



FLAT HOLM ISLAND CONSERVATION MANAGEMENT PLAN



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Section 1: Policy

1.1 Summary of the Aims of the Flat Holm Project

The Flat Holm Project has two main aims:

- Conservation of the important natural and cultural features on Flat Holm Island; and,
- Development of the Island as a public resource for education in its widest sense.

1.2 Introduction

Flat Holm has great importance both for its wildlife and for its rich historical heritage. The most important natural and cultural features of the Island are protected by statutory designations with consequent obligations for their maintenance and conservation. Many other features, while of lesser significance, are nevertheless of local importance, and in total provide Flat Holm with its unique character. In addition to meeting its statutory obligations the Flat Holm Project seeks to manage both natural and cultural features of Flat Holm in order to conserve this unique character.

Natural and cultural features are seen to have equal standing, hence a key policy is to ensure that work carried out on either does not adversely affect the other

The Project seeks to develop all the conservation work on the Island in a strategic and systematic way. To this end it will carry out research work, maintain records and consult with legislative bodies and specialists.

The richness of the Island's historical and wildlife interest provides an invaluable resource for the people of Cardiff and the surrounding areas, offering visitors an educational experience in its widest sense without harming the important natural and cultural features of the Island. The Project also seeks to inform as wide a section of the local community as possible of its work, and wherever feasible to generate involvement within this.

An overarching aim of the Project is to develop Flat Holm as a model of good environmental practice and to promote and interpret the sustainable use of natural resources. Its island nature makes it ideally suited to this.

The Project functions as part of Cardiff Council and its operations are therefore bound by the broader policies of the Council. These include Equal Opportunities and Health and Safety policies.

1.3 The Purpose of the Management Plan

Flat Holm has a wide diversity of wildlife and historic interests which are conserved and interpreted to a wide range of people. Any management carried out must aim to achieve its ends within necessarily limited financial means. In

order to achieve these both effectively and efficiently it is essential that there is a clear and well deliberated Management Plan.

This Management Plan summary identifies the overall policy and aims of the Project, and provides a baseline description of Flat Holm and its features of interest. It prioritises the many different objectives of the project. The Plan briefly identifies the practical measures by which its objectives can be met, and to monitor and measure the outcomes of all such procedures. This provides a feedback loop to evaluate and develop the measures used.

The existence of this Management Plan summary will help to provide a wider audience an insight into the management of Flat Holm features.

The Project's policy is to involve individuals and groups with specific interests in its operation and this is no less true of the management planning process. An effort has been made to consult widely and to reach balanced decisions as a result of this. A further use of the Plan is therefore to provide detailed information on the aims and operations of the Project.

Section 2: Description

2.1 General

2.1.1 Location and area

Flat Holm is a small island in the Bristol Channel, 4.1 km southeast of the nearest part of the Welsh coastline at Lavernock Point, and 9.7km from the Flat Holm Project Office in Cardiff. The nearest land to Flat Holm is the smaller island of Steep Holm, which lies 3.7km due south. Flat Holm is roughly circular, with a diameter of just over half a kilometre. The central grid reference is ST221649. The terrestrial area of the site is around 24Ha, but this figure does not take into account the shingle beaches, the Sabellaria reef and rocks which are exposed at low tide, or the surface of the tall limestone cliff faces, all of which are included within the area of SSSI interest. Consequently, the total area is approximately 35Ha.

2.1.2 Administration

The Flat Holm Manager is based at the Channel View Leisure Centre, tel. 02920 353917. The Flat Holm Warden and Assistant Warden usually work from the farmhouse on the Island. Flat Holm Island is also listed on the Cardiff Biological Database Recorder programme as Site 10142. This database is kept by the Council's Ecologist at County Hall, tel. 029 2087 3227.

2.1.3 Tenure

The majority of Flat Holm is in the freehold ownership of Cardiff Council. The foreshore (i.e. the land between low and high tide) is leased by Cardiff Council from the Crown Estate Commissioners. The current lease is for 50 years from 1/3/1995.

2.1.4 Status

Flat Holm has a variety of protective designations for its nature conservation, geological, archaeological and architectural features.

Flat Holm lies within the Severn Estuary and is included in the Estuary's international designations of Ramsar Site and Special Protection Area (SPA). These designations apply especially to the bird populations of the Estuary, of which the breeding gull colonies on Flat Holm and the adjacent island of Steep Holm are a significant part. NB. Although Flat Holm and Steep Holm are excluded from the current Severn Estuary possible Special Area of Conservation (pSAC) boundary, the Ramsar Site and SPA features (which do include the two Islands) are cited as important factors in the pSAC selection.

The Island was notified as a Site of Special Scientific Interest (SSSI) in 1972, with subsequent modifications and extensions in 1983 and 1992 and includes both earth science and biological interests. The earth science interests are limited to the Geological Conservation Review Site. The biological interests are found throughout the Island and include rare and uncommon plant

species, coastal plant communities and the breeding colony of lesser black-backed and herring gulls.

The Island was declared as a Local Nature Reserve (LNR) in 1975 by the then lessee, South Glamorgan County Council.

The unique Cholera Hospital, the foghorn station and the lighthouse and keeper's cottage are all Listed Buildings.

There is also a scheduled Ancient Monument designation which covers three of the Palmerstonian gun batteries, the Farmhouse, Lighthouse and Castle Rock Batteries.

Byelaws are in place to help achieve the management aims of the Local Nature Reserve. A full copy of the bye-laws are available upon request to Cardiff Council.

2.1.5 Staffing and technical scope

The Flat Holm Project is part of the Harbour Authority section of Projects, Design and Development of Cardiff Council. A Consultative Group drawn from interested organisations and individuals provides advice and guidance to the Project. Other contacts have been established to provide technical support and advice for the Project including the Habitat Advisory Group.

The Flat Holm manager is responsible for all safety, personnel, financial and planning issues within the Project.

The Warden is responsible for the day to day running of the Island.

The Assistant Wardens assist the Warden in the running of the Island and are in charge of day-to-day operations in the Warden's absence.

The work on the Island is also assisted by up to 6 Trainee Voluntary Wardens.

The project staff are supported by the Project Assistant post, responsible for administrative and financial systems, for purchasing supplies and visitor bookings.

The Coxswains are responsible for the Project vessel, the "Lewis Alexander", including passenger safety, transportation of materials, boat staffing and maintenance.

Casual Crew are utilised in the absence of one of the Coxswains.

2.1.6 Island Management Compartments

The following management compartments and subcompartments are currently recognised:

Main grassland - This incorporates all the central areas of the Island, including those with some scrub. This area has a history of division into two

halves, with intensive grassland restoration management on the north half and limited intervention on the south half, on which the gull colony is concentrated.

Lighthouse compound - A self-contained area of grassland owned by Trinity House but managed by the Flat Holm Project.

Farmhouse garden - The old kitchen garden behind the farmhouse.

Ditch - The deep cutting which leads past the lighthouse compound and down to the shore.

Shore - Rarely subject to active management, but monitored and the subject of certain protective policies.

Foghorn Station compound - A small area of rocky ground contained within the walls of the Foghorn Station and Keepers Cottage.

Paddocks - The walled paddocks behind the farmhouse.

Rock crevices - All the cliff faces and associated bare rock, including the end of the ditch alongside the lighthouse compound.

2.2 Cultural and Management Setting

2.2.1 Land use past and present

- (i) Historic uses of Flat Holm
See Main document for full details

Archaeological records show that the island has been farmed for at least 700 years. The farm was finally abandoned in 1946 when it was deemed no longer viable as an agricultural unit.

- (ii) The Flat Holm Project
In 1982 the Flat Holm Project was set up and the current management initiated.

2.2.2 Background to nature conservation

- (i) Past Management
Since 1982 a concerted effort was made to restore the grassland on the north half of the Island, whilst the south half was kept as a gull colony. To this end, the Island was divided into two; the southern half was left virtually undisturbed to support the gull colony, whilst the northern half was managed to encourage the spread of calcicolous grassland species. This involved the removal of scrub, mowing, grazing and initially chemical spraying of tall ruderal vegetation. (See Main document for full details)
- (ii) Current Management
The ecological management on Flat Holm currently represents one stage in a series of efforts to restore a species-rich, managed grassland community. Of the other ecological features, most are currently deemed to be in a desirable state but require regular management to keep them from deteriorating -

including the gull colony, which is unique in posing a “negative” deterioration threat, ie. if not controlled at all, it could increase to the detriment of other features.

2.2.3 Landscape

See Main document for full details

2.2.4 Background to buildings and cultural features

Building	Designation	Designation date
Flat Holm Light House	Grade II Listed	6 th May 1987
Former Isolation Hospital	Grade II Listed	6 th May 1987
Laundry	Grade II Listed	6 th May 1987
Former Fog Horn Station incl. Keeper's Cottage and enclosure walls	Grade II Listed	29 th March 1996
Oil Store and enclosure walls at Flat Holm Lighthouse	Grade II Listed	29 th March 1996
Palmerstonian Gun Batteries	Scheduled Ancient Monuments	
Victorian Barracks	Off Council's Local List of Buildings of Merit.	

2.2.5 Access

Currently the Flat Holm Project runs a purpose built vessel the “Lewis Alexander” which takes both visitors and supplies to the Island. The “Lewis Alexander” is owned by the Vale of Glamorgan Council. There are limitations as to when landings can take place due to the height and strength of tides around Flat Holm. Trips are therefore limited to the 3 hours up to high tide. Furthermore, as with all sea trips, there may be cancellations due to adverse weather conditions.

2.2.6 Public interest and involvement

The Flat Holm Society, which has more than 100 members is a charitable body

Many other local schools and institutions visit Flat Holm very regularly, at least on an annual basis. Some of these come to carry out practical work on the Island.

There has been considerable media interest in the Island with regular television, radio and press articles.

2.2.7 Education and Interpretation

The Project has developed education and interpretation on Flat Holm since its inception in 1982. The island is ideally suited to an educational role and can serve a wide variety of groups on day and residential visits.

Interpretation has also been developed by the Project. Visitors receive a guided tour of the island and its features. There is also high quality interpretation material presented on Flat Holm mainly in the Victorian barracks. Further information on the Project's educational and interpretative programme can be found at www.cardiff.gov.uk/flatholm.

2.3 The Physical Environment

2.3.1 Geology and Geomorphology

- (i) Description and status
The south-western coast of Flat Holm is listed as a Geological Conservation Review (GCR) site for its exposures of limestone geology.

2.3.2 Soils

The soils on Flat Holm have not been subjected to detailed chemical analysis, but a preliminary depth survey was undertaken in July 1997, using line transects spaced at 30m intervals on the north side of the Island.

2.4 Ecology

2.4.1 Background to biological recording on Flat Holm

The Cardiff Biological Database contains over 2000 records for Flat Holm, mostly of plant and bird species..

2.4.2 Flora

- (i) Vascular plants
A total of 271 vascular plant species has been recorded on Flat Holm. One nationally scarce plant species, wild leek, occurs in some numbers and is included in the SSSI citation as a reason for notification.
See Main document for full details

2.4.3 Fauna

- (i) Reptiles
The slow worm population is monitored but no figure for total number of individuals is available. There is no data currently available and no survey work done on the common lizard (*L. vivipera*) population. Both populations are considered an important local feature (being rare in Cardiff as a whole) and a vital part of the Island's biodiversity.
- (iv) Birds
Birds are recorded more regularly and extensively than any other group. Of all the Flat Holm biological records, over half are for birds, amounting to a total of over 1000 records covering 114 species.

By far the most prevalent breeding bird species on Flat Holm is Lesser Black Backed Gull, which has a regular breeding colony of three to four thousand nests. This colony is counted with the adjacent colony on Steep Holm as a

feature of the Ramsar Site/SPA/pSAC. Jointly, the two colonies make up a significant proportion of the UK breeding population.

(v) Mammals

Historic sources suggest that rabbits and rats (probably both brown and ship rats) were once prevalent on the Island. The only established mammal on Flat Holm now, however, is the rabbit. No count is taken of rabbit numbers, but their overall effect on the grassland ecology is considered very important, particularly where very isolated patches of finer grasses are concerned. Their numbers oscillate markedly due to myxomatosis outbreaks.

2.4.4 Communities

(i) Vegetation

(ia) National Vegetation Classification Descriptions

See Main document for full details

Section 3: Confirmation of Features

3.1 Introduction

The purpose of this Section is to set down the confirmed list of features

3.2 – 3.5

See Main document for full details

3.6 Confirmed List of Important Features & Policies

Natural Features:

1. Coastal grassland and associated habitats;
2. Maritime rock crevice community;
3. Rare plant species *Allium ampeloprasum* (wild leek) and *Brassica oleracea* (wild cabbage)
4. Gull Colony *Larus fuscus* (lesser black backed gull);
5. The Flat Holm limestone of the Carboniferous limestone (Dinantian);
6. The Variscan Structures;
7. Populations of nesting shelduck;
8. Populations of other birds including notable breeding birds, other breeding birds and passage migrant and overwintering birds
9. Wild peony (*Paeonia mascula*);
10. A range of littoral habitats including shingle beach and rocky shore;
11. Reptile populations (common lizard (*Lacerta vivipera*) and slow worms (*Anguis fragilis*));
12. Permian -Triassic fissure fills;
13. *Sabellaria alveolata* reef;
14. Locally rare colonizing plant community;

Cultural Features:

15. Palmerstonian Gun Batteries;
16. Foghorn Station and Lighthouse Keeper's Cottage;
17. Cholera Hospital and Associated Buildings;

18. The Victorian Barracks;
19. Farmhouse and Associated Structures;
20. Water Catchment and Water Tank;
21. Other Palmerstonian Buildings and Structures;
22. Second World War structures;
23. Driftwood and Driftwood Stores;
24. The Lime Kiln;
25. The Archaeology of the island;
26. The Historic Archive.

Section 4: Influential Factors

4.1 Introduction

This section aims to identify all the significant factors, trends and constraints which influence, or may influence, the nature reserve and its important features.

4.2 Practical objectives of the Flat Holm Project

See Section 1 for a resume of the overall aims of the Flat Holm Project. These aims represent the chief deciding factor in which features to manage, and how to carry out that management.

4.3 Internal natural factors

In general, the Island has an unusually mild climate for the area, which influences the vegetation that grows there. It is however very exposed to wind, and like many islands it does not support any mature trees. As a limestone island, its vegetation is susceptible to damage through extended dry periods. This reduces the amount of grazing available to the animals on the island but also stresses the coarse grasses and ruderal species. Stormy weather brings salt spray on to the island plateau, which improves the maritime sward and suppresses unwanted species. This weather can also have a devastating effect on the rock crevice community.

[See following table].

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Factors affecting Natural features:

Natural Factors	Natural Features	Positive/Negative Impact
Colonisation by invasive species and elder scrub – succession	Coastal grassland and associated habitats Reptile populations Locally rare plant colonising community	+ve - shelter for reptiles protecting against predation -ve - Reduces species diversity, increases competition for coastal grassland and associated habitats and locally rare plant colonising community. Invasion leading to loss of basking sites for reptiles.
Natural processes and climate, especially stormy weather and summer drought	Coastal grassland and associated habitats Rock crevice community Wild Leek Flat Holm Limestone Variscan features Wild Peony Littoral Habitats incl shingle beach & rocky shore Permian - triassic fissure fills	Can have –ve impact on all features. These factors cannot be controlled but protective management of some features may be possible to limit potential damage. Extreme dry weather and drought conditions may devastate the grassland and seriously limit the grazing available for rabbits and sheep.
Predation and competition: from Gulls, raptors, corvids	Gull colony Shelduck Populations of other birds Reptile populations	-ve impact on shelduck, other birds and reptiles. The gull colony though affected by predation to a small extent is not adversely affected. This factor is controlled to an extent on the north side due to nesting control measures in place
Food availability	Shelduck Reptile populations	The abundant invertebrate life appears more than sufficient to support the current reptile population. The disappearance of the extensive mudflats due to the Cardiff Barrage has decreased the availability of local food sources and maybe one of the factors leading to the decline of nesting shelduck on the island.
Nesting sites/area	Gull colony Populations of other birds Shelduck	Available nesting area for gulls is restricted by the size of the island and by the active management to discourage nesting on the north side of the island. The number of disused rabbit burrows are favourable for nesting shelduck. The abundance of scrub

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Natural Factors	Natural Features	Positive/Negative Impact
		provides plenty of nesting sites for other birds however the link between the location of scrub being centred mainly on the south side/gull colony area may have negative result on other birds opting to nest in this predatory area.
Lack of ground predators	Gull colony Shelduck Reptile populations	+ve – nesting birds and reptiles are safe from the lack of ground predators and so numbers are not affected as a result
Isolated area – no influx of new individuals	Reptile populations	-ve Problems with inbreeding due to the isolated population. Success of future population may be affected as a result. +ve Currently the population appears stable/increasing
Botulism	Gull colony	-ve Botulism contracted through gulls feeding on the rubbish tips (external factor) causes numerous deaths each year due to the spread of the disease between adults and to their young.. +ve However the population of the colony has not declined as a result.

Natural Factors affecting Cultural features:

Factor	Feature	Positive/Negative Impact
Climate especially stormy weather, high winds and natural processes	Cholera hospital Foghorn Station Lighthouse Keepers Cottage Victorian gun emplacements Second World War Fortifications Driftwood Barracks Farmhouse	Negative impact creating possible structural damage to all features. These factors cannot be controlled but protective feature management may be necessary as a result.

4.4 Internal man-induced factors

4.4.1 Refer to Section 2.2.1 and 2.2.2 for further details of historical use of the island.

Man induced Factors	Features	Positive/Negative Impact
Farming (historically)	Coastal grassland and associated habitats	Led to creation of fertile, deep soils in centre of island. Impact seen in the abundance of ruderals and invasive species which thrive in these conditions.
Species introductions e.g. Henbane Hyoscyamus niger, Vipers bugloss Echium vulgare, and Cowslip Primula veris	Coastal grassland and associated habitats	Whether accidental or deliberate has increased plant diversity on the island.
Conservation management – mechanical/non mechanical/chemical	Coastal grassland and associated habitats Shelduck Populations of other birds Reptile populations	+ve impact in aim of reducing the dominance of ruderals, invasive species and lowering nutrient status of soil. Currently no chemical spraying takes place. -ve - disturbance to nesting shelduck, other birds but currently low due to management of activities. Lack of ground cover for reptiles for protection against predators
Visitors	Coastal grassland and associated habitats Wild Leek Wild Peony Rock crevice community Shelduck Populations of other birds Sabellaria alveolata reef	Potential –ve impact on features through disturbance and damage. +ve - Currently restricted through visitor management, protected fencing in areas, education and the use of paths. Sabellaria reef, some wild leek stands and rock crevice community further protected from disturbance due to low level of accessibility. Currently level of impact has positive effect on paths – maintaining short turf, low growing herbs and little or no invasive species.
Grazing with 47 mixed non breeding flock – north side of island	Coastal grassland and associated habitats Wild Leek Wild peony	+ve effect with aim of improving conservation status of grassland, lowering ruderals and invasive species through trampling effect. -ve impact through trampling of wild leeks but currently this

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Man induced Factors	Features	Positive/Negative Impact
	Reptile populations	is minimal. Impact on wild peony controlled by protective fencing. Overgrazing is a potential –ve effect but currently not a problem. Lack of ground cover for reptiles for protection against predators
Uncontrolled grazing by rabbits, goats and soay sheep	Coastal grassland and associated habitats Wild Leek Wild peony	Introduction of goats turned predominantly island scrub habitat in part to grassland habitat, currently 1 goat browses vegetation on south side – impact minimal. Soay sheep selectively browse vegetation across island and help maintain grassland and associated habitats. Fluctuating rabbit population, historically and currently due to the disease myomatosis, has major impact on maintaining short turf in areas.-ve impact on some wild leek stands through disturbance and browsing on leaves. Impact on wild peony minimised through fencing

4.4.2 Visitor Impact

There is no current limit placed on the number of individuals allowed to visit the island per season. The number of visitors that can be accommodated on the island at any one time is limited by the carrying capacity of the project vessel and the available overnight accommodation. Unauthorised visitors mainly visit the island during the summer months but they are restricted by the activities of the project vessel, tidal and weather conditions. Trinity House employees visit infrequently and in small numbers. Again access is restricted by activities of the project vessel and weather conditions. Access to the helipad is restricted by weather conditions and by use primarily for the emergency services.

4.5 External factors

The position of Flat Holm in the Severn Estuary together with its small size defines its climate and imposes upper limits on the extent of many of the island features including the gull colony population and numbers of other birds.

External Factor	Feature	Positive/Negative Impact
Shipping/boat use	Littoral habitats including shingle beach and rocky shore Sabellaria alveolata. Reef	-ve - potential pollution problems along the shoreline if a shipping accident were to occur. Damage to reef through boats/ships running aground.
Dredging – for sand and aggregates	Sabellaria alveolata. Reef	-ve - May affect tidal movement and sediment deposition/erosion reducing ability of reef to expand
Cardiff Bay Barrage	Sabellaria alveolata. Reef Shelduck	-ve – possible reduction in sediment deposition lowering ability of reef to expand. Loss of mudflats, local feeding grounds, may be one factor in reduction of shelduck nesting on the island
Climate Change	Littoral habitats incl shingle beach and rocky shore	-ve threat of global warming in the future with its associated sea level rise may cause loss of rocky shore
Off shore wind farm	Populations of other birds	Proposed off shore wind farm west of Porthcawl, 4miles off shore should have limited impact on Flat Holm features. Birds killed by turbines are not significant numerically and so any development should have limited negative on Flat Holm features. The impact of any further proposals would need

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External Factor	Feature	Positive/Negative Impact
		to be assessed in the light of their scale and proximity to the island.
Severn Barrage	Including, Littoral habitats incl shingle beach and rocky shore Sabellaria alveolata. Reef Shelduck Populations of other birds	Dependant on the alignment, tidal and construction impact any Severn Barrage proposal could have significant negative impacts both directly on the island features e.g. littoral habitats and indirectly e.g. on birds due to the reduction of mudflats
Rubbish Tips	Gull Colony	-ve – scavenging gulls import diseases such as botulism, causing high numbers of deaths within the colony. Currently this is not causing a decline in the population but may become a problem in the future.

4.6 Legal obligations

The following represent factors that influence the management decisions on the Island:

- Ramsar designation
- SSSI designation
- Flat Holm Island's byelaws
- Health and safety at work act
- The Wildlife and Countryside Act 1981
- Occupier's liability act (See Section 2.1.4 for further details)
- Ancient Monuments and Archaeological Act 1979
- Ancient Monuments (Class Consents) Order 1994

See 2.1.4. for descriptions

4.7 Physical considerations / constraints

These mostly consist of physical management constraints caused by the isolated and craggy nature of the site. Landing on the Island is restricted by the weather and state of tide. Water availability might also be seen as a factor affecting both the levels of manpower available on the Island at any given time, and also the ease with which stock can be cared for in summer. See Section 2.2.5 for details

4.8 Available resources

Flat Holm need to operate within the financial constraints of the budget and staffing limits. See Section 2.1.5 for staffing details.

Section 5: Objectives, Limits of Acceptable Change and Monitoring of Features

5.1 Introduction

This section deals with each feature and will define the objectives, methodology on how the objectives are to be attained and the monitoring programmes that will show us the progress that is being made.

5.2 Primary Features

1. Coastal Grassland and associated habitats

The improvement in the grassland will be assessed on species diversity and sward structure.

Objective 1: To maintain grassland at favourable conservation status where:

At least 10% of the island is species rich maritime grassland with a species composition of red fescue, bird's foot trefoil, bucks horn plantain, sea and bladder campion, sea storksbill.

Lower limit: 5%

No more than 50% of the grassland to be covered by scrub with a varying age structure

Lower limit - 0%

No more than 40% of ruderal communities notably ragwort, wild arum, nettles and thistles on the northern side of the island.

Lower limit - No invasive species setting seed

Upper limit - 0% ragwort, 10% of invasive species setting seed

Favourable Target - No invasive species setting seed

75% of the grassland (in the managed area but excluding the PhD plot) should have a sward height of 5-20 cm, with no build up of litter/mat. Bare ground (excluding rocks) not more than 5%.

Lower limit: 50% with a sward height of 5-20 cm. Bare ground 1%.

Upper limit: 90% with a sward height of 5-20 cm. Bare ground 5%.

To conserve the redundant PhD plot as grassland for flowering plants and invertebrates in summer and to prevent scrub encroachment.

Lower Limit- 90% plants free from summer grazing pressure. No scrub.

Upper Limit 100% plants free from summer grazing pressure. 5% Scrub

Monitoring: - Fixed point photography to monitor invasive species/ scrub.

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Current Condition and Status: - The grassland is in an unfavourable recovering condition. Management carried out in the last 17 years has resulted in the reduction of rank scrub and an increase in sward coverage and the associated grassland species.

Management Projects/Action Plan:- Review impact of new grazing pressure. Schedule the following into work programme: arum bruising from March - July, ragwort pulling, topping thistles and nettles when in flower. Elder regeneration removal on northern side and investigate chemical treatment. Scarify areas to prevent build up of litter/matt.

2. Maritime Rock Crevice Community.

Objective 2: - To maintain the maritime rock crevice community in a favourable condition

Lower Limit - No significant loss

Upper Limit – upper limit determined by location on periphery of Island

Favourable target – to maintain current status of rock crevice communities

Monitoring: - Every 5 years - Monitor & collect data; Fixed point photography; Monthly visual assessment by island staff; Monitor gull nesting population on cliffs during annual gull count every May

Current Condition and Status: - generally favourable

Management Project/Action Plan:- Carry out monitoring of rock crevice communities and map locations of species every 5 years reviewing against base data from 1999.

3. Rare plant species - Wild leek population. *Allium ampeloprasum*

Objective 3: - To maintain the wild leek population in a favourable condition such that:

The population remains viable

Lower limit - 1000 spikes

Upper limit – no upper limit

Current distribution is maintained

Lower limit: 50% loss of current distribution

Monitoring: - All flowering spikes to be counted in the last week of July and distribution to be mapped.

Current Condition and Status: - Favourable.

Management Projects /Action plan: - Should the number of spikes fall below 1000 for 3 continuous years, areas around stands should be cleared in order to reduce competition from neighbouring scrub and other management methods should be investigated. If stands are lost completely bulbs from healthy stands could be transplanted into those areas. Operational limit: No strimming in areas where the wild leek grows

4. Gull Colony (*Larus fuscus* Lesser Black Backed Gull)

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Objective 4:- To maintain a viable breeding population of LBB gulls (*Larus fuscus*) in a favourable condition such that:

Nesting is confined to cliff edge and defined areas on southern side

Lower limit: No successful nests in northern side of island and specified areas on southern side (see Map)

The total island population is:.

Lower limit – nesting pairs must not fall below 2,000 of LBB – level stated in Severn Estuary Ramsar/SPA designation
Upper limit - Limited by available nesting area

Monitoring: - Annual gull counts used to monitor numbers of nesting pairs. Visual assessment of north side of island for colony expansion. Nest removal on north side of island. Counting of dead gulls

Current Condition and Status: - favourable increasing

Management Projects/Action Plan: - Carry out weekly nest sweeps on northern side of island to prevent gull colony expanding to this side of the island. Regular collection and burning of dead carcasses to discourage spread of botulism and to monitor number affected. Continue to monitor colony population through annual counts of nesting pairs.

5. The Flat Holm Limestone of the Carboniferous limestone - Island Geology.

Objective 5: - To maintain the structures within the GCR area visible and intact.

Monitoring: - Fixed point Photography

Current Condition and Status: - Favourable maintained

Management Projects/Action Plan: - A survey was carried out in 1999 by CCW incorporating the Islands geological features. The survey consisted primarily of a photographic record which will provide a suitable base line data set. Subsequent surveys, following CCWs methodology, should be carried out every 5 years.

5.3 Secondary Features

6. Shelduck, *Tadorna tadorna*

Objective 6: - To maintain a stable breeding population of Shelduck in a favourable condition.

Lower limit – 4 breeding pairs of Shelduck
Upper limit – No upper limit

Monitoring: - collect data, birds, count shelduck

Current Condition and Status: - unfavourable declining

Management Projects/Action Plan: - No active management for the Shelduck, other than counting the birds, is currently carried out. The counts are taken weekly from mid-March

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until the end of July when high tide is early morning . Recorders walk slowly around the perimeter of the island and mark on a map of the island the location and number of Shelduck seen. This gives a rough idea of the population size and favoured nesting areas. A more accurate count of the birds should be done once in May, which identifies any obvious pairs and any single birds which are probably half of a pair.

Populations of other birds including:

i) Notable Breeding Birds

Objective 7i : - To maintain breeding populations of Herring Gull, Great Black backed Gull, Oystercatcher and Rock Pipit.

Limits :

No numerical limits are set for the Herring and Great Black-Backed Gull populations due to the populations being restricted by geographical area.

Species	Lower	Upper	Favourable
Oystercatcher	4 pairs	No limit	>4 pairs
Rock Pipit	2 pair	No limit	>2 pairs

Monitoring: - Annual gull count, Breeding bird census should be conducted every 5 years. Nests found or territorial displays should be recorded

Current Condition and Status: - favourable

Management Projects/Action Plan: - Records of nests found or territorial displays should be made and from these an idea of the population numbers can be obtained. The Breeding bird census, to be carried out every 5 years, should more accurately show population numbers. Oystercatchers might benefit from the clearing of Gull nests on the North side but are probably helped most by a policy of minimal disturbance once a nest has been found.

ii) Other Breeding Birds

Objective 7ii : – To maintain the diversity of nesting birds on the Island.

Monitoring: –daily bird sightings recorded by island staff.
Carry out Common Bird Census every 3 years and collate results

Current Condition and Status: - Favourable

Management Projects/Action Plan: – Manage habitat through cutting/coppicing of the Elder, if required, creating habitat piles and allowing Teasels, Brambles and Thistles to grow abundantly on the southern half of the Island with the exception of lighthouse common where these species will be controlled

iii) Passage Migrant Birds.

Objective 7iii :- Maintain annual recording of migration.
Minimum Migration counts/ ringing on four days during August to October.
Maximum N/A

Monitoring: - Monitoring and ringing by Flat Holm Ringing Group. Daily bird sightings recorded by island staff. Monthly WEBS counts
WEBS

FLAT HOLM ISLAND CONSERVATION MANAGEMENT PLAN

Current Condition and Status: – Favourable

Management projects/Action Plan: - Manage the scrub, as and when required through cutting/coppicing to provide valuable roosting and feeding sites for these birds. Allow Teasels, Brambles and Thistles to grow abundantly on the southern half of the Island with the exception of lighthouse common where these species will be controlled. Maintain records in the bird log book and monthly bird totals sheet held on computer.

8. The Wild Peony, *Paeonia mascula*

Objective 8: - To maintain a small population of *P. mascula* in a favourable condition.

Lower limit – 1 flowering plant in good condition

Upper limit – No upper limit

Favourable target – 2 flowering plants in good condition

Monitoring: - The number of flowering plants and seed pods will be counted each year.

Current Condition and Status: - favourable maintained

Management Projects/Action Plan: - Count the flowers when they bloom and the seed pods in July and record. Cut back dead stems in October and cover the plant by the Fog Horn Station with dead bracken held in place with chicken wire and pegged down. Remove the wire in March when the new buds come through. Occasional weeding is done as required to prevent smothering. Should the population appear to be suffering, seeds should be collected and grown to ensure the plants do not disappear.

9. Littoral Habitats including Rocky Shore and Shingle Habitats.

Objective 9: – Maintain the Rocky Shore habitat in a favourable condition.

Factors:- See sections 4.2, 4.3, 4.4 for full details.

Management Projects /Action Plan: – control projects and working methods to minimise damage, control visitors when on the rocky shore, carry out monitoring (or use 'A' level projects) to study condition of organisms on the rocky shore.

10. Reptile Populations - Slow worm population. *Anguis fragilis*

Objective 10: - To maintain a breeding population of slow worms in a favourable condition.

Limits are not defined because a population study has not been achieved as yet.

Monitoring: - The monitoring involves counting all individuals under 20 corrugated metal sheets scattered at fixed points around the island. - 10 on the northern and 10 on the southern side of the island. Monitoring is carried out once a month.

Current Condition and Status: - Favourable

Management Projects /Action Plan: – No active management is carried out for the benefit of Slow worms, but the need for sunny sheltered areas linked to dense undergrowth is taken into consideration during grassland management and maintenance of monitoring sheets will be continued

11. Sabellaria alveolata Reef.

Objective 11: - to retain the population of *Sabellaria spp* in a favourable condition.

No formal survey has been carried out to determine the true extent of the reef and as such no limits for change have been set at this time.

Monitoring: - No monitoring is currently in place

Current Condition: – favourable maintained

Management Projects /Action Plan: – access results from CCW survey, minimise disturbance, plan and introduce a monitoring scheme possibly % cover or recording extent of population around the shore, watch out for pollution.

12. Invertebrate Populations

Information gathered on the invertebrates of the Island comprises regular Butterfly and Moth surveys. Some other work has been done on beetles and hoverflies but no comprehensive list of species is currently available.

Objective: – Maintain annual recording of *Lepidoptera*.

Lower Limit – no limit set

Upper Limit – no upper limit set

Favourable target – at least maintain current levels

Monitoring: - RA42/01 - Weekly fixed line transects between April and September

Current Condition and Status: - favourable

Rationale: - Flat Holm butterfly recording is carried out on a weekly basis between April - September. On average 12 species are identified annually with varying frequencies from year to year. No rare butterflies have been recorded but a few migrant species have been noted. Moths are recorded on an ad hoc basis by the Glamorgan moth recording group. A number of common and scarce species have been recorded over the years. A species record can be found in appendix

Action Plan: - Allow Teasel, nettles and thistles to grow abundantly on the south side of the island, except Lighthouse Common, where these species will be controlled