FIG Environmental Planning Department

Falkland Islands Biodiversity Framework

2016 - 2030

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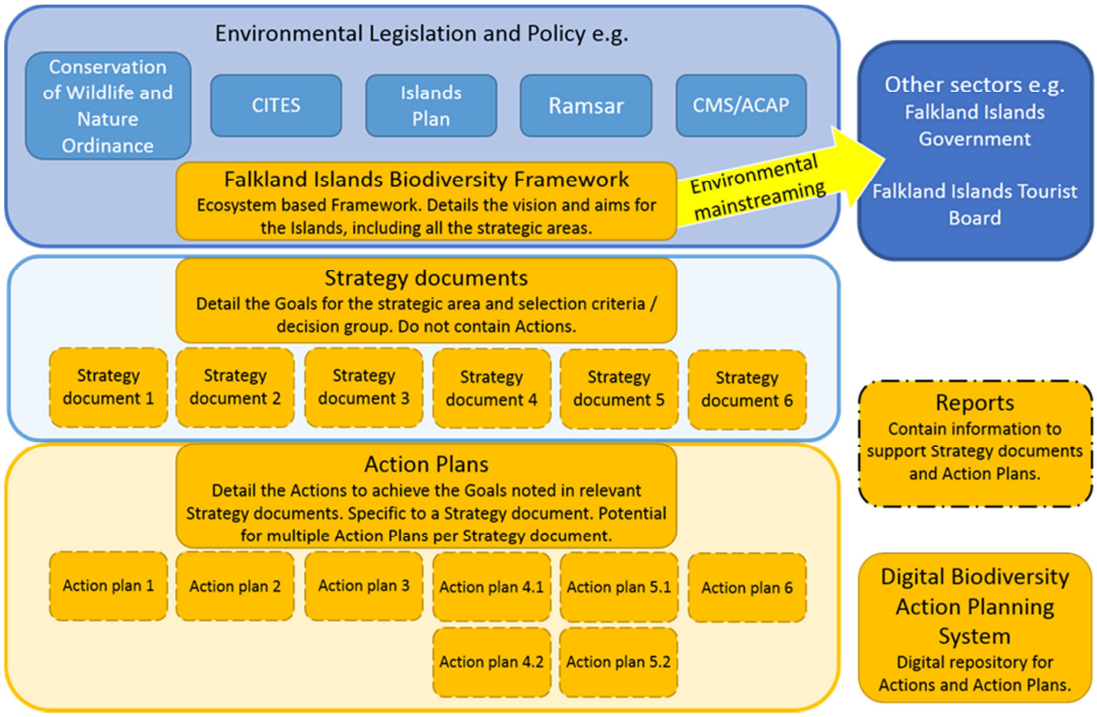
Part One: Falkland Islands Biodiversity

1.1 Introduction

Biological diversity – biodiversity – is the variety of life and its processes and it includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur. The 'Falkland Islands State of the Environment 2008' report documents the current knowledge of the Falkland Islands environment, both on land and at sea, of the geology, meteorology, oceanography and biodiversity. It also describes the current human population, social infrastructure, and commercial and recreational activities undertaken within land and marine habitats. The report highlights processes that threaten Falkland Islands wildlife and identifies some key conservation policies required to mitigate these threats. A brief summary of this knowledge is presented in section 1.2.

This Biodiversity Framework is a threat-based document which outlines the priorities required with regards the wider Falkland Islands environment. The Framework is underpinned by the implementation of Strategies and Action Plans, as identified in the diagram below.

Figure 1: Framework Structure



1.2 Context

Terrestrial Environment

The majority of Falkland Islands animals and plants show strong affinities to Patagonian South America. The Falkland Islands lie on the eastern edge of the Patagonian shelf, where there is an abundance of demersal and pelagic marine species, which provide rich foraging for seabirds and marine mammals, which often have strong connections with the land environment.

Nineteen land habitat types are recognised in the Falkland Islands. The lower and non-vascular plants (e.g. freshwater algae, liverworts, lichens and fungi) are poorly studied in the Falkland Islands, whilst 21 species of ferns and club mosses have been recorded. The vascular flora consists of 348 species, with 171 native species and 14 endemic species. Most plant species found in the Falkland Islands, including endemic species, occur over a wide range of altitudes, soil types, habitats and exposures.

Twenty three plant species (13% of native taxa) listed in the Falklands Red Plant List are protected by legislation. There has been little data collected on long-term habitat change, and for this reason, it is difficult to determine whether the threatened species have a naturally limited distribution or frequency, or whether there has actually been a significant change. Coastal tussac grass and boxwood/fachine scrub are recognised as having suffered major declines in the Falkland Islands.

Invertebrate life forms a very important part of the Falkland Islands ecology in a land without native trees, reptiles, amphibians or terrestrial mammals. Invertebrates perform a critical role in the breakdown and recycling of organic matter, the formation of soil and at all stages of their life history, are important food sources for a variety of birds. Twelve species of earthworm, 43 species of spider and nearly 250 species of insect are reported for the Falkland Islands, although many collected specimens remain to be fully analysed and are both native and introduced species. Thirteen terrestrial invertebrates are currently recognised as endemic.

The birdlife of the Falkland Islands are well documented, with 21 resident land birds, 18 resident water birds, 22 breeding seabirds and 18 annual non-breeding migrants recognised and about 150 species recorded as occasional visitors. The Falkland Islands support globally significant populations of a number of species, as well as two endemic species and 14 subspecies. Under IUCN classification, there are nine species of conservation concern here. Twenty two Important Bird Areas were identified in 2006.

Much of the land in the Falkland Islands has a freshwater connection and six species of fish, including zebra trout and Falklands minnow, are found in freshwater and brackish estuaries. Freshwater invertebrates, fish and birds can be affected where there are physical changes to watercourses, invasive species and pollutants. The zebra trout is fully protected under Falkland Islands legislation.

Marine Environment

There is limited, but growing, information on the intertidal and near shore coastal shallow marine environment (down to 30m water depth) in the Falkland Islands. Seaweeds make a major contribution to primary production, as well as providing a habitat and/or a food source for a wide range of marine fauna in the Falkland Islands, but they are not well inventoried or studied. The inshore and offshore environment of the Falkland Islands support a variety of whale, dolphin, seal and sea lion species, including at least eleven species of cetaceans listed by the IUCN as being of conservation concern. 14 globally threatened seabird species are non-breeding transients through the Falkland waters.

1.3 Threats

The 'Falkland Islands State of the Environment 2008' report identifies our key environmental assets and the processes that threaten their integrity. The Biodiversity Framework prioritises the threats and identifies effective measures that are needed to mitigate or minimise them.

Climate change predictions indicate an up to 2.2 °C increase in the annual mean temperature by 2100 but for no change in the annual mean rainfall. Despite a predicted lack of change in the mean annual rainfall it is likely that under a warmer climate the pattern of rainfall will be affected with more extreme weather events expected. An Energy Strategy, including climate change mitigation, was adopted by the Falkland Islands Government in 2015 (see section 2.2). Climate change implications run through all elements of the threats identified and as such are not individually identified.

The priority threats affecting ecosystems and species in the Falkland Islands were reviewed in 2015 and are summarised below. The threats are not individually ranked within the categories of high, medium and low priority.

High Priority Threats
Biodiversity threats are rated as being of high priority where they are frequently occurring and/or are highly likely to occur and mitigation measures can be implemented that have a high or moderate rate of success and/or are cost-effective. One high priority threat has been identified.

- **Invasive species and biosecurity**: A number of non-native species introduced to the Falkland Islands have environmental, social and economic costs and these are defined as invasive species. In addition, some non-native species have the potential to become invasive due to changes in climate or species genetics. Mitigating the effects of invasive non-native species is difficult. It is much easier to prevent the introduction of an invasive species in the first place or destroy/remove it before it has become established.

Medium Priority Threats
Threats are considered to be of medium priority where they are occurring intermittently and/or have moderate impacts on habitats and species but mitigation measures can be implemented that have a moderate rate of success and/or resources needed are within the Falkland Islands budget. Three medium priority threats have been identified.

- **Natural resource use**: The key extractive industries in the Falkland Islands are fisheries and farming, and also potentially exploitation of offshore hydrocarbon reserves. There is a concern that the harvesting of some target species/resources has the potential to be unsustainable.

- **Pollution**: Pollution is an all-embracing term for chemical contamination of air, land and water and on a global scale, the Falkland Islands is relatively pollution free and this status is highly valued by Falkland Islanders.

- **Visitors/tourism**: Tourism development enables the camp community to diversify their economic revenue. These visitors expect a wilderness experience, but they can affect biodiversity, both directly and indirectly. Visitors can cause physical damage to soil, plants and bird nesting areas and cause wildlife to change the amount of time they spend on certain activities.

Low Priority Threats

Threat are considered low priority, where they are of low threat to biodiversity and mitigation actions have a low likelihood of success and/or are beyond the resources of the Falkland Islands. Two low priority threats have been identified.

- **Natural disasters**: There are no fully resourced response plans in the Falkland Islands for natural disasters such as wildfires where life or infrastructure are threatened, wildlife diseases and poison events (e.g. harmful algal blooms) and the need for them should be reviewed, including considering the protection of the environment, as well as human safety, infrastructure and economic revenue.

- **Built Development**: The major land uses outside of Stanley are farming, military defence and nature-based tourism. Therefore the scale of built development across most of the Falkland Islands is low. Furthermore, safeguards are already in place through the planning system (with a new Development Plan adopted in 2015), although some activity does not require a specific planning application. Given the level of activities and existing safeguards this threat is considered low.

1.4 Cross Cutting Challenges

In addition to the threats identified above, there are two cross cutting challenges as set out below. If these issues are not addressed there is no direct loss of biodiversity, but they exacerbate the threats which have been identified above. It is therefore important to prioritise actions which address these challenges insofar as they relate to the threats identified in section 1.3.

- **Lack of awareness**: In general, there is a high level of awareness of the environment among Falkland Islanders and most long-term Falkland Islands residents, but the increasingly urbanised population, as well as a large military, visitor and business population has led to a greater need for awareness raising activities. Poorly informed activities and actions (predominantly recreational) which can impact on vulnerable species are identified as a medium threat (see section 1.3), but it is also perceived as something that is potentially relatively easy to remedy with a number of targeted education initiatives.

- **Uncertainty or lack of information**: There is a level of uncertainty or lack of information about specific aspects of species, habitats and the wider environment, and how they are affected by land-use (including but not limited to built development) and marine-use activities. This is considered a major threat to the biodiversity of the Falkland Islands. The quality and timeliness of decision making can be undermined without sufficient, accurate and accessible information.

Part Two: Broad Approach

2.1 Vision and Aims

Vision
Our Vision is set out below.

We will conserve and enhance the natural diversity, ecological processes and heritage of the Falkland Islands, in harmony with sustainable economic development.

Aims
Our Aims are set out below.

Aim 1	We will develop threat based strategies which identify locally appropriate outcomes that reflect the Convention on Biological Diversity (CBD) Goals and Aichi Targets.
Aim 2	We will seek to meet international commitments and obligations in respect of our environment.

The CBD Strategic Goals are set out below. The targets are set out in the appendix.

A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
B: Reduce the direct pressures on biodiversity and promote sustainable use
C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
D: Enhance the benefits to all from biodiversity and ecosystem services.
E: Enhance implementation through participatory planning, knowledge management and capacity building

2.2 National and International Commitments

Our National Commitments
Strategic national direction for the medium term in the Falkland Islands is clearly laid out in the 'Islands Plan 2014-18', which has as its Mission Statement: 'To improve the quality of life of present and future generations by stimulating economic and social development, within the constraints of our limited resources and the need to protect the environment'. The Islands Plan has eight objectives in the environment section[1].

One of the key strategies to assist with meeting objectives of the Islands Plan is the Falkland Islands Development Plan 2015-2030, which was adopted in 2015. The Development Plan provides a framework for the future spatial development of the Islands (including guiding the determination of planning applications). The Biodiversity Framework flows directly from the national Islands Plan and sits alongside the Development Plan.

FIG adopted an Energy Strategy in 2015 which adopts the principles of: making best endeavours to reduce the per capita Greenhouse Gas emissions of the Falkland Islands (excluding emissions from hydrocarbons activity which does not take place on-shore and from livestock); working towards reducing the carbon intensity of our energy production; and to support people, industry and ecosystems to adapt to the impacts of climate change.

[1] *To facilitate environmental work, the UK and the Falkland Islands produced an Environment Charter in 2001. It sets out a broad approach for eleven areas where the Falkland Islands Government and the UK government can continue to work together.*

Our International Commitments

The Falkland Islands has a global responsibility for the protection and well-being of a number of species and habitats, for which our islands have stronghold populations. These global responsibilities are highlighted in a number of multilateral environmental agreements that the Falkland Islands has ratified, as summarised below.

- The Convention on Wetlands of International Importance, especially as Waterfowl Habitat, known as the Ramsar Convention – to make wise use of all wetlands and to promote the conservation of wetlands through the establishment of nature reserves on wetlands
- The Convention on the Conservation of Migratory Species of Wild Animals – to protect and conserve terrestrial, marine and avian migratory species throughout their range across international boundaries
- The Agreement on the Conservation of Albatross & Petrels (ACAP) – requires countries to produce an action plan that addresses all threats relevant to albatrosses and petrels
- The Convention on International Trade in Endangered Species (CITES) – regulates, by a permit system, international trade in wild animals and plants that are listed in three appendices and the level of control and prohibition of trade is dependent upon the appendix listing of the biological material
- The Kyoto Protocol – countries that ratify this protocol must commit to reducing their emissions of carbon dioxide and five other greenhouse gases

There are a number of ordinances in the Falkland Islands involved in the sustainable use of natural resources and remediation when damage to the land or sea occurs. These are noted in appendix 1.

Part 3: Implementation

3.1 Strategies

The following strategies have been identified as being required in response to the local priority threats. These also meet the requirements of the CBD Aichi targets. The high and medium priority threats and cross cutting challenges will be met through a planned strategy and the implications of Climate Change will run through all relevant documents.

Table 1: Summary of Proposed Strategies

Issue	Response Strategy	Relevant Aichi Targets[2]
High Priority		
• Invasive species and biosecurity	1: Biosecurity and Invasive Species	9
Medium Priority		
• Natural Resource Use • Pollution • Visitors/Tourism	2: Sustainable Resource Use	4,5,6,7,8,10,14, 16 and 18
	3: Ecoregions, Habitats, Species and Sites	11,12,13,15
Cross Cutting Challenges		
• Lack of Awareness	4: Awareness Raising	1,2,3
• Uncertainty or lack of information	5: Research & Knowledge Gaps	19

N.B. Full list of Aichi targets in appendix2

3.2 Ecosystems Approach

The Conference of Parties to the Convention of Biological Diversity approved in 2000 the 'ecosystem approach' as the guide for formulating strategies and plans. The ecosystem approach is a way to integrate the management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It focuses on processes, functions and interactions and recognises that humans, with their cultural diversity, are an integral component of ecosystems. The ecosystem approach has 12 principles, which have been used to guide the development of the Falkland Islands Biodiversity Framework and the Strategies sat beneath it.

- The objectives of management of land, water and living resources are a matter of societal choice.
- Management should be decentralised to the lowest appropriate level.
- Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
- Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
  - Reduce those market distortions that adversely affect biological diversity;
  - Align incentives to promote biodiversity conservation and sustainable use; and
  - Internalise costs and benefits in the given ecosystem to the extent feasible.
- Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the Ecosystem Approach.

[2] *Aichi Target 17 relates to the production of a Biodiversity Strategy and so is fulfilled by this Biodiversity Framework. Target 20 relates to funding and is addressed in Part 3: Implementation.*

- Ecosystems must be managed within the limits of their functioning.
- The Ecosystem Approach should be undertaken at the appropriate spatial and temporal scales.
- Recognising the varying temporal scales and lag-effects that characterise ecosystem process, objectives for ecosystem management should be set for the long-term.
- Management must recognise that change is inevitable.
- The Ecosystem Approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
- The Ecosystem Approach should consider all forms of relevant information including scientific, indigenous, and local knowledge, innovations and practices.
- The Ecosystem Approach should involve all relevant sectors of society and scientific disciplines.

3.3 Availability of Resources/Implementing the Framework

FIG is committed to funding the actions which arise from the Biodiversity Framework and Strategies and Action Plans which support it. A funding strategy is therefore to be developed to drive the implementation of the Biodiversity Framework.

This will contribute to Aichi Target 20, “By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties”.

A challenge to the rate at which the action tasks in the Biodiversity Framework and the strategies below it can be implemented is funding, both for officer time and for costs of transport, accommodation, equipment, materials, analysis and so on. FIG currently funds a variety of organisations, including government departments and nongovernment organisations.

However, most of the environmental programmes in the Falkland Islands, particularly the research and biodiversity monitoring programmes, rely on funding obtained from overseas sources, particularly European organisations. Whilst this type of cooperation encourages international linkages, obtaining international funding is difficult, as it requires staff time and not all applications are likely to be successful.

Appendix 1: Legal Framework

There are a number of ordinances in the Falkland Islands involved in the sustainable use of natural resources and remediation when damage to the land or sea occurs.

- Conservation of Wildlife and Nature Ordinance 1999 – contains provisions for the protection of wild birds, wild animals and wild plants, introduction of new species and for the designation of National Nature Reserves
- Marine Mammals Ordinance 1992 – protects all marine mammals
- Endangered Species Ordinance 2003 (Currently being updated) – enacted in order that the Falkland Islands upholds the Convention on International Trade in Endangered Species (CITES).
- Grass Fires Ordinance 2002 – enables management of camp burning during the drier months
- Plant Disease Regulation Controls 1944 and Customs Ordinance 2003 – controls the import of plants and animals
- Planning Ordinance 1991 – includes provisions for the preparation of development plans, the handling of planning applications and Environmental Impact Assessments
- Marine Farming Ordinance 2006 – created to allow the licensing of farming of fish, crustaceans and molluscs
- Fisheries (Conservation and Management) Ordinance 2005 – enacted to manage commercial fisheries, with two objectives being is to maintain the potential of fisheries resources to meet the reasonably foreseeable needs of future generations and to avoid, remedy or mitigate adverse effects of fishing on the marine environment
- Offshore Minerals Ordinance 1994 (amended 1997 and 2011)– enables seismic survey work and exploratory drilling under specific licence conditions, including provision for an Environmental Impact Assessment
- Oil pollution – is managed by the Environment Protection (Overseas Territories) (Amendment) Order 1997, the Merchant Shipping (Oil Pollution) Act 1971, Merchant Shipping Act 1995 and Oil in Territorial Waters Ordinance 1987.

Appendix 2: Aichi Targets (Table 2)

Strategic Goal A: *Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*	
1.	By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
2.	By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
3.	By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
4.	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
Strategic Goal B*: Reduce the direct pressures on biodiversity and promote sustainable use*	
5.	By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
6.	By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
7.	By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
8.	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
9.	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
10.	By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
Strategic Goal C: *Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*	
11.	By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.
12.	By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
13.	By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
Strategic Goal D: *Enhance the benefits to all from biodiversity and ecosystem services.*	
14.	By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and wellbeing, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
15.	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
16.	By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.
Strategic Goal E: *Enhance implementation through participatory planning, knowledge management and capacity building*	
17.	By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
18.	By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
19.	By 2020, knowledge, the science base and technologies relating to biodiversity, its values functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
20.	By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.