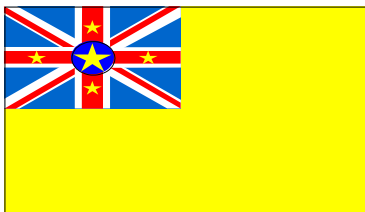


FIFTH NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY

NIUE

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EXECUTIVE SUMMARY

Biodiversity is very important to the economy of Niue with about a fifth of its GDP coming from the agriculture, fishery, forestry and hunting sectors. It is also the basis for subsistence lifestyles and has cultural significance. 70% of the country retains a cover of forest and 23% of it is in conservation areas, primarily the Huvalu Conservation Area.

Since the 4th National Report in 2009, there are two influential trends. The first is the slowly declining resident population (1607 in 2011), offset by an increasing number of tourists. The second is the ongoing recovery of the country's environment from the devastation caused by Cyclone Heta ten years ago.

Since 2009, there is evidence of a slight increase in forest areas reflecting reduced demand to clear land for agricultural plantations. However, there has been an increased impact from extensive fires now that there is more use of burning to clear scrub for planting, following reduced availability and increased costs of bulldozers.

Re-surveys in 2012 showed that numbers of the two hunted species, the Pacific pigeon (lupe) and the Tongan flying fox (peka) had recovered from the low numbers following Cyclone Heta, partly the result of a 3-year hunting ban imposed. However, current levels of hunting are not considered sustainable. Coral cover is increasing but has still not returned to pre-cyclone levels. Harvesting of pelagic fish is considered to be at sustainable levels though there is pressure on reef resources and potentially on bottom-dwelling fish stocks. Hunters report declines in the sizes of coconut crabs (uga) caught, suggesting there may be over-harvesting of this species. Increased commercialisation and the high numbers of crabs exported may be involved.

A series of on-going threats to Niue's biodiversity have been identified including invasive alien species, over-exploitation, point-source pollution and climate change leading to altered weather patterns. Two species, the blue-crowned lory and the olive small-scaled skink are considered under current threat of extinction and the causes of their declines need further investigation, though introduced predators (cats and rats) are likely to be involved.

Niue has integrated biodiversity into planning at the highest level, with the country's National Strategic Plan having environment as one of its seven pillars. A wide range of activities have been undertaken since the 4th National Report, particularly relating to *Article 6* of the Convention: "*General Measures*". Planning and legislation have been put into place across areas such as Forest Management, Coastal and Offshore Fisheries, Environmental Impact Assessment, Waste Management, Water Resources and Climate Change.

New multi-year projects are in place for Forestry and Conservation Area Management, Invasive Species Management and Integrated Water Resources.

Niue's 2001 National Biodiversity Strategy and Action Plan (NBSAP) has been reviewed and a revised version is in preparation. Some progress has been made on 83% of the actions in the original plan and almost a quarter of them have been fully achieved. Monitoring and evaluation will be strengthened in the new strategy.

Significant progress towards the Aichi Biodiversity Targets is reported on. Two of the targets within Millennium Development Goal 7 – *Ensure Environmental Sustainability* have already been met and Niue is on track to achieve the other three by 2015.

The key issue experienced by Niue in implementing the Convention on Biological Diversity is a shortage of human capacity. There are limited numbers of technically trained staff and significant time requirements involved in reporting on all the different Conventions and Agreements to which Niue is a party. It is difficult to maintain consistent efforts to address the threats to biodiversity and improve the status of species when available funding typically comes in large 2-3 year blocks with nothing in between.

Niue is currently developing its 2014-2018 Integrated Strategic Plan and its revised NBSAP and is confident that these will foster significant further effort to secure the future of the nation's biodiversity.

INTRODUCTION

Preparation of the Parties' Fifth National Reports is in accordance to COP decision X/10 and with Article 26 of the Convention.

The Fifth National Report will provide important information for a mid-term review of progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and progress towards the Aichi Biodiversity Targets which will be undertaken by the COP at its twelfth meeting in September 2014.

Information from the fifth national report will also contribute to the development of the Global Biodiversity Outlook, and furthermore, to report on contributions to the relevant 2015 Targets of the Millennium Development Goals.

This report was collated through a multi-stakeholder, multi-disciplinary approach to ensure it comprehensively reflects the national situation. The preparation of this report is also done in conjunction with the review of the National Biodiversity Strategy and Action Plan (NBSAP).

The importance of a national report is that it forms a useful tool for alerting those not yet engaged in the issues addressed by the Convention, highlighting that they are not remote issues addressed under an international legal instrument, but rather among the most urgent day-to-day issues faced by Niueans themselves.

PART I: AN UPDATE ON BIODIVERSITY STATUS, TRENDS AND THREATS AND IMPLICATIONS FOR HUMAN WELL-BEING

1. The importance of biodiversity to Niue

1.1 Economics

Niue's National Gross Domestic Product increased from 16.8 million in 2001 to 27 million in 2012, and the sectors directly linked to the use of biodiversity: agriculture, hunting, fishing and forestry, have contributed more than a fifth of this annually (Table 1).

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
%	21.1	20.2	21.3	21.9	22.2	24.2	22.2	21.8	22.6	20.8	20.5	18.0

Table 1: Percentage contribution to Gross Domestic Product of Agriculture, Hunting, Fishing and Forestry Sectors 2001-2012 (Source: Statistics Niue)

The natural environment underpins Niue's tourism industry which is currently a major focus for economic development. Its internationally renowned clear waters support diving and snorkelling activities, and humpback whales visit from July to October. Pelagic fish such as wahoo, tuna and mahimahi, support a small sports fishery and Niue Tourism is collecting data on the economic value of this to the sector. The country is largely covered in forest vegetation with a small number of readily observed bird species, flying foxes and lizards. Sea tracks, bush tracks and caves provide visitor attractions on land and support small guiding businesses. Seafood, traditional root crops and tropical fruits are widely sold in the local market and outlets and served in cafes and restaurants.

1.2 Human well-being

Agriculture, fisheries and to some extent, forestry are the main sources of local food on Niue (Niue Food Security Assessment, 2011). The 2009 agricultural census found that 87% of households were actively involved in agriculture, 71% kept livestock (pigs and chickens), 62% engaged in fishing and 60% hunted for coconut crabs (Statistics Niue, 2009). The 2011 population census included questions about the keeping of pigs and chickens and identified that 84% kept pigs and 86% kept free ranging chickens, so these livestock remain very important food sources (Statistics Niue, 2012).

Niue has about 19,000 hectares of native forest comprising approximately 70% of the island's land area. The major foods sourced from forests are edible ferns and yams, feral pigs and chickens, land crabs such as coconut crab *Birgus latro* (uga), pacific pigeons *Ducula pacifica* (lupe) and Tongan flying foxes or fruit bats *Pteropus tonganus* (peka).

The pigeon population is roughly estimated at 50,000 individuals (Butler *et al*, 2012) and the flying fox population at 2000-4000 (Brooke & Tschapka, 2002). The coconut crab is the only land crab that many people still continue to hunt for food, while other species of crab such as the kalahimu and kalavi are taken in smaller numbers. The estimated population of coconut

crabs was about 200,000 in a study by Schiller in 1992, which was thought to be a low number considering the amount of habitat available. No reliable updated figures are available. In 2009, 60% of households (279) engaged in coconut crab hunting with about 12,384 animals caught in the month before the census took place (Statistics Niue, 2009).

Forest has traditionally been an important source of firewood for cooking. But it has steadily been replaced by the use of electricity or gas, so that only 5% of households reported using firewood in 2011 compared to 18% in 1997 (Statistics Niue, 2012).

Regarding marine biodiversity, the Secretariat for the Pacific Community (SPC) carried out a socio-economic assessment in 2005 in all 14 villages covering 47% of households (218/468), which yielded the following results. The average fresh fish consumption (both reef and pelagic fish), was estimated to be 31.1/kg/person/year, which is slightly lower than the regional average of 35kg. Survey data suggested a total annual reef finfish catch of 53.4 tonnes, which meets about 77% of the consumption needs of Niue's total island population (69.3 tonnes/year). In addition, there was an estimated production of 76.2 tonnes/year from mid-water and trolling fishing, bringing the total finfish catch to 129.6 tonnes/year. The invertebrate fishing pressure imposed on the total coastal reef-flat area and the 1.9km² of accessible reef flats was considered surprisingly high: ≈ 7 and 18.3 tonnes/km²/year respectively. There were no official seafood exports during the assessment, although an estimated 5 tonnes/year of seafood was exported as gifts for relatives overseas. Most fish caught were consumed within households and only 10% of these reported that fishing provided supplementary income.

Table 2 below, provides a snapshot of the local catch of pelagic species by powered boats of the artisanal fishery in 2003 from logbooks (Fisheries Division, 2011). A logbook system remains in place but it is inconsistently managed and complied with, so more recent comprehensive data is unavailable. There have however, been significantly more such boats operating in recent years, from 50-60 in 2008 (SPC, 2008) to 115 'aluminium/inflatable' boats and 85 outboard engines owned in 2011 (Statistics Niue, 2012).

Species:	No. of Fish	Kg
Albacore Tuna	12	247
Sailfish	3	98
Shark	3	55
Barracuda	108	789
Skipjack Tuna	2093	5070
Big-eye Tuna	13	129
Triggerfish	5	4
Mahimahi	271	2208
Wahoo	635	8880
Marlin	4	587
Yellow-fin Tuna	1764	8208
Rainbow Runner	46	153
Other	2273	1598

Table 2: Typical total catch from local small dinghies per species reported 2003 (Fisheries Division, 2011).

Forests provide some local timber for making canoes, furniture and carvings, and a range of non-timber plant products. A review by Thaman *et al*, (2004), identifies 26 non-food uses of plants in Niue, the most widespread being medicinal purposes (68 species), firewood (30 spp.), ornamentals (28 spp.) and spiritual purposes (27 spp.). Of particular significance are the leaves of *Pandanus* sp. used for weaving.

Natural vegetation also provides important ecological services including erosion control, protection from salt spray, soil improvement, flood/runoff control, animal/plant habitats, wind protection, and weed/disease control.

1.3 Cultural Identity

In 2004, Niue convened a *Taoga Niue Fono* (workshop) to inaugurate a Government initiative – “to harness all those things which together make up the spirit and the material being of ‘*Tagata Niue*’ (Niuean people), and to secure the sovereign and ethnic identity of all Niueans” (Government of Niue, 2008). Presentations and discussions identified Niueans’ strong cultural ties to the land. A wide variety of natural resources were used in traditional arts and crafts, particularly weaving, and there were many traditional practices associated with hunting, fishing and agriculture. Long-term closures of forest or coastal areas to harvesting (tapu) or short-term bans in particular areas (fono), remain important parts of the Niuean tradition that are still practiced today.

Thaman *et al* (2004) identified that several plants used for medicine, handicrafts, fibre or cordage were rare, some due to past over-exploitation and lack of replanting. This situation is unlikely to have changed. The red feathers of the hega were used in girdles worn on the head so possible future loss of this species would be significant. Many stories and legends feature wildlife, two well-known ones featuring interactions between a whale and sea snake, and between an octopus and a rat.

2. Changes in the status and trends of biodiversity in Niue.

2.1 Changing pressure from people

Niue’s population continues to slowly decline at an average annual rate of -1% between 2006 and 2011 (Figure 1), which has eased the pressure on some of the country’s native habitats and species. However, at the same time, visitor numbers have increased significantly (Figure 2), a trend that is expected to continue as part of the push to encourage tourism, increasing the demand for some individual resources.

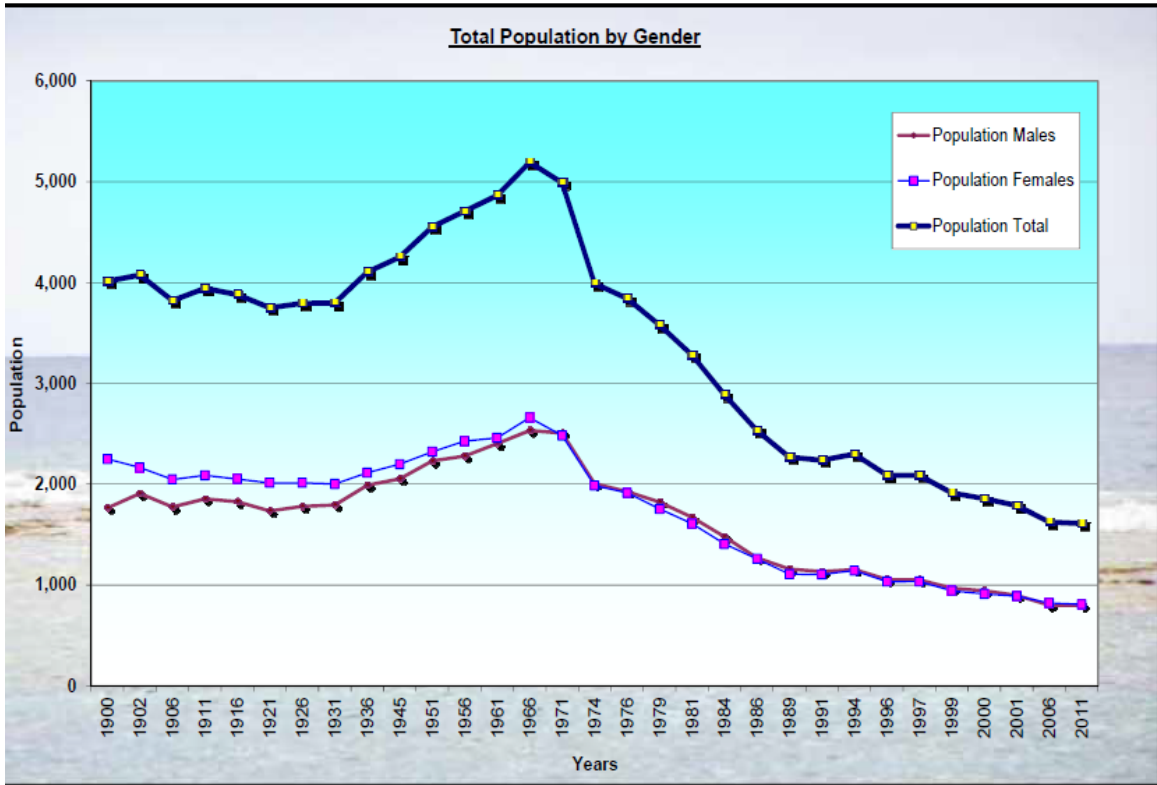


Figure 1: Niue Population (Statistics Niue)

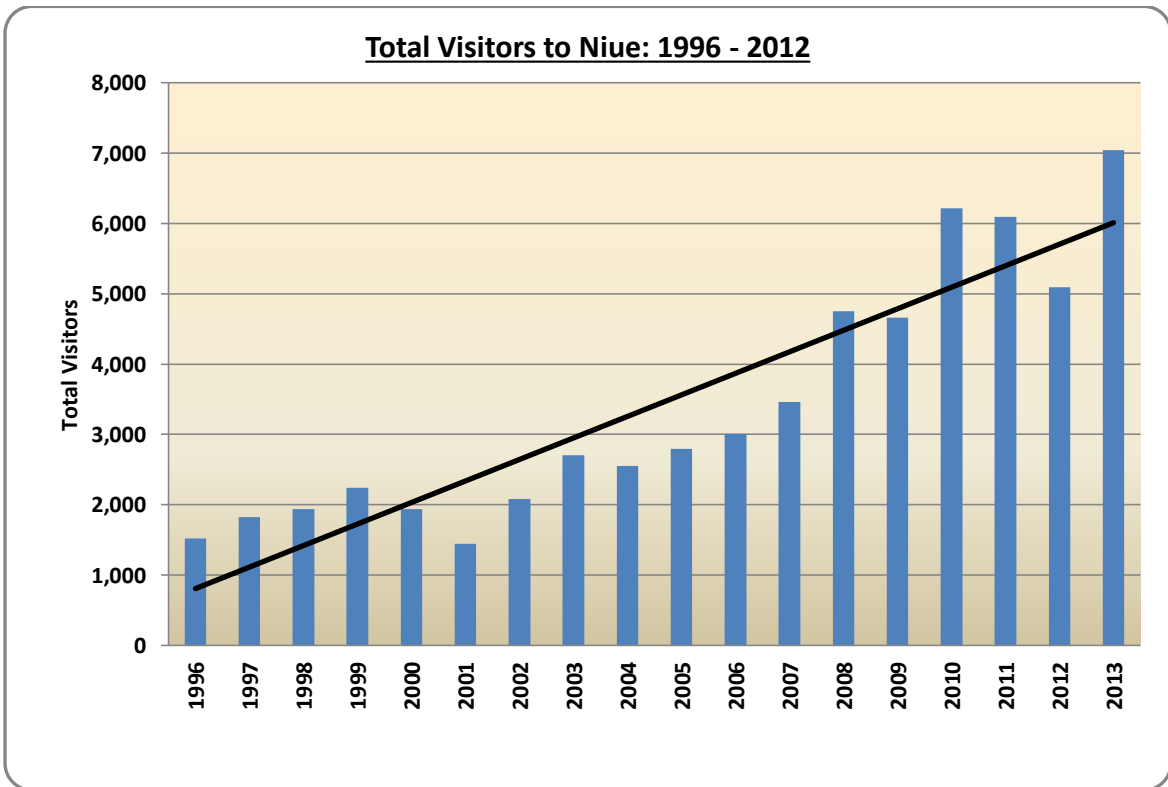


Figure 2: Visitor Numbers (Statistics Niue)

2.2 Changes in Forest Cover and Condition

Past information included in the National Forest Policy (DAFF, 1998) identified that the area of primary and regenerating forest reduced by 30% between 1966 and 1994, with most clearance from 1981 to 1994.

The most recent data comes from a Niue National Forest Inventory carried out in 2008 that identified the areas of three different forest types (Table 3, Figure 3).

Forest Type	Area (hectares)
Mature dense forests	5,566
Regenerating medium dense forests	13,191
Littoral (coastal) forests, fern land, other non-forest land	7,346
Total area of Niue	26,103

Table 3: Areas covered by forest in Niue.

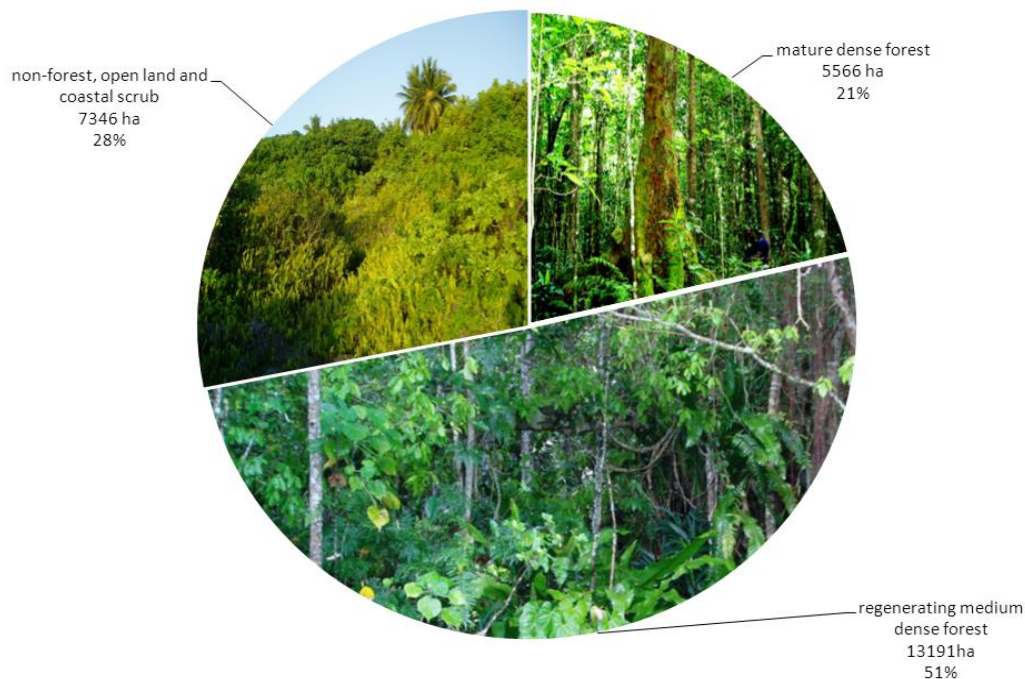


Figure 3: Proportions of the vegetation types in Niue (source: Forest Management Plan)

These 2008 figures cannot be directly used to assess changes since the 1994 forest cover survey because slightly different definitions of forest types were used. However, a rough visual comparison was made in 2012, by overlapping GIS polygons from the 1994 survey with recent imagery, showing that areas of mature (primary) forest have generally increased slightly over this period. This probably indicates a reduced demand to bring new land into agricultural plantations.

The forests continue to recover from the devastation caused by Cyclone Heta in January 2004. That storm caused widespread defoliation and the uprooting of 5-30% of trees generally and up to 50% of those exposed on the edges of cleared areas (Butler, 2004). While no detailed data exists, the forest now appears to the observer as it did before the cyclone, though some loss of trees clearly occurred.

In recent years, there has been an increase in the frequency of serious fires that have damaged significant areas of forest. This is largely a result of increased use of fire to clear managed lands for replanting, following increased costs and lack of availability of bulldozers – the other main clearance method. Under dry conditions such fires can spread well beyond the targeted area and Niue has limited infrastructure to control a larger outbreak.

2.3 Coastal and Marine Habitats

Cyclone Heta widely devastated the island's coastlines exposed to the north and northwest (SOPAC, 2008). In areas of highest impact, a corridor 20-50m from the cliff edge was de-vegetated and soil washed away to leave barren rock. Several significant areas of cliff collapsed into the sea. There will be a long interval before a vegetation cover is re-established on many damaged areas. The terrace on top of the cliffs at Alofi South where the damage to infrastructure and people's lives was most significant is now largely covered in scrub and weeds as the sites of previous buildings have been abandoned.

Checks by divers soon after the cyclone revealed that little coral remained along the entire coast from Hikutavake to Halagigie Point, past Alofi. Damage was much reduced from the Point to Tamakautoga and then devastation continued round to Tepa Point (Butler, 2004). The sheltered bay of Tamakautoga had the highest coral cover (40%) during a 2005 survey (SOPAC, 2008). Overall, coral cover was significantly reduced except for a few sheltered areas in the west and the southwest and eliminated down to bedrock in places (SPC op. cit.). Surveys in Alofi North and Makefu in March 2004 recorded "high to severe" damage with major reduction in coral cover recorded on the reef slope in the most exposed locations. There was also proliferation and dominance of a single macro-algal species (*Liagora* sp.) in most slope and reef-flat pools, as well as extensive expansion of turf algae and blue-green algae mats in both reef-flat and slope habitats (Fisk, 2007).

SPC coordinated a series of follow up surveys for a few years but these were discontinued once it was shown that corals were recovering well. However, ten years after Heta, coral cover has still not returned to the extent observed before the cyclone and significant areas that once held corals in the past are still bare rock covered in green algae. There are widely varied estimates for how long it takes for the worst affected reefs to recover from damaging cyclones from 20 to 100 years (Pearson, 1981). Recent and on-going surveys by Fisheries staff are building a dataset of baseline information on reef-flat biodiversity including corals for future reference.

It is considered that there could be a threat of over-fishing of bottom dwelling fish though data to detect any fish stock decline is not available. A Fish Aggregating Device program did reduce bottom fishing for a period, but rising fuel costs may now be encouraging more boat fishermen to do less trolling and more bottom fishing. Canoes also undertake bottom fishing. Niue is largely a "closed" system – it has 3 offshore reefs (of which Beveridge Reef is the

largest) – but beyond these, there are very long distances to other sources of bottom dwelling non-migratory fish stocks.

2.4 Population trends – terrestrial species

Updated information has been provided by bird, flying fox and reptile surveys carried out in September 2012 using the same techniques as earlier surveys (Butler *et al*, 2012). These showed that the two hunted species, the Pacific pigeon (lupe) (Figure 4) and the Tongan flying fox (peka) (Table 4), had recovered in numbers from the very low points in 2004 following Cyclone Heta. A 3-year ban on hunting post-cyclone and the recovery of the forest were thought to be the key factors responsible. However, estimates of current harvest rates suggest that these are still not sustainable.

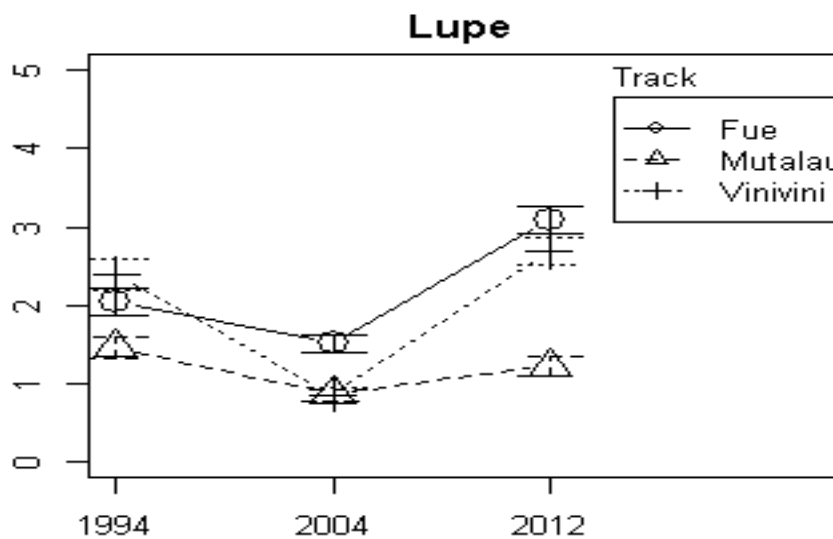


Figure 4: Mean 5-minute bird count results for Pacific pigeon (lupe) along three transects (Mutalau – 20 stations, Vinivini – 16 stations, Fue – 14 stations) during September 1994, September 2004 and September 2012. (Figures are mean counts with confidence intervals)

	1998	2004	2012
No. of counts	70	27	31
No. of bats	1715	60	623
Max No. bats/count	225	12	188

Table 4: Flying fox (fruit bat) survey results 1998-2012

Two threatened species, the blue-crowned lory (*Vini australis*) (hega) and the olive small-scale skink (*Emoia lawesii*) were not detected during the two-week survey in September 2012 and are considered at real risk of local extinction, although occasional reports are still received.

The bird counts showed a gradual decline in one of the most common species, the Polynesian starling (*Aplonis tabuensis*) (miti), from 1994 to 2012. It is a cavity nester and possibly being impacted by the introduced ship rat (*Rattus rattus*). There is also an indication that the white-

rumped swiftlet (*Aerodramus spodiopygius*) (pekapeka) may have declined, although it is more difficult to census this species reliably.

Coconut crabs are included in this section, though key parts of their life cycle occur at sea, because they are hunted on land and this activity is likely to be the key factor affecting their numbers. The only detailed nation-wide survey was carried out in 1990 (Schiller, 1992), and it estimated the population at about 200,000 which was considered low compared to the amount of habitat available. During the Agriculture Census of 2009, 279 households (60%) were identified as engaged in uga hunting, with about 12,384 crabs caught during the month before the census took place, an average of 44/household/month (Statistics Niue, 2009).

Significant numbers of uga are exported on flights to New Zealand as part of the luggage of travellers, largely Niueans. Schiller in 1992, estimated that 3,176 to 5,898 uga were exported over 9 months in 1978-88, or an average of 353-655. Barnett *et al*, 2008, counted a total of 1042 crabs being exported over a month (on four weekly flights from 18 September to 9 October 2008), suggesting that the numbers exported have increased over this 20-year period. There is also increased commercialisation of uga in Niue, with a large crab currently fetching \$100 at the market, increased demands from tourism providers, and increased numbers being sold or raffled at village 'show days'.

Evidence that these pressures are negatively affecting uga stocks comes from the observations of hunters who have identified that the size of crabs caught has declined with fewer very large animals.

One participant in the national workshop referred to the disappearance of hihī (*Orobophana pacifica*), a small yellow land snail used in many handicrafts, particularly necklaces, from areas where agricultural chemicals are in intensive use. This may be an indication of a wider problem.

2.5 Population trends

The losses of coral and increases in algae along coastal areas affected by Cyclone Heta in 2004, were discussed above.

Regarding any changes in inshore fish populations, the Namoui Marine Protected Area (MPA) near Makefu and a control site, Avatele, have been surveyed three times in November 1998, February 2004 and in May/June 2005, although data are poorly replicated as they were collected at different seasons for different purposes. Fish biodiversity, density and biomass, were similar in each survey, suggesting that the relative paucity of Niuean reef fish resources is largely structural, with only slight negative effects from Cyclone Heta. The same variables were consistently higher at the control site, showing that protected status had not increased the finfish resource in Namoui over a period of seven years. This suggests several alternatives that: (1) the cyclone erased the benefits, if any, of the protection status, and/or (2) protection was not fully enforced, and/or (3) fishing pressure was so low on Niuean reef fish that protection had no effect on the resource and/or (4) the Namoui MPA is too small to generate any measurable effect on the resource (SPC, 2008).

Invertebrates that are taken for food were surveyed in 2005 (SPC, 2008). Densities of giant clams had fallen dramatically since the early and late 1990s and one species *Tridacna*

squamosal was at very low densities and over-fishing is considered the likely cause. Densities of sea cucumbers, of which six commercial species are present throughout, they are very rarely taken by Niueans, were significantly reduced in 2005 compared to before Cyclone Heta and earlier surveys in the 1990s.

The dinoflagellates, *Gambierdiscus* spp. have shown periodic or local increases in numbers leading to cases of ciguatera fish poisoning. Surveys in 2002 showed a particular problem around the Alofi wharf area (SPC, 2008). There is also some evidence from local deaths of tube worms and fewer fish in pools on the wave platform, that inadequate septic tanks at one site may be a problem, but further investigation is required.

There is very limited data to assess any changes in the numbers of pelagic fish species in Niuean waters. The commercial long-line fishery effort within Niue's Exclusive Economic Zone has fluctuated significantly from year to year (Table 5). There were no vessels registered to fish here in 2011-2013 and 8 vessels recently licensed for 2014 of which 2 are currently active.

Year	Vessels	CATCH (metric tonnes)								
		ALB	BET	SKJ	YFT	BLM	BUM	MLS	SWO	TOTAL
2006	10	213	22	8	42	4	5	3	2	299
2007	7	137	18	7	30	3	9	6	2	212
2008	3	7	1	1	8	1	0	0	0	18
2009	3	147	10	5	20	0	0	0	0	182
2010	5	97	4	1	8	0	1	0	1	112

Notes:

- Abbreviations: ALB – albacore tuna, BET – bigeye tuna, SKJ – skipjack tuna, YFT – yellowfin tuna, BLM – black marlin, BUM – blue marlin, MLS – striped marlin, SWO - swordfish
- 2010 date covers only first 4 months of the year before the joint fishing partnership ceased operation and the processing plant closed.

Table 5: Annual catch estimates for the Niue long-line fleet in the WCPFC Convention Area, 2006-2010 (Fisheries Division, 2011).

Generally, increased effort in Niuean waters has resulted in increased catches, and catch rates per unit effort for albacore, big-eye and yellow-fin tuna are significant on a Pacific-wide basis, both suggesting low levels of exploitation. Currently, there are no concerns with the stocks of these three species in Niuean waters, though equatorial fisheries for the last two could potentially impact on their stocks in the part of the region that includes Niue in the future (SPC, 2008a).

The artisanal fishery is dominated by wahoo (40-70% of the catch), yellowfin tuna, skipjack tuna and mahimahi and there is no evidence of stock depletion around the island as these are highly migratory species and the local take is insignificant on a regional scale. Most of the boats in this fishery troll for pelagic fish, but there is concern over a possible increase in bottom fishing, though there is not yet any data to assess this.

3. Main threats to biodiversity in Niue

3.1 Invasive species

Niue has recently developed a National Invasive Species Strategy and Action Plan (NISSAP) (DOE, 2013), that identifies the invasive plants, invertebrates and mammals that threaten terrestrial biodiversity. There is no information on marine invasive species and surveys are recommended. The indigenous crown of thorns starfish (*Acanthaster planci*) is monitored to obtain warning of any irruption of numbers, but there have been no such issues in recent years. Small numbers of starfish are occasionally removed from dive sites.

Rats (*Rattus rattus* and *R. exulans*) and feral cats (*Felis catus*) are implicated in declines of birds and lizards. Feral pigs (*Sus scrofa*) damage 20% of agricultural plantations, according to the 2011 census (Statistics Niue, 2012) and negatively impact on forest condition and on coconut crabs. Yellow crazy ants (*Anoplolepis gracilipes*) are potentially a growing threat to land crabs including the coconut crab, to judge by their impacts on red crabs (*Gecarcoidea natalis*) on Christmas Island.

Six weed species are currently targeted for eradication or control: Singapore daisy (*Wedelia trilobata*) Chain of hearts (*Antigonon leptopus*), Honolulu rose (*Clerodendrum chinense*), Giant sensitive plant (*Mimosa diplotricha=invisa*), Aureus (*Epipremnum pinnatum*) and Bronzed-leaved clerodendrum (*Clerodendrum quadriloculare*).

In certain weather conditions, Niue experiences occasional population explosions of introduced mealy bugs and associated honeydew-feeding ants, which lead to infestations of a black sooty mould fungus that is damaging for many plants, particularly citrus trees. An intensive spraying program is required to control it.

3.2 Loss or deterioration of habitat

Reduced population pressure and the cessation of a taro export scheme have apparently reduced the rates of forest clearance. However, a current push to develop tourism and construct more facilities on the coast may have minor impact on areas of littoral forest. Forest condition continues to improve from Cyclone Heta in 2004, with the exception of some areas that have been opened up to greater infestation by climbing weeds such as *Meremia peltata* and *Epipremnum pinnatum*.

3.3 Natural disasters and climate change

The country has experienced no devastating storms since Cyclone Heta in 2004, but has a history of occasional major cyclones, the one previous to that being Cyclone Ofa in 1990. There is a pronounced “dry” season and rainfall is typically reduced in El Niño episodes leading to noticeable droughts in both 2010 and 2011.

SPC (2008a) reviewed the possible impacts of climate change on Niue and the region’s pelagic fisheries. There are likely to be distributional changes in the tuna fishery as these fish typically adapt to variation in climatic conditions by moving to find their preferred sea temperature range. Climate change may lead to more permanent El Niño conditions which

mean increased fluctuations in fish numbers and distribution. Relative warming could reduce the strength of the water up-welling system in the central equatorial pacific where Niue is located, which in turn may reduce fish productivity.

3.4 Over-exploitation

Current harvest rates for the Pacific pigeon (lupe) and the Tongan flying fox (peka) have been assessed as unsustainable (Butler *et al.* 2012) and enforcement of hunting regulations has been recommended to address this. The hunting season is defined on an annual basis and the most recent one ran for three months (November 2014 – January 2014), a month longer than usual, with similar numbers of registered shotguns (c.400) and ammunition allocations (100 rounds/gun) as previous years. Hunting out of season is regularly reported so the pressure on these species has not reduced.

There is evidence that the size of coconut crabs harvested is declining suggesting that these may also be over-harvested and restricting exports is one possible response. Giant clams have also declined in numbers and over-harvesting is implicated.

An increased cash value placed on fish (\$15-\$20/kg for wahoo and tuna) and shellfish (a “margarine” punnet of tubeworms that used to fetch \$20 a few years ago is now \$60), potentially adds to pressure on some stocks. There is high localised pressure when villages have fishing days ahead of their show days, and large numbers of canoes compete for catch over relatively small areas.

3.5 Pollution

Small scale impacts are associated with waste dumps, coastal run-off, and the use of pesticides. Seepage from septic tanks is a concern particularly in coastal areas. The 2011 national census identified that 78% of households had fully enclosed septic tank systems (concrete all round), but 16% had bottomless tanks (concrete sides and roof) and 10% no tanks at all, with sewage going into natural holes (Statistics Niue, 2012). The latter two are clearly a threat to underground water resources, and in places to coastal water quality.

4. Impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of this.

No current changes are considered to have altered the large-scale services that ecosystems provide such as erosion control or coastal protection. Over-exploitation of terrestrial and marine species has the potential to reduce food supplies that can be sourced locally and lead to an increase in imported foods. Reduced availability of such species would bring with it a loss of the traditional practices used to harvest and manage their populations.

PART II: THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS, ITS IMPLEMENTATION, AND THE MAINSTREAMING OF BIODIVERSITY.

5. Niue's biodiversity targets.

New targets are under development linked into the Aichi Biodiversity Targets of the Strategic Plan for Biodiversity 2011-2020 as part of the preparation of the current revised NBSAP and its latest National Integrated Strategic Plan (NISP) 2014-2018. The current NISP 2009-2013 has the following biodiversity conservation targets:

- Increase protected areas (terrestrial, marine and coastal) by 10% by 2013
- Increase number and type of ecosystems and species conserved by 5% by 2013
- Reduce invasive species (including feral pigs) by 15% by 2013
- Reduce use of chemical enhancements (fertilisers, herbicides, insecticides) by 20% by 2013;
- Increase use of organic materials for crop and livestock production by 10% by 2013

When reviewing these it is apparent that the use of such targets was not well developed in 2008 when the plan was put together and some of these are unrealistic and/or impractical to measure. Improved targets will be included in the next national plan 2014-2020.

Considering them in turn:

- No new terrestrial or marine conservation areas were developed over this period so this target was not achieved, and it will be more effective to have separate terrestrial and marine targets in the future. A 10% increase in terrestrial areas should be achieved within the 5-year term of the next plan, largely through the Forestry and Protected Areas Management Project, which aims to extend the area protected from 6000 to 6300 hectares. There is no acceptable definition of the coastal zone in Niue to allow the proportional of it under protection to be calculated. One approximation that could be used is length of coastline. The Namoui Marine Reserve with a length of 2.8km would protect 3.2% of the approximate total coastline of 87km.
- There are no readily identifiable ecosystems under threat that could be the subject of conservation programs. There are species under threat, two critically so, but no programs were developed towards their conservation over this period. A target "to conserve" a species is not really specific enough. In future, this is more likely to be replaced by ones such as: "recovery plans and programs in place for 'x' species" or "the status of species 'y' raised from "threatened" to "least concern", though this would be a longer-term target defined in a recovery plan.
- There was limited work on existing invasive species over this period – though border control was maintained to reduce the risk of new ones arriving – but a major project has begun at the end of 2013. Similar to the previous point, future targets are more likely to read: "eradication or control programs in place for 'x' invasive species" and then more specifically "species 'y' eradicated by year 2020", "numbers of species 'z' reduced by 50% by year 2020". Feral pigs will be one species targeted for control within the new program and a significant reduction in numbers (higher than 15%) will be needed to bring about a useful reduction in their damage to key areas.

- Whether there has been a reduction in the use of fertilisers, herbicides and insecticides should be measurable by tracking imports of these chemicals. Tables 6 and 7 show recent figures suggesting an increase rather than decrease in fertiliser use and an indication of a decrease in insecticide imports over a 4-year period. Herbicides figures are not consistently available.

Years	2009	2010	2011	2012
Kgs of Fertiliser	1,150	437	3,193	7,902

Table 6: Fertiliser Imports in Kilogrammes

Years	2009	2010	2011	2012
Insecticides (nos)	294	608	84	147
Herbicides (nos)	na	10	na	na

Table 7: Insecticide imports as numbers of boxes/cartons

- Measuring such an increased use of organic materials could be difficult. However, a reduction of fertiliser imports or an increase in the number of farmers with organic certification, or the volume of organically grown exports would be alternative ways of measuring progress in this area.

6. Updating of national biodiversity strategy and action plan to incorporate these targets and to serve as an effective instrument to mainstream biodiversity.

This process is on-going and a revised draft of the NBSAP will be completed by March 2014.

7. Actions taken to implement the Convention since the fourth report and other their outcomes.

Niue's 4th National Report was submitted in March 2009. Activities since then are reported on according to the Convention's articles as follows:

Article 6: General Measures for Conservation and Sustainable Use

Niue has:

- Adopted a Forest Management Plan for Niue
- Initiated a Forest and Protected Areas Management Project as part of a regional 4-country program coordinated by FAO
- Adopted a Management and Development Plan for Niue pelagic fishery
- Drafted a Coastal Fisheries Management Plan
- Developed a Niue Sustainable Coastal Development Policy

- Enacted and drafted several key pieces of legislation: Water Act 2012, Water Regulation Bill and Guidelines, Bio-security Bill, Environment Bill, Environment Impact Assessment Regulation, Forest Bill, Whale Watching Regulation
- Completed a National Climate Change Policy and drafted a Joint National Action Plan for Disaster Risk Management and Climate Change
- Developed a National Integrated Waste Management Strategy 2010-2015 and the accompanying Action Plan
- Initiated an invasive species project as part of the regional GEF-PAS project coordinated by SPREP
- Participated in a GEF Pacific Integrated Water Resource Management Project with a focus on improving land management in the borehole catchments of Alofi
- Participated in the regional Pacific Adaptation to Climate Change program with a focus on improving household rainwater harvesting
- Developed Water and Waste Water Management Plans for the village of Alofi South and Alofi North
- Developed two community-based Village Development Plans for Hakupu and Tuapa villages
- Promoted eco-tourism
- Reviewed Territorial Sea and EEZ legislation and completed a re-draft

Article 7: Identification and Monitoring

- Carried out surveys of flying foxes, birds and lizards
- Carried out a study of the rare plants of Niue
- Carried out a survey of reef flat biodiversity distribution and abundance
- Collected data on artisanal and foreign-licensed pelagic fishery
- Carried out monitoring, control and surveillance of foreign-licensed fishing vessels
- Conducted national population (2011) and agricultural (2009) censuses
- Conducted a forest inventory

Article 8: In-situ Conservation

- Established Marine Protected Areas

Article 9: Ex-situ Conservation

- Niue taro varieties are now held in SPC's Centre for Pacific Crops and Trees gene bank

Article 10: Sustainable Use of Components of Biological Diversity

- Some efforts have been made to manage the hunting of pigeons and flying foxes through a defined season but enforcement has been difficult
- Marine legislation has been reviewed to ensure the sustainable management of pelagic fishery

Article 11: Incentive Measures

Government currently provides a fuel subsidy for local Niueans with aluminium boats for fishing. This was originally introduced to "level the playing field" for local artisanal fishermen when a fishing processing factory began operating in Niue and commercial long-

liners, paying no local fuel tax and selling their by-catch into the local market at discounted prices. The subsidy has remained in place since the closure of the factory, and has partly served to keep people fishing in the face of rising fuel price. There is no suggestion that the subsidy has had any significant impact on biodiversity as local fishermen are from around the island, small numbers of highly migratory fish like tuna and wahoo which move widely around the Pacific. There are no plans to phase out this subsidy.

A form of positive subsidy for the artisanal fishery has been the on-going program to place and maintain Fish Aggregating Devices (FADs). These serve to aggregate the small fish on which the larger pelagic fish feed and take the fishing pressure from canoes and powered boats off the areas immediately adjacent to the coast.

Article 12: Research and Training

- Training in identification of rare plants was conducted during the 2013 survey
- Training in forest inventory

Article 13: Public Education and Awareness

- Department of Environment has delivered regular radio programs on environmental issues, including biodiversity conservation
- Staff of different Departments give regular presentations and talks to schools
- The various World Days drawing attention to different issues are typically recognised with a series of activities, banners, posters and information displays, e.g. International Biodiversity Day, World Environment Day, World Ozone Day
- The Education Department are working to contextualise the curriculum for Niue by developing local examples

Article 14: Impact Assessment and Minimising Adverse Impacts

- The Environment Bill 2013, includes a requirement for development consents for certain activities affecting the environment and makes provisions for the development of environmental standards
- Environment Impact Assessment Regulations are under development to be part of an amendment of the Environment Act
- Environment Impact Assessments are currently carried out for major developments under a voluntary system.

Article 15: Access to Genetic Resources

- Ratification of the International Treaty on Plant Genetic Resources is in progress

Article 16: Access to and Transfer of Technology

No activities

Article 17: Exchange of Information

No activities

Article 18: Technical and Scientific Cooperation

No particular activity beyond the usual interactions with International and Regional Organisations such as UNDP, SPREP, SPC and SOPAC with which Niue shares information and receives technical support and program activities.

Article 19: Biotechnology

- Provisions related to Living Modified Organisms are included in the Environment Bill 2013
- Bio-safety framework developed

8. Effectiveness of mainstreaming biodiversity into relevant sectoral and cross-sectoral strategies, plans and programs

Niue's overarching national strategy, the National Integrated Strategic Plan 2009-2013 has "Environment" as one of its six Goals, with the following wording: "*Sustainable use and management of Niue's natural resources and environment for present and future generations*".

There are seven Strategies within this Goal as follows, each of which have a series of targets and indicators:

Agriculture – Ensure the sustainable use and management of the land and soil

Fisheries – Enhanced management and conservation of the marine resources

Climate Change and Natural Disasters – The mitigation of adverse effects of climate change and natural and non-natural disasters

Solid and Hazardous Wastes and Pollution – Review and strengthen the implementation of national initiatives in addressing solid and hazardous waste and marine pollution

Biodiversity Conservation – The conservation of marine, freshwater and terrestrial biodiversity and ecosystems

Education for Environment and Sustainable Development – Increase public awareness of environment and sustainable development principles

Biodiversity conservation also features in development plans at the village level in a pilot project within UNDP's 4-country Community Centred Sustainable Development Program. Two villages, Hakupu and Tuapa, undertook this program. Hakupu's Village Development and Action Plan (VDAP) 2009-2020, contains strategies for eco-tourism development based on the Huvalu Conservation Area and Hakupu Heritage & Conservation Park, and for organic farming. Tuapa's (VDAP) 2009-2020 contains strategies for food security, renewable energy and healthy living.

9. Implementation of national biodiversity strategy and action plan

The implementation of Niue's 2001 NBSAP has been reviewed as part of the development of the 2014-2020 plan. Table 8 provides a summary assessment for objectives listing the status of the actions included in each.

Overall, there has been significant activity and this will continue, particularly through several important new programs that have received funding such as the Forestry and Protected Area Management one focussed on the country's most important area of forest at Huvalu. The NBSAP had provision for a Biodiversity Strategy and Action Plan Committee to meet annually to review progress and develop an implementation plan for the year ahead. This committee did not function, so the means to monitor and evaluate progress will be reassessed in the development of the new plan.

Objective	Status of Actions			
	Achieved	Achieved in part	In progress	Not achieved
Forest Conservation & Management	3	1	4	4
Sustainable Management of Cleared Lands		1	2	3
Conservation of Terrestrial Species	2	3	3	1
Conservation of Biodiversity of Inshore Coral Reefs	1	3	6	
Conservation & Sustainable Management of Offshore Fisheries	5		2	1
Governance	7		3	1
Improve Management of Waste	1	4	3	1
Develop Recycling Programs		2	3	1
Retain Safe Supply of Freshwater	2		4	
Manage Mineral Extraction			2	
Minimise Marine Pollution	1		1	
Prevent Production of New Invasive Species		2	3	1
Reduce & Eliminate Impacts of Existing Pest Species			3	2
Raise Awareness and build Capacity to manage Invasive Species	1		1	2
Education & Public Awareness	1		5	
TOTAL (%):	24 (23.5%)	16 (15.7%)	45 (44.1%)	17 (16.7%)

Table 8: Status of actions for each objective in Niue's 2001 NBSAP

PART III: PROGRESS TOWARDS THE 2020 AICHI BIODIVERSITY TARGETS AND CONTRIBUTIONS TO THE RELEVANT 2015 TARGETS OF THE MILLENNIUM DEVELOPMENT GOALS.

10. Progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets.

Information is presented under the strategy's four Goals and the 20 Aichi Targets.

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.

Target 1: *By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.*

There is widespread awareness among individuals from participation in community projects and from information material and radio/TV programs produced by the key Government Departments. Particular attention has been given to the sustainable use of inshore marine resources, pigeons, flying foxes and coconut crabs that are hunted for food. Village Councils are taking on important roles in promoting the need for conservation.

Target 2: *By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.*

Refer to section 8 "Effectiveness of mainstreaming biodiversity..." in part II of this report.

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

Refer to earlier comments under Article 11 of the Convention in part II of this report.

Target 4: *By 2020, at the latest, Governments, businesses and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.*

Several plans addressing the sustainable management of resources are currently in place or in draft awaiting Cabinet approval: Forest Management Plan, National Coastal Fisheries Management and Development Plan 2014-2018, Management and Development Plan for the Niue Pelagic Fishery. Rates of clearance of primary forest are considered to be around historic lows and there has been no commercial logging for some years. The duration of the hunting season for flying foxes and pigeons is varied according to information on hand and its suspension for three years after Cyclone Heta in 2004 has recently been shown to have brought about population recovery to pre-cyclone levels. Questions remain about long-term

sustainability of the harvesting of these species, including coconut crabs, but recommendations have been made that if adopted, should keep such harvest within safe limits by 2020.

Environment Impact Assessment (EIA) Regulations are being prepared as part of revised environmental legislation to formalise requirements for EIA's that are currently undertaken informally.

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

Target 5: *By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible, brought close to zero, and degradation is significantly reduced.*

Rates of forest loss are currently minimal, linked to the declining population and the cessation of an export scheme for taro. The cycle of clearing land for agricultural plantations largely takes place in modified land and shrub land whose primary forest was removed years ago.

Target 6: *By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that over-fishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.*

Implementation of the current National Coastal Fisheries Management and Development Plan 2014-2018, and Management and Development Plan for the Niue Pelagic Fishery should ensure that this target is achieved. Based on the best available information, there are no threatened marine species found in Niue that can be managed here to contribute to their global recovery – for example, endangered marine turtles sometimes visit Niue's coastal waters in very small numbers and do not breed here. Measures are being developed to address past over-fishing of giant clams.

Village Councils play important roles in reef management in their areas. They have managed some local problems such as a small number of non-Niueans, particularly Asians, whose different harvesting traditions involve more "blanket" harvesting of everything edible.

Target 7: *By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.*

There is currently no aquaculture in Niue and any development would be linked to the Coastal Management Plan. Measures to increase the sustainability of agriculture include an emphasis on organic production, the demonstration of sustainable land management practices and efforts to reduce fertiliser and pesticide inputs. There is currently no commercial forestry operation in Niue and the Forest Management Plan contains provisions to ensure that any revival of this will operate sustainably through a requirement for Timber Harvesting Plans and restrictions on national allowable take.

Target 8: *By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.*

Pollution is a minor issue in Niue, with no detrimental impacts seen at ecosystem or species levels. Improvements are being made to the few landfills, zones are being developed to restrict possible sources of pollution around freshwater bores, and a program is addressing the town area and small-scale pollution sources there. There was localised nutrient enrichment in an area of sea adjacent to a fish processing plant near Alofi, but this facility has since closed down.

Periodic incidences of *Siguateira* poisoning in reef or bottom fish caught from near the Alofi area may indicate other land-based sources of pollution operating here and a monitoring program is in place in this area. The Government has endorsed a Waste Management Plan.

Target 9: *By 2020, invasive alien species and pathways are identified and prioritised, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.*

Niue's recently drafted National Invasive Species Strategy and Action Plan contains the necessary identification and prioritisation and lists the species currently subject to control or eradication programs. Ongoing work is continuing to eradicate several weed species and a revised feral pig management and control program is being initiated. Some villages have received small grant assistance to build pig pens to better confine their animals. Rats and feral cats are recognised as a widespread issue that may be tackled in future at specific sites significant for locally endangered species. No information exists on marine invasive species, except Crown of Thorns starfish, and surveys are proposed, subject to necessary resources.

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

There is limited ability to address such large scale issues. Niue is managing land-based sources of pollution, reducing emissions of carbon dioxide and has eliminated the use of ozone-depleting CFCs. Increased use of solar power for water heating (Statistics Niue, 2012), is reducing emissions related to diesel-powered electricity generation. Niue's natural disaster management planning takes the recovery of ecosystems into account.

Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11: *By 2020, at least 17 percent of terrestrial and inland water areas, and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.*

Currently 23% of the land area is within conservation areas, the vast majority within the community-managed Huvalu Conservation Area in the villages of Liku and Hakupu. A current project aims to increase the figure to 24.2% by creating similar conservation areas in the lands of several more villages.

There is currently a single nationally managed marine protected area (MPA), the Namoui Marine Reserve (27ha). A community-managed reserve at Alofi North was recently opened to harvesting after eight years of protection and very heavily impacted. Further village MPAs are under discussion, with 4-5 communities expressing interest, and Fisheries staff are doing surveys to identify key areas for protection. Temporary fono (harvesting bans) may be placed on particular reef areas, sometimes for several years, as a sign of respect upon the passing away of village elders’.

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

Recent surveys have identified two terrestrial species of particular concern, the blue-crowned lory and olive small-scaled skink. Resources are needed to identify if sufficient remain and where they occur to determine, if any recovery program can be developed. If not, and the causes of their decline can be identified and addressed, their re-introduction from populations in different countries could be considered.

Target 13: *By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimising genetic erosion and safeguarding their genetic diversity.*

There is an emphasis on maintaining varieties of taro, yams and banana under encouragement by communities. Some technical support is provided by FAO to encourage the planting of traditional root crops such as yams. Enhancing the genetics of the pig population is being worked on through crossbreeding back to animals showing “original” Captain Cooker traits and bringing in new pure-breeds from overseas.

Climate resilient crop varieties of kumara, yams and cassava have been brought in from overseas to the Vaipapahi research farm, and there is a conscious effort not to lose local varieties as a result.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14: *By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.*

Niue has no surface water, so supplies are drawn from the freshwater lens lying under the island through series of bores. Vegetation cover plays a key role in maintaining the purity of this supply and regular testing shows it to remain in good condition and the current take to be well within sustainable levels. Provisions to maintain vegetation cover and restrict certain activities in specific zones around each bore are under development through an Integrated Water Resources Management project.

Coastal habitats are particularly important for protecting inland areas from storms and sea surges and EIA regulations will ensure that any developments in this area, such as for tourism, are established appropriately.

Target 15: *By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 percent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.*

Some degraded lands which in the past were largely covered in fern after clearing with discs that damaged soil profiles, are now being farmed productively through the use of new techniques. Others are steadily developing a covering of secondary forest.

There are small disused quarries around the island, used in the past to source building and roading material. Proposals have been developed to rehabilitate these, though the total area involved is largely insignificant.

Target 16: *By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation, is in force and operational, consistent with national legislation.*

Niue is not a signatory to the Nagoya Protocol, which has not yet had sufficient countries accede to it, to enter into force. It intends to sign up and for relevant legal instruments to be in place. The development of Environment Bio-prospecting regulations has been proposed within “Taoga Niue”, the review and strategy referred to earlier.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity-building.

Target 17: *By 2015, each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.*

Niue is currently finalising a revised NBSAP to replace an initial one prepared in 2001.

Target 18: *By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.*

Traditional canoe making and fishing from canoes are promoted at youth level by the Vaka Association who are proactive and run many canoe fishing competitions. Niue’s revised NBSAP (draft) includes a new theme: “Traditional Knowledge and Access to Benefit Sharing”. This has two objectives; the first, to document the traditional knowledge of the protection, conservation and uses of Niue’s biodiversity, and the second, to protect this knowledge and ensure equitable sharing of any benefits that result from sharing it. Completing the actions identified within these objectives would go a long way towards meeting this target.

Fisheries staff are working on a program with the Education Department to research and encourage the use of traditional knowledge of fishing.

Target 19: *By 2020, at the latest, the mobilisation of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilisation, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.*

Niue has recently secured significant international funding through two multi-country/regional projects supported by GEF-4: Forestry and Protected Area Management and GEF-PAS Regional Invasive Species Project, and an Integrated Water Resources Management Project and the other through the International Waters Program. It has completed a PIF for a “Ridge to Reef” project through GEF-5. It is also the recipient of regional and bilateral funding.

A Resource Mobilisation Strategy is currently under development as part of the project to revise the NBSAP.

11. Contribution of actions to implement the Convention towards the achievement of relevant 2015 targets of the Millennium Goals in Niue.

Niue has recently completed a draft report of its progress in relation to the Millennium Development Goals (MDGs) (Statistics Niue, 2013). Of the eight international goals¹, biodiversity-related work has largely been of relevance to *Goal 7 – Ensure Environmental Sustainability*. However, bio-security work to prevent the arrival of new mosquitoes and other disease-carrying organisms contributes to *Goal 6 – Combat HIV/AIDS, Malaria and other diseases*, as does work to control mosquitoes already in the country (under the Mosquito Control Act, 1980).

Goal 7 has two targets (9 and 10) that relate to activities in Niue’s NBSAP and progress against their relevant indicators has been reviewed as follows:

Target 9: Integrate the principles of sustainable developments into country policies and programs and reverse the loss of environmental resources	
Indicator & 2015 Target	Progress
25. Proportion of land area covered by forest. – Target: 75%	Potentially on target to achieve 75% by 2015 from 71.9% in 2008
26. Ratio area protected to maintain biological diversity to surface area. – Target: 25%	Potentially on target to achieve 25% by 2015 from 23.3% in 2003
28a. Carbon dioxide emissions (metric tons) per capita. – Target: 1.3	Potentially on target to achieve 1.3 by 2015 from 1.49 in 2001
28b. Consumption of ozone-depleting CFCs (ODP tons). – Target: 0	Already met

29. Proportion of population using solid fuels. – Target: 5%	Already met
Target 10: <i>Halve, by 2015, the proportion of population of people without sustainable access to safe drinking water and basic sanitation</i>	
Indicator & 2015 Target	Progress
30. Proportion of population with sustainable access to an improved water source, urban and rural – Target: 100%	Already met
31. Proportion of population with access to improved sanitation, urban/rural – Target: 100%	Already met

12. Lessons learned from the Implementation of the Convention in Niue.

Niue has achieved significant activity in relation to the Convention overall as reflected in the review of its first NBSAP, and this has continued since the Fourth National Report was submitted in 2009. This later period has seen the introduction of quantitative targets. However, early experiences have shown those developed locally to be of limited value, either too ambitious or hard to measure. Learning from these experiences will lead to the establishment of stronger monitoring and evaluation systems in the future to support the more effective delivery of programs and projects.

Lack of human resource capacity is a key issue faced by a small country with a slowly declining population. There is a limited pool of people with tertiary education able to take up any new project coordination and management roles. Staff in many government departments are fully committed to their own projects and have limited time to engage on cross-cutting issues such as biodiversity conservation.

It is very hard to maintain a consistent approach to the management of issues relating to biodiversity. Taking forest conservation for example, there was a major burst of activity associated with the South Pacific Biodiversity Conservation Program in the early 1990s, and this is developing again now within the multi-country Forestry and Protected Area Management project. However, it was very difficult to obtain ongoing support to maintain impetus between the two. Consistent smaller amounts of funding would be more effective and easier to manage longer-term than periodic large injection of funds.

Obtaining long data series with consistent collection, analysis and reporting is very difficult, relating to shortage of capacity and the previous point about bursts of funding. The absence of such series makes it very difficult to measure trends.

The compliance and reporting requirements of Conventions are demanding and time-consuming and international efforts to simplify and standardise these are welcomed. Single reports covering multiple conventions is one positive aspect being developed.

APPENDIX 1: Information concerning the reporting Party and preparation of the Fifth National Report.

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