IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 12 November 2014

Please note: this is an archived Conservation Outlook Assessment for Henderson Island. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Henderson Island

SITE INFORMATION

Country:
United Kingdom of Great Britain and Northern Ireland (UK)
Inscribed in: 1988
Criteria:
(vii) (x)

Site description:

Henderson Island, which lies in the eastern South Pacific, is one of the few atolls in the world whose ecology has been practically untouched by a human presence. Its isolated location provides the ideal context for studying the dynamics of insular evolution and natural selection. It is particularly notable for the 10 plants and four land birds that are endemic to the island. © UNESCO

SUMMARY

2014 Conservation Outlook

Significant concern

The remote and uninhabited Henderson Island has so far been relatively well preserved, primarily because of the limited anthropogenic pressure. However, the biodiversity values of the island remain very highly threatened by rat predation and competition. The impact of rat predation on petrel chick mortality is extremely high. Other endemic land bird populations are also suppressed by rat predation. Rat predation is likely to be responsible for a decrease of petrel abundance from an estimated 5 – 10 million pairs on the island before their arrival to just 40,000 pairs today. This will impact on ecological processes of the island, as previously millions of seabirds would have provided a crucial nutrient source for the island’s ecosystem via their guano. Henderson petrel will also likely go extinct without intervention to eradicate the rats. A rat eradication programme was undertaken in 2011, but unfortunately proved to be unsuccessful. The site is also at risk of potential future invasive alien species introductions, which could occur relatively easily through uncontrolled or poorly managed visitation and have a devastating effect on several key values of the island. The site would benefit from additional efforts to eradicate rats following the unsuccessful 2011 rat eradication programme, as well as efforts to effectively enforce visitor regulations.

Current state and trend of VALUES

High Concern
Trend: Deteriorating

The impact of rat predation on petrel chick mortality on Henderson Island has been estimated at > 99%, and that on Henderson Crake mortality as c.25%. Other endemic land bird populations are also suppressed by rat predation. Rat predation is likely to be responsible for a decrease of petrel abundance from an estimated 5 – 10 million pairs on the island before their arrival to just 40,000 pairs today. This will impact on ecological processes of the island, as previously

millions of seabirds would have provided a crucial nutrient source for the island's ecosystem via their guano. Henderson petrel will also likely go extinct without intervention to eradicate the rats. Bird monitoring after the 2011 rat eradication attempt demonstrated that the endemic land birds are more impacted by rats than previously thought, as may be other little studied groups such as plants and invertebrates.

Overall THREATS

High Threat

The key threat to the World Heritage values of Henderson Island continues to be rat predation and competition and its effects on avifauna, invertebrates, sea bird breeding area and the wider ecological processes of the island. Possible future species introductions are also a significant threat. This implies that uncontrolled or poorly managed visitation, as the main invasive alien species invasion vector, remains a potential threat to the site.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Henderson Island is generally sufficiently well-protected, primarily because of its remoteness, but would benefit from additional efforts to eradicate rats following the unsuccessful 2011 rat eradication programme, as well as efforts to effectively enforce visitor regulations (including the 2007 Code of Conduct), i.e. through the requirement for visitors to be accompanied by a ranger.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Raised and forested coral atoll of exceptional natural beauty**
Criterion:(vii)

As an extremely remote and near-pristine island, Henderson Island is the world's only forested coral atoll with its landscape and ecology virtually intact, and with ongoing geological and biological processes (IUCN, 1988).

▶ **Exceptionally rich endemic flora**
Criterion:(x)

7 endemic species of flowering plants on a land area of only 43 km2 (Florence et al., 1995)

▶ **Exceptionally rich endemic avifauna**
Criterion:(x)

4 endemic species of land birds : Henderson crake Porzana atra (VU: 6,200 in 1992), Henderson lorikeet Vini stepheni (VU:1,200 pairs in 1992), Henderson fruit dove Ptilinopus insularis (VU: 3,400 in 1992) and Henderson reed warbler Acrocephalus taiti (VU) and one endemic seabird: the Henderson Petrel (Pterodroma atrata EN: 16,000 in 1992) on a land area of only 43 km2 (BirdLife International, 2012).

▶ **Exceptionally rich endemic invertebrate fauna**
Criterion:(x)

All the island's 16 species of land snail and about 30% of the 180 insect species may be endemic. Additional groups of invertebrates may comprise a similar level of endemism (UNEP-WCMC, 2011).

▶ **Important seabird nesting area (including of globally threatened species)**
Criterion:(x)

ca.40,000 pairs of breeding seabirds (9 species,) (UNEP-WCMC, 2011).

Other important biodiversity values

▶ **Rich terrestrial and coastal marine biota**

6 vegetation communities comprising 71 species of vascular plants, 20 of bryophytes and 30 of lichens, 2 native terrestrial reptile species and occasional nesting of Green Turtles Chelonia mydas (EN), regular occurrence of Humpback Whale Megaptera novaeangliae, rich marine invertebrate fauna (including 29 species of coral) and coastal ichthyofauna (190 species) (UNEP-WCMC, 2011).

Assessment information

Threats

Current Threats
High Threat

In general, the uninhabited Henderson Island is well protected by its remoteness and hostile living conditions. The only exception is the presence of the introduced Polynesian Rat, which has had a major negative impact on ground-breeding petrel species, endemic landbirds and endemic invertebrate

populations..

▶ Invasive Non-Native/ Alien Species

High Threat
Inside site

The impact of rat predation on petrel chick mortality on Henderson Island have been estimated at > 99% (RSPB, 2011), and that on Henderson Crake mortality as c.25% (UNEP-WCMC, 2011). Other endemic land bird populations are also suppressed by rat predation. Rat predation is likely to be responsible for a decrease of petrel abundance from an estimated 5 – 10 million pairs on the island before their arrival to just 40,000 pairs today (BirdLife International, 2012). This will impact on ecological processes of the island, as previously millions of seabirds would have provided a crucial nutrient source for the island’s ecosystem via their guano. Henderson petrel will also likely go extinct without intervention to eradicate the rats. The 2011 rat eradication attempt was unsuccessful.

▶ Logging/ Wood Harvesting

Very Low Threat
Inside site

Very limited impact of reportedly well-regulated miro removal. No visits since 2004 reported in 2012.

▶ Tourism/ visitors/ recreation

Low Threat
Inside site

Most recent documented example of damage through irresponsible visitation in 1986, when a track was cut and affected plant distribution on the island (UNEP-WCMC, 2011). Generally, island is little visited, due to its extreme remoteness.

Potential Threats

High Threat

There is a high threat of additional invasive alien species introductions to the

island, which might have adverse effects on all or parts of its biodiversity.

► Invasive Non-Native/ Alien Species

High Threat
Inside site

The example of the rat predation effect on petrel populations shows that any species introduction, which might happen easily through unregulated visitation, may lead to heavy damage of the native flora and fauna, and hence to the island's ecosystem, landscape and beauty. Its high degree of endemism in all taxonomic groups present makes the island community extremely vulnerable to invasive alien species.

Protection and management

Assessing Protection and Management

► Management effectiveness

Mostly Effective

5-year management plan 2004 (Brooke et al., 2004), implementation started 2005 and apparently continued since 2010. Since the rat eradication programme was unsuccessful, the plan might need to be updated.

► Integration into regional and national planning systems

Data Deficient

Site managed by Pitcairn Island Council according to Pitcairn Island OST planning (UNEP-WCMC, 2011), but no information about integration into formal planning available.

► Relationships with local people

Highly Effective

N. a. - no permanent local population;islands only occasionally visited by Pitcairn Islanders, particularly in the context of the 2009-12 research and eradication programmes.

► Legal framework and enforcement

Highly Effective

Local Government Regulations Part IV provide for wildlife protection and fishery management, the Lands and Administration of Estates Ordinance applies restrictions on possession, occupation and transference of land (UNEP-WCMC, 2011). Regime effective but (WHC, 2010)there should be a requirement that all visiting cruise ships have to be accompanied by a ranger. A ranger on the island would pose a risk of further species invasions and would decrease the site's protection and natural values as an uninhabited island almost untouched by human development.

► Management system

Mostly Effective

System generally sufficient. A rat eradication programme was conducted 2011, but was found to be unsuccessful in 2012 (RSPB, 2011). 5-year management plan 2004 (Brooke et al., 2004), implementation started 2005 and apparently continued since 2010. Since the rat eradication programme was unsuccessful, the plan might need to be updated.

► Implementation of Committee decisions and recommendations

Mostly Effective

Request at 12.COM to involve Pitcairn Islanders in the management of the site increasingly met over subsequent years.
Request at 12.COM to review legal status of island and upgrade its status to nature reserve or similar not met to date.
Recommendation at 12.COM to include adjacent marine areas in site not followed to date.
Recommendation at 26.COM to urgently implement and improve 1995 management plan followed by 29.COM.
Request at 29.COM to continue updating the WHC about the implementation of the management plan and state of conservation partly met by 32.COM.
Request at 31.COM to report on fundraising progress for rat eradication and bird monitoring partly met by 32.COM.
Request at 32.COM to finalize plans for rat eradication mostly met by 34.COM.
Request at 32.COM to consider establishing a ranger at the site partly met by

34.COM.
Request at 32.COM to report on conservation status and efforts met by 34.COM.

▶ Boundaries

Mostly Effective

Appropriate, but no inclusion of adjacent coastal marine areas (IUCN, 1988) as suggested.

▶ Sustainable finance

Mostly Effective

No permanent management on site, no operational budget, but little on-site management needed (Foreign and Commonwealth Office, 2006).

▶ Staff training and development

Mostly Effective

Only part-time manager off-site currently. Off-site management is appropriate for this site. Manager should accompany visitors.

▶ Sustainable use

Highly Effective

Limited miro harvest considered sustainable, not practiced since 2004. No other use pressure or potential, due to remoteness.

▶ Education and interpretation programs

Data Deficient

N. a. – because of remoteness and limited number of direct stakeholders.

▶ Tourism and interpretation

Mostly Effective

Tourist numbers very limited, visitor guide and code of conduct published in 2007 (WHC, 2008) – remoteness and risk of invasive alien species introduction do not favor large-scale tourism promotion.

► Monitoring

Mostly Effective

No regular systematic monitoring currently but monitoring by miro expeditions from Pitcairn Island suggested, should these resume (UNEP-WCMC, 2011).

► Research

Highly Effective

A new research programme on rat eradication is underway. Island has been visited by numerous expeditions since its discovery and is considered sufficiently documented to inform management (UNEP-WCMC, 2011).

Overall assessment of protection and management

Mostly Effective

Henderson Island is generally sufficiently well-protected, primarily because of its remoteness, but would benefit from additional efforts to eradicate rats following the unsuccessful 2011 rat eradication programme, as well as efforts to effectively enforce visitor regulations (including the 2007 Code of Conduct), i.e. through the requirement for visitors to be accompanied by a ranger.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

Aside from the rat predation threat, which is currently being addressed by the United Kingdom, all conceivable potential threats would originate from outside of the island, particularly through uncontrolled visitation and invasive alien species introduction. A permanent ranger presence would likely exacerbate the risk of invasive species as considerable infrastructure would be required to establish adequate habitation on this extremely remote island. To effectively enforce visitor regulations (including the 2007 Code of Conduct), visitors should be required to be accompanied by a ranger.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Raised and forested coral atoll of exceptional natural beauty**
Good
Trend:Stable

Integrity of ecosystem and landscape has been stable and no new threat factors have arisen since inscription (UNEP-WCMC, 2011).

▶ **Exceptionally rich endemic flora**
Data Deficient
Trend:Data Deficient

No abundance, reduction or loss of endemic flora has been reported and no new threat factors have arisen since inscription. Rats are likely to be affecting relative abundance of endemic flora through consumption of most palatable seeds, but research is required to assess impacts.

▶ **Exceptionally rich endemic avifauna**
High Concern
Trend:Deteriorating

Most endemic bird species have been negatively affected by rat predation and competition (WHC, 2008) and a continuous slow decline with a potential to lead to extinction of one species (Henderson Petrel Pterodroma atrata) has been inferred (BirdLife International, 2012). Bird monitoring after the 2011 rat eradication attempt demonstrated that the endemic land birds are more impacted by rats than previously thought.

▶ **Exceptionally rich endemic invertebrate fauna**
Data Deficient
Trend:Data Deficient

Invertebrate fauna relatively little studied and may be particularly vulnerable

to invasive alien species, but no abundance reduction or loss of endemic invertebrates has been reported and no new threat factors have arisen since inscription. No research has been carried out but rats are likely to be significantly affecting overall abundance and community structure of endemic invertebrate fauna.

▶ **Important seabird nesting area (including of globally threatened species)**

High Concern
Trend:Deteriorating

Among the nine breeding seabird species, Henderson Petrel Pterodroma atrata and other Pterodroma spp. have been particularly threatened by rat predation, and a continuous slow decline with a potential to lead to extinction has been inferred.

Other important biodiversity values

▶ **Rich terrestrial and coastal marine biota**

6 vegetation communities comprising 71 species of vascular plants, 20 of bryophytes and 30 of lichens, 2 native terrestrial reptile species and occasional nesting of Green Turtles Chelonia mydas (EN), regular occurrence of Humpback Whale Megaptera novaeangliae, rich marine invertebrate fauna (including 29 species of coral) and coastal ichthyofauna (190 species) (UNEP-WCMC, 2011).

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**

High Concern

Trend: Deteriorating

The impact of rat predation on petrel chick mortality on Henderson Island has been estimated at > 99%, and that on Henderson Crake mortality as c.25%. Other endemic land bird populations are also suppressed by rat predation. Rat predation is likely to be responsible for a decrease of petrel abundance from an estimated 5 – 10 million pairs on the island before their arrival to just

40,000 pairs today. This will impact on ecological processes of the island, as previously millions of seabirds would have provided a crucial nutrient source for the island's ecosystem via their guano. Henderson petrel will also likely go extinct without intervention to eradicate the rats. Bird monitoring after the 2011 rat eradication attempt demonstrated that the endemic land birds are more impacted by rats than previously thought, as may be other little studied groups such as plants and invertebrates.

▶ **Assessment of the current state and trend of other important biodiversity values**

Good

Trend: Stable

No deterioration of the other natural values of the site and no emerging factors that would make a negative trend likely have been reported since inscription.

Additional information

Key conservation issues

▶ **Rat predation of Henderson Petrel Pterodroma atrata and other Pterodroma spp. chicks, as well as Henderson Crake Porzana atra chicks and likely the endemic invertebrates.**

Local

Up to > 99% loss of Pterodroma chicks and limited but significant loss of Porzana atra chicks to Polynesian Rat predation reported at Henderson Island. Since the P. atrata population is the largest globally and appears to be unsustainable if rat predation continues, this could lead to the extinction of the species.

▶ **Potential of introduction of new invasive alien species**

Local

Additional invasive alien species introductions (microbes, plants, invertebrates or vertebrates) could happen relatively easily by means of uncontrolled

visitation, and could have a devastating effect on several key values of the island. This issue is compounded by the current lack of a ranger accompanying visitors to the island.

▶ Uncontrolled visitation

Local

Uncontrolled visitation would contribute to the potential introduction of new invasive alien species, but could also have additional negative impacts (littering, disturbance, trail construction, unsustainable resource use etc.). In spite of the remoteness of the island, small boat visitation may increase in the wake of the rise in yachting global tourism.

▶ Infrastructure development

Local

Plans to develop infrastructure on Henderson Island in 1982/83 were turned down by the British government but might resurface if the general framework affecting the islands changes (UNEP-WCMC, 2011).

Benefits

Understanding Benefits

▶ Collection of genetic material

The island is used as a reservoir of genetic material of miro and tau stocks for the future (UNEP-WCMC, 2011) and may hold genetic resources of global importance among its endemic biota.

▶ Is the protected area valued for its nature conservation?

The site supports numerous populations of endemic and globally threatened biota.

▶ Importance for research

As one of the few nearly pristine coral atolls, the site has generated significant scientific knowledge since discovery (UNEP-WCMC, 2011) and

might turn into a reference for the ecological restoration of other islands in the Pitcairn group and in the wider South Pacific (RSPB, 2011).

Summary of benefits

The nature conservation benefits of this remote and uninhabited site exceed other types of benefits significantly, although there are also additional minor and potential benefits.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	RSPB		Henderson Island Restoration Project (rat eradication, aimed at boasting endemic land bird and seabird populations, native flora and invertebrate fauna; participation of Pitcairn Islanders in management of the site).

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	UK Government	Deployment of a ranger to accompany visitors to the site, aimed at enforcing the 2007 visitation Code of Conduct, site monitoring and interpretative activities.	

REFERENCES

№	References
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3	Florence J., Waldren, S., Chepstow-Lusty A. (1995). ‘The flora of the Pitcairn Islands: a review’. Biological Journal of the Linnean Society 56:79-119.
4	Foreign and Commonwealth Office (2006). ‘United Kingdom – Henderson Island’. State of Conservation of World Heritage Properties in Europe. Section II. accessed 22 February 2012
5	IUCN (1988): ‘487: Henderson Island. World Heritage Nomination – IUCN Summary.’ Advisory Body Evaluation. accessed 22 February 2012
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9	WHC (2002). WHC-02/CONF.202/17 Henderson Island (UK) (N487)’. In WHC Item 21 of the Provisional Agenda: State of conservation of properties inscribed on the World Heritage List pp.15-16. accessed 22 February 2012
10	WHC (2008). ’32.COM 7B.27 Henderson Island (UK) (N487)’. In WHC, Item 7B of the Provisional Agenda: State of conservation of World Heritage properties inscribed on the World Heritage List. pp.60-62. accessed 22 February 2012
11	WHC (2010). ’34.COM 7B.27 Henderson Island (UK) (N487)’. In WHC, Item 7B of the Provisional Agenda: State of conservation of World Heritage properties inscribed on the World Heritage List. pp.71-74. accessed 22 February 2012