stylommatophora	Orthalicidae	<i>Placostylus ochrostoma</i>				2011	EN	B1ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus porphyrostomus</i>				1996	VU	A1c
Stylommatophora	Orthalicidae	<i>Placostylus seemanni</i>				2011	EN	B1ab(iii)+2ab(iii)
Stylommatophora	Orthalicidae	<i>Placostylus subroseus</i>				2011	DD	
Stylommatophora	Partulidae	<i>Eua globosa</i>				2011	CR	B2ab(iii); D
Stylommatophora	Partulidae	<i>Eua zebrina</i>				1996	EN	A2ce
Stylommatophora	Partulidae	<i>Partula affinis</i>				2007	CR	B1ab(ii,iv)+2ab(ii,iv)
Stylommatophora	Partulidae	<i>Partula approximata</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula arguta</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula atilis</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula auriana</i>				2011	EN	B1ab(iii)
Stylommatophora	Partulidae	<i>Partula aurantia</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula auriculata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula bilineata</i>				2007	EX	

Stylommatophora	Partulidae	<i>Partula callifera</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula calypso</i>	1996	CR	A2c	2011	CR	B2ab(iii); D
Stylommatophora	Partulidae	<i>Partula candida</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula carteriensis</i>				2011	DD	
Stylommatophora	Partulidae	<i>Partula castanea</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula cedista</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula citrina</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula clara</i>				2007	CR	B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Partula compacta</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula coxi</i>				2011	DD	
Stylommatophora	Partulidae	<i>Partula cramptoni</i>				2011	DD	
Stylommatophora	Partulidae	<i>Partula crassilabris</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula cuneata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula cytherea</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula dentifera</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula dolichostoma</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula dolorosa</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula dorseyi</i>				2011	DD	
Stylommatophora	Partulidae	<i>Partula emersoni</i>	1996	CR	A1e+2ce	2011	CR	D
Stylommatophora	Partulidae	<i>Partula eremita</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula exigua</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula faba</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula filosa</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula formosa</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula fusca</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula garretti</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula gibba</i>				1996	CR	A2ce
Stylommatophora	Partulidae	<i>Partula guamensis</i>	1996	CR	A2ce	2011	EX	
Stylommatophora	Partulidae	<i>Partula hebe</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula hyalina</i>				2007	VU	B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Partula imperforata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula labrusca</i>				2007	EX	

Stylommatophora	Partulidae	<i>Partula langfordi</i>				1996	CR	A1e+2ce
Stylommatophora	Partulidae	<i>Partula leptochila</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula leucothoe</i>	1996	CR	A2e	2011	CR	B2ab(iii); D
Stylommatophora	Partulidae	<i>Partula levilineata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula levistriata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula lugubris</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula lutea</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula martensiana</i>				1996	CR	A1ce+2e
Stylommatophora	Partulidae	<i>Partula micans</i>				2011	LC	
Stylommatophora	Partulidae	<i>Partula microstoma</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula milleri</i>				2011	CR	B1ab(i,ii)+2ab(i,ii); D
Stylommatophora	Partulidae	<i>Partula mirabilis</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula mooreana</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula navigatoria</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula nodosa</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula otaheitana</i>				2007	CR	B2ab(ii,iii)
Stylommatophora	Partulidae	<i>Partula ovalis</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula planilabrum</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula producta</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula protea</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula protracta</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula radiata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula radiolata</i>				1996	CR	A2ce, B1+2abcde
Stylommatophora	Partulidae	<i>Partula raiatensis</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula remota</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula robusta</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula rosea</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula rustica</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula sagitta</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula salifana</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula salifera</i>				2000	EX	
Stylommatophora	Partulidae	<i>Partula similis</i>				2011	DD	

Stylommatophora	Partulidae	<i>Partula subgonochila</i>				2011	CR	B1ab(iii)
Stylommatophora	Partulidae	<i>Partula suturalis</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula taeniata</i>				2007	CR	B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Partula thalia</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula thetis</i>	1996	CR	A1c	2011	CR	B2ab(iii)
Stylommatophora	Partulidae	<i>Partula tohiveana</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula tristis</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula turgida</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula umbilicata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Partula varia</i>				2007	EW	
Stylommatophora	Partulidae	<i>Partula variabilis</i>				1996	EX	
Stylommatophora	Partulidae	<i>Partula vittata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Samoana abbreviata</i>	2000	CR	B1+2cde	2011	CR	B2ab(iii)
Stylommatophora	Partulidae	<i>Samoana attenuata</i>				2007	CR	A2e;B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Samoana bellula</i>				2007	CR	B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Samoana burchi</i>	2007	CR	B2ab(ii,iv)	2011	CR	B2ab(iii)
Stylommatophora	Partulidae	<i>Samoana conica</i>				1996	EN	A2ce
Stylommatophora	Partulidae	<i>Samoana cramptoni</i>				2011	CR	D
Stylommatophora	Partulidae	<i>Samoana decussatula</i>				2007	CR	B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Samoana diaphana</i>				2011	EN	B2ab(i,ii,iii)
Stylommatophora	Partulidae	<i>Samoana dryas</i>				2007	CR	B2ac(ii,iii)
Stylommatophora	Partulidae	<i>Samoana fragilis</i>				2000	CR	B1+2cd
Stylommatophora	Partulidae	<i>Samoana hamadryas</i>				2007	CR	B2ab(ii,iii)
Stylommatophora	Partulidae	<i>Samoana inflata</i>				2007	EX	
Stylommatophora	Partulidae	<i>Samoana jackieburchi</i>				2007	EX	
Stylommatophora	Partulidae	<i>Samoana magdaliniae</i>				2007	DD	
Stylommatophora	Partulidae	<i>Samoana margaritae</i>				2007	VU	D2
Stylommatophora	Partulidae	<i>Samoana meyeri</i>				2011	CR	B2ab(ii,iii)
Stylommatophora	Partulidae	<i>Samoana oreas</i>				2007	CR	B2ab(ii,iii)
Stylommatophora	Partulidae	<i>Samoana strigata</i>				2007	CR	B2ab(ii,iv)
Stylommatophora	Partulidae	<i>Samoana thurstoni</i>				2000	EN	A1c+2ce
Stylommatophora	Punctidae	<i>Christianoconcha quintalia</i>				1996	VU	D2

Stylommatophora	Pupillidae	<i>Nesopupa eapensis</i>				1996	DD	
Stylommatophora	Pupillidae	<i>Nesopupa ponapica</i>				1996	DD	
Stylommatophora	Pupillidae	<i>Nesopupa quadrasi</i>				1996	DD	
Stylommatophora	Rhytididae	<i>Delos gardineri</i>				2011	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)
Stylommatophora	Rhytididae	<i>Delos oualanensis</i>				1996	DD	
Stylommatophora	Rhytididae	<i>Ouagapia perryi</i>				2011	EN	B2ab(ii,iii)
Stylommatophora	Rhytididae	<i>Ouagapia ratusukuni</i>				2011	CR	B1ab(ii,iii)
Stylommatophora	Succineidae	<i>Succinea guamensis</i>				1996	DD	
Stylommatophora	Succineidae	<i>Succinea philippinica</i>				1996	DD	
Stylommatophora	Succineidae	<i>Succinea philippinica</i>				2011	DD	
Stylommatophora	Succineidae	<i>Succinea piratarum</i>				1996	EN	A2c
Stylommatophora	Succineidae	<i>Succinea quadrasi</i>				1996	EN	A2e
Stylommatophora	Succineidae	<i>Succinea rotumana</i>				2011	CR	B1ab(ii,iii)
Stylommatophora	Trochomorphidae	<i>Videna electra</i>	1996	DD		2011	VU	B1ab(iii)+2ab(iii)
Stylommatophora	Trochomorphidae	<i>Videna oleacina</i>	1996	DD		2011	EN	B1ab(iii)+2ab(iii)
Stylommatophora	Trochomorphidae	<i>Videna pagodula</i>	1996	DD		2011	CR	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Trochomorphidae	<i>Videna pumila</i>	1996	DD		2011	CR	D
Stylommatophora	Valloniidae	<i>Pupisoma orcula</i>				2000	LR/lc	
Stylommatophora	Zonitidae	<i>Brazieria entomostoma</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Brazieria erasa</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Brazieria lutaria</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Brazieria minuscula</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Brazieria obesa</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Brazieria velata</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Hongolua kondorum</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Kondoa kondorum</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha abrochroa</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha accurata</i>				2011	VU	B1ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha albobstriata</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha apia</i>				1996	EN	A2ce
Stylommatophora	Zonitidae	<i>Trochomorpha approximata</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha carolinae</i>				1996	DD	

Stylommatophora	Zonitidae	<i>Trochomorpha conoides</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha contigua</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha corallina</i>				2011	NT	
Stylommatophora	Zonitidae	<i>Trochomorpha depressostriata</i>				2011	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha fessonia</i>				2011	NT	
Stylommatophora	Zonitidae	<i>Trochomorpha kambarae</i>				2011	CR	B1ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha kantavuensis</i>				2011	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha kuesteri</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha latimarginata</i>				2011	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha lüdersi</i>				2011	NT	
Stylommatophora	Zonitidae	<i>Trochomorpha merzianoides</i>				2011	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha moalensis</i>				2011	CR	B1ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha nigrifella</i>				1996	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha planoconus</i>				2011	CR	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha tavinniensis</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha transarata</i>				2011	EN	B1ab(ii,iii)+2ab(ii,iii)
Stylommatophora	Zonitidae	<i>Trochomorpha tumulus</i>				2011	DD	
Stylommatophora	Zonitidae	<i>Trochomorpha tuvuthae</i>				2011	CR	B1ab(iii)

Appendix 3: Current Red List Status of Pacific Island Reptiles

Notes:

i) **Species in bold** are published in IUCN's Red List version 2012:2.

ii) Some species have been published on the Red List previously, but have been re-assessed as part of this project due to new information available.

Order	Family	Species	2011 Assessment	Category	Criteria	Previous Published Category	Regional endemic	Single-country endemic
Squamata	Acrochordidae	<i>Acrochordus granulatus</i>	Draft	LC		LC		
Squamata	Agamidae	<i>Hypsilurus godeffroyi</i>	Published	DD				Palau
Squamata	Agamidae	<i>Hypsilurus longi</i>	Draft	LC			Yes	
Squamata	Agamidae	<i>Hypsilurus macrolepis</i>	Draft	NT				Solomon Islands
Squamata	Agamidae	<i>Hypsilurus modestus</i>	Draft	LC				
Squamata	Agamidae	<i>Hypsilurus schoedei</i>	Draft	LC				Papua New Guinea
Squamata	Boidae	<i>Candoia aspera</i>	Draft	LC				
Squamata	Boidae	<i>Candoia bibroni</i>	Published	LC			Yes	
Squamata	Boidae	<i>Candoia carinata</i>	Draft	LC				
Squamata	Boidae	<i>Candoia paulsoni</i>	Draft	LC		NE		
Squamata	Boidae	<i>Candoia superciliosa</i>	Published	LC				Palau
Squamata	Colubridae	<i>Boiga irregularis</i>	Draft	LC				
Squamata	Colubridae	<i>Dendrelaphis calligastra</i>	Draft	LC		LC		
Squamata	Colubridae	<i>Dendrelaphis punctulatus</i>	Draft	LC		LC		
Squamata	Colubridae	<i>Dendrelaphis salomonis</i>	Draft	LC			Yes	
Squamata	Colubridae	<i>Stegonotus heterurus</i>	Draft	LC				Papua New Guinea
Squamata	Colubridae	<i>Stegonotus modestus</i>	Draft	LC				Papua New Guinea
Squamata	Elapidae	<i>Aspidomorphus muelleri</i>	Draft	LC				
Squamata	Elapidae	<i>Loveridgelaps elapoides</i>	Draft	VU	B1ab(iii,v)			Solomon Islands
Squamata	Elapidae	<i>Ogmodon vitanus</i>	Draft	VU	B1ab(iii)	VU		Fiji
Squamata	Elapidae	<i>Parapistocalamus hedigeri</i>	Draft	DD		LC	Yes	
Squamata	Elapidae	<i>Salomonelaps par</i>	Draft	LC			Yes	
Squamata	Gekkonidae	<i>Cyrtodactylus biordinis</i>	Draft	LC		DD		
Squamata	Gekkonidae	<i>Cyrtodactylus louisiadensis</i>	Draft	LC				
Squamata	Gekkonidae	<i>Cyrtodactylus salomonensis</i>	Draft	NT			Yes	

Squamata	Gekkonidae	<i>Gehyra brevipalmata</i>	Published	LC				Palau
Squamata	Gekkonidae	<i>Gehyra insulensis</i>	Draft	LC				
Squamata	Gekkonidae	<i>Gehyra oceanica</i>	Draft	LC				
Squamata	Gekkonidae	<i>Gehyra vorax</i>	Draft	NT			Yes	
Squamata	Gekkonidae	<i>Gekko vittatus</i>	Draft	LC				
Squamata	Gekkonidae	<i>Hemidactylus frenatus</i>	Draft	LC		LC		
Squamata	Gekkonidae	<i>Hemidactylus garnotii</i>	Draft	LC				
Squamata	Gekkonidae	<i>Hemiphyllodactylus ganoklonis</i>	Draft	LC				Palau
Squamata	Gekkonidae	<i>Hemiphyllodactylus typus</i>	Draft	LC				
Squamata	Gekkonidae	<i>Lepidodactylus buleli</i>	Draft	DD	B1ab(iii); D2			Vanuatu
Squamata	Gekkonidae	<i>Lepidodactylus euaensis</i>	Draft	CR	B1ab(iii)			Tonga
Squamata	Gekkonidae	<i>Lepidodactylus flavivularis</i>	Draft	DD	A1a+2a+4ac; B1a+2a; C2a(i); D			Solomon Islands
Squamata	Gekkonidae	<i>Lepidodactylus gardineri</i>	Published	VU	D2			Fiji
Squamata	Gekkonidae	<i>Lepidodactylus guppyi</i>	Draft	LC			Yes	
Squamata	Gekkonidae	<i>Lepidodactylus lugubris</i>	Draft	LC				
Squamata	Gekkonidae	<i>Lepidodactylus manni</i>	Draft	VU	B1ab(iii)			Fiji
Squamata	Gekkonidae	<i>Lepidodactylus moestus</i>	Published	LC			Yes	
Squamata	Gekkonidae	<i>Lepidodactylus mutahi</i>	Draft	DD		LC	Yes	
Squamata	Gekkonidae	<i>Lepidodactylus oligoporus</i>	Draft	VU	D2			FSM
Squamata	Gekkonidae	<i>Lepidodactylus paurolepis</i>	Draft	VU	D2			Palau
Squamata	Gekkonidae	<i>Lepidodactylus pulcher</i>	Draft	DD				Papua New Guinea
Squamata	Gekkonidae	<i>Lepidodactylus shebae</i>	Draft	DD				Solomon Islands
Squamata	Gekkonidae	<i>Lepidodactylus tepukapili</i>	Draft	LC	D2			Tuvalu
Squamata	Gekkonidae	<i>Lepidodactylus vanuatuensis</i>	Draft	LC		LC		Vanuatu
Squamata	Gekkonidae	<i>Lepidodactylus woodfordi</i>	Draft	DD			Yes	
Squamata	Gekkonidae	<i>Nactus multica rinatus</i>	Draft	LC		LC		
Squamata	Gekkonidae	<i>Nactus pelagicus</i>	Draft	LC		LC	Yes	
Squamata	Gekkonidae	<i>Perochirus ateles</i>	Draft	EN	B1ab(v)			
Squamata	Gekkonidae	<i>Perochirus guentheri</i>	Draft	CR	D			Vanuatu
Squamata	Gekkonidae	<i>Perochirus scutellatus</i>	Draft	VU	D2			FSM
Squamata	Homalopsidae	<i>Cerberus rynchops</i>	Draft	LC		LC		
Squamata	Iguanidae	<i>Brachylophus bulabula</i>	Published	EN	A2bce+4bce			Fiji

Squamata	Iguanidae	<i>Brachylophus fasciatus</i>	Published	EN	A1c		Yes	
Squamata	Iguanidae	<i>Brachylophus vitiensis</i>	Published	CR	A2abce			Fiji
Squamata	Natricidae	<i>Tropidonophis dahlia</i>	Draft	LC		LC		Papua New Guinea
Squamata	Natricidae	<i>Tropidonophis hypomelas</i>	Draft	LC				Papua New Guinea
Squamata	Pygopodidae	<i>Lialis jicari</i>	Draft	LC				
Squamata	Pythonidae	<i>Bothrochilus boa</i>	Draft	LC			Yes	
Squamata	Pythonidae	<i>Leiopython albertisii</i>	Draft	LC				
Squamata	Pythonidae	<i>Morelia amethystina</i>	Draft	LC		LC		
Squamata	Scincidae	<i>Caledoniscincus atropunctatus</i>	Draft	LC		LC	Yes	
Squamata	Scincidae	<i>Carlia ailanpalai</i>	Draft	LC				Papua New Guinea
Squamata	Scincidae	<i>Carlia mysi</i>	Draft	LC				Papua New Guinea
Squamata	Scincidae	<i>Corucia zebrata</i>	Draft	NT			Yes	
Squamata	Scincidae	<i>Cryptoblepharus eximius</i>	Draft	NT				Fiji
Squamata	Scincidae	<i>Cryptoblepharus novaeguineae</i>	Draft	LC		LC		
Squamata	Scincidae	<i>Cryptoblepharus novohebridicus</i>	Draft	LC				Vanuatu
Squamata	Scincidae	<i>Cryptoblepharus poecilopleurus</i>	Draft	LC				
Squamata	Scincidae	<i>Cryptoblepharus rutilus</i>	Draft	LC		LC		Palau
Squamata	Scincidae	<i>Emoia adspersa</i>	Draft	EN	B1ab(iii,v)	EN	Yes	
Squamata	Scincidae	<i>Emoia aneityumensis</i>	Draft	EN	B1ab(iii)	EN		Vanuatu
Squamata	Scincidae	<i>Emoia arnoensis</i>	Published	LC			Yes	
Squamata	Scincidae	<i>Emoia atrocostata</i>	Draft	LC				
Squamata	Scincidae	<i>Emoia bismarckensis</i>	Draft	LC				Papua New Guinea
Squamata	Scincidae	<i>Emoia boettgeri</i>	Draft	EN	B1ab(iii)	EN	Yes	
Squamata	Scincidae	<i>Emoia caeruleocauda</i>	Published	LC				
Squamata	Scincidae	<i>Emoia campbelli</i>	Draft	EN	B1ab(iii)			Fiji
Squamata	Scincidae	<i>Emoia concolor</i>	Draft	NT				Fiji
Squamata	Scincidae	<i>Emoia cyanogaster</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia cyanura</i>	Draft	LC				
Squamata	Scincidae	<i>Emoia erronan</i>	Draft	VU	D2			Vanuatu
Squamata	Scincidae	<i>Emoia flavigularis</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia impar</i>	Published	LC				
Squamata	Scincidae	<i>Emoia isolata</i>	Draft	LC		VU		Solomon Islands

Squamata	Scincidae	<i>Emoia jakati</i>	Draft	LC				
Squamata	Scincidae	<i>Emoia kordoana</i>	Draft	LC				
Squamata	Scincidae	<i>Emoia lawesi</i>	Draft	EN	B1ab(iii,v)	EN	Yes	
Squamata	Scincidae	<i>Emoia maculata</i>	Draft	LC				Solomon Islands
Squamata	Scincidae	<i>Emoia mivarti</i>	Draft	VU	D2			Papua New Guinea
Squamata	Scincidae	<i>Emoia mokosariniveikau</i>	Draft	EN	B1ab(iii)+2ab(iii)			Fiji
Squamata	Scincidae	<i>Emoia nigra</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia nigromarginata</i>	Draft	LC				Vanuatu
Squamata	Scincidae	<i>Emoia parkeri</i>	Draft	VU	B1ab(iii,v)			Fiji
Squamata	Scincidae	<i>Emoia ponapea</i>	Published	EN	B1ab(iii)+2ab(iii)			FSM
Squamata	Scincidae	<i>Emoia pseudocyanura</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia rennellensis</i>	Draft	LC				Solomon Islands
Squamata	Scincidae	<i>Emoia rufilabialis</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia samoensis</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia sanfordi</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia schmidtii</i>	Draft	LC				Solomon Islands
Squamata	Scincidae	<i>Emoia slevini</i>	Draft	CR	B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)		Yes	
Squamata	Scincidae	<i>Emoia taumakoensis</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Emoia tongana</i>	Published	LC			Yes	
Squamata	Scincidae	<i>Emoia trossula</i>	Draft	EN	B1ab(iii,v)		Yes	
Squamata	Scincidae	<i>Emoia tuitarere</i>	Draft	VU	D2			Cook Islands
Squamata	Scincidae	<i>Eugongylus albofasciolatus</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Eugongylus rufescens</i>	Draft	LC				
Squamata	Scincidae	<i>Eutropis multicarinata</i>	Draft	LC				
Squamata	Scincidae	<i>Geomyersia coggeri</i>	Draft	VU	B1a+2a; D2	VU		Papua New Guinea
Squamata	Scincidae	<i>Geomyersia glabra</i>	Draft	NT			Yes	
Squamata	Scincidae	<i>Lamprolepis smaragdina</i>	Draft	LC				
Squamata	Scincidae	<i>Leiolopisma alazon</i>	Draft	CR	B1ab(iii,v)+2ab(iii,v)			Fiji
Squamata	Scincidae	<i>Lipinia leptosoma</i>	Published	NT				Palau
Squamata	Scincidae	<i>Lipinia noctua</i>	Draft	LC				
Squamata	Scincidae	<i>Lipinia rouxi</i>	Draft	LC	B1a			Papua New Guinea
Squamata	Scincidae	<i>Prasinohaema virens</i>	Draft	LC				

Squamata	Scincidae	<i>Sphenomorphus bignelli</i>	Draft	LC				Solomon Islands
Squamata	Scincidae	<i>Sphenomorphus concinnatus</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Sphenomorphus cranei</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Sphenomorphus fragosus</i>	Draft	DD			Yes	
Squamata	Scincidae	<i>Sphenomorphus jobiensis</i>	Draft	LC				
Squamata	Scincidae	<i>Sphenomorphus pratti</i>	Draft	LC				
Squamata	Scincidae	<i>Sphenomorphus scutatus</i>	Published	LC				Palau
Squamata	Scincidae	<i>Sphenomorphus simus</i>	Draft	LC				
Squamata	Scincidae	<i>Sphenomorphus solomonis</i>	Draft	LC				
Squamata	Scincidae	<i>Sphenomorphus tanneri</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Sphenomorphus taylori</i>	Draft	DD			Yes	
Squamata	Scincidae	<i>Sphenomorphus transversus</i>	Draft	DD			Yes	
Squamata	Scincidae	<i>Sphenomorphus woodfordi</i>	Draft	LC				
Squamata	Scincidae	<i>Tachygyia microlepis</i>	Published	EX				Tonga
Squamata	Scincidae	<i>Tiliqua gigas</i>	Draft	LC				
Squamata	Scincidae	<i>Tribolonotus annectens</i>	Draft	DD				Papua New Guinea
Squamata	Scincidae	<i>Tribolonotus blanchardi</i>	Draft	LC		VU	Yes	
Squamata	Scincidae	<i>Tribolonotus brongersmai</i>	Draft	DD				Papua New Guinea
Squamata	Scincidae	<i>Tribolonotus ponceleti</i>	Draft	DD		DD	Yes	
Squamata	Scincidae	<i>Tribolonotus pseudoponceleti</i>	Draft	LC			Yes	
Squamata	Scincidae	<i>Tribolonotus schmidti</i>	Draft	LC				Solomon Islands
Squamata	Typhlopidae	<i>Acutotyphlops infralabialis</i>	Draft	DD			Yes	
Squamata	Typhlopidae	<i>Acutotyphlops kunuaensis</i>	Draft	DD			Yes	
Squamata	Typhlopidae	<i>Acutotyphlops solomonis</i>	Draft	DD			Yes	
Squamata	Typhlopidae	<i>Acutotyphlops subocularis</i>	Draft	LC				Papua New Guinea
Squamata	Typhlopidae	<i>Ramphotyphlops acuticaudus</i>	Published	LC				Palau
Squamata	Typhlopidae	<i>Ramphotyphlops aluensis</i>	Published	DD				Fiji
Squamata	Typhlopidae	<i>Ramphotyphlops angusticeps</i>	Draft	DD				Solomon Islands
Squamata	Typhlopidae	<i>Ramphotyphlops becki</i>	Draft	DD				Solomon Islands
Squamata	Typhlopidae	<i>Ramphotyphlops depressus</i>	Published	LC			Yes	
Squamata	Typhlopidae	<i>Ramphotyphlops mansuetus</i>	Draft	DD			Yes	
Squamata	Typhlopidae	<i>Typhlops depressiceps</i>	Draft	LC				Papua New Guinea

Squamata	Varanidae	<i>Varanus finschi</i>	Draft	LC		LC		
Squamata	Varanidae	<i>Varanus indicus</i>	Draft	LC		LC		
Squamata	Varanidae	<i>Varanus juxtindicus</i>	Draft	LC				Solomon Islands
Squamata	Varanidae	<i>Varanus spinulosus</i>	Draft	LC			Yes	



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