IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 12 November 2017

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

St Kilda

SITE INFORMATION

Country:
United Kingdom of Great Britain and Northern Ireland (UK)
Inscribed in: 1986
Criteria:
(iii) (v) (vii) (ix) (x)

Site description:

This volcanic archipelago, with its spectacular landscapes, is situated off the coast of the Hebrides and comprises the islands of Hirta, Dun, Soay and Boreray. It has some of the highest cliffs in Europe, which have large colonies of rare and endangered species of birds, especially puffins and gannets. The archipelago, uninhabited since 1930, bears the evidence of more than 2,000 years of human occupation in the extreme conditions prevalent in the Hebrides. Human vestiges include built structures and field systems, the cleits and the traditional Highland stone houses. They feature the vulnerable remains of a subsistence economy based on the products of birds, agriculture and sheep farming. © UNESCO

SUMMARY

2017 Conservation Outlook

Good

The overall situation within this World Heritage site is good. The main issues of concern – declines in some seabird population sizes and breeding success (except gannet Morus bassanus and fulmar Fulmarus glacialis) - seem likely to largely reflect natural variation in the wider marine environment. For instance after some poor years, Puffin Fratercula arctica breeding success, according to NTS monitoring, returned to average levels in 2013. But if the longer-term population trend is for a decline, there is more cause for concern about this value. All the other values seem in good shape and likely to remain so if the current situation prevails. Unfortunately the main threat to the seabirds is changes that occur outside the World Heritage Site, in particular in oceanographic conditions that appear to have reduced prey availability and hence breeding success for some species. They are therefore outside immediate management control. A buffer zone in which fishing is restricted could help, as could a potential Marine SPA under the EU Directives. Protection and management within the World Heritage site remains highly effective.

Current state and trend of VALUES

Low Concern
Trend: Stable

The overall condition of the site is good and stable, with a few specific issues requiring more investigation – a decline in numbers and breeding success of some seabird species (a wider marine issue), and the need for a monitoring system in the inshore marine ecosystems.

Overall THREATS

Low Threat

It is considered that the site values are safe and secure with no noticeable loss in

the recent reporting period. The threats are low (except perhaps any potential threat of closure of the military base). The impacts on the continued operation of the World Heritage Site are recognized and covered in detail in the Management Plan. Wider issues such as climate change and overfishing might be considered to be higher threats but are at present rated low because they mostly arise outside the property, but they are also recognized in the Management Plan.

Overall PROTECTION and MANAGEMENT

Mostly Effective

The terrestrial integrity of the site is well protected by effective protection and management, with some deficiency arising in the marine surroundings.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Significant marine communities**
Criterion:(x)

Exposure, water depth and clarity produce diverse range of marine communities and species, of both northern and southern provenance (SOUV, StKMPlan, Posford Duvivier Environment 2000).

▶ **Significant maritime plant communities**
Criterion:(x)

Unique ecological conditions result in diverse range of interesting plant communities and species, both coastal and inland, integral to the whole island site and its attributes (SOUV, 2013, StKMPlan, Love 2009).

▶ **Significant fulmar colony**
Criterion:(x)

The oldest and one of the largest Northern Fulmar (Fulmarus glacialis) colonies in the UK (SOUV, StKMPlan, Mitchell et al 2004, Love 2009).

▶ **Significant puffin colony**
Criterion:(x)

Significant part of the UK population of the Atlantic Puffin (Fratercula arctica) population (SOUV, 2013, StKMPlan, Mitchell et al 2004, Love 2009; Harris &

Wanless 2011)

▶ Significant gannet colony

Criterion:(x)

The largest Northern Gannet (Morus bassanus) colony in the world (SOUV, 2013, StKMPlan, Mitchell et al 2004, Love 2009; Murray & Wanless 1997, Wanless et al 2005, Murray et al 2014)

▶ Important seabird station

Criterion:(x)

One of the largest seabird sites in the North Atlantic and Europe with over half a million birds present in the breeding season (SOUV, 2013, Murray 2002, Mitchell et al 2004)

▶ Terrestrial biodiversity

Criterion:(ix)

Outstanding array of species in diverse terrestrial communities (SOUV, 2013)

▶ Marine zonation and biodiversity

Criterion:(ix)

There is also a complex ecological dynamic in the three marine zones present at the site that is essential for the maintenance of both marine and terrestrial biodiversity (SOUV, 2013). The highly diverse range of species, many of which are rare or absent elsewhere, mean that local marine communities are exceptional in terms of biodiversity value (SOUV, 2013, Posford Duvivier Environment 2000)

▶ Diverse seabird communities

Criterion:(ix)

Densely packed seabirds nest on cliffs in a relatively small area (SOUV, 2013, Murray 2002, Mitchell et al 2004). Seabirds successfully utilize the range of breeding sites and ecological niches offered by the local topography (SOUV, 2013)

▶ Outstanding natural features

Criterion:(vii)

Cliffs extending underwater to produce dramatic sea caves, and cliff faces (StKMPlan, Love 2009, SOUV, 2013)

▶ Outstanding island scenery

Criterion:(vii)

The scenery of the St Kilda archipelago is spectacular, reflecting its volcanic origin and subsequent weathering and glaciation to produce a dramatic island landscape. Marine erosion of the hard igneous rocks has produced spectacular sea cliffs and stacks (SOUV, 2013)

Other important biodiversity values

▶ Leach’s storm petrel

Oceanodroma leucorhoa Largest breeding colony in the North East Atlantic.(Mitchell et al 2004)

▶ St Kilda field mouse

Unique subspecies evolved in isolation, demonstrating biological evolution on islands (StKMPlan, Love 2009)

▶ St Kilda wren

Unique subspecies evolved in isolation, demonstrating biological evolution on islands (StKMPlan, Love 2009)

Assessment information

Threats

Current Threats

Very Low Threat

There has been little change in recent years so, under the current Management prescriptions, current threats remain at a very low level with little immediate prospect of deterioration in the site values.

► Habitat Shifting/ Alteration, Temperature extremes

Data Deficient
Inside site, throughout(>50%)
Outside site

The effects of climate change on the site can already be seen; however, no systematic assessment is available.

► Tourism/ visitors/ recreation

Low Threat
Inside site

Visitor numbers are monitored annually and have increased over the years, from around 1000 in 1986, to 1518 in 2004 to 4598 in 2013. The increase is mainly due to day visitors from several small charter vessels in recent years, and to small expedition cruise ship passengers whose numbers may vary greatly. This is still within acceptable levels and easily controlled under the existing management arrangements and is limited by weather conditions which may inhibit landings. Recreational diving has always been a popular pursuit around the islands, but is assumed to have negligible impact. In recent years there have been more requests by rock climbers to scale the stacks and cliffs which would cause serious disturbance and damage to breeding Gannets, particularly on Stac Li and Stac an Armin (Murray et al 2013). Recent access legislation in Scotland makes it difficult to prevent ad

hoc landings on islands and stacks other than Hirta, but these are still very few and controlled by voluntary codes of conduct, difficult/limited landing places and, principally, by weather. (NCC/SNH and NTS Ranger reports, WIM Reports and personal observations)

► Erosion and Siltation/ Deposition

Low Threat
Inside site

Improvements to the pier around 1960 began to cause problems with erosion which the military addressed with gabions, which have been added to over the years. The earliest are now collapsing and erosion still persists at both ends of the structures. No more are allowed to be added (except where erosion threatened the Feather Store near the pier) and a decision may need to be made whether to retain these gabions or provide a more satisfactory, and less obtrusive, solution. (NCC/SNH and NTS Rangers reports, photographic monitoring, StKMPlan etc). This issue of course affects the building/cultural heritage.

► Livestock Farming / Grazing

Very Low Threat
Inside site, scattered(5-15%)

The Soay sheep on Hirta have always fluctuated in numbers from 500 to 2000, and ahead of the periodic population crashes, the vegetation become overgrazed. The issue is subject to a very detailed study by various universities and is not thought to be a serious or long-term problem (Jewell at al 1974, Clutton-Brock and Pemberton 2004 and their Annual Research Reports). Annual monitoring will reveal any deleterious change immediately.

► War, Civil Unrest/ Military Exercises

Very Low Threat
Inside site, localised(<5%)

This impact has been present ever since the military base was established in 1958, although additional buildings have been added with planning and conservation consents. Periodic mitigation measures such as the application of green/grey paint, removal of some redundant structures, upgrade of others have all helped to minimize the impact. But the military installations

are still a feature that draws an immediate comment from visitors on arrival. (NCC/SNH and NTS Wardens' Reports, Western Isles Manager (WIM) Reports, personal observations). The issue is covered in the Management Plan. The rebuild of the Military of Defence base began in the summer of 2017 and will enhance the landscape of the Village Bay area (IUCN Consultation, 2017).

Potential Threats

Low Threat

Several potential threats are identified, most of which are considered at to pose very low threats. There has been a recognisable decline in some breeding numbers and success of some seabird species. However this seems to be a product of impacts outside the site and by factors that appear to be multinational, even global. It would appear that these are being addressed at a governmental level with little firm data available at present. A higher threat would be presented by the closure of the military base (a UK Government Defence decision) making many of the management aspirations and functions more difficult to sustain. A short term commitment has been offered and the matter is covered fully in the NTS Management Plan for the Site.

▶ Fishing / Harvesting Aquatic Resources

High Threat
Outside site

Small scale lobster creeling continues as it always has and is not considered to pose a threat. Longline and trawl fishing takes place out at sea subject to EU Fisheries Regulations etc. This could severely impact fish stocks and therefore food supplies for the seabirds nesting on St Kilda. Poor breeding seasons have been recorded for kittiwakes, puffins and other auks, shags, and probably Leach's storm petrels (Murray 2002, Mitchell et al 2004, NTS Seabird Warden/WIM Reports). Progress is awaited on the possible designation of pelagic Special Protection Areas under EU Directives (SNH, RSPB, NTS Unpubl. Reports).

▶ Shipping Lanes

Very Low Threat

Inside site

Ship wrecks have occurred on and around St Kilda for hundreds of years (Love 2009) and so far no rats have appeared on the archipelago; however, two recent incidents have caused concern – the supply vessel Elektron grounded in Village Bay, Hirta in Oct 2000, and a fishing boat Spinningdale was wrecked in Village Bay in Feb 2008. Monitoring and mitigation measures for rats/mink were refreshed and improved as a result. (NCC/SNH and NTS Wardens/WIM reports, StKMPlan)

▶ Flight Paths

Very Low Threat
Inside site

Several incidents of low-flying aircraft and helicopters have been reported in the past (NCC/SNH Wardens Reports) causing panic in the sheep flocks and disturbance to seabird colonies. Private operators are difficult to trace, but military and regular supply flights adhere to an established code of practice.

▶ Water Pollution

Low Threat
Outside site

In Dec 1981 the empty 100,000 ton tanker Maersk Angus lost power temporarily and drifted perilously close to St Kilda but no incident took place (Love 2009). Since the Braer went aground in Shetland in January 1993 laden tankers are encouraged to take the outside route, west of the Hebrides which renders St Kilda, vulnerable to oil spillages etc. of which a major spill could have a potentially catastrophic impact on seabirds and other marine life. (StKMPlan)

▶ Industrial/ Military Effluents

Very Low Threat
Inside site

Periodic supply vessels offload fuel for the Base during the summer months. QuinetiQ (who operate the base on behalf of the Ministry of Defence, Western Isles Council Emergency Planning Department) have measures in place to cover spillages (SKMPlan)

▶ Solid Waste

Very Low Threat
Inside site

Rubbish is stored in skips and removed by Western Isles Council Environmental Health vehicles on board the Supply vessel. (StKMPlan)

▶ Temperature extremes

Data Deficient
Outside site

It is thought that climate change affecting sea temperatures and ocean circulation patterns, potentially exacerbated by overfishing, might be implicated in declines in fish stocks and impacts on seabird breeding numbers and success but there is insufficient data to assess this adequately.

▶ Erosion and Siltation/ Deposition

Very Low Threat
Inside site

The average annual rainfall on St Kilda is in excess of 1000mm (Love 2009) so short term flooding and outwash can cause localized flooding and vegetation damage, which repairs naturally and easily. No serious problems have been identified.

▶ War, Civil Unrest/ Military Exercises

High Threat
Inside site

The future of the military base and therefore its facilities are reviewed periodically by the Ministry of Defence and QuinetiQ. Closure would seriously undermine the operation of the World Heritage Site. The matter is addressed fully in the NTS Management Plan.

▶ Other Activities

High Threat
Inside site

The closure of the base would remove all human presence and policing in the winter months leaving the World Heritage Site vulnerable to vandalism, and

remove some of the logistical support for current monitoring. The matter is addressed fully in the NTS Management Plan.

▶ Invasive Non-Native/ Alien Species

High Threat
Inside site, extent of threat not known

Introduction of invasive species represents a potential threat to the site's biodiversity values (IUCN Consultation, 2017).

Protection and management

Assessing Protection and Management

▶ Relationships with local people

Highly Effective

There is no resident population and the nearest communities are on the Outer Hebrides (45+ miles away). Consultation meetings were held locally, also with online response, in the preparation of the Management Plan (StKMPlan). Elected councilors also inputted. (SOUV, 2013)

▶ Legal framework

Mostly Effective

The primary legislation that protects the archipelago and surrounding seas and their key attributes are: The Conservation (Natural Habitats. & C.) Regulations 1994, as amended; The Wildlife and Countryside Act 1981; The Land Reform Act 2003; Nature Conservation (Scotland) Act 2004; The Ancient Monuments and Archaeological Areas Act 1979; The Planning etc. (Scotland) Act 2006; and The Environmental Liability (Scotland) Regulations 2009.Land tenure is secure and the site has many conservation designations (WHS, NNR, SSSI, SPA, SAC, NSA) most with associated legal obligations. The capacity does exist to employ legislation effectively. (SOUV 2013)

▶ Enforcement

Highly Effective

Enforcement of the relevant laws and regulations is effective.

► Integration into regional and national planning systems

Mostly Effective

Comhairle nan Eilean Siar as the local planning authority and the Scottish Government are largely supportive in management, but coordination could be improved (SOC Report).

► Management system

Highly Effective

The comprehensive Management Plan is fully effective in its purpose. There is an excellent working relationship between National Trust for Scotland (NTS), SNH, Historic Scotland, Comhairle nan Eilean Siar and Ministry of Defence. This Management group is highly effective in that it includes all key stakeholders who meet informally and annually to review progress and forward planning. (StKMPlan)

► Management effectiveness

Highly Effective

The management of the site is highly effective. A comprehensive Management Plan is in place and there is adequate monitoring of most values, although the monitoring of the marine features is carried out very rarely (IUCN Consultation, 2017).

► Implementation of Committee decisions and recommendations

Mostly Effective

Most or all of the management activities that can be are being implemented and monitored effectively, with the exception of the marine area. (SOC Report)

► Boundaries

Mostly Effective

The boundary in low water to mark the whole archipelago is clearly defined and well recognized. However the ultimate boundary out at sea is not

obvious and not well known. Thus the boundaries are adequate to preserve the terrestrial values of the site, but no buffer zone exists and no effective legislative framework associated with it.(SOUV, 2013, StKMplan)

▶ Sustainable finance

Mostly Effective

The available budget and sources are laid out by NTS (mostly from operator payments and much of the rest from governmental sources eg SNH etc.) and are found acceptable but still with room for improvement to fully implement management needs This is secure in the medium term and moves are afoot to have this extended. (SOC Report)

▶ Staff training and development

Mostly Effective

Staff training could be enhanced to improve and enhance management outputs. There is a high standard of expertise and training but additional finance would permit full access to professionals in all disciplines and to improve research, interpretation, visitor management and administration. Equipment is well maintained. Good use is made of volunteers

▶ Sustainable use

Highly Effective

Within Hirta itself the available resources are utilized effectively but difficulties of access to all the other islands and stacks limit any further exploitation, thus effectively preserving the conservation values.(SOC Report, StKMPlan and pers obs)

▶ Education and interpretation programs

Highly Effective

Guided walks are available from the ranger service, there is an excellent museum, comprehensive and attractive literature available and an excellent website. Other projects and exhibitions are constantly generated off site by outside or related bodies, schools etc. There is a planned education and awareness programme which could be extended with more financial support.

(pers. Obs., WIM reports)

▶ Tourism and visitation management

Highly Effective

The ranger service provides an adequate welcome and briefing for visitors, while provision for groups with their own guides are familiar with what is on offer, and usually with time ashore restraints. Guidelines are available stressing safety precautions etc and tour operators are highly sympathetic to the site values and co-operative. The site is large enough and visitor impact small enough to minimize deleterious impacts to the site values.

▶ Monitoring

Mostly Effective

Terrestrial values are well monitored, especially seabirds by the seabird warden (sample breeding plots etc) with national surveys every 10 years or so. There are also monitoring programmes for vegetation, sheep, seals, migrant birds and now mice. Certain groups of invertebrate, geological and geomorphological features have been surveyed but there is no regular monitoring of marine habitats and species (constrained perhaps by the physical conditions of the site).(NCC/SNH wardens reports, WIM reports, Research team reports and publications, StKMPlan, SOC reports). There was a detailed survey of marine habitats and species by SNH in 1997 and 2000 (Posford Duvivier Environment 2000) but no further monitoring undertaken. Monitoring of the marine environment needs to be further enhanced (IUCN Consultation, 2017).

▶ Research

Highly Effective

There is an effective research policy which is targeted and sympathetic to the values of the site which feeds into its management and decision making. There is, however, plenty of scope for development and extension in the future. Research has been and is being conducted into the impact of great skuas Stercorarius skua on Leach’s storm petrels.

Overall assessment of protection and management

Mostly Effective

The terrestrial integrity of the site is well protected by effective protection and management, with some deficiency arising in the marine surroundings.

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

Mostly Effective

With no effective buffer zone identified, management recommendations outside the site and the powers of its managers are limited. Fishery pressure around the site including in the feeding areas of local seabirds is largely driven by EU policies although measures are afoot to address impacts on seabirds by EU conservation directives (SPAs etc) albeit slowly. (SOC Report, StKMPlan etc).

State and trend of values

Assessing the current state and trend of values

World Heritage values

► Significant marine communities

Data Deficient
Trend:Data Deficient

Although there has been a detailed initial survey (Posford Duvivier Environment 2000) no monitoring programme is in place (partly due to logistical difficulties) to assess any change.

► Significant maritime plant communities

Data Deficient
Trend:Data Deficient

Although there have been quite detailed surveys, no significant change has been reported (Booth 1996, Love 2009, StKMPlan). However, no recent

information is available.

▶ Significant fulmar colony

Low Concern
Trend:Deteriorating

Regular surveys used to indicate a stable population (Murray 2002, Mitchell et al 2004). However, a deteriorating trend has been reported recently (IUCN Consultation, 2017; Seabird and Marine Ranger Report 2016 (internal report)).

▶ Significant puffin colony

High Concern
Trend:Deteriorating

Monitoring indicates a decline in numbers in recent decades, and erratic breeding success with occasional complete failures. (Murray 2002, Mitchell et al 2004; Harris & Wanless 2011). More recent reports confirm the negative trends (IUCN Consultation, 2017).

▶ Significant gannet colony

Good
Trend:Stable

Regular survey indicates the population is stable or slightly increasing (Murray 2002).

▶ Important seabird station

High Concern
Trend:Deteriorating

Regular national surveys and sample monitoring by NTS Seabird warden indicate a decline in some species e.g. Kittiwake Rissa tridactyla, Shag Phalacrocorax aristotelis, auks (Alcidae). Possible predation on Leach’s storm petrel by great skuas (study in progress). No firm data yet on the causes of any seabird declines. (NTS Ranger/WIM Reports, Murray 2002, Mitchell et al 2004). More recent reports confirm the negative trends (IUCN Consultation, 2017).

▶ Terrestrial biodiversity

Good
Trend:Stable

There is little structured monitoring but no decline has been reported (NTS Ranger/WIM Reports, Booth 1996, Crawley 1993)

▶ Marine zonation and biodiversity

Low Concern
Trend:Stable

There is a need for further monitoring but the subtidal habitats seem in a good state (Posford Duvivier Environment 2000). There is little information, however, on the current state of marine biodiversity.

▶ Diverse seabird communities

Good
Trend:Stable

Despite a decline in some species, biodiversity will remain uncompromised in the short to medium term. (StKMPlan) There has been no obvious decline in terrestrial habitat quality. (StKMPlan).

▶ Outstanding natural features

Good
Trend:Stable

The scale of the features is such that little can be done to improve them.

▶ Outstanding island scenery

Low Concern
Trend:Stable

While largely in a good state, certain aspects should be addressed to improve the scenic quality at the main access point. Discussions should take place between the main stakeholders to replace the gabion baskets (while still addressing the erosion issues), to landscape the area above and behind the boulder beach and also to remove structures and buildings around the Base that are considered no longer necessary (StKMPlan). The rebuild of the Military of Defence base began in the summer of 2017 and should enhance

the landscape of the Village Bay area (IUCN Consultation, 2017).

Summary of the Values

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

Low Concern

Trend: Stable

The overall condition of the site is good and stable, with a few specific issues requiring more investigation – a decline in numbers and breeding success of some seabird species (a wider marine issue), and the need for a monitoring system in the inshore marine ecosystems.

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

Good

Trend: Stable

St Kilda field mouse and St Kilda wren rated good and populations appear to be stable (NTS Ranger/WIM Reports). A study has been undertaken into impact of great skua on Leach’s storm petrels, with ongoing study of petrel breeding using nest boxes.

Additional information

Benefits

Understanding Benefits

► **Cultural and spiritual values, History and tradition**

The story of the former community, its unusual seabird economy, and its ultimate evacuation in 1930, is well known and contributes to the great public interest in the WHS.

► **Cultural and spiritual values, Sacred natural sites or landscapes**

The combination of natural and cultural is powerful in affording the site both wilderness and iconic status.

► **Health and recreation, Outdoor recreation and tourism**

Difficulties of access due to expensive, limited transport and weather, with the need to avoid facilities impacting on the very values of the site, will always impose a ceiling on direct tourism but those that do visit (via cruise and charter vessels, and to a lesser extent yachts) find the experience hugely rewarding, while those that cannot visit can access some of the experience at visitor centres and exhibitions in the Hebrides and elsewhere, media interest, online through websites and through many and diverse publications. Small, local charter vessels and accommodation outlets in the Hebrides benefit from the attraction of the site.

► **Knowledge, Importance for research**

The important aspects of geology, marine and terrestrial biology, island biogeography and evolution, feral sheep, seabirds and mice offer outstanding opportunities for research, not least monitoring of seabirds to inform debates on fisheries and global change. More work required on little-known species e.g. especially Leach's and European storm petrel and Atlantic Puffin

► **Knowledge, Contribution to education**

The WHS has generated a huge corpus of published material, and media interest over two centuries. Websites now make this accessible to a huge global audience.

Summary of benefits

St Kilda immediately captures the interest and imagination of all who encounter this remote archipelago and its natural attributes (both actual and virtual). It has much to offer the world of science and politics in the way of research and education. The effective management structure between the owners and diverse other stakeholders provides a useful model for other

similar sites, while the whole package offered by St Kilda enhances the profile of its dual World Heritage status and ethos.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Nature Conservancy, various universities since 1957, esp Cambridge (T.Clutton-Brock) and Edinburgh (J Pemberton)		Detailed study of feral Soay Sheep; numbers, breeding strategy, parasites, genetics etc.
2	M Crawley (Imperial College)		Detailed study of vegetation, esp. sheep grazing impacts
3	National Trust for Scotland (Seabird wardens)		Seabird populations and productivity, including guillemot feeding studies, puffin productivity and Leach’s petrel productivity using artificial nest boxes
4	National Trust for Scotland		Moss and lichen survey
5	S Murray, Centre for Ecology and Hydrology		Gannet surveys

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	.	Monitoring and recording all fishery effort within the 'buffer zone'	
2	.	Photographic and land based monitoring of Gannets every 3 years to assess mean hatching, & fledging dates and possibly breeding success also.	
3	.	A season of dedicated boat based cetacean surveys around the islands, monthly from May to August with onshore constant effort site in Village Bay	
4	.	Population surveys of Atlantic Puffin and Leach's and European Storm Petrel colonies on all islands.	

№	Site need title	Brief description of potential site needs	Support needed for following years
5	.	Study of St Kilda wren	
6	.	Monitoring of marine flora and fauna	

REFERENCES

№	References
1	Booth A (1996) A National Vegetation Classification Survey of Hirta and Dun. Commissioned Report to Scottish Natural Heritage, Edinburgh< Perth and Inverness.
2	Clutton-Brock T C and Pemberton J (2004) Soay sheep: dynamics and selection in an island population. Cambridge University Press (they also produce Annual Research Reports distributed by J Pemberton, University of Edinburgh)
3	Crawley M (1993) The Flora of St Kilda. Unpublished. Imperial College, Silwood Park.
4	Harris M P & Wanless S (2011) The Puffin. T & AD Poyser, London
5	Harris M P Murray S & Wanless S (1998) Long-term changes in breeding performance of puffins on St Kilda. Bird Study v 45
6	Jewell P A, Milner C and Boyd, J M (1974) Island Survivors: the ecology of the Soay Sheep of St Kilda. Athlone Press, London (out of print)
7	Love J A (2009) A Natural History of St Kilda Birlinn, Edinburgh (Comprehensive reference list)
8	Mitchell P I, Newton S F, Ratcliffe N and Dunn T El (2004) Seabird Populations of Britain and Ireland. Christopher Helm, London.
9	Murray S & Wanless S (1997) The status of the gannet in Scotland in 1994-95. Scottish Birds v19
10	Murray S (2002) Birds of St Kilda. Scottish Birds Supplement, Scottish Ornithologists Club, Aberlady
11	Murray S (2014) St Kilda cetacean records 2001-2010. Unpublished report to NTS, Inverness
12	Murray S Wanless S & Harris M P (2013) Timing of breeding and estimated fledging dates of Gannets at St Kilda in 2012. Scottish Birds v33
13	Murray S, Wanless S & Harris M P (2014) NW Scotland Gannet Surveys in 2013. Scottish Birds v34 (includes latest St Kilda figures)
14	NCC/RSPB Wardens’ Reports. Unpublished, Scottish Natural Heritage archives, Edinburgh.

№	References
15	National Trust for Scotland Western Isles Manager (WMI) Reports, Balnain House, Inverness.
16	Postford Duvivier Environment (2000) Broad Scale Survey and Mapping of the Seabed and Shore Habitats and Biota: St Kilda SAC. Scottish Natural HeritageCommissioned Report F97PA01.
17	St Kilda World Heritage Site Management Plan 2012-17. National Trust for Scotland, Edinburgh (available at nts.org.uk)
18	State of Conservation of World Heritage Properties: St Kilda (2002)
19	Statement of Outstanding Universal Value: St Kilda (2013)
20	Wanless S Murray S & Harris MP (2005) The northern gannet in Britain and Ireland in 2003-04. British Birds v 98
21	Weilgart L S (2007) A Brief Review of Known Effects of Noise on Marine Mammals. Comparative Psychology v 20