**Status**

Fair

Trend

Deteriorating

Data confidence

Medium



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PRESENT STATUS

Island biodiversity continues to be extremely vulnerable, and 47% of the known threatened Pacific species are declining towards extinction. Pacific island species have high levels of endemism combined with small land areas and therefore limited habitat. Habitat change, naiveté to predation by introduced animals, vulnerability to invasive species-driven changes, pollution, and climate change combine to influence the abundance and population structure of Pacific biodiversity.

The IUCN Red List of Threatened Species (Red List) is the global standard for the extinction risk status of animal, plant, and fungal species. Of the 11,158 listed species (IUCN 2020; Figure 22.1, Table 22.1) present in the Pacific island countries and territories included in this report:¹

- 1,891 species (16.9%) are listed as threatened, falling in the categories of critically endangered, endangered, or vulnerable,
- 125 species (1.1%) are considered extinct or extinct in the wild,
- 7,671 species (68.7%) fall within the categories of lower risk, near threatened, or of least concern, and
- 1,471 species (13.2%) are data deficient and thus cannot be categorised accurately.

In 2013, 23% of the 5,797 listed Pacific species were identified as threatened (SPREP 2016). The change to 16.9% threatened in 2020 (Figures 22.1 and 22.2) does not necessarily mean that the status of individual species has improved; rather, the doubling in number of listed Pacific species might have balanced the number of threatened species with the number of listed species overall. More recent listings have a greater share of species at risk (see Table 22.2).

¹ American Samoa, Commonwealth of the Northern Mariana Islands, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Papua New Guinea, Palau, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna

Only 1% of listed species in the Pacific islands have an increasing trend in population abundance, matching the global average, and 47% of threatened species show population declines (Table 22.1). The population status of over half of the species present in the Pacific islands identified on the Red List is unknown. An unknown population trend is cause for concern because a lack of sightings, and therefore a lack of data on abundance over time, is common for species at risk, particularly Critically Endangered species.

Representation by taxonomic group or system is not even (Table 22.3): for example, the Fungi are significantly under-represented, and although 6,354 terrestrial and 4,740 marine species are listed, only 1,644 freshwater species are listed. The first systematic investigation of Pacific island freshwater ecosystems was conducted in 2009, at which time 44% of the studied water bodies were already stocked with nonindigenous fish species (Schabetsberger et al. 2009). Considering the pace of ecological change and the high extinction rate on islands, much biodiversity could be lost before we know it was there.

The share of known species represented on the Red List has improved substantially since 2008 for reptiles and fishes (Pippard 2008). Many other important groups, including insects and plants, remain poorly represented by comparison to the number of described species.

About 57% of the Pacific assessments were published within the last 5 years, but 15% of the Pacific listings are over 10 years out of date. These proportions are similar to the global share of 56% of assessments published within the last 5 years and 17% over 10 years old, with 40% of assessments for global species at risk in need of an update according to the IUCN. Of the 1,904 Pacific species categorised as extinct in the wild, critically endangered, endangered, and vulnerable, 43% of the listings need to be updated.

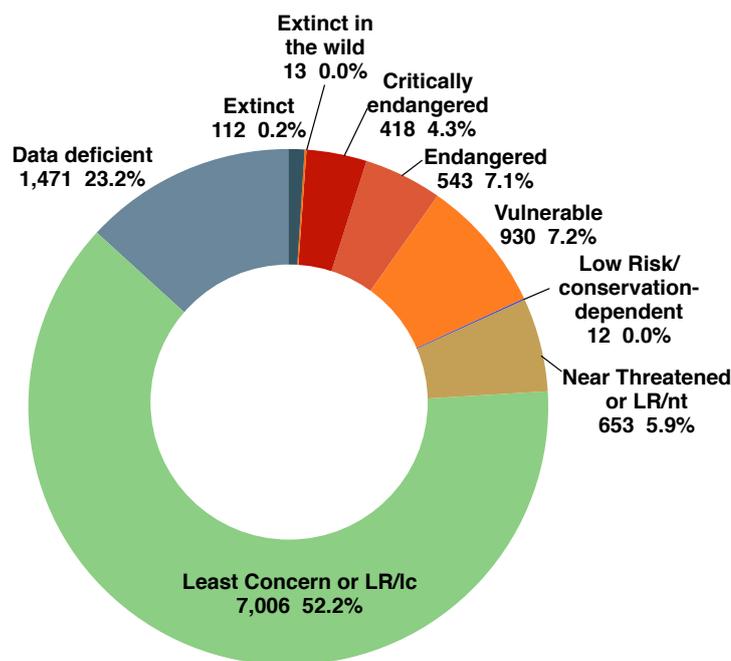


FIGURE 22.1: Number of species found within all IUCN Red List risk categories for all 22 Pacific island countries and territories combined, 2020. Source: IUCN (2020)

TABLE 22.2: Red List assessments of species in Pacific island countries and territories published in 2010, 2015, and 2020. Although the number of assessments published in 2020 was substantially greater than the number published in 2010 or 2015, the share of those species that are at risk increased and the share of species with stable populations dropped. Source: IUCN (2020)

	2010	2015	2020
Number of assessments	660	577	1314
Share of species by threat status (%)			
Extinct	0.0	0.0	0.2
Extinct in the wild	0.0	0.0	0.0
Critically endangered	2.3	2.3	4.3
Endangered	4.8	1.9	7.1
Vulnerable	5.0	2.6	7.2
Low Risk/conservation-dependent	0.0	0.0	0.0
Near Threatened or LR/nt	4.2	2.3	5.9
Least Concern or LR/lc	77.3	82.8	52.2
Data deficient	6.4	8.1	23.2
Share of species by population trend (%)			
Unknown	62.0	76.8	70.2
Stable	23.6	16.6	14.6
Declining	14.4	6.2	15.0
Increasing	0.0	0.3	0.1

TABLE 22.1: Population trends of Pacific island species on the IUCN Red List, total and by selected risk category. Species defined as present in the 21 Pacific island countries and territories that are SPREP Members, in addition to Pitcairn island, were considered. Source: IUCN (2020)

POPULATION TREND %	UNKNOWN	STABLE	DECREASING	INCREASING
All listed species	62.2	20.9	16.0	0.9
Critically endangered species	53.6	1.9	43.5	1.0
Endangered species	38.3	2.0	58.9	0.7
Vulnerable species	51.7	5.2	41.8	1.3

CRITICAL CONNECTIONS

For the Pacific islands, biodiversity loss threatens the cultures, traditions, well-being, and spiritual heritage of Pacific islanders. Accompanying aesthetic changes from biodiversity loss undermine tourism. These changes are under-monitored in comparison to the known impacts of biodiversity loss on the stable function of healthy ecosystems.

Shifts in and loss of biodiversity can both result in degradation of ecosystem services, such as availability of food, fresh water, and fuel sources. These changes in ecosystem services can affect health and wellbeing, livelihoods, income, local migration, and potential political conflict. Loss of biodiversity might reduce the opportunity for bioprospecting and the discovery of potential treatments for many diseases and health problems and might foster the spread of infectious diseases.

As the COVID-19 pandemic illustrated, our relationship with biodiversity has direct and indirect human health impacts. The conservation or unique Pacific species is fundamental to the Pacific way of life.

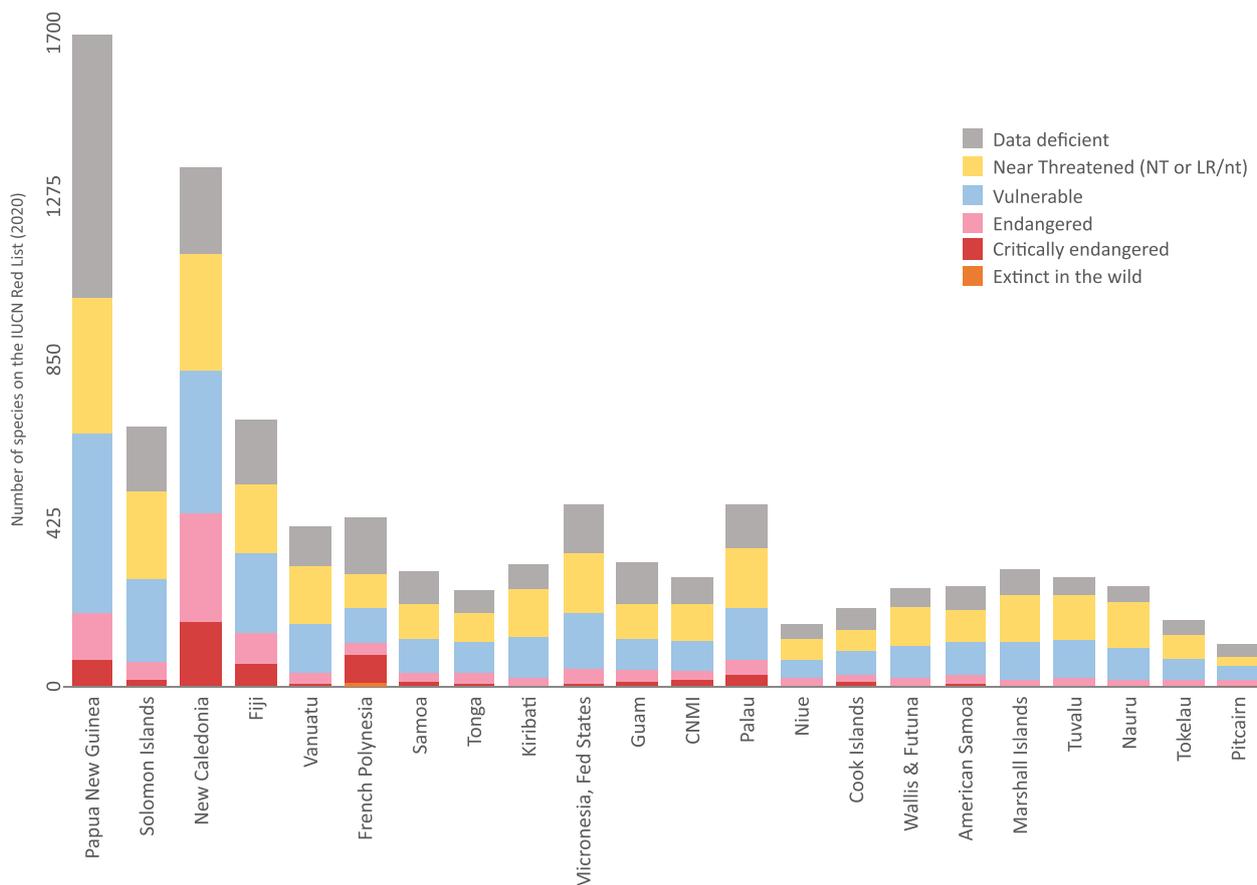


FIGURE 22.2: Number of species on the IUCN Red List at risk in Pacific island countries and territories, 2020. Countries are arranged by order of largest to smallest terrestrial area. Refer to Table 22.4 for data detail and land area. Numbers of species of Least Concern are excluded from this graph, provided in breakdown detail as Table 22.3. There is a general pattern of more species assessments on the Red List from countries with more land area and the highest biodiversity overall. CNMI: Commonwealth of the Northern Mariana Islands. Source: IUCN (2020)

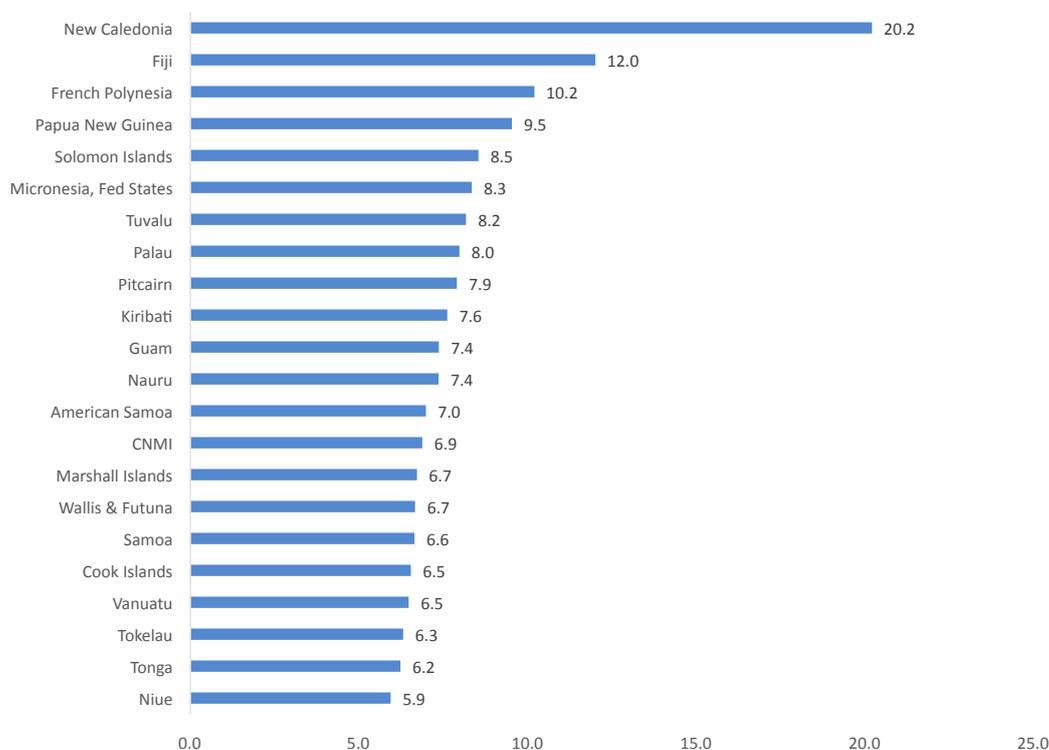


FIGURE 22.3: Species at risk as a share of all species on the IUCN Red List, by Pacific island country or territory (%), 2020. Species in the categories Extinct in the Wild, Critically Endangered, Endangered, and Vulnerable were considered at risk. Note that the identification of species at risk relies on data-driven assessments, thereby the share of species at risk could be underestimated for understudied islands. CNMI: Commonwealth of the Northern Mariana Islands. Source: IUCN (2020)

TABLE 22.3: Number of Red Listed species in selected taxonomic groups in the Pacific island countries and territories.

These groups range from taxonomic Kingdom to Order and are not comprehensive of all Pacific species. Mammalia is subdivided by system into terrestrial or marine; the New Zealand fur seal (*Arctocephalus forsteri*) and leopard seal (*Hydrurga leptonyx*) are included in both systems and are both considered of Least Concern. It is important to note that the number of described species far exceeds the number on the Red List for some groups. Significant gaps in representation remain for fungi, plants, insects (not shown) and more (Pippard 2008); for example, only 10 species of fungi have been assessed and listed, all since 2013. Source: IUCN (2020)

NUMBER OF SPECIES	FUNGI	PLANTAE (PLANTS)	CORALS (CNIDARIA)	AMPHIBIA	AVES (BIRDS)	MAMMALIA	MAMMALIA	REPTILIA	TESTUDINES (INCL. TURTLES)
Taxonomic rank	Kingdom	Kingdom	Phylum	Class	Class	Class. terrestrial	Class. marine	Class	Order
Total	10	3,368	599	284	1,262	320	35	468	17
Extinct	0	12	0	0	29	4	0	1	0
Extinct in the wild	0	1	0	0	1	0	0	0	0
Critically endangered	1	236	0	1	32	16	0	20	1
Endangered	6	315	8	0	41	33	2	38	4
Vulnerable	0	462	163	11	90	23	5	32	6
Lower risk: Conservation dependent	0	8	0	0	0	0	0	0	0
Near Threatened (NT or LR/nt)	1	254	154	2	121	17	3	21	2
Least Concern (LC or LR/LC)	1	1,722	224	153	935	187	19	285	4
Data deficient	1	358	50	117	13	40	6	71	0

TABLE 22.4: Number of species on the IUCN Red List by Pacific island country or territory and share of those at risk, 2020. Countries are arranged by order of largest to smallest terrestrial area. There is a general pattern of more species assessments on the Red List from countries with more land area. CNMI: Commonwealth of the Northern Mariana Islands. Source: IUCN (2020)

	LAND AREA (KM ²)	EXTINCT	EXTINCT IN THE WILD	CRITICALLY ENDANGERED	ENDANGERED	VULNERABLE	LOWER RISK: CONSERVATION DEPENDENT	NEAR THREATENED (NT OR LR/NT)	LEAST CONCERN (LC OR LR/LC)	DATA DEFICIENT	TOTAL	SPECIES AT RISK (%)
Papua New Guinea	462,840	1	0	65	123	468	3	355	5032	831	6878	9.5
Solomon Islands	28,896	2	0	14	46	218	3	227	2572	172	3254	8.5
New Caledonia	18,575	9	0	168	283	372	10	299	2700	230	4071	20.2
Fiji	18,274	2	0	58	78	208	3	182	2166	167	2864	12.0
Vanuatu	12,189	1	0	4	30	125	4	152	2033	107	2456	6.5
French Polynesia	4000	65	11	69	37	88	2	88	1503	146	2009	10.2
Samoa	2831	2	0	7	27	86	3	90	1509	82	1806	6.6
Tonga	747	2	0	6	25	83	3	74	1574	63	1830	6.2
Kiribati	726	1	0	1	20	107	3	122	1360	66	1680	7.6
FSM	702	2	0	6	34	150	3	153	1801	128	2277	8.3
Guam	549	5	1	10	32	80	3	94	1336	108	1669	7.4
CNMI	464	2	0	11	25	81	3	95	1411	73	1701	6.9
Palau	459	1	0	28	40	133	4	153	2048	112	2519	8.0
Niue	260	0	0	2	18	48	0	58	982	37	1145	5.9
Cook Islands	236	16	0	9	19	60	1	55	1130	56	1346	6.5
Wallis & Futuna	200	0	0	3	17	84	0	99	1305	53	1561	6.7
American Samoa	199	1	0	5	25	84	3	87	1366	61	1632	7.0
Marshall Islands	181	0	0	1	15	100	3	125	1417	65	1726	6.7
Tuvalu	26	0	0	2	18	99	3	118	1167	49	1456	8.2
Nauru	20	0	0	2	12	87	0	117	1113	41	1372	7.4
Tokelau	12	0	0	2	14	55	2	59	956	37	1125	6.3
Pitcairn	5	0	1	2	14	38	1	26	584	30	696	7.9

PRESSURES AND OPPORTUNITIES

Our knowledge of Pacific species is growing. Research effort is related to the number of species assessments on the IUCN Red List and to the share of species with identified population trends. For some taxonomic groups, such as plants, fungi, and insects, the number of described species from Pacific islands is likely still a small fraction of the true number of species present.

We have enough information to know that human-caused pressures are contributing to or driving Pacific species decline.

Invasive species remain the most commonly identified threat to Pacific wildlife (listed as a threat for 1,641 species), followed by climate change and severe weather (1,622 species). Although some threats are global and/or transboundary, Pacific people can directly influence some of the top threats to Pacific species, such as unsustainable harvest, entanglement in plastics and fishing debris, and local habitat loss.

Measures of the status of and threats to IUCN Red List Species in Pacific islands are limited by a lack of research and available data (IPBES 2018). Although baseline knowledge of Pacific island species would be ideal for

making informed decisions to better protect biodiversity and manage natural resources, collecting data for the majority of species is costly and requires a high level of expertise for identification.

In a 2018 assessment, the lowest extinction risk of endemic species within the Asia-Pacific region occurred in Oceania (22% threatened; the highest risks were found in South Asia with 46% of species threatened and Northeast Asia with 36% threatened), even though Oceania had the largest numbers of species actually extinct (IPBES 2018). More than half of all recent extinctions have occurred on islands, and islands are home to over one third of all species facing extinction in the near future (IPBES 2018). Invasive animals have been identified as a driver in 86% of island plant and vertebrate extinctions (see Regional Indicators: [Invasive species](#)). These findings demonstrate that local management actions can alter the course of biodiversity loss.

In addition to single-species assessments, a new Red List of Ecosystems has been proposed as a global standard. All ecosystems around the world are to be assessed by 2025. There have been no assessments for the Pacific to date.



REGIONAL RESPONSE RECOMMENDATIONS

Although 13% of the listed Pacific species lack sufficient data to identify their conservation status, our understanding of the threats to Pacific species is enough to demand greater action. For some taxonomic groups, many more Pacific species might exist and might be described than are presently on the IUCN Red List (Pippard 2008). A complete analysis of representation will require national and regional analyses. Even without more data, species-driven action with a focus on healthy native habitats can benefit multiple species simultaneously.

Countries can benefit from a whole system approach with investment in management actions, such as the prevention, control, and eradication of invasive species, to conserve biodiversity. To progress towards the desired outcomes, Pacific islanders can:

- Identify priorities for biodiversity protection, assessment, and monitoring, in consultation, to identify the areas and kinds of species that require most urgent action;
- Create a regional species inventory identifying priority species and priority threats to those species;
- Support local researchers and knowledge keepers, including training in taxonomy and biodiversity

assessments for the next generation of Pacific island experts (see Box i.2);

- Mitigate threats to Pacific biodiversity, with key attention to climate change, invasive species and disease, and habitat loss, while equipping communities and sectors to live alongside, conserve, and enrich Pacific biodiversity;
- Implement and monitor action plans for species-driven conservation, ensuring a balance between assessment and action in the spending on environmental management;
- Plan for species conservation, including preparedness such as disaster risk reduction and biosecurity; and
- Partner for environmental management across sectors that rely on biodiversity or impact biodiversity and natural spaces and look for synergistic benefits.

Globally, biodiversity is declining. Action to reverse the decline is essential across the world, and the world benefits from practical examples of positive relationships between people and nature. Pacific leadership can capitalise on our existing island life and connections to nature to support strong, sustainable relationships with our unique biodiversity.

INDICATOR IN ACTION

SDGs 6.6, 15.1, 15.5, 15.7, 15.c · Convention on Biological Diversity · SAMOA Pathway · Pacific Regional Environment Objective 2.3 · Pacific Islands Framework for Nature Conservation Objective 4

FOR MORE INFORMATION

IPBES (2018) The IPBES regional assessment report on biodiversity and ecosystem services for Asia and the Pacific. Karki M, Senaratna Sellamuttu S, Okayasu S, Suzuki W (eds) Bonn, Germany: Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

IUCN (2020) The IUCN Red List of Threatened Species. Version 2020-1. <https://www.iucnredlist.org> (accessed October 2020)

IUCN Red List of Ecosystems: <https://iucnrle.org/about-rle/rle/>

For assessments, see <https://iucnrle.org/assessments/>

Pippard H (2008) The Pacific islands: an analysis of the status of species as listed on the 2008 IUCN Red List of Threatened Species. International Union for the Conservation of Nature.

Schabetsberger R, Drozdowski G, Rott E, Lenzenweger R and others (2009) Losing the Bounty? Investigating species richness in isolated freshwater ecosystems of Oceania. *Pacific Science* 63:153–179. DOI: 10.2984/049.063.0201

SPREP (2016) State of conservation in Oceania: regional report. Apia: Secretariat of the Pacific Environment Programme.

Indicator 22 of 31 in *State of Environment and Conservation in the Pacific Islands: 2020 Regional Report*



The Secretariat of the Pacific Regional Environment Programme (SPREP) supports 14 countries and 7 territories in the Pacific to better manage the environment. SPREP member countries and members of the Pacific Roundtable on Nature Conservation (PIRT) have contributed valuable input to the production of this indicator. www.sprep.org

National and regional environment datasets supporting the analysis above can be accessed through the Pacific Environment Portal. pacific-data.sprep.org

For protected areas information, please see the Pacific Islands Protected Area Portal. pipap.sprep.org