Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

John Cooper
Honorary Tristan Conservation Officer
Conservation & Restoration Initiatives
9 Weltevreden Avenue
Rondebosch 7700
South Africa

Tel +27-21-685-1357; Fax +27-21-650-3434
John.Cooper@uct.ac.za

2. Date this sheet was completed/updated:

28 June 2008

3. Country:

United Kingdom (Overseas Territory of Tristan da Cunha)

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Inaccessible Island

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**
a) Designation of a new Ramsar site X❑; or
b) Updated information on an existing Ramsar site ❑

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6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ❑

or
If the site boundary has changed:
i) the boundary has been delineated more accurately ❑; or
ii) the boundary has been extended ❑; or
iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ❑; or
ii) the area has been extended ❑; or
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

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7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:
i**) a hard copy** (required for inclusion of site in the Ramsar List): ❑;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ❑; X

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables ❑**.

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundary of the site is set at 12 nautical miles offshore, taking account of the overlaps with neighbouring islands (see below) which coincides with the boundaries of both the Inaccessible Island Nature Reserve and the relevant sector of the Gough and Inaccessible Islands World Heritage Site.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

37º 18'S, 12º 41'W

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

Inaccessible Island lies 40 km south-west from the main island of Tristan da Cunha in the mid South Atlantic Ocean. It forms part of the United Kingdom Overseas Territory of Tristan da Cunha (resident population recorded as 264 on 19 March 2009) , which is part of the UK Overseas Territory of St Helena.

Inaccessible Island is uninhabited, save for occasional (and usually short) visits for research and conservation management purposes.

10. Elevation: (in metres: average and/or maximum & minimum)

Minimum: 0 m (sea level)
Maximum: 500-600 m (Swales Fell)*
Average: No information available

*exact height uncertain

11. Area: (in hectares)

Terrestrial area: 1524 ha
*Marine area: *c.* 125 000 ha

*The marine area has been calculated taking account of the adjacent islands of Nightingale and Tristan, whose 12-nautical mile boundaries overlap with that of Inaccessible, by plotting an equidistant line through the overlapping areas.

Total area: 126 524 ha

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Inaccessible Island is a near-pristine cool temperate island of volcanic origin. The island is characterized by steep coastal cliffs that rise to an undulating plateau. Inaccessible is heavily

vegetated. A total of 24 species of seabirds and land birds (several endemic to the island or to the Tristan Group) and the Subantarctic Fur Seal *Arctocephalus tropicalis* breed, some in very large numbers. There are no introduced mammals, although there have been in the past, and there are a number of introduced species of invertebrates and plants. Several bird species are considered threatened by the World Conservation Union. The deep marine component is relatively little known but above 40 m supports a variety of intertidal and subtidal habitats dominated by seaweed and kelp beds, a range of invertebrates including a commercially-exploited population of Tristan Rock Lobster *Jasus tristani*, demersal and pelagic fish, and cetaceans of several species that are seen from time to time. Important wetland types include Non-forested peatlands, Permanent freshwater pools, Permanent streams, Marine subtidal aquatic beds and Rocky marine shores.

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13. Ramsar Criteria:
Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
x❑	x❑	x❑	x❑	x❑	x❑	x❑	x❑	x❑

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14. Justification for the application of each Criterion listed in 13 above:
Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1

Inaccessible Island is a near-pristine cool temperate island of volcanic origin; it falls biogeographically within the southern cool temperate zone, although aspects of its upland habitats and several animal (e.g. penguins, albatrosses and seals) and plant species show strong affinities to the sub-Antarctic region.

Inland Wetlands include Permanent and Intermittent streams (including waterfalls) [M]; Permanent freshwater pools [Tp]; and Non-forested peatlands [U].

Marine/Coastal Wetlands include Rocky marine shores, including sea cliffs with narrow boulder beaches at their feet [D], Marine subtidal aquatic beds, made up largely of seaweed meadows and kelp beds comprising two species of kelp [B] and Permanent shallow marine waters [A].

Examples of each of the above wetland types are given below:

Permanent streams [Wetland type M]

Waterfall River that drains the island's eastern plateau via several spectacular waterfalls and a 300-m high cliff.

Permanent freshwater pools [Wetland type Tp]

Skua Pond at West Point.

Non-forested peatlands [Wetland Type U]

Molly Bog and Dick's Bog , on the island's plateau.

Rocky marine shores [Wetland type D]

The narrow boulder beaches at Blenden Hall and between North Point and Pig Beach Point on the east coast, as well as the offshore stacks of Pyramid Rock and Cave Rock.

Marine subtidal aquatic beds[Wetland type B]

The east-coast kelp beds stretching from North Point to East Point.

Permanent shallow marine waters [Wetland Type A]

Carlisle Bay on the island's more sheltered eastern coastline.

Criterion 2

The following nine IUCN-categorized globally threatened and near-threatened vertebrate species (2008 listings and most recent taxonomic treatments) breed on Inaccessible Island or occur regularly within its territorial waters:

Southern Right Whale *Eubalaena glacialis* Endangered
Northern Rockhopper Penguin *Eudyptes moseleyi* Endangered
*Tristan Albatross *Diomedea dabbenena* Critically Endangered
*Atlantic Yellow-nosed Albatross *Thalassarche chlororhynchos* Endangered
*Sooty Albatross *Phoebetria fusca* Endangered
*Spectacled Petrel *Procellaria conspicillata* Vulnerable
Inaccessible Rail *Atlantisia rogersi* Vulnerable
Tristan Thrush *Nesocichla eremita* Near Threatened (subspecies *gordoni*)
Inaccessible Bunting *Nesospiza acunhae* Vulnerable (three subspecies and hybrids between them occur)

It is possible that two threatened winter-breeding burrowing petrels, the Grey Petrel *Procellaria cinerea* (Near Threatened; ACAP-listed, see below) and the Atlantic Petrel *Pterodroma incerta* (Endangered) breed on Inaccessible, but evidence is lacking due to the lack of winter surveys by ornithologists.

The Southern Right Whale is listed on CITES Appendix I and has been protected since 1935 by the International Whaling Commission. Four of the above avian species (asterisked above) are listed within the Agreement on the Conservation of Albatrosses and Petrels (ACAP), to which the United Kingdom is a Party, its ratification including the Overseas Territory of Tristan da Cunha. Several other species of IUCN-threatened and ACAP-listed southern procellariiform seabirds (albatrosses and petrels) have been recorded visiting Inaccessible territorial waters as non-breeders (Ryan 2007).

Of the significant wetland types identified as occurring on Inaccessible Island, Non-forested peatlands and Rocky marine shores (including sea cliffs and boulder beaches) are critical to the

survival of the breeding populations of Tristan Albatross (relict population of 2-3 pairs) and Spectacled Petrel (island endemic), and Northern Rockhopper Penguin and Sooty Albatross, respectively. All these species breed wholly or primarily within the designated wetland types.

All the above threatened species are fully protected by the Conservation of Native Organisms and Natural Habitats (Tristan da Cunha) Ordinance, 2006. No domestic category-of-threat classification currently exists under Tristan da Cunha legislation.

Criterion 3

Inaccessible Island is one of the most pristine oceanic islands in the southern hemisphere. It supports no introduced mammals. Away from the field hut at Blenden Hall there is a complete absence of permanent man-made objects, such as fences or sign posts, giving the island a complete wilderness nature. Although introduced plants and invertebrates do occur, they have not visibly altered the natural appearance of the island's wetlands.

Three threatened avian species are endemic: to the island:

Spectacled Petrel
Inaccessible Rail
Inaccessible Bunting

Additionally, the Tristan Thrush is a near-threatened endemic subspecies and the Tristan Albatross and Atlantic Yellow-nosed Albatross are endemic to the Tristan Group.

Numbers of plants and invertebrates are either endemic to the island, or to the island group. Baardseth (1941) considered that around 40% (about 50 species) of seaweeds (mainly red algae) recorded from the Tristan north islands are endemic to the archipelago. However, he conceded that much taxonomic work was needed, particularly on the South American flora, before the true figures could be established. A few of these have only been found on Inaccessible, but it is likely that further surveys will reveal them at the other islands. Collections from recent surveys (Scott in prep.) should help to establish the true proportion of endemic seaweeds in the islands.

Inaccessible Island supports in unaltered conditions most of the natural terrestrial vegetation types found within the Tristan da Cunha group, including upland peatlands (bogs) and wet heath, and lowland fern bush and tussock grassland, as well as subtidal seaweed and kelp beds. Seaweed beds on subtidal boulders are particularly well developed and diverse around the island. Feldmark (alpine habitat) is absent due to the relatively low height of the island.

Criterion 4

Inaccessible Island provides annual refuge and breeding habitats to many species (16 seabirds, one seal) that range and forage across the South Atlantic, both during and outside of their breeding seasons. For example, Atlantic Yellow-nosed Albatrosses and Spectacled Petrels regularly visit the South American and southern African coasts. The Antarctic Tern over-winters in South Africa.

Criterion 5

Inaccessible Island regularly supports more than 20 000 waterbirds. Recent (2000+) population estimates (breeding pairs) have been made for the following taxa:

Northern Rockhopper Penguin 18 000
Tristan Albatross 2-3 (biennial breeder)
Atlantic Yellow-nosed Albatross 2000
Sooty Albatross 500
Broad-billed Prion *Pachyptila vittata* >50 000
Spectacled Petrel 10 090
Kergeulen Petrel *Lugensa brevirostris* >100
Soft-plumaged Petrel *Pterodroma mollis* >10 000
Great Shearwater *Puffinus gravis* >2 000 000
Little Shearwater *P. assimilis* >5000
White-bellied Storm Petrel *Fregetta grallaria* >50 000
White-faced Storm Petrel *Pelagodroma marina* *c.* 5000
Common Diving Petrel Pelecanoides urinatrix *c.* 5000
Inaccessible Rail *c.* 5000
Tristan Skua *Catharacta antarctica hamiltoni* 100
Antarctic Tern *Sterna vittata* 100
Common Noddy *Anous stolidus* 50

Large numbers of seabirds regularly occur within Inaccessible territorial waters (including of species that do not breed on the island). Notably, large rafts of Great Shearwaters *Puffinus gravis* and flocks of Broad-billed Prions *Pachyptila vittata* are regularly seen from the shore in summer months, in numbers that must far exceed 20 000 birds of each species. Large numbers of storm petrels may be seen at dark nights at sea around the island, when attracted to the lights of visiting vessels.

Criterion 6

Inaccessible Island supports more than 1% of the global population of several of the seabird and waterbird species and subspecies that breed on the island. Notable examples for which sufficient data exist include:

*Northern Rockhopper Penguin: *c.* 8%
*Atlantic Yellow-nosed Albatross: *c.* 6 %
*Sooty Albatross: *c.* 3%
*Spectacled Petrel: 100%
Great Shearwater: *c.* 36%
Tristan Skua *c.* 8%
*Inaccessible Rail 100%

Note: five species (asterisked) of the above seven taxa are globally threatened (see Criterion 2 above).

Sources: Ryan & Glass 2001, Ryan 2007, Cuthbert *et al*. in press.

Criterion 7

The territorial waters of Inaccessible support significant populations of pelagic and demersal fish, with over 50 species recorded from the Tristan group. Although little is known about their population sizes, it is considered, due to the absence of a commercial finfish fishery and near-total lack of exploitation historically, that their stocks around the island remain in a near-pristine condition. The Klipfish *Bovichtus diacanthus* is endemic to the Tristan Group. Additionally, the island's waters support a substantial part of the global population of the Tristan Rock Lobster, which is endemic to the Tristan da Cunha islands and to Vema Seamount.

Criterion 8

Inaccessible Island's territorial waters support the inshore populations of a number of fish species and of the Tristan Rock Lobster. Examples of inshore-breeding fish species include the Klipfish, Tristan Wrasse *Nelabrichthys ornatus*, Five-finger *Acantholatris monodactylus* and False Jacopever *Sebastes capensis*.

Criterion 9

The island's Tristan Rock Lobster population represents far more than 1% of the species' global population, as shown by island-specific quotas and catches by the commercial fishery. The waters around Inaccessible undoubtedly contain more than 1% of the populations of other shallow-water invertebrate species endemic to the Tristan islands, for instance the sea urchin *Arbacia crassispina*. More taxonomic work is required on marine invertebrate groups (S. Scott in prep.).

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15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):
Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Inaccessible Island, as part of the UK Overseas Territory of Tristan da Cunha, falls within the Cool Temperate subdivision of the Biogeographical Province of Insulantarctica.

b) biogeographic regionalisation scheme (include reference citation):

Insulantarctica forms one of the four provinces of the Antarctic Realm (Udvardy 1975). In this scheme, Insulantarctica is defined as containing both southern temperate and sub-Antarctic islands. Following Clark & Dingwall (1985), Insulantarctica is further divided into three sub-divisions: "Cool temperate" (which contains Gough Island), "Subantarctic" and "Maritime Antarctic". Cool temperate islands are identified by having woody plants, including trees, annual mean temperatures generally higher than 5ºC, and by lying between the Subtropical and Subantarctic Fronts (Clark & Dingwall 1985).

Clark, M.R. & Dingwall, P.R. 1985. *Conservation of Islands in the Southern Ocean.* Gland & Cambridge: International Union for the Conservation of Nature and Natural Resources. 193 pp.

Udvardy, M.D.F. 1975. A classification of the biogeographical provinces of the world. *IUCN Occasional Paper* No. 18. 48 pp.

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16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Inaccessible Island is a mountainous oceanic island of c. 15 km², approximately 6 x 5 km, with steep and high (> 200 m in places) coastal cliffs around the entire coastline. An undulating plateau occurs in the interior, rising up to 600 m above sea level. Spectacular erosion-resistant plugs occur, notably Michael's Massif that juts out of the west coast. The coastal cliffs have narrow boulder beaches at their bases. Two offshore stacks (one vegetated) are situated in shallow bays, and there are further offshore stacks at the south-west corner. Shallow subtidal areas around much of the island are mixtures of boulders of all sizes and bedrock outcrops with patches of cobbles, pebbles and sand between; the products of coastal erosion. There is a more extensive offshore sand plain at 20-30 m off the east coast. Steep bedrock slopes drop from the shore to 30 m and beyond in the exposed south-west around Pyramid Rock, several kilometres from the coast, the seabed drops to below 1000-m deep, although there is an extensive shallower plateau of less than 100 m depth extending to the west of the island.

Inaccessible is a true volcanic island with an estimated age of 3-4 million years. Soils are poorly developed, with a deep peat mantle covering most of the island. Peat slips are frequent on steep slopes following heavy rainfall events and appear to be a driving force in vegetation succession and in maintaining plant diversity.

Frontal rain at all times of the year results in generally waterlogged ground, including peatlands, and fast-flowing streams in incised valleys. These streams may rise dramatically in spate after heavy rain, subsiding once more in a matter of hours. Spectacular waterfalls exist on the streams, as well on the coastal cliffs (where they may be over 100 m tall). Very little is known of the chemistry of the island's pools and streams, but water clarity is generally high, except where streams are biotically influenced (e.g. by guano from penguin colonies).

The tidal range is small (less than 1 m). Prevailing oceanic currents are generally from the west, associated with prevailing westerly winds. Seawater temperatures range from 12-16ºC in winter to 15-20ºC in summer. Inaccessible is thought to lie north of the Subtropical Front, and thus seawater temperatures are significantly warmer than at Gough, which lies south of it.

Inaccessible has a cool temperate climate. No climatic data exist for the island itself. Because of a combination of altitude, high winds and rain, the island plateau has a more sub-Antarctic-type climate, with wind chill often a significant factor for visitors. Mist, especially on the plateau, including at times of strong winds, is a common feature, and the interior is often shrouded by low cloud.

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17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The catchment area includes the whole of the Island. See 16 above for a description.

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18. Hydrological values:
Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Rainfall is an ultimate driving force of the island's ecology, supporting a rich vegetation, which in turn leads to the formation of deep peat from decomposing plants, in which huge numbers of burrowing seabirds breed.

The island is constantly battered by waves, resulting in the products of coastal erosion accumulating underwater, providing attachment for dense beds of kelp. The clarity of the water, cool temperatures and constant water movement provide ideal conditions for seaweed growth, resulting in seaweed meadows which harbour large populations of small animals, (food for fish), and provide shelter for juveniles of the commercially important Tristan Rock Lobster.

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19. Wetland Types
a) presence:
Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory notes & Guidelines*.

Marine/coastal: <u>A</u> • <u>B</u> • C • <u>D</u> • <u>E</u> • F • G • H • I • J • K • Zk(a)

Inland: L • <u>M</u> • N • O • P • Q • R • Sp • Ss • <u>Tp</u> Ts • <u>U</u> • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:
List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

A, B, U, D, Tp, M, E

Note: Inadequate mapping (the only topographical survey of the island was undertaken without the aid of aerial photography in 1982/83) makes it difficult to assess the areas covered by such hydrological features as pools, some of which are too small to have been depicted on the only available map.

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20. General ecological features:
Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Inaccessible Island and its territorial waters form one of the largest unmodified cool temperate island ecosystems in the South Atlantic. Probably the most significant wetland types are Non-forested peatlands and Marine subtidal aquatic beds (see Sections 14, Criterion 1 and 19 above), which support a dense (but low) vegetation cover of mainly grasses, sedges and mosses and huge numbers of both surface- and burrow-nesting seabirds, and dense inshore seaweed meadows and kelp beds with an attendant demersal and pelagic fauna, including the commercially exploited and near-endemic Tristan Rock Lobster, respectively.

The zonation of marine life from the shore downwards is characteristic. Stable intertidal rocks are mainly covered with short seaweed turfs, containing large numbers of small invertebrates. At Pyramid Rock, the most exposed corner of the island where there is a constant swell and it is rarely possible to get ashore, the whole intertidal zone is covered with large barnacles, whereas rock pools here contain anemones, sponges and seaquirts usually found only in the subtidal zone. By contrast, intertidal mobile boulder and cobble beaches are usually devoid of attached life (apart from temporary microscopic films). In shallow water between 0-10 m, dense beds of foliose and filamentous seaweeds cover all bedrock and stable boulders, in the absence of significant grazers. Here there is a rich diversity of algae; seaweeds are by far the most diverse group of organisms underwater. Below 10-12 m, the flatter rocks are increasingly grazed by hordes of sea urchins, resulting in bare, pink coralline algal-encrusted rock surfaces, together with some resistant animals, notably the Jewel Anemone *Corynactis annulata*. On vertical or overhanging surfaces where sea urchins find it difficult to reach, there is often a dense cover of sessile animals including hydroids, bryozoans, sponges, anemones, tube anemones and soft corals, preyed on by mobile animals such as starfish, whelks and rock lobsters. The overall diversity of animals is very low; this is to be expected from the island's extremely isolated location and small size. Forests of Pale Kelp *Laminaria pallida* and Giant Kelp *Macrocystis pyrifera* grow on rocks between 10-35 m, and are inhabited by numerous Tristan Wrasse and Five-finger. Offshore of the east coast beds of fine pale sand are present at the base of boulder slopes below 25 m, with characteristic animals and algae growing on embedded pebbles, but little sign of infauna apart from occasional bivalves *Tawera philomena*. Extensive areas between 50-100 m deep on the west side of the island support a significant rock lobster population

The marine ecosystem is generally characteristic of exposed cool temperate locations, but with a very impoverished fauna, which presumably results in short food chains. Many species are very small and/or sessile, and have live young rather than a planktonic stage, supporting the theory that the island was colonised mainly by animals drifting on seaweeds or other debris. There is still little known about how the inshore marine ecosystem functions.

Twenty species of birds (16 seabirds and four land birds) and one species of seal breed on the island. Although not as yet studied, it is likely the biotic influence of guano-rich run-off water is significant in the maintenance of the inshore environment, especially the kelp bed ecosystem.

Vegetation types are altitudinally zoned, with Non-forested peatlands (wet heath) occurring on the interior plateau, and the lower slopes closer to sea level being dominated by coastal tussock.

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21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS*.

Several plant species are noteworthy at Inaccessible Island. Four vegetation types have been recognized.

In the lowlands and the lower cliff slopes, notably at Blenden Hall and Salt Beach, near-impenetrable tussock grassland up to three metres high made up primarily of *Spartina arundinacea.* Penguins and Great Shearwaters nest under the thick cover.

The Island Tree *Phylica arborea*, Bog Fern *Blechnum palmiforme* and the Bracken *Histiopteris incisa* dominate much of the plateau, forming a dense vegetation cover, known as fern bush, through which it is difficult to walk, especially in summer when the Bracken emerges. Fern bush supports large numbers of burrowing seabirds, including the endemic Spectacled Petrel.

Wet heath is a low (<0.5-m high) and diverse habitat, made up mainly of grasses, sedges and creeping forbs (including Dogcatcher *Acaena sarmentosa* with its hooked inflorescences that get caught on clothing and Berry Bush *Empetrum rubrum* with its bright red edible berries).

Two types of bogs occur, dominated by either sedges *Scirpus* sp. or by *Sphagnum* moss. Both are poorly drained. The former type is restricted to the plateau, with Dick's Bog a studied example. *Scirpus* bogs occur both at altitude and in the lowlands, where Skua Pond is the best-known (and largest) example. Many bogs have been invaded by the alien *Holcus lanatus* (Farm Grass).

Only one vascular plant species is thought to be endemic to Inaccessible Island, the fern *Elaphoglossum gracilifolium*. A further 35 vascular species that occur are restricted to the Tristan group. An intriguing endemic subspecies is the Pepper Tree *Peperomia berteroana tristanensis*, which is restricted to the lower part of the Waterfall River.

At least 27 introduced plants have been recorded, but few have as yet led to large changes in the vegetation. Thistles *Sonchus* spp, Broad-leafed Dock *Rumex obtusifolius*, Farm Grass, Creeping Bent *Agrostis stolonifera* and Annual Blue-grass *Poa annua* are among the most widespread alien plant taxa, common in wet heath, so that their eradication seems currently unfeasible. However, ongoing eradication efforts are (hopefully) leading to the successful removal of several alien plants with (so far) restricted distributions, including the New Zealand Flax *Phormium tenax* and the Turnip *Brassica rapa*.

Desmarestia sp., a large brown seaweed, was found on the south side of Inaccessible during a recent subtidal survey. This seaweed has not been found on the other northern islands in the Tristan group, but is common at Gough. It is a cold-water species, and as such may be a useful indicator of changing seawater temperatures

Pale and Giant Kelps are features of the sub-tidal zone around the island, having a notable calming effect on sea conditions.

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22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria)

indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Information on endemism and on threatened species of vertebrate fauna has been given above.

Perhaps the most noteworthy aspect of the vertebrate fauna of Inaccessible Island are the huge numbers of burrowing petrels, especially the Great Shearwater, which occurs in its millions, the endemic Spectacled Petrel, the Broad-billed Prion *Pachyptila vittata*, and the storm petrels. Storm petrels appear notably abundant, probably due to the complete absence of introduced mammalian predators, such as rodents and feral cats, which most probably have severely reduced their populations on two other islands (Tristan – rodents and cats, and Gough - House Mouse) in the island group.

Also noteworthy is the presence of the world's smallest flightless bird, the Inaccessible Rail, which is endemic to the island, and the endemic buntings, which show signs of active speciation.

Inaccessible's position has led to an intriguing mix of birds with both tropical and sub-Antarctic affinities. Its penguin and albatrosses are also from essentially sub-Antarctic stock, whereas the Brown Noddy *Anous stolidus* is a seabird of the tern family with a primarily tropical distribution.

Among the terrestrial invertebrates, a high level of flightlessness occurs (e.g. of moths and flies), which is characteristic of many southern oceanic islands. Beetles (including weevils, rove beetles and water beetles) are notably common, with a number of endemic species known to the island, or to the island group. The terrestrial invertebrate fauna of Inaccessible has been little studied.

In the past several animal species have been deliberately introduced to the island, all of domestic stock (poultry, sheep, cattle, pigs and dogs). Fortunately, none of these remain, leaving Inaccessible alien mammal-free. However, the pigs are thought responsible for reducing the Tristan Albatross from some 200 pairs to its current relict population of less than five pairs in the 19th and early 20th centuries. It seems this tiny population is now to small to recover.

A large number of alien invertebrates has been introduced and become established, many of which have spread all over the island (e.g. flies, millipedes, beetles, wasps, snails and slugs).

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23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

As is to be expected from its near-pristine state, and lack of any permanent habitation both past or present, Inaccessible does not contain much of cultural significance. Nevertheless, there is a site marking the remains of a failed farming attempt (from Tristan) in the last century, and sealers and shipwrecks dating back to earlier times may have left some traces. Such known and potential archaeological sites have never been properly studied.

In terms of the island's management plan, commercial tourism is severely restricted. This has helped to retain the island's wilderness nature, with no development of infrastructure and an absence of littering away from mainly fishing jetsam on the more-exposed boulder beaches. Away from the single field hut there are no permanent structures, and so any venture inland from the shoreline takes place in a completely natural and unaltered environment – from the visual aspect at least.

Use of the island is restricted to limited tourism (day visits of small parties only, landed in small boats) and the closely-linked activities of scientific research and conservation management, in the last decade restricted to studies of threatened and endemic species (especially the endemic Spectacled Petrel) and alien plant eradication campaigns.

In the marine environment, the commercial fishery for Tristan Rock Lobster is tightly managed: by way of a allowing only a single licensee, setting an annual island quota, a minimum size limit and a closed fishing season, and by conducting regular surveys to ascertain the size of the stock, which information is used to set the quotas. Whereas poaching of rock lobster is thought to have occurred in the past, no recent cases have been reported, probably because a fisheries patrol boat is now able to visit from the main island.

The above values and activities are all considered to be consistent with the maintenance of the natural wetland processes and ecological character of the island.

Lastly, as a natural site registered with the World Heritage Convention, Inaccessible Island has a globally-significant status as one of the world's most special and unspoilt places.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box ❑ and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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24. Land tenure/ownership:
a) within the Ramsar site:

Inaccessible Island forms part of the United Kingdom's Overseas Territory of Tristan da Cunha and may be regarded as wholly "state-owned". As a proclaimed nature reserve (which includes

all its surrounding territorial waters), its management is the responsibility of the Conservation and Agriculture & Natural Resources Departments (TCD and TANRD) of the Tristan Government.

b) in the surrounding area:

The surrounding seas from 12 out to 200 nautical miles form part of Tristan's Exclusive Economic Zone (EEZ).

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25. Current land (including water) use:
a) within the Ramsar site:

There is no permanent human population. From time to time, more commonly in the last 25 years, small numbers of researchers and conservation management teams have visited the island, usually during summer months, for visits that have lasted up to several months but are normally shorter.

No exploitive activities take place (i.e. cultivation of plants or keeping of domestic stock). Tristan islanders occasionally visit to "beach comb", collecting such items as fishing floats and drift wood, and to collect apples from the few plants established last century at Blenden Hall and Salt Beach. Difficulties of landings on the exposed boulder beaches make such visits rare.

A commercial fishery for Tristan Rock Lobster takes place in Inaccessible's territorial waters. Limited recreational fishing under license is allowed from rock lobster fishing vessels.

b) in the surroundings/catchment:

Small numbers of pelagic fishing vessels have from time to time been licensed by the Tristan Government to fish (e.g. for tuna) within the Tristan da Cunha EEZ.

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26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
a) within the Ramsar site:

The most detrimental factor affecting the ecological character of Inaccessible Island is the continued presence of introduced species, both of plants and of animals (now invertebrates only). An active eradication exercise is underway to remove New Zealand Flax, with visits for this purpose taking place every few years, the last in 2007; after which only a few plants remain.

Introduced plants and invertebrates have the capacity to "outcompete" indigenous species, which could lead to changes in the ecological character of the island. A reduction in native invertebrate fauna could lead to changes in the rates of peat formation (by altering the rates of decomposition). Given that the larger part of the island's avifauna is made up of burrowing birds, any changes to the peat layers of the island could eventually affect bird populations.

Pollution is not considered a significant problem, although some shorelines do contain large amounts of washed-up material. Visitors to the island must remove their solid wastes when they depart. Seabirds do import plastic fragments to the island, swallowed at sea in error for food items, which are then passed onto their chicks, who may regurgitate them later. Although such

fragments are occasionally visible on the ground, they do not appear to affect ecological processes.

Episodic events, such as heavy rainfall leading to peat slips, and the ongoing erosion of sea cliffs and stacks are part of the natural system of the island, and are necessary to maintain plant diversity and succession. Peat slips and cliff falls do lead to the mortality of breeding birds, but only in small numbers. Such events help shape the ecological character of the island, rather than altering it in any adverse way.

b) in the surrounding area:

None known

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27. Conservation measures taken:
a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:
In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Inaccessible Island and its territorial waters is designated a nature reserve in terms of Tristan's Conservation Ordinance of 2006. It was first declared in 1997. A management plan was adopted for the island in 2001. In 2004 the existing Gough Island World Heritage Site was expanded to include Inaccessible Island under the name "Gough and Inaccessible Islands World Heritage Site".

Tristan da Cunha adheres to the international Agreement on the Conservation of Albatrosses and Petrels, to which the United Kingdom is a Party.

Inaccessible Island has been recognized as an "Important Bird Area" by BirdLife International (Rowlands & Hilton 2006).

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia x❑; Ib ❑; II ❑; III ❑; IV ❑; V ❑; VI ❑

c) Does an officially approved management plan exist; and is it being implemented?:

Yes. A management plan for the Inaccessible Island Nature Reserve was formally adopted by the Government of Tristan da Cunha in March 2001 (Ryan & Glass 2001).

All human activities ashore on the island, including tourism, are carried out in terms of the management plan. In terms of the plan and the 2006 conservation ordinance, such exploitative activities as collecting or killing animals and plants without permit are not allowed.

Fishing is carried out under license in terms of Tristan fishery ordinances and their amendments. Long-line fishing is not allowed within 50 nautical miles of the island.

d) Describe any other current management practices:

All current management practices are carried out in terms of the island's management plan.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

Nil.

29. Current scientific research and facilities: e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Recent and current research activities are closely linked to those directed at the island's conservation management. The following research projects are noteworthy:

Managing alien plants on the outer islands of Tristan da Cunha

This OTEP-funded project runs from August 2007 to March 2009. At Inaccessible it has concentrated on eradicating New Zealand Flax. The project also aims at improving quarantine procedures to reduce the risks of new species of alien plants reaching the island. Observations of the presence and distribution of alien plants over accessible parts of the island are undertaken during flax eradication visits.

Monitoring and demography of threatened birds breeding at Inaccessible Island

Ongoing research, some of which dates back to the mid-1980s, aims to assess population trends and reasons for change in a selected suite of threatened and near-threatened species on Inaccessible. These include the Northern Rockhopper Penguin, Tristan, Atlantic Yellow-nosed and Sooty Albatrosses, Spectacled Petrel and Inaccessible Bunting. Methodologies adopted include island-wide censuses as set out in a seabird monitoring manual (Ryan 2005). This project is supported by the Royal Society for the Protection of Birds and the University of Cape Town. These research activities are usually combined with plant-eradication exercises, and took place most recently in 2000, 2004 and 2007.

Enabling the people of Tristan da Cunha to implement the CBD in the marine environment.

Following concern over the possible introduction of alien marine species to Tristan via a stranded oil production platform in 2006 (Scott 2007), funding was obtained through the Darwin Initiative for subtidal surveys including around Inaccessible, in recognition that little baseline information existed for the island. Diving surveys were successfully carried out in November 2007, and are currently being written up (S. Scott in prep.). The current phase of the project is due to end in April 2009.

Other research activities

Near-annual surveys of Tristan Rock Lobster are undertaken in summer months to assess stock size for quota-setting purposes.

Research facilities

A small (9 x 6 m) field hut exists at Blenden Hall, erected and equipped with basic facilities in January 2000. It can sleep up to six persons. It replaces a previous hut erected on the site in 1982. Since the above research is conducted in the field, often from tented camps on the plateau or at The Waterfall on the east coast, the basic facilities available are considered adequate.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

No such facilities exist ashore on Inaccessible.

.TANRD staff have joined research and conservation management projects for limited periods from time to time, thereby gaining appropriate skills and experience. The Darwin post-project (see Section 29 above) includes training for Tristanians in species recognition and underwater survey techniques, relevant to Inaccessible, and public presentations on Tristan and elsewhere.

31. Current recreation and tourism:
State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Tourism is restricted in terms of the island's management plan. From time to time, usually in summer months, small numbers of cruise ships visit the island and may affect guided landings by small boats when sea conditions allow.

32. Jurisdiction:
Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Territorial jurisdiction

The Administrator
Government of Tristan da Cunha
Edinburgh of the Seven Seas
Tristan da Cunha
South Atlantic Ocean TDCU 1ZZ
tristandcadmin@gmail.com

Functional jurisdiction

Head of Department (Mr Trevor Glass)
Tristan Conservation Department
Government of Tristan da Cunha
Edinburgh of the Seven Seas
Tristan da Cunha
South Atlantic Ocean TDCU 1ZZ
tg.conservation@gmail.com

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Head of Department (Mr Trevor Glass)
Tristan Conservation Department
Government of Tristan da Cunha
Edinburgh of the Seven Seas
Tristan da Cunha
South Atlantic Ocean TDCU 1ZZ
tg.conservation@gmail.com

A small group of experts with direct knowledge of conservation issues at the Tristan Islands (the Tristan Biodiversity Advisory Group, or T-BAG) supplies advice on request to the TCD and TANRD and the Tristan Administrator on conservation issues at Inaccessible and the other Tristan Islands.

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Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**

Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • e-mail: **ramsar@ramsar.org**