

RANKING THE WORLD HERITAGE VALUES OF ISLANDS IN THE SOUTHERN OCEAN

(P.R. Dingwall, NZ Department of Conservation, April 1995)

Introduction and objectives

This report presents the results of an exercise to rank the islands of the Southern Ocean according to their potential for inscription as natural properties on the World Heritage List. It is an informal extension of a project undertaken by an IUCN Working Group on Application of the World Heritage Convention to Islands of the Southern Ocean (IUCN 1992). The report of the 1992 Working Group presented an agreed set of principles for assessing the nominations of Southern Ocean islands as potential World Heritage sites, and also proposed a comparative methodology for rating the World Heritage values of islands. Working Group members considered that it would be useful to undertake this comparative study as a second stage in the project.

Accordingly, a small informal group was established, comprising four members of the original Working Group including John Cooper, Jenny Scott, Martin Holdgate, and Paul Dingwall as convener. Results from three members are presented here.

The purpose of this exercise was to conduct an objective ranking of various World Heritage attributes for all Southern Ocean islands or island groups, to provide an indication of which of those islands might merit World Heritage status. The results are intended to be useful to IUCN and the World Heritage Committee in deciding the outcome of any island nominations for World Heritage listing.

The results presented should not be treated as definitive. They provide a general guide only, and certainly don't replace the need for comprehensive assessment of natural values in any formal nomination of islands as World Heritage sites. The results are indicative of the comparative rating of islands as potential World Heritage site candidates - they are not absolute measures. The methods used are simple ones and only partially objective. However, the individuals involved in preparing this report have an intimate knowledge of the character and conservation status of some of the islands, a good general knowledge of

all the islands, and a fair understanding and working experience of the criteria used to decide the inscription of natural properties under the World Heritage Convention.

Methods

Island Groupings

Two broad groupings of islands are recognised, *viz.* Cool-temperate and Subantarctic. This essentially follows an agreed principle in the earlier IUCN report, which states that, given the diverse physical and biological character of the islands and the vast scope of their oceanic setting, islands should be assessed in comparison with islands of similar biogeographical character. Essentially, Cool-temperate islands are those lying between the Subtropical and Antarctic Convergences while Subantarctic islands are those located in the vicinity of the Antarctic Convergence. According to widely accepted biogeographical subdivision of the Southern Ocean, Bouvetøya and the South Sandwich Is. should be classed as "maritime Antarctic", but for ease of analysis in this instance they are incorporated within the Subantarctic category. Other criteria might have been used to categorise the islands, such as geological origins and character, landscape types or geographic regions, but for World Heritage purposes biogeography is probably the most relevant and widely applicable criterion to use.

Island attributes

Four attributes were selected for ranking. These were selected to cover the broad physical and biological make-up of the islands and their naturalness, but also to match key criteria used in assessing World Heritage values for natural properties. Thus, the attributes are as follows:

- (i) Landscape features: A measure primarily of natural beauty or scenic attraction, equivalent to W.H. criterion 36(a)(iii). This considers scenery, aesthetics, integrity of landscapes, features of outstanding natural beauty, classic landform types and landscapes.

- (ii) Geological character: A measure of geological origins, evolution and structural character, equivalent to W.H. criteria 36(a)(i) and (iv). This includes geological origins, evolution and setting; geological character; landforms and geomorphological processes.
- (iii) Biodiversity: A measure of the character and scope of biological diversity, equivalent to W.H. criteria 36(a)(iv). This considers species population numbers and diversity, degree of endemism in the biota, diversity of natural habitats, and significance of species/habitat interrelationships.
- (iv) Absence of human impact: A measure of the naturalness or pristineness of an island, which equates to assessment of conservation status and integrity under the W.H. Convention criteria. This considers the absence of modified and/or degraded habitats and communities, absence and/or adequate control of alien predators and grazing animals, and absence of plant pests and weeds. Also considered is the degree of threat to indigenous biota.

Scoring

The techniques used for scoring the various island attributes is a simple Delphi analysis. Delphi surveys are commonly used as an objective, semi-quantitative means of making decisions where multiple factors are assessed in reaching an overall measure or rating.

The crude Delphi system used here involved individuals in the group independently scoring each of the four World Heritage attributes for all islands according to a scale from 1 (low value) to 5 (high value). Totals of the scores provide a convenient measure for ranking purposes.

The technique used is fraught with difficulties, as follows:

- * There are only three scorers.

- * Scoring was not conducted entirely independently. One member completed a trial scoring, which potentially may have influenced the final result. In an endeavour to overcome this, the other two scorers worked without direct comparison to the original.

- * There was some inconsistency in considering geographical entities among the islands. The Tristan Group, comprising three islands ranging widely in size character and conservation status, was assessed collectively by all scorers, but by two scorers also as individual islands.

- * All four island attributes were weighted equally. It is arguably more appropriate that biodiversity be given highest weighting and geological character lowest, with landscape and human impact having an intermediate weighting.

- * Ideally, the full range of scores (1-5) should be employed within each attribute class in the two categories of islands. This has not been done consistently by all scorers.

These deficiencies notwithstanding, the end results of the analysis presented below are probably not wide of the mark that would have been attained had a more rigorous approach been adopted. This, however, is ultimately a matter for others to judge, or for further analysis.

Results

The results of the analysis are presented in Tables 1 and 2.

Overall World Heritage Ranking

Total scores provided in Table 1 can be regarded as a crude measure in assessing the comparative merits of islands for World Heritage status.

Cool-temperate islands

Gough Island ranks highest, followed by the Auckland Islands and the Tristan Island Group, which both have almost equal ranking. These three stand conspicuously ahead of the lower ranked islands, headed by the Snares, with St Paul and Amsterdam ranked lowest.

Subantarctic Islands

The three top ranking islands are South Georgia, Heard Island and Prince Edward Island. They are so closely rated that it is not practical to distinguish among them as the highest ranked candidates. Nor is there a very marked distinction between them and the next lower rated group of islands. In fact, the overall rating of subantarctic islands as potential World Heritage candidates is higher and more even than that for the cool-temperate islands.

Ranking among island attributes

Table 2 presents all the scores across all attributes for all islands. These data afford an opportunity to assess the relative standing of islands in terms of the specific World Heritage attributes.

Cool-temperate islands

Landscape: The highest ranked islands for their scenic landscape values are Gough Island, the Auckland Islands and the Tristan Group.

Geological features: The most significant islands geologically are the Auckland Islands, Gough Island and Campbell Island.

Biodiversity: Outstanding among the islands from a biological viewpoint are the Tristan Island Group, Gough Island and the Auckland Islands.

Human impact: Gough Island, the Snares Islands and the Bounty Islands are the least affected by human modification.

Subantarctic Islands

Landscape: South Georgia ranks highest, conspicuously ahead of Heard Island and Iles Kerguelen.

Geological features: Macquarie Island is outstanding geologically, with Iles Kerguelen and South Georgia also ranked high.

Biodiversity: Three islands are closely ranked at the top in terms of their biological values, *viz.* Iles Crozet, Iles Kerguelen and Prince Edward Island.

Human impact: The essentially unmodified, non-impacted islands rate highest here, including Heard and McDonald Islands, Prince Edward Island, Bouvetøya and the South Sandwich Islands. Lowest ranked islands are the highly modified Macquarie Island and Iles Kerguelen.

Conclusion

An informal quasi-objective ranking of World Heritage values for islands in the Southern Ocean reveals that among Cool-temperate islands Gough I., the Auckland Is. and the Tristan Is. Group rate highest, while among Subantarctic islands South Georgia, Heard I. and Prince Edward I. are the highest rated. There is some indication that, overall, Subantarctic islands rate higher as potential World Heritage candidates than Cool-temperate islands.

Reference

IUCN. 1992. Report of the Working Group on Application of the World Heritage Convention to Islands of the Southern Ocean. Miscellaneous IUCN Report (December 1992), Gland, Switzerland, 13 pp.

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Island	C	H	D	Total
<u>Cool-temperate</u>				
Tristan	7	-	10	-
Nightingale	8	-	10	-
Inaccessible	13	-	12	-
Combined TNI	11	12	12	35
Gough	16	13	15	44
St Paul	6	4	9	19
Amsterdam	6	4	8	18
Auckland	8	10	17	35
Campbell	7	8	11	26
Snares	10	8	12	30
Antipodes	8	6	11	25
Bounty	11	5	8	24
<u>Sub-antarctic</u>				
S. Georgia	12	13	14	39
S. Sandwich	13	10	12	35
Bouvetøya	13	7	13	33
Marion	11	6	11	28
Prince Edward	14	9	14	37
Crozet	9	10	12	31
Kerguelen	11	12	13	36
Macquarie	12	11	13	36
Heard	15	9	14	38
McDonald	10	8	8	26

1 C = Cooper; H = Holdgate; D = Dingwall

Table 1: Totals of delphi scores for Cool-temperate and Sub-antarctic islands

Island	¹ Landscape				Geology				Biodiversity				Impact			
	² C	H	D	T	C	H	D	T	C	H	D	T	C	H	D	T
<u>Cool-temperate</u>																
Tristan	1	-	3	-	3	-	3	-	2	-	3	-	1	-	1	-
Nightingale	2	-	2	-	1	-	3	-	3	-	3	-	2	-	2	-
Inaccessible	3	-	3	-	2	-	2	-	5	-	4	-	3	-	3	-
Combined TNI	3	2	3	8	2	2	3	7	4	5	4	13	2	3	2	7
Gough	5	3	4	12	3	2	3	8	4	4	4	12	4	4	4	12
St Paul	2	1	3	6	2	1	3	6	1	1	2	4	1	1	1	3
Amsterdam	2	1	3	6	2	1	2	5	1	1	2	4	1	1	1	3
Auckland	3	3	5	11	2	2	5	9	2	3	4	9	1	2	3	6
Campbell	2	2	3	7	2	2	3	7	2	2	3	7	1	2	2	5
Snares	2	2	2	6	2	1	2	5	2	2	3	7	4	3	5	12
Antipodes	2	1	3	6	2	1	3	6	2	1	2	5	2	2	3	7
Bounty	2	1	1	4	2	1	1	4	2	1	1	4	5	2	5	12
<u>Sub-antarctic</u>																
S. Georgia	4	5	5	14	3	3	3	9	3	2	3	8	2	3	3	8
S. Sandwich	3	3	3	9	3	2	2	7	2	1	2	5	5	4	5	14
Bouvetøya	3	1	3	7	3	1	3	7	2	1	2	5	5	4	5	14
Marion	3	1	3	7	3	1	3	7	3	2	3	8	2	2	2	6
Prince Edward	3	1	3	7	3	1	3	7	3	3	3	9	5	4	5	14
Crozet	1	3	3	7	1	2	3	6	5	3	4	12	2	2	2	6
Kerguelen	3	4	4	11	4	3	4	11	3	3	4	10	1	2	1	4
Macquarie	3	2	3	8	5	5	5	15	3	2	3	8	1	2	2	5
Heard	5	3	4	12	3	1	3	7	3	1	2	6	4	4	5	13
McDonald	2	1	1	4	2	1	1	4	1	1	1	3	5	5	5	15

Notes

- 1 Landscape features; geological character; biodiversity; absence of human impact.
- 2 C = Cooper; H = Holdgate; D = Dingwall; T = totals

Table 2: Delphi scores for attributes of Cool-temperate and Sub-antarctic islands