

Longis Nature Reserve

Management Plan 2017 – 2021

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• INTRODUCTION

Alderney has an incredible diversity of wildlife. Half of the total number of seabird species breeding in the UK and over one thousand species of wild flora, many of which are rare or endangered in the rest of the British Isles can be found here. To date, 286 bird species have been recorded and the island supports breeding populations of several amber and red listed bird species on the UK list of Birds of Conservation Concern, including species with a high risk of extinction in Europe like the Oystercatcher. Alderney has an average ratio of 100 plant species per square kilometre, 100 times more than the UK vice-counties' average. Furthermore, the island's countryside is also an important resource both in its use by the local community and in its value in attracting tourism to the island.

As an example of how this natural value is threatened, Atlantic Puffin (*Fratercula arctica*) numbers have fallen from well over one thousand to under two hundred breeding pairs in the last fifty years and at least twenty species of flora endangered in the British Isles have been lost in Alderney. Moreover, most of the traditional land management has been lost in the last century, which means that wildlife dependent on these semi-natural habitats, mainly unimproved grasslands, extensive farmland and coastal heathlands, are also threatened.

To fill the existing gap in Alderney's nature conservation, the Alderney Wildlife Trust (AWT) was formed in 2002, supported by the States of Alderney (SoA), with an aim of preserving the island's biodiversity for the benefit of both local community and visitors through educating and encouraging a sustainable island and promoting the conservation of its wildlife.

The AWT currently manages three nature reserves in order to achieve those aims and ensure their long-term protection. Longis, Vau du Saou and the Alderney's West coast and Burhou Islands were designated Nature Reserves in 2003, 2004 and 2005 respectively, the first two through a land management agreement with the SoA and the third being included in a network of internationally important wetlands (Ramsar).

Longis Nature Reserve (LNR) contains fifteen different terrestrial habitats and forty-nine marine biotopes, including one of the two sizable natural freshwater ponds found in the island. Its biological and landscape diversity and the presence of some Alderney flagship species such as Dartford Warbler (*Sylvia undata*), Sand Crocus (*Romulea columne*), Glanville Fritillary (*Melitaea cinxia*), and Alderney Sea-lavender (*Limonium normannicum*) highlight its importance. The site was designated a reserve by a Memorandum of Understanding (MoU) between the SoA and the AWT and verbal agreements with other private landowners to prevent habitat loss due to abandonment of traditional land management. These agreements stipulate that the site must be managed for the purpose of wildlife conservation, footpaths must be maintained and noxious weeds must be controlled. Furthermore, this management must respect the established public use of the site by walkers, anglers and others.

The present document is produced to outline the management actions required to ensure the conservation of LNR for the period 2017-2021. This process encourages involvement with land tenants and local community to determine the future of LNR.

.1. SUMMARY OF MANAGEMENT TO DATE

Since the MoU was agreed in 2003 management has consisted of the following areas of work.

.1.1. GRASSLAND MANAGEMENT: THE ALDERNEY GRAZING ANIMAL PROJECT (AGAP)

The project began in 2003 with the aim to maintain and improve species rich coastal and dune grassland, two of the most valuable habitats of Alderney, through cattle grazing. With minimal costs and using traditional farming methods these aims can be reached with a positive public perception of the AWT's work. The project was started with 2 cattle owned by the AWT, some young heifers purchased from Kiln Farm and 1 pony which was grazed on behalf of local residents. Over 10 years the herd has fluctuated from 9 to 4 mature steers and young bullocks until in 2011 the decision was made to rely on between 3 and 5 barren/dry cows owned by Kiln Farm and lose through natural attrition the AWT's older steers. Different project reviews and studies revealed a positive effect of AGAP on flora diversity and highlighted the need of providing a monitoring scheme to fully assess the effect of grazing (Stevens, 2007; Henney, 2011; Lewington, 2012). At the moment the AGAP keeps a herd of 4 cattle to manage 21.5 ha of grassland, 13.5 ha of which fall within the LNR boundaries.

.1.2. REEDBED MANAGEMENT

Reedbed management at Longis and Mannez Ponds has been needed to prevent encroachment of Bramble (*Rubus sp.*), Willow (*Salix sp.*) and White Poplar (*Populus alba*). Reed has been cut since 2005 with an attempt to manage the whole reed bank at Longis Pond in a four-year cycle: every year a quarter of the total area was cut so that disturbance on wildlife was substantially reduced. Man power limitations have prevented this from actually being achieved. However, in 2014 the full quarter section in two separate areas was successfully cut, with a large dried area to the southwest of the pond cleared back to the mud area. The cut reed was burnt on site in a specially constructed metal incinerator to enable the removal of all material.

All White Poplar saplings growing inside the reedbed have been cut and removed at Mannez and Longis Pond. However, saplings continue to return from the root stock of the original trees and need continued annual control.

.1.3. CONTROL OF NOXIOUS SPECIES

Two noxious species have been controlled near the most visited areas and footpaths every year since 2003. Pupae of Brown-tail Moth (*Euproctis chrysorrhoea*), whose hair can cause rashes and respiratory problems for walkers, have been removed from the footpaths and verges and burned.

Ragwort (*Jacobea vulgaris* syn. *Senecio jacobea*) is a native poisonous plant for livestock which has been controlled by pulling at Longis Common and other places around LNR.

.1.4. CONTROL OF INVASIVE SPECIES

Bracken (*Pteridium aquilinum*), Hottentot Fig (*Carpobrotus edulis*), Sally-my-handsome (*Carpobrotus acinaciformis*) and Angular Sea Fig (*Carpobrotus glaucescens*) are the four invasive species that have been controlled in the last few years. Bracken is a native but invasive fern which spreads where traditional land use has been lost and its control by cutting has been focused so far on areas where grassland remains underneath bracken's cover. Hottentot Fig, Sally-my-handsome and Angular Sea Fig are non-native, invasive plants present in Alderney's coastal areas where important flora species occur. Within the LNR, their removal has been focused around Houmet Herbé which is the most affected area. Previous studies showed their distribution in Alderney and identified vulnerable areas based on the presence of native fauna and flora (Cox, 2010; Graves, 2012). An Invasive Species Action Plan was also produced to outline the management actions needed to halt their spread across the island (Lewington, 2012).

.1.5. CREATION AND MAINTENANCE OF AMENITY RESOURCES

A total of 5 km of footpaths have been maintained, or where necessary created, within LNR to ensure public access. Work on these paths has included vegetation clearing, grass cutting, maintenance of steps and removal of stumps. White marker stones were placed to identify the AWT footpath network and have been repainted regularly since then. Moreover, two bird hides with bird feeders were built at Longis and Mannez Ponds in 1999 and 2006 respectively with some information points added later on.

.1.6. SURVEYING AND MONITORING

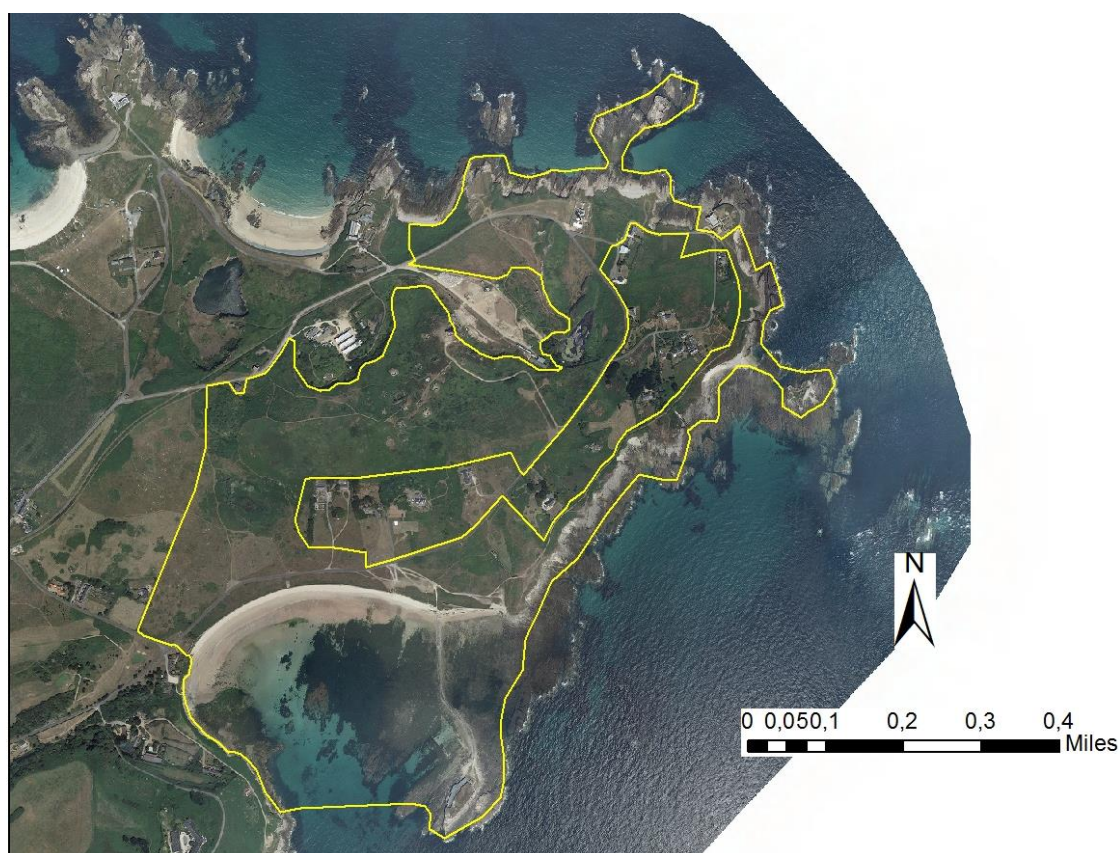
Several surveys have been carried out to assess the natural values of LNR and to monitor them in order to evaluate the management success. These included Phase I habitat surveys (2010), bats, small mammals, wetland and terrestrial breeding birds, butterflies and other macroinvertebrates (all these carried out annually and coordinated by UK NGO's) and intertidal biotope habitat surveys (2008, 2011, 2012). Slow worms were surveyed in 2015 as part of a wider project to assess its population status in Alderney.

• SITE DESCRIPTION

.1. LOCATION AND SITE BOUNDARIES

LNR is located 2.5 km east of St. Anne, Alderney (Figure 1). It covers 82.2 ha stretching from Rue des Mielles to Fort Les Homeaux Florains and Fort Houmet Herbé. It includes Longis Common, Mannez Garenne, Mannez quarry and the intertidal area from St. Esquere Bay to Longis Bay.

Figure 1. LNR's boundaries.



.2. LAND TENURE

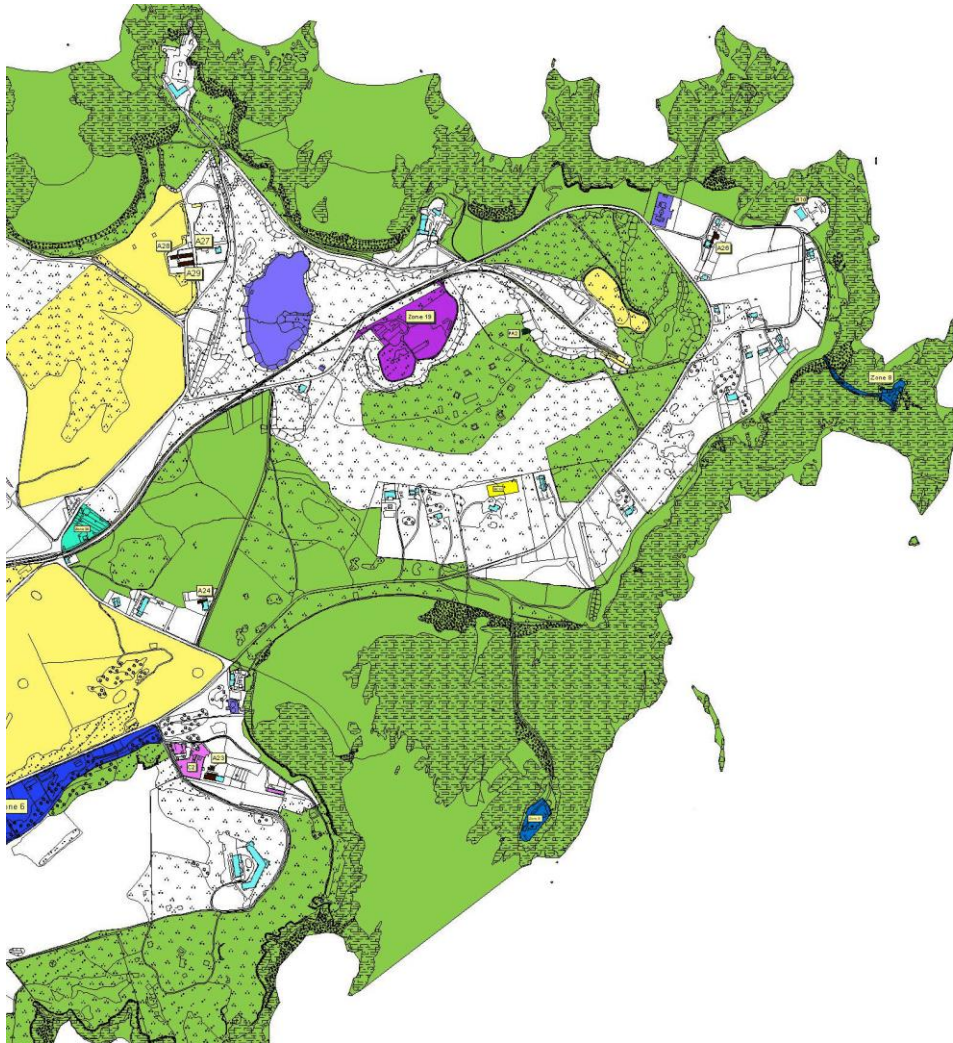
LNR is owned by the SoA (70ha) and private landowners (20ha).

.3. LEGAL STATUS

The Alderney Land Use Plan (2011) describes the majority of LNR as 'Protected' under the Building and Development Control [Alderney] Law (2002) (Figure 2). Protected areas are

implemented “to preserve and protect the island’s natural, archaeological and historical heritage” and “will not be developed unless approved by the Committee in order to restore or protect a feature / aspect of that Protected Zone” (Subsection C of the Alderney Land Use Plan). The law states that permission for development “should not be granted unless by special consideration relating to the site” (Subsection 23 [3] [a] [ii] of the Building and Development Control [Alderney] Law).

Figure 2. Map showing Protected Area Zone in green.



Within the Protected Zone, designated by the Land Use Plan, areas within LNR are designated as:

- Biologically Important Terrestrial Habitats: most of LNR due to the presence of species of flora and fauna listed in the British Red Data Lists (Joint Nature Conservation Committee), any of the Biodiversity Action Plans (UK Biodiversity Partnership and the UK Government) or “that which might be designated under any future wildlife legislation that might be passed during the term of the current Land Use Plan”.
- Biologically Important Freshwater Habitats: Longis Pond.

- Biologically Important Marine Habitats: all intertidal areas of LNR as part of the Alderney coast, regarded as one of the richest marine habitats to be found in the British Isles.
- Archeologically Important Areas and Sites: Longis Common as the area containing the greatest concentration of archaeological finds.

There is very little wildlife protection law that can be applied within LNR. The Protection of Wild Birds (Alderney) Ordinance (2005) states that it is unlawful “for any person to kill, injure or take or attempt to kill, injure or take any wild bird, or to take or destroy or (except in the ordinary course of farming or forestry operations) knowingly or wilfully to disturb eggs or nests of any wild bird”. UK or EU legislations are ineffective here.

As stated in the MoU between the SoA and the AWT, the reserve’s designation does not restrict public use by walkers, anglers and others. Only dog walking and horse riding is not permitted along Longis Bay (currently between 1st of June to 15th of September) to avoid any potential conflict with beachgoers.

.4. PHYSICAL FEATURES

.4.1. CLIMATE

A summary of Alderney’s monthly average weather from January 1994 to December 2013 has been produced by Brian Bonnard (Appendix 1). The mean day temperature ranges between 7.7 °C in February and 17.5 °C in August. The average lowest temperature is 1.2 °C (January) and highest is 24.4 °C (July and August). Average monthly rainfall reaches a low of 41.6 mm in July and a high of 112.2 mm in December. Average monthly sunshine is low in December at 58.9 hours and high in July at 276.6 hours.

.4.2. GEOMORPHOLOGY

LNR is an undulating coastal site and lies at a lower elevation than western Alderney. The highest point of the site is Mannez Garenne, a sandstone outcrop located in the centre of LNR and 40m above sea-level. Regarding the marine area, LNR consists of a variety of rocky shore areas and a low lying sheltered bay.

.4.3. SOILS

Two low resolution mapping surveys undertaken by Cranfield University and Reading University broadly described the island’s soils (Hazelden, 1991). Though varied across LNR, the soil can largely be classified as sandy to sandy loam and slightly calcareous. This soil type has been described as Longis Series and Sandwich Series.

Coastal soils are slightly alkaline, becoming slightly acidic inland. Calcareous marine deposits increase the coastal pH; whilst previously cultivated, fertilised and abandoned areas have a lower pH. This pH is subsequently further reduced as bracken humus builds. The pH remains higher on unimproved land, such as the Mannez Garenne.

Due to the aggressive hydrodynamic conditions, the LNR's coastline is characterised by bedrock, boulders, cobbles and pebbles. Only sediment deposition occurs in Longis Bay, where finer sediments like muddy sand can be found.

.4.4. HYDROLOGY

LNR holds two ponds: Longis and Mannez. The lack of any streams within LNR means that their water level depends mainly on rainfall.

Longis Pond, which covers an area of 1 ha including the reedbed, is one of only two natural freshwater ponds on Alderney. Pollen of aquatic plants found in the peat suggests a bigger open water area present at Longis Common in prehistoric times, before being inundated with blown sand at around 1400 Before Present (BP). A short stream fed the pond 250 years ago entering on the northern side and leaving on the south to discharge onto Longis Bay. Nowadays fresh water still seeps under the German sea wall located along the bay when the pond is full and after heavy rain.

Mannez Pond sits on a quarry floor where the lowest point is now flooded, forming a 0.4 ha freshwater pond. Whilst there are a number of flooded quarries on Alderney, the majority of these are steep-sided reservoirs with limited wildlife. In contrast with that, the softer sides of Mannez and Longis Ponds allow the formation of small areas of wetland.

As already mentioned, Alderney's coast is affected by the high energy marine environment of its surroundings. Tidal flow is along a NE-SW axis. Peak spring currents range from 1.5 ms^{-1} to 4.4 ms^{-1} and peak neap currents from 1 ms^{-1} to 2.5 ms^{-1} .

.4.5. GEOLOGY

Overlying the older igneous complex, LNR rests on a layer of Alderney Sandstone, which was laid down by turbulent streams flowing from a landmass raised to the northwest after the intrusion of the granites. This layer is several hundred meters thick and formed of grits, arkoses, sandstones and conglomerates. Pleistocene deposits, laid down during periods of high sea-level, are also evident, creating loosely consolidated banks of pebbles, at elevations over 8 m above sea level.

Longis Common was created by windblown sand, of sediment depths ranging up to 20 meters. Underneath there are several layers of peat interleaved with layers of sand over the bedrock, from the times during the several ice ages when the waters receded and this area became a freshwater pond. Fixed dunes at Longis Bay are no longer mobile due to a large anti-tank wall built in the 1940s along the high water mark.

.5. BIOLOGICAL FEATURES

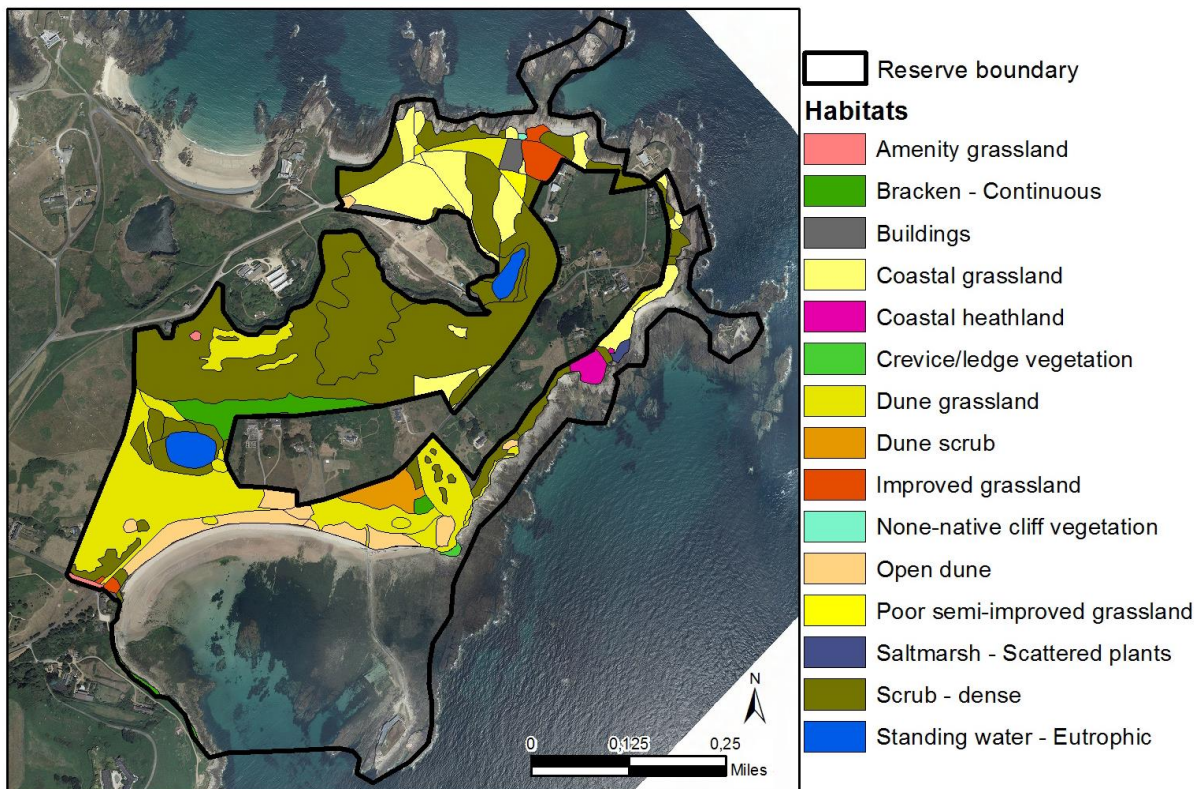
.5.1. TERRESTRIAL HABITATS AND FLORA

The flora of Alderney has been extensively studied by the local recorders for the Botanical Society of the British Isles, Brian Bonnard and David McClintock. Much of the data accumulated is presented in *The Wildflowers of Alderney* (Bonnard, 2008). A Phase I habitat survey was carried out by Ian Ralphs in 2010.

As described by Bonnard, Alderney's flora diversity is the result of both natural and anthropogenic factors. Geographically, Alderney represents the northern limit of the range of a number of southern European species and the southern limit of some northern European species. There are, therefore, a range of species common in Alderney but rare in Britain and a few species rare here but common there. In addition, several plant species have been introduced either deliberately or accidentally through years of human history. Early farmers from the Neolithic period, Romans, Monks, Victorians, Germans and post-war settlers have all contributed to the present day flora of Alderney.

Although no data exists about the floral diversity of LNR specifically, approximately 527 species of flowering plants occur in the eastern part of Alderney, most of which lies within LNR boundaries (Manzano-Rubio, 2015a). The flora includes a wide range of species with differing ecological requirements, typifying 15 different terrestrial habitats (Figure 3), where a mosaic of scrubland and grassland dominates the landscape (Manzano-Rubio, 2015b).

Figure 3. Location of LNR habitats, following Phase I Habitat Classification System (Ralphs, 2010).



Inland areas are dominated by Bracken, Gorse (*Ulex europaeus*), and Bramble (*Rubus sp.*) scrub, which are the most abundant habitats within LNR. Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*) are also present. Due to their high colonization capacity, Bracken and Bramble are widespread throughout LNR, becoming established in grasslands. Dune scrub, also dominated by Bracken and Bramble over much of the area, has its only presence in Targets.

Dune and coastal grassland are the other two commonest habitats, present in open and flat areas such as Longis Common, Mannez Football area or Targets. These habitats exist in a state of arrested succession, dependent on trampling by walkers and grazing by the widespread Rabbit (*Oryctolagus cuniculus*) and cattle as part of the recent Alderney Grazing Animals Project (AGAP). However, probably due to a lack of regular grazing or cultivation since the 1950s, coarse Cock's-foot (*Dactylis glomerata*) currently dominates over much of these grasslands. A community of Sand Couch (*Elytrigia juncea*) and Marram (*Ammophila arenaria*) characterizes the single open dune habitat along the southern side of Longis Common, which is no longer mobile due to the German wall.

A patchwork of Bramble and Bracken scrub, coastal grassland and coastal heathland composed of Heather (*Calluna vulgaris*) and Bell Heather (*Erica cinerea*) dominates along LNR's coast. It is also worth to mention the small salt-marsh community of Sea Rush (*Juncus maritimus*) growing on the upper rocky shore near Houmet Herbé. Longis Bay is the only sandy shore within LNR and rests underwater during high tide (not mapped in Figure 3). Here other microhabitats like pebbles, bedrock or washed up seaweed occur.

One single reedbed community of Common Reed (*Phragmites australis*), again mixed with Bramble, can be found at Longis Pond. In contrast, Mannez Pond holds a less mature wetland habitat, primarily comprising Lesser Bulrush (*Typha angustifolia*), due to its artificial origin and the presence of the invasive plant New Zealand Pigmyweed (*Crassula helmsii*) and also Parrot's-feather (*Myriophyllum aquaticum*). A boggy area has developed on the western side of the pond where several species of rush (*Juncaceae*) and sedge (*Cyperaceae*) can be found.

Woodland is vaguely represented in isolated and small patches of tall scrub across LNR, mainly on the north side of Longis Pond, dominated by Elder (*Sambucus nigra*), and Mannez Pond, where a community of Rusty Sallow (*Salix cinerea subsp. oleifolia*) has developed.

Apart from the New Zealand Pigmyweed, other exotic invasive plants threaten local flora. Small pockets of Hottentot Fig and other affine species (*Carpobrotus sp.*) can be found all over LNR, specially spread along the coastline, and White Poplar (*Populus alba*) has been planted in the east side of Longis Pond and has spread along the reedbed.

Man-made structures such as military bunkers, houses and stone walls provide suitable habitats for birds, lichens and bryophytes.

5.2. TERRESTRIAL FAUNA

Due to its small scale, detailed data about much of LNR fauna needs to be derived from broader, sometimes island-scale studies. Breeding birds and plant lists used in this section were compiled using these broader studies: the breeding bird status shown in Manzano-Rubio (2015c) was retrieved from an island-wide breeding bird survey from 2006 (Pierre, 2006) and the complete plant list shown in Manzano-Rubio (2015a) was retrieved from data recorded in wider area than LNR (Bonnard, 2015). These assumptions should therefore be kept in mind when using the data and the lists should be updated as soon as new information is available.

- Birds

LNR supports a diverse avifauna, primarily composed of species dependent on open habitats and wetlands (Manzano-Rubio, 2015c). Many of the 161 bird species recorded within the site are migrants or winter visitors, which find in these habitats the right conditions for stopping over or overwintering, and only 33 species breed at the eastern side of the island (Pierre, 2006).

Longis Common and other grasslands provide suitable habitat for breeding Stonechats (*Saxicola torquata*), Meadow Pipits (*Anthus pratensis*) and Greenfinches (*Chloris chloris*), migrant Northern Wheatears (*Oenanthe oenanthe*) and wintering thrushes. These places are also used as hunting areas by local and migrant raptors.

Despite their small size, Longis and Mannez Ponds give home to some typical breeding wetland species such as Common Reed Warbler (*Acrocephalus scirpaceus*), Coot (*Fulica atra*), Mallard (*Anas platyrhynchos*), Moorhen (*Gallinula chloropus*) and Little Grebe (*Tachybaptus ruficollis*). They also

supply food and rest for migrant swallows and martins, Chiffchaffs (*Phylloscopus collybita*) and wintering Snipe (*Gallinago gallinago*). In addition, solitary birds of some other species are a common sight: Sedge Warbler (*Acrocephalus scirpaceus*) in spring and Kingfisher (*Alcedo atthis*) and several species of ducks in winter.

Longis Bay supports low numbers of migrant and winter waders, mainly Curlews (*Numenius arquata*) and Whimbrels (*Numenius phaeopus*) but also plovers and sandpipers. Only Oystercatchers (*Haematopus ostralegus*) and Rock Pipits (*Anthus petrosus*) breed here. In addition, solitary birds of several species of grebes, sea ducks and divers occasionally find Longis Bay a sheltered bay to rest and forage in winter. Rocky shores along the LNR's coast hold breeding Oystercatchers and Rock Pipits and the adjacent sea waters are a common feeding area for seabirds including Shags (*Phalacrocorax aristotelis*) and terns.

Mannez's scrubland supports a small community of breeding birds: Linnets (*Linaria cannabina*), Dunnocks (*Prunella modularis*) and Whitethroats (*Sylvia communis*), and Dartford Warblers (*Sylvia undata*) may still breed here. The German bunkers present here are used by Barn Swallows (*Hirundo rustica*) for nesting.

- Mammals

As in the rest of the island, mammal diversity within the LNR is limited and therefore only 10 species are present (Manzano-Rubio, 2015d). Rabbits (*Oryctolagus cuniculus*) are regarded to be a major force for slowing down vegetation succession in the LNR's grasslands. They reach higher densities in Longis Common, where the sandy soil and brambles provide a natural refuge. The locally abundant Greater White-Toothed Shrew (*Crocidura russula*), Woodmouse (*Apodemus sylvaticus*), Common Mole (*Talpa europaea*) and European Hedgehog (*Erinaceus europaeus*) are also present in these habitats. Both rat species (*Rattus norvegicus* and *Rattus rattus*) have been detected at LNR and three species of bats can be found: Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*) and very occasionally Nathusius Pipistrelle (*Pipistrellus nathusii*).

- Amphibians and reptiles

No Slow Worms (*Anguis fragilis*) were detected during a field survey carried out in 2015 to assess the population status of this species on Alderney. It is known that Palmate Newt (*Lissotriton helveticus*) and Common Frog (*Rana temporaria*) are present at both Mannez and Longis Ponds.

- Invertebrates

- Butterflies

A total number of 25 species of butterflies have been detected during the long term monitoring of LNR' butterfly populations since 2006, following the UK Butterfly Monitoring Scheme (BMS) methodology and during other observational studies done by local experts (Manzano-Rubio, 2015e). Common sights are Common Blue (*Polyommatus icarus*), Small Heath (*Coenonympha pamphilus*),

Meadow Brown (*Maniola jurtina*) and Gatekeeper (*Pyronia tithonus*). Glanville Fritillary (*Melitaea cinxia*) can be locally abundant in grasslands along the LNR's coastline.

- Moths

Although LNR lacks detailed data of moths population, Alderney's moths have been extensively studied in the last years by David Wedd. 529 species of Macro moths and 313 species of Micro moths have been recorded so far, following the UK National Moth Recording Scheme (NMRS) methodology. One third of them are regarded to be locally common or abundant. Due to the high habitat diversity of LNR, many of these species are expected to be found at LNR too, but proper assessment is needed to confirm this.

- Dragonflies and damselflies

Mannez and Longis Ponds, being the only permanent waterbodies, are the main places within LNR known to be supporting communities of dragonflies. Latest data from this taxonomical group comes from Wedd (2008) and Parr & Long (2015). A total number of 18 species of dragonflies and damselflies have been recorded at LNR: 7 are regarded to be common or regular visitors, 9 are occasional or rare visitors and 2 have gone extinct recently due to the drainage of Longis Pond in the last 50 years (Manzano-Rubio, 2015f). In addition, 3 species which have been recorded elsewhere in Alderney may be present at LNR. It is worth pointing out that these abundances are based on brief notes from a few local naturalists; therefore proper surveying should be done to assess current Odonata populations.

.5.3. FUNGI

Little research exists about Alderney's fungi and further studies are required to better assess their status within LNR. However, it is known that Deadman's Fingers (*Xylaria polymorpha*) and Winter Stalkball (*Tulostoma brumale*), the last one considered rare both in the Channel Islands and the UK, are present in some seasonally dampish hollows behind the Longis sea wall.

.5.4. MARINE HABITATS

Intertidal habitats have a large extension in the site and most of the area was surveyed in 2010 as part of a consultancy project submitted to the Alderney Commission for Renewable Energy (Broadhurst & Salado, 2011). Although the survey also covered the Frying Pan Bay which is outside LNR's boundaries, all habitats recorded are found within LNR's area.

A total number of 49 biotopes were identified, following The Marine Habitat Classification for Britain and Ireland (Manzano-Rubio, 2015b). Stable bedrock and rocky shorelines are the most

predominant biotopes, which exhibit high to moderate exposure levels. Seaweeds and barnacles, indicators of strong physical factors, characterize these biotopes. Sheltered biotopes are also common, primarily located within Longis Bay and across the Raz causeway area and containing a large proportion of differing substrates: sand, pebbles, cobbles, boulders or bedrock. Dense stands of fucoid seaweed species cover these substrates and support a variety of marine fauna.

A variety of rockpools, caves and overhangs are also found, where opportunistic and invasive seaweed like *Sargassum muticum* or encrusting algae live. Kelp and *Himanthalia elongate* biotopes extend across the lower infra-littoral and sub-littoral environments, which also indicates fast flowing currents and sediment scour. Several patches of Eelgrass (*Zostera marina*) are present at the lowest end of Longis Bay, and during 2016 survey work undertaken on behalf of FAB Link Ltd identified this bed as of greater size and density than any other Eelgrass bed on the island.

.5.5. MARINE SPECIES

70 marine algae, 4 lichen, 7 sponge, 11 cnidarian, 9 polychaete, 11 crustacean, 20 mollusc, 1 bryozoa, 4 echinoderm and 15 chordate species were recorded by Broadhurst & Salado (2011). Moreover, it is known the occasional presence of Grey Seals (*Halichoerus grypus*) within the bay.

.6. CULTURAL FEATURES

.6.1. ARCHAEOLOGY

Alderney's landscape has been vastly influenced by human activity throughout its history. Within LNR, there are a number of significant features including, quarries, bunkers and other German and Victorian fortifications. Furthermore, Longis Common is well known for the number of Iron Age, Bronze Age and Roman artefacts found.

A unique heritage feature which sits on the LNR boundary is the Roman Fort known as the Nunnery, now understood to be the oldest building in the Channel Islands.

.6.2. LAND USE HISTORY

Farming in Alderney is likely to have been introduced in the Bronze Age (Dillon & James, 1998), when the native woodland habitat was probably cleared and resulting in the more open landscape that is still characteristic of the island (Bonnard & Bonnard, 1995).

The area now defined as LNR has been common land since at least the 13th century (Dillon & James, 1998). The area was used by the community for grazing of animals (sheep throughout the year and cattle during summertime) and for the collection of gorse and bracken for use as fuel (Ewen, 1959). This system continued until 1831, when the common lands were divided between the

island's 52 resident families. During the 1920s, it is thought that grazing continued, in one form or another, until World War II. During the German occupation, a large number of defences were built within the site and much of Longis Common was used as a burial ground during 1943 and 1944; however the bodies were exhumed in 1960.

After World War II, farming practices on the island went through a considerable change. The traditional open field agricultural system was abandoned on their return in favour of a short lived attempt to establish co-operative farming. The end of the occupation saw only a limited return of local residents with many staying in the UK or emigrating (Bates, 1989). The intensification of farming using artificial fertilisers and developments in farming machinery meant Alderney's agricultural industry was unable to compete with cheap import from large-scale farms abroad (Bonnard, 1993). The introduction of Common Agricultural Practice and the European Community increased the difficulties in exporting produce. Farming went through a huge decline and regular grazing on the site was abandoned.

Management of the site was taken over by the Alderney Wildlife Trust in 2003. At this point, the Longis Common was rapidly succumbing to increasingly scrubby, coarse vegetation, with the invasion of bramble, bracken and coarse grasses (David & Ozanne, 2004). The Alderney Grazing Animals Project was implemented to combat this invasion (see section 1.1.).

Regarding Longis Pond, bore holes surrounding this site were installed during the 1990s to increase the island's water supply. Used only for emergency provision, pumping was maintained at very low levels until 2001 when successive years of low rainfall required greater pumping. As a result, Longis Pond regularly dried out. This is believed to have seriously impacted upon the pond's fauna and flora. In 2006, the bore holes began to collapse. An island-wide hose pipe ban was imposed and in response Alderney's water collection system underwent major renovation. The need to pump regularly at Longis Common was thereby reduced and pond water levels quickly increased.

.7. SOCIOECONOMICAL FEATURES

.7.1. SOCIOECONOMIC USE

LNR is regularly visited mainly by dog walkers and walkers but also birdwatchers, cyclists and horse riders (Grenville, 2007). In summer, Longis Bay is a popular place for beachgoers and anglers. Alderney waters are under review for potential marine renewable energy development. Rabbit hunters occasionally use Longis Common.

.7.2. RESEARCH AND EDUCATION

LNR biological and archaeological features have been the subject of several research projects, including MSc and PhD theses. The AWT runs a number of educational and recreational events

within the LNR each year such as rockpooling, kayaking, pond dipping, treasure hunts and birdwatching walks.

.7.3. ACCESS AND VISITOR FACILITIES

The AWT maintains a network of footpaths across LNR to allow access from different sides. The SoA maintains the built beach access and manages verge sides to provide pedestrian refuges. There are several parking areas along the road bordering Longis Common as well as dog waste bins. Parking areas are open to the public and dog waste bins are maintained by the SoA.

The Alderney Railway Society maintain a voluntary run charitable company which keeps the Braye to Mannez quarry line open and in operation for visitors, special events and charters throughout the year.

Two bird hides placed at Longis and Mannez Ponds allow visitors to get a closer view of LNR's wetland flora and fauna. Several interpretation panels can be found within or beside the bird hides and inside the German trench near Fort Houmet Herbé.

• SITE EVALUATION

An evaluation of the site is required to highlight the features which should become the focus of the management actions. The UK Nature Conservation Review (NCR) criteria have been recognized as the standard approach to identify these features and are therefore used here (Ratcliffe, 1977; Alexander, 2008). Some of the criteria can be applied under different geographical scales: local (Alderney), national (the UK) and international (Europe).

.1. SIZE

In most cases, the importance of a feature will increase with size because large, continuous areas often contain more species and are less fragile than small, fragmented areas.

Longis' dune grassland and Longis and Mannez ponds are the largest areas of their habitat type found in Alderney (Ralphs, 2010).

.2. NATURALNESS

Naturalness reflects the degree of human alteration of natural areas. Generally, areas with little human modification are more likely to support natural assemblages and are therefore highly valued.

Longis is very much the epitome of a cultural landscape, with many thousands of years of human activity etched into the current ecology of the area. The intertidal biotopes and Longis open dune are the only unaltered habitats at LNR. Longis Pond was dug out by the Alderney Society in 1989 although old maps confirm its existence 250 years ago. Pollen analysis also indicates the presence of open water vegetation 3800 years BP.

All grasslands and scrub habitats present resulted from grazing and other farming practices occurring during the last eight centuries (see 2.5.2. Land Use History) and can therefore be regarded as semi-natural habitats. Though shore-line foraging and other forms of human impact do take place within the intertidal environment, this is at a relatively low level and within a very high energy environment.

Longis Bay itself was the primary harbour for the island up until the 18th Century and the establishment of the Douglas Quay at Braye. Longis is still the island's secondary anchorage, much of which is located within the Eelgrass bed, privately owned fixed floating moorings and running lines largely situated to the western edge of the Bay.

.3. DIVERSITY

Diversity reflects how much variety (physical, habitat, community and species) can be found within a site. Diverse areas are highly valued.

The wide spectrum of terrestrial and marine habitats gives the landscape of LNR local significance: LNR is home to nearly half of the floral diversity found in Alderney, which is known as having one of the highest proportional diversities of vascular plants of any similar area within the British Isles; half of the bird species and almost all dragonfly, damselfly and butterfly species recorded on the island have occurred here.

Species-rich habitats contributing to this diversity include coastal grasslands, dune grasslands and Longis and Mannez ponds. Longis Bay and the LNR's coast host a moderate to high number of marine species. In general, the Channel Islands' surrounding waters are a highly diverse environment for the British Isles due to their geographical position.

.4. RARITY

Rare habitats and species are a higher priority for conservation than common, widespread ones. This criterion is often evaluated at different geographical levels.

.4.1. HABITATS

- **Local**

Reedbed, dune grassland, open dune, dune scrub, and saltmarsh are rare habitats in Alderney (Ralphs, 2010). Longis and Mannez ponds host the single Reed and Lesser Bulrush bank on the island; dune grassland, open dune and dune scrub are only found in less than five locations outside LNR and the saltmarsh community is regarded to be a unique occurrence (Ralphs comm. pers.).

- **National and international**

In the UK, heathlands have become rare in the last 200 years and dune grasslands are scarce along the south and east coast of the UK (JNCC, 2015a). None of the terrestrial and marine habitats are considered rare in Europe.

.4.2. SPECIES

- **Local**

One third of the flora and the breeding birds found at LNR are scarce or rare in Alderney, including species that can only be found here. Longis Pond and Longis Bay are two of the main places for most migrant and wintering waterfowl and waders in the island to visit. Almost all dragonflies and damselflies ever recorded in Alderney have been found at Longis and Mannez ponds, which provide the best breeding sites for the island.

- **National and international**

24 species of flora present at LNR are scarce or rare in the UK and one, the Alderney Sea-lavender (*Limonium normanicum*), is an endemism of the Channel Islands (Appendix 2). Nearly all 24 species are found in coastal grassland. The fungi species Winter Stalkball is considered rare in the UK.

Dartford and Cetti's Warblers (*Cettia cetti*) are the only birds which are nationally rare in the UK and occur regularly at LNR, in Mannez Garenne and Longis Pond respectively. In addition, Dartford Warblers are endemic to South-west Europe and North Africa. The Fan-tailed Warbler (*Cisticola juncidis*), which has also been recorded and may have bred in the past, is also rare in the UK.

Two mammal and four butterfly species are rare or absent in the UK: Greater White-toothed Shrew, Nathusius' Pipistrelle and Long-tailed Blue, Large Tortoiseshell, Queen of Spain Fritillary (all occasional sightings) and Glanville Fritillary, this last one mainly restricted to one colony in the UK but commonly found within LNR grasslands. The leucistic form of the European Hedgehog present here is also a particularity of Alderney.

23 nationally scarce/rare moth species are found more frequently at LNR than anywhere else in the island, all of which occur within LNR grasslands, open dune and the rocky shore (David Wedd pers. comm., Appendix 2).

The occasional Willow Emerald Damselfly, which is occasionally seen at Longis and Mannez ponds, is still rare in the UK.

Regarding marine species, two algae and three invertebrates are rare in the British Isles: *Gracilaria bursa-pastoris*, *Padina pavonica*, *Endectyon delaubenfelsi*, *Aplysia depilans* and the Green Ormer (*Haliotis tuberculata*).

5. FRAGILITY

Fragility reflects how sensitive habitats and species are to environmental change. Despite its definition complexity, habitats and species dependent on natural disturbance, facing human impact or with a high degree of specialisation are often regarded as fragile (Alexander, 2005; Nilsson & Grelsson, 1995).

Conservation status and legal protection are also good indicators of fragility and are therefore mentioned here. Due to space constraints, only the UK Biodiversity Action Plan (UK BAP), the European Union EU 2009/147/EC Birds Directive (EU Birds Directive) and the European Union EU 92/43/EEC Habitats Directive (EU Habitats Directive) were chosen for the evaluation. Thus, some other LNR species protected under other legislations (e.g. Wildlife and Countryside Act, CITES or Bern Convention) might not be shown here.

5.1. HABITATS

- **Local**

Fragile habitats at LNR include:

- All type of grasslands due to their reliance on constant disturbance by grazing or cutting.

- Longis reedbed due to its reliance on constant disturbance by flooding, grazing or cutting.
- Longis and Mannez ponds due to their reliance on specific water level and characteristics.
- The saltmarsh community due to its small size and its proximity to a frequently used footpath.

- **National and international**

Coastal grassland, reedbed, open dune, dune grassland, crevice/ledge vegetation and saltmarsh have an unfavourable status and are therefore protected under the UK BAP and, excluding reedbed, under the EU Habitats Directive (Table 1). Dune scrub might also be protected, but further information is required to identify the specific plant communities of this habitat. In addition, 4 marine biotopes are protected under the UK BAP and 11 under the EU Habitats Directive (Table 1).

Table 1. Terrestrial and marine habitats present at LNR and protected in the UK and Europe under the UK BAP and the EU Habitats Directive shown along with their status. Status is based on reports from JNCC and European Commission (EIONET, 2015; JNCC, 2015b). Due to the existing difference in habitat terminology between Phase I Habitat classification, The Marine Habitat Classification for Britain and Ireland (not shown due to space constraints), UK BAP and EU Habitats Directive, correspondence tables were used to establish the correct relationship between these (JNCC, 2010; EC, 2003).

	LNR habitat	Status in UK	Status in Europe (Atlantic Region)
TERRESTRIAL	Coastal grassland	Bad	Inadequate
	Ledge vegetation		
	Coastal heathland		
	Saltmarsh		Bad
	Open dune		
	Dune grassland		
	Reedbed	Under concern ¹	Unknown
MARINE	3 biotopes	Bad	Bad
	11 biotopes	Inadequate	

Legend for the Status: Inadequate - change in management or policy is required to return the habitat type or species to favourable status but there is no danger of extinction in the foreseeable future -; Bad – serious danger of becoming extinct, at least regionally-. ¹There is no formal status for reedbeds in the UK, but they are under concern due to their rarity and their importance for wildlife (Hardman, 2011; White et al, 2014).

5.2. SPECIES

- **Local**

Species associated with the habitats already mentioned are considered to be fragile.

- **National and International**

LNR contains a diverse range of fauna of conservation concern in the UK or Europe: 49 bird species occurring regularly, 16 plant, four butterfly, three bat and seven moth species (Appendix 2). In total, 25 species are protected under the UK BAP and 7 under the EU Habitats or Birds Directives, which include three species showing a high risk of extinction in Europe: Oystercatcher, Kingfisher and Curlew. In addition, all rare species mentioned in section 3.4.2. must be considered as fragile due to their restricted distributions.

Dune and coastal grasslands found at LNR contain most of the plant species of interest. The UK BAP species Small-flowered Catchfly, which is listed as endangered in the UK, grows here. Also Land Quillwort, Sand Catchfly, Sand Crocus, Yarrow Broomrape and Smooth Cat's-ear are worth mentioning here due to their vulnerable or nationally rare status too. The dune grassland at Longis supports resident Meadow Pipits, Starlings and Dunnocks, and migrant Whinchats, Linnets and Yellow Wagtails. In addition, two UK BAP butterfly species breed in these two habitats: Glanville Fritillary and Small Heath.

Longis Pond, and to a lesser extent, Mannez Pond, are perhaps the most important terrestrial habitats in terms of threatened bird species, especially during migration and in winter. Every year, species such as Kingfisher, Redwing, Fieldfare, Starling, Reed Bunting, Song Thrush, Grasshopper Warbler and Yellow Wagtail use this site to stop-over or overwinter. In addition, a small population of Mallard and Coot breed here.

The dense scrub along Mannez Garenne may still support a small breeding population of the UK amber-listed Dartford Warbler and the red listed Linnet. Autumn Lady's-tresses, Autumn Squill and Green-winged Orchids as well as Sand Crocus grow in the grassland patches found here.

Longis Bay and the exposed bedrock along the LNR coast support UK BAP bird species such as Herring Gulls, Curlews and Brent Geese. Other UK red and amber listed species using this marine environment are Oystercatchers, Shags, Common and Sandwich terns or Mediterranean Gulls. The endemic plant Alderney Sea-lavender occurs here as well as Eelgrass.

.6. TYPICALNESS

Typicalness reflects how well represented a particular feature is within a wider geographical area. These features can be either rare or common.

The endemic Alderney Sea-lavender, the leucistic form of European Hedgehogs and the historical heritage are some Alderney attractions found within the LNR.

.7. RECORDED HISTORY

Recorded History reflects the extent to which a site has been used for education and scientific research.

Ornithological data for Alderney has been recorded by various organizations and individual ornithologists over the years, including the Alderney Wildlife Trust, the RSPB, Jeremy Sanders and Peter Condor. From March 2016 constant effort recording through ringing and visual observation has been undertaken by the Alderney Bird Observatory (ABO), led by John Horton, the Warden, Catherine and Paul Veron.

Brian Bonnard is the Botanical Society of Britain and Ireland (BSBI) recorder for Alderney. Other specialists have recorded botanical data: V. Mendham, F. Le Sueur, D. McClintock, C.T. David, B.J. Ozanne. Moths have been monitored by David Wedd over the last 11 years. The Alderney Society holds significant information on various aspects of Alderney ranging from natural history and geology through to the historical environment and archaeology.

.8. POSITION IN AN ECOLOGICAL/SOCIOECONOMIC/CULTURAL UNIT

This criterion reflects how a site contributes to a wider ecological and cultural unit.

Similar ecological assemblages of marine and coastal habitats can be found in the other Channel Islands, which as a whole are regarded as an area of distinctive ecological characteristics due to their geographical position. Alderney is part of the Bailiwick of Guernsey which is a Crown Dependency of Great Britain. As in the rest of the Channel Islands, tourism is the major industry on the island and nature tourism one of the few locally controllable components of this, with the LNR and its features, including the ABO being a major part of the island's existing, and future tourism offering.

.9. POTENTIAL VALUES

This criterion reflects the potential of a feature to become better valued in the future if appropriate management is undertaken.

On an ecological context, certain bird or invertebrate species can be more common than thought as Alderney is considered to be under-recorded for wildlife. This has clearly been demonstrated when dedicated recording effort has been expended on moths (David Wedd) and Birds (ABO), with nationally important assemblages being identified within and around the LNR.

On a socio-economic context, the presence of rare species and its ecological diversity has economic potential in the wildlife tourism market.

The need for traditional management to preserve much of the habitat could contribute to the local economy by providing areas of low-intensity grazing. Agreements on grazing timings and stock densities would then be essential in order to guarantee that ecological values are preserved.

.10. INTRINSIC APPEAL

Intrinsic appeal reflects the level of popularity and attractiveness of a feature based on many different social preferences. Whether this criterion deserves equal consideration is controversial since it is fully based on a subjective vision of human interests.

LNR's popular attractions include the 'Odeon' and other German bunkers, the Longis anti-tank wall, the Nunnery (Roman Fort), the ABO, Longis and Mannez ponds bird hides, Longis Bay, the coastal paths, the leucistic form of European Hedgehog and several species of orchids.

.11. IDENTIFICATION OF IMPORTANT FEATURES

Table 2 compiles all the features present at LNR which were identified as important based on the criteria presented in the previous section 3.10. The habitats and species listed here must become the focus for the management and monitoring actions suggested in the following sections.

Table 2. Important features found at LNR. Due to space constraints, fragile species of less conservation concern (Amber-listed in the UK or Nearly Threatened in UK or Europe and not nationally or internationally protected) were not included in the list.

Feature	
Habitats	
Longis and Mannez ponds	
Dune grassland	
Intertidal biotopes	
Coastal grassland	
Saltmarsh	
Longis open dune	
Crevice/Ledge vegetation	
Heathland	
Plants	
Alderney Sea-lavender	
Small-flowered Catchfly	
Land Quillwort	
Sand Catchfly	
Sand Crocus	
Small Hare's-ear	
Yarrow Broomrape	
Dodder	
Nettle-leaved Goosefoot	
Smooth Cat's-ear	
Bermuda-grass	
Four-leaved Allseed	
Orange Bird's-foot	
Small Restharrow	
Green-winged Orchid	
Sharp Rush	
Autumn Squill	
Bastard Toadflax	
Clustered Clover	
Dune Fescue	
Golden Samphire	
Hairy Bird's-foot-trefoil	
Least Soft-brome	
<i>Bromus hordeaceus subsp. thominei</i>	
Suffocated Clover	
Western Clover	
White Horehound	
	Autumn Lady's Tresses
	Pyramidal Orchid
	Birds
	Curlew
	Kingfisher
	Oystercatcher
	Dartford Warbler
	Herring Gull
	Meadow Pipit
	Linnet
	Starling
	Grasshopper Warbler
	House Sparrow
	Common Tern
	Redwing
	Fieldfare
	Shag
	Skylark
	Song Thrush
	Spotted Flycatcher
	Whimbrel
	Whinchat
	Woodcock
	Yellow Wagtail
	Marsh Harrier
	Mediterranean Gull
	Sandwich Tern
	Brent Goose
	Reed Bunting
	Cetti's Warbler
	Fan-tailed Warbler
	Mammals
	Nathusius Pipistrelle
	Common Pipistrelle
	Soprano Pipistrelle
	European Hedgehog
	Greater White-toothed Shrew

Invertebrates
Glanville Fritillary
Grayling
Long-tailed Blue
Large Tortoiseshell
Queen of Spain Fritillary
Willow Emerald Damselfly
Jersey Emerald
Spanish Carpet
White Spot
Forester
Four-spotted
Speckled Footman
Pale Shoulder
Horse Chestnut
Grass Eggar
Gypsy Moth
Barrett's Marbled Coronet
Orache
Cream-bordered Green Pea
Sand Dart
Narrow-bordered Five-spot Burnet
Cream-spot Tiger

Clouded Buff
Bordered Sallow
Bordered Straw
Scarce Bordered Straw
Striped Hawk
Death's Head Hawk
Red-necked Footman
Fungi
Winter Stalkball
Marine species
Green Ormer
<i>Padina pavonica</i>
<i>Endectyon delaubenfelsi</i>
<i>Aplysia depilans</i>
<i>Gracilaria bursa-pastoris</i>
Eelgrass
Others
Historical heritage

MAIN FACTORS INFLUENCING THE MANAGEMENT OF THE SITE

.12. NATURAL SUCCESSION

Bracken, Bramble and Blackthorn encroachment is the main threat for early successional habitats like grasslands and reedbeds.

Grasslands are semi-natural habitats which exist in a state of arrested succession, dependent on grazing and trampling across the site and rapid Bramble and Bracken encroachment occurs when disturbance is ceased. The abandonment of farmland practices in the last century has gradually led to a development of rank grassland, heavy Bramble and Bracken and colonisation by scrub in many of the island's grasslands and heathlands. Within LNR, the worst affected areas are the grasslands at Mannez Garenne, Targets and along the eastern coast. The open dune system and Longis reedbed are also threatened by Bramble encroachment. Similarly, rusty sallow encroaches on Mannez Pond.

.13. NON-NATIVE SPECIES

Invasive, non-native plants are a major issue in Mannez Pond (New Zealand Pigmyweed and Parrot's-feather), along the eastern coast (Hottentot Fig) and within Longis reedbed (White Poplar).

Several feral cats are present at Longis Common although their impact on local bird populations is still unknown.

Marine non-native algae are present in Longis Bay (Japweed and *Asparagopsis armata*).

.14. INFRASTRUCTURE DEVELOPMENT

Future tidal power development and cabling, including installation, operation and decommissioning, is regarded to be the main concern for marine habitats and species in the intertidal area of LNR.

An electrical interconnector between France, Alderney and Britain (known as the FAB Link project) is proposed, at the time of writing of this plan, for construction in 2018. The project includes underwater and underground cabling across Longis Bay, Longis Common and Corblets Bay. AWT was commissioned in 2015 to undertake ecological surveys for the project and provide recommendations to mitigate and compensate for significant ecological impacts on site. However, residual impacts left after mitigation and compensation measures must be taken into consideration in the near future when assessing the factors influencing the site.

.15. PUBLIC USE

Human disturbance by site users has an impact on bird populations at LNR, although further assessment is needed to evaluate the level of this impact. For example, disturbance on Dartford Warblers can delay breeding by up to 6 weeks, reducing breeding success (Murison et al, 2007).

Dogs walked off leash are regarded to be the main factor of human disturbance here as these are the most common activity occurring on site. Open, exposed areas and isolated habitats such as grasslands or ponds are likely to be the most affected beaches. Evidence exists for dogs and walkers unintentionally chasing birds away at Longis Common and Longis Bay. Dogs have also been seen swimming at Longis and Mannez ponds.

While trampling has a positive impact on grasslands by keeping more competitive species under control, high intensity trampling might threaten small and isolated habitats like the ledge vegetation or the saltmarsh community present, and the impact of concentrated dog dirt around footpaths increasing nitrates and reducing viability for key species within the LNR.

Fishing and shore-gathering may also have a negative impact on LNR marine habitats and species, if undertaken inappropriately, as a result of stone turning, pollution by litter, discarded fishing line and depletion of local populations of species of interest like Green ormer.

.16. CLIMATE CHANGE

Climate change is widely considered to be one of the main reasons for biodiversity loss worldwide and needs therefore to be included here. It is predicted that global warming will assist in the spread of non-native species present at LNR like Hottentot Fig (Squirrel, 2015).

.17. OCEAN ACIDIFICATION

Ocean acidification is considered as one of the main human-caused pressures on marine ecosystems and might therefore have long-term effects on LNR marine habitats and species. There is an increasing concern about the potential impacts of pH reduction and its subsequent alteration of calcification processes on marine life (IGBP, IOC, SCOR, 2013).

.18. RESOURCES

The AWT has extremely limited staff and funding resources for management: only eight AWT **staff** members (most of whom are voluntary staff) currently work on a full time basis to deliver on all AWT projects and sites and five of these are replaced every year due to the voluntary nature of the job. Under this scenario it is essential to review current effort, set priorities and allocate resources accordingly when managing LNR and other AWT sites.

In addition the AWT is able to draw on a group of Conservation Volunteers who meet twice a week and undertaken 4-5 hours of conservation effort. This group averages around 6 individuals during anyone session, and delivers around 2,000hrs of additional conservation effort per annum.

In 2017 the States of Alderney's General Services Committee (GSC) adopted the 'Alderney States' Estate Management Policy' (appendix 4). This policy requires States staff for a Joint Working Group and look to work with the AWT and others to deliver the following key objectives:

Aim

For the States and its partner NGOs to work collaboratively to ensure Alderney's built and natural heritage resources (both terrestrial and marine) are conserved, sustainably managed and developed, in order to grow visitor numbers, improve visitor experience and enhance the quality of life of island residents, in line with States' strategic goals relating (inter-alia) to Economic Development and Land Use Planning.

N.b. this aim will be met through the co-ordination (i.e. prevention of duplication) and adaptation of existing land management effort expended by the SoA and other partner organisations and where necessary, resources allowing, new effort.

3. Objectives:

I. To review all relevant areas of existing Estate management including Public Green Spaces, Cambridge Battery and Bibette Head sites, the Ramsar Site, Community Woodland, and Island Nature Reserves for the purpose of developing them to meet the aims of this policy, whilst reducing duplication of effort.

II. To ensure the island's existing infrastructure (e.g. footpaths, car parks, litter and dog bins) is maintained, or where necessary improved upon, with support of all relevant SoA departments and other partners.

III. To consider new opportunities to develop the island's heritage and natural resource to meet the aims of this policy.

IV. To create the necessary mechanisms to ensure that work is developed in co-ordination with the relevant States' Departments, and all other groups who are willing to support this policy to ensure its success.

V. To establish simple measures for the use and enjoyment of Alderney's natural and built heritage, by both visitors and residents (i.e. questionnaires, visitor counts), to enable the monitoring of this policy's success.

The Joint Working Group is at the time of preparing this proposal looking at aspects of work including footpaths, amenities and waste, all of which have a potential mutual benefit which will have a direct impact on the delivery of the LNR Plan.

.19. LANDOWNERSHIP

The LNR is largely owned by the States of Alderney and is designated and managed via a Memorandum of Understanding (MoU). This plan will facilitate the requirements of the MoU and gives the States General Services Committee (responsible Committee) a mechanism through which to assess AWT management of the LNR.

Other parts of LNR fall within private landownership and whilst verbal agreements are in place to enable this land to be described as part of the LNR, the lack of legal agreements can restrict the management works.

• **MANAGEMENT AIMS & OBJECTIVES**

The following aims and objectives will guide the long term management of LNR:

AIM 1 To increase the knowledge about the natural value of LNR and its importance within both local and international context.

Objective 1.1. To update existing data about the size and condition of the important habitats of LNR.

Objective 1.2. To update existing data about the breeding status and presence of the important species of LNR.

Objective 1.3. To promote scientific research in LNR's ecological features, and ensure the results of this research are available to the wider community.

AIM 2 To conserve the natural value of LNR by preserving the diverse range of habitats and species.

Objective 2.1. To maintain the current size, plant communities and species richness of dune grasslands and coastal grasslands present at LNR.

Objective 2.2. To maintain an appropriate balance of tree and shrub cover in the area surrounding Longis Pond, whilst maintaining, and if possible increasing, the current size and species richness of open water and reedbed, allowing their natural expansion into adjacent grasslands.

Objective 2.3. To develop Mannez Pond's surrounding vegetation into a wet woodland whilst maintaining the current size and species richness of open water.

Objective 2.4. To maintain the current size and species richness of Houmet Herbe's heathland.

Objective 2.5. To maintain existing Mannez scrub in a favourable status for breeding Dartford Warblers.

Objective 2.6. To maintain the current size, plant community and species richness of Longis open dune.

Objective 2.7. To maintain the current habitat and species richness of LNR marine environment.

AIM 3 To advance the education of the public about the natural value of LNR and promote a sustainable recreational use of it.

Objective 3.1. To maintain the current level of access and its condition.

Objective 3.2. To increase on-site signage about boundaries, features and management of LNR whilst maintaining visual impact to a minimum.

Objective 3.3. To maintain and if possible enhance the existing infrastructure i.e. Longis and Mannez birdhide facilities.

Objective 3.4. To involve the community in regular events and activities.

● IMPLEMENTATION

The following section provides information about the actions to be undertaken in order to achieve the management objectives set. Ornithological effort will be focused through the mechanism of the ABO whilst terrestrial and marine survey effort will be the responsibility of the reserves and Living Sea's teams respectively.

AIM 1 To increase the knowledge about the natural value of LNR and its importance within both local and international context.

Objective 1.1. To update existing data about size and condition of the important habitats of LNR.

ACTION 1.1.1. Undertake a Phase 1 Habitat Survey.

The Phase I Habitat Survey (JNCC, 2010) is a standardized system that provides a quick identification of the wildlife habitats of a site and gives basic information about the species and plant communities potentially present.

A Phase 1 Habitat Survey for LNR was done in 2010 as part of an island-wide survey (Ralphs, 2010). Some habitat boundaries might have not been accurately defined due to time constraints and some habitat codes might have not been correctly recorded (Ralphs pers.comm.). Furthermore, significant changes in habitat size and condition may have happened since 2010.

Accordingly, a second Phase 1 Habitat survey is required to obtain up-to-date, accurate data which will serve as a baseline when reviewing the effectiveness of the management action, to be undertaken by no later than 2018.

ACTION 1.1.2. Undertake NVC surveys for the important habitats: dune grassland, coastal grassland, dune scrub, saltmarsh, open dune, crevice, heathland and Mannez Pond's adjacent grasslands.

Information about plant communities is essential to assess the conservation value of some habitats in a national and international context. It also provides data about the abundance of plant species and can aid in the process of identifying which management actions are required to preserve the habitat. The National Vegetation Classification (NVC) (Rodwell et al., 1991 et seq.) is the standard classification method in Britain to do so.

Existing NVC data for LNR is very limited. As part of the Alderney Grazing Animal Project (AGAP), several botanical surveys have been carried out on Longis Common and Mannez Garenne using different methodologies: David & Ozanne (2004), Strevens (2007), Hampshire botanists (2010) and Henney & David (2012). However, only Strevens assessed the plant communities present and identified Longis Common as CG2 [Rodwell classification] (*Festuca ovina* - *Avenula*

pratensis grassland) calcareous grassland. In contrast, Ralphs identified it as a dune grassland SD [Rodwell classification] community (Ralphs, pers. comm.). In addition, he identified the plant communities for only some of the habitats found during the Phase 1 Habitat Survey.

Therefore, a vegetation survey following standard NVC methods (Rodwell, 2006) is required to identify the plant communities present in the important LNR habitats: dune and coastal grasslands, dune scrub, open dune, crevice, heathland and Mannez Pond's grasslands (see Figure 4). Several surveys are needed at Longis Common as the site might be composed of several plant communities. The coordinates must be recorded for each quadrat so the survey can be repeated in the following years in order to monitor changes in vegetation.

Figure 4. Location of Mannez Pond's grasslands of interest.



Objective 1.2. *To update existing data about the presence, distribution and breeding status of the important species of LNR.*

Knowing the specific location and status of important species is essential when preserving the natural values of a site.

Although historical data exists for some LNR wildlife, the current status and distribution of some important wildlife is uncertain or not published. For example, the breeding status of LNR birds has never been assessed (two island-wide surveys were carried out in 2006 and 2010 which included LNR but also other areas around it). Similarly, some LNR plant species might actually not be present within LNR due to:

- The list having been compiled using distribution data which was last updated in 1995 so some species might become extinct (Bonnard, pers. comm.; Bonnard, 2015).
- The survey area of the botanical research from which the species list was derived including areas falling outside LNR as this list was compiled using distribution maps (last updated in 1995) which includes LNR but also other areas around it. The actual presence within LNR was only checked

for rare or threatened plants. Therefore some common, not-threatened plants might not be actually present at LNR.

In addition, very little published information exists for invertebrates, mammals or amphibians of LNR.

Therefore, species surveys are required to obtain and record up-to-date, accurate data which will serve as a baseline when reviewing the effectiveness of the management actions. This data will also help to better understand the conservation value of LNR.

ACTION 1.2.1. Identify the current locations of the important plant species listed in Table 2.

No standardized methods need to be followed. Locations found in Bonnard's distribution maps must be checked on site to confirm the important plant species are still present there. Further search around adjacent areas of confirmed locations or in similar habitats elsewhere should be carried out when possible in order to find potential new locations.

ACTION 1.2.2. Identify the current number and location of breeding, terrestrial bird species.

Following the Common Bird Census methods (Marchant, 1983), a Territory Mapping technique must be used as this provides information about the total number of breeding pairs and the areas used for nesting, foraging and roosting, unlike transect surveys such as the Breeding Birds Survey (BBS). The eastern coast should be included in this survey as this technique will be able to better assess the number of breeding pairs of coastal birds like Oystercatcher or Rock Pipit than other wetland bird surveys. This information will be necessary to identify the most sensitive areas for breeding birds and to minimize impacts when undertaking practical management work.

ACTION 1.2.3. Identify the current number and location of wintering, terrestrial bird species.

Following the Common Bird Census methods (Marchant, 1983), a Territory Mapping technique must be used as this provides information about the total number of breeding pairs and the areas used for nesting, foraging and roosting, unlike transect surveys such as the Breeding Birds Survey (BBS). This information will be necessary to identify the most sensitive areas for wintering birds and to minimize impacts when undertaking practical management work. Timing for this survey must be November – March.

ACTION 1.2.4. Identify the current number and location of breeding and wintering wetland bird species.

Due to practical difficulties, a different technique is required to survey LNR wetland birds. Areas to be surveyed are Longis and Mannez Ponds, Longis Bay and the eastern coast. The techniques to be used are:

- Following the BTO Wetland Birds Survey (WeBS) methods, a vantage point count technique must be used to survey Longis Bay in high tide, Longis Pond and Mannez Pond.
- Following the BTO Non-Estuarine Waterbirds Survey (NEWS) methods, a transect count technique must be used to survey Longis Bay in low tide.

These surveys will help understand the status of important bird species such as Oystercatcher, Curlew and Kingfisher. Both surveys must be undertaken every month to assess both wintering and breeding populations.

ACTION 1.2.5. Identify the current number of species of freshwater invertebrates, newts and frogs at Longis and Mannez ponds.

Following National Pond Survey methods (Biggs et al., 1998), a survey must be undertaken to obtain information about the freshwater communities present at Longis and Mannez ponds.

ACTION 1.2.6. Identify the current number of species of damselflies and dragonflies at Longis and Mannez ponds.

Following Dragonfly Monitoring Scheme methods, a transect count technique must be used for Longis Pond; however, due to practical difficulties, point counts must be used for Mannez Pond. Further data about breeding status of species will be provided by the pond survey (Action 6).

ACTION 1.2.7. Identify the current number of species of moths using LNR.

Following National Moth Recording Scheme methods, a moth trap must be set in several LNR habitats in order to obtain initial data about the moth community using LNR.

ACTION 1.2.8. Identify the current number of species of ground and other flying invertebrates.

Several different techniques, to be agreed prior to work commencing, must be used in order to obtain first-ever data about the invertebrate assemblages of LNR.

Objective 1.3. *To promote scientific research in LNR's ecological features.*

ACTION 1.3.1. To support and lead terrestrial and marine based academic projects within LNR.

M.Sc and undergraduate projects with York University and any other interested universities should be developed annually.

AIM 2 To conserve the natural value of LNR by preserving the diverse range of habitats and species.

Objective 2.1. *To maintain the current size and species richness of dune grasslands and coastal grasslands present at LNR.*

ACTION 2.1.1. Graze LNR dune and coastal grasslands in accordance with the specific requirements of each area.

Most grasslands are successional habitats which require some sort of disturbance to persist. In the absence of this disturbance vegetation would change over time and rank grass, scrub and trees would eventually dominate. In fully wild areas fire, grazing by wild herbivores and flooding would have been the main factors of disturbance maintaining natural grasslands. Where these disturbances no longer occur or occur in small levels, grassland must be actively managed. Traditional, extensive grazing is critical in order to maintain dune and coastal grasslands as this ensures that dominant coarser grasses and scrub do not overwhelm sensitive species (JNCC, 2004; Houston, 2008; van der Laan, 1985, Crofts & Jefferson, 1999).

The rotational grazing regime of AGAP must be continued to achieve and maintain the habitat size and species richness of dune and coastal grasslands. Recommended parameters as set by JNCC for UK dune and coastal grasslands can be used as a reference (Appendix 3).

Grazing timing should be set depending on each area's species richness, sward length and flowering period of notable species. Results from several studies about the effect of grazing intensity are compiled in Appendix 3. Bullock et al. (2001) found that after 12 years of grazing, species richness was increased by spring grazing, decreased by heavier summer grazing and unaffected by winter grazing. In addition, summer grazing helps to control tall herb species as sward productivity is high although heavy grazing pressure can remove flowers and prevent plants from setting seed (Crofts & Jefferson, 1999). Following these results, the proposed regime is:

- Spring grazing (Mar-May): small plots of high conservation value: Longis 1-4 (Mar-Apr) and Longis 5 (May) (Figure 5).
- Summer grazing (Jun-Sep): large plots of high conservation value first and then plots of low conservation value: Coast 1-2 (Jun-Jul) and Mannez Football Pitch (Ago-Sep) (Figure 5).

- Autumn and winter grazing (Oct-Feb): plots of moderate conservation value. Mannez 2 (Oct-Nov), Targets 1-2 (Dec-Feb) (Figure 5).

Figure 5. Plots to be grazed under the proposed rotational grazing regime.



It should be noted that the conservation value agreed for each area is rather subjective as botanical data is lacking in most areas. The proposed regime must therefore be reviewed as soon as NVC plant community data is available (see Action 1.1.2). This NVC surveys will provide the information to:

1. Decide which areas have the highest conservation value (based on notable species presence).
2. Avoid grazing during the flowering period of the present notable species.

A record of dates, timing and stocking levels must be kept and used when assessing management effectiveness. Where footpaths are present, public access across the grazing plots must be always ensured with stiles or equivalent.

ACTION 2.1.2. Remove rank grass growth through mechanical cutting.

Coarse, rank grasses have become dominant in areas where little grazing has been done in the past. In these areas where grazing is not practical, this overgrown grass must be removed mechanically, in order to avoid imminent extinction of important plant species (Figure 6).

Figure 6. Areas (in green) to undertake rank grass control mechanically.



It is very important to do the cut outside the breeding and flowering season (April-September) and to remove cut material from site as left thatch will enrich the soil and overwhelm sensitive plant species. Rank grass will also be controlled mechanically where grazing has little effect in maintaining habitat size and species richness. Grazing plots which would likely need additional mechanical control are Mannez 1, Mannez 2 and Football.

ACTION 2.1.3. Remove Ragwort (*Senecio jacobea*) in grazed areas through hand-pulling.

Ragwort is a native weed which contains alkaloids that are toxic to livestock if eaten. At the same time numerous insects such as butterflies, moths and bees rely on Ragwort. On Alderney Ragwort is classified as a “Mauvaise Herbe” and the landowner is obliged to remove the weed from his land.

Therefore, Ragwort must be removed entirely from AGAP areas and other frequented sites such as road verges, footpaths or amenity spaces. Plants should be hand pulled before the seeding period and in subsequent sessions due to staggered growth patterns. Chemical use must be avoided in

areas where there is cattle and public presence. All the plant material must be collected up and burned due to Ragwort's high capacity of regeneration and its seeds' long term viability.

ACTION 2.1.4. Remove new Bracken and Bramble shoots through mechanical cutting.

Where grazing has little effect on new Bracken and Bramble shoots, further control will be required through mechanical cutting in order to prevent scrub encroachment into dune and coastal grasslands (Figure 7).

Figure 7. Areas (in dark green) show where bracken control is undertaken mechanically. Area boundaries shown here are indicative only and they must therefore be checked on site, avoiding any mechanical work on already established (with nothing else growing underneath) dense Bracken/Bramble stands or pits, bunkers or buried walls. For Bramble control, no defined areas have been identified yet and it therefore should be undertaken wherever needed.

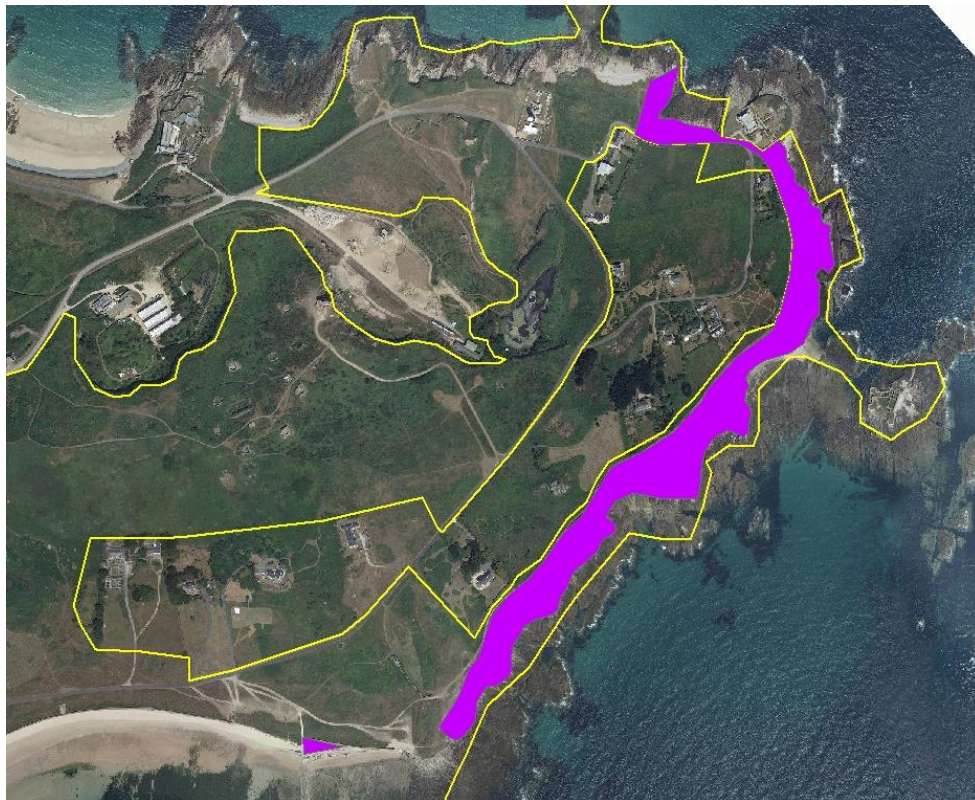


For Bramble control, it is very important to remove cut material from site as left thatch will enrich the soil and overwhelm sensitive plant species. No control will be undertaken where Bramble or Bracken has already been established, and where no grassland species grow in the understory, as this measure would be insufficient to restore grassland and scrub can serve as a wildlife refuge and nesting place. Bracken must be cut at least three times each year during its growing season for an effective control, avoiding peak breeding season or nesting areas of notable bird species. For Bramble control, cutting must be done in late summer-autumn, during its growing season but avoiding breeding and the main flowering season of sensitive plant species.

ACTION 2.1.5. Remove Hottentot Fig and other *Carpobrotus spp.* along coast through hand pulling.

Hottentot Fig (*Carpobrotus edulis*) is an invasive South African succulent plant which is spreading over coastal areas. It spreads rapidly, forming dense impenetrable mats where little else can grow (Squirrel, 2015). According to the Wildlife and Countryside Act 1981, it is an offence to grow this species in the wild in England and Wales. Other *Carpobrotus spp.* species growing in Alderney are equally invasive: *Carpobrotus acinaciformis* and *Carpobrotus glaucescens*.

Figure 8. Areas to undertake Hottentot Fig manually. Area boundaries shown here are indicative only and they may not show accurately the current distribution of the species.



The removal of Hottentot Fig, *Carpobrotus acinaciformis* and *Carpobrotus glaucescens* must continue in the coming years in order to prevent colonization in LNR dune and coastal grasslands (Figure 8). This should be pulled by hand although mechanical clearance might be needed first in areas of tall, dense grass. It is very important to ensure no fragments remain as the plant can re-grow from small bits. Due to the high capacity to regenerate and the long term viability of seeds of the species all the plant material must be removed from site and composted under tarpaulins, taking care that no part is uncovered so as not to risk its spread by birds. It is recommended to burn the plant material once it loses moisture.

Objective 2.2. *To increase tree and shrub cover of Longis Pond's surrounding vegetation whilst maintaining the current size and species richness of open water and reedbed, allowing their natural expansion into adjacent grasslands.*

Figure 9. Proposed management strategy for Longis Pond, showing areas of work: 1 – reed management, 2 – non-intervention, 3 – tree planting.



ACTION 2.2.1. Cut mechanically Longis reedbed on a five-year, rotational basis.

Similar to grasslands, reedbeds must be actively managed through water level manipulation, substrate lowering, mowing, burning and grazing in order to preserve it (Ausden, 2007). Due to limited resources and size constraints, rotational cutting is the recommended method for Longis reedbed, by which each year a small area is cut achieving a varied age structure.

Accordingly, a 1/5th of the reedbed must be cut each year by tractor in dry areas and strimmer in wet or small areas (Figure 9, plot 1). Areas to be cut cannot be predetermined as bramble encroachment greatly depends on the yearly variation of water levels. Therefore, areas within the current reedbed area where bramble is most prevalent must be identified and mapped every year. The majority of cuttings must be either burned on site or removed from site to avoid soil enrichment and give a clear ground for new reed to grow. A few piles should be left on site to provide refuge to invertebrates and amphibians. It is recommended to leave a narrow line of reed near the footpath and the pond's edge which will act as a visual barrier, avoiding disturbance by machinery and

visitors. The work must be carried out in late autumn when bird activity is at its minimum, after the main autumn migration and before winter species arrive.

Cutting times and areas will be co-ordinated with the ABO to maximise benefit, reduce disturbance by taking into account the actual migration taking place at the time of the work and to establish the best possible breeding, roosting, foraging and netting environment to benefit both the birds using the site and the ABO's monitoring of them.

ACTION 2.2.2. Remove White Poplar through hand-pulling and chemical control.

White Poplar (*Populus alba*) is native from central and southern Europe and was introduced in Britain. Due to its high spread capacity, control is required to prevent its spread across Longis Pond's surrounding habitats.

Control must be undertaken by hand-pulling for new shoots and cut-stump chemical application for older trees. The work should be carried out in autumn, avoiding breeding season and before the plant enters the dormant phase for winter. Pulled and cut trees will be removed and burned to avoid further spread.

Control effort will be undertaken with support from the ABO to reduce disturbance and make use of the labour resource provided by the ABO's resident volunteers.

ACTION 2.2.3. Plant native tree species amongst Bramble and Bracken.

Tree planting at Longis Pond is recommended in order to accelerate the vegetation succession process at Longis Pond's scrub and create a visual barrier. The best area to do so is in the Northwest corner (Figure 9, plot 2), where no reed grows and Bramble and Bracken might offer protection to seedlings (Harmer et al, 2009; Harmer & Morgan, 2005). Local soil conditions should be first identified before choosing the species to be planted. Planted tree species must be native and adapted to local conditions.

ACTION 2.2.4. Allow Elder and Bramble develop naturally.

Mature and growing Elder and Bramble don't require management to persist and therefore should be left unmanaged (Figure 9, plot 3). Once settled and grown, the planted trees at plot 2 will seed naturally in adjacent areas, creating a more diverse tree age structure than with tree planting.

ACTION 2.2.5. Assess the viability of lowering the reed bed.

Bed lowering refers to excavation of relatively large, slightly deeper areas, principally to provide open water that is relatively quickly re-colonized by swamp vegetation. Bed lowering at Longis Pond might be a more efficient management technique as Bramble would not encroach. Therefore, an expert assessment is required to consider the project viability given the existing resources and reedbed size limitations.

This aspect of the plan will be undertaken in co-ordination with the ABO to ensure delivery does not cause unnecessary disturbance of the reedbed and pond habitats.

Objective 2.3. *To develop Mannez Pond's surrounding vegetation into a wet woodland whilst maintaining the current size and species richness of open water.*

ACTION 2.3.1. Remove Rusty Sallow invading open water.

Rusty Sallow (*Salix cinerea subsp. oleifolia*) is a native tree which quickly spreads vegetatively. New shoots growing in open water must be removed to avoid further spread and the eventual loss of open wetland.

Control effort will be undertaken with support from the ABO to reduce disturbance and make use of the labour resource provided by the ABO's resident volunteers.

ACTION 2.3.2. Assess the viability of removing New Zealand Pigmyweed and Parrot's Feather.

The main problem identified in Mannez Pond to date is the uncontrolled spread of two non-native, aquatic species, in particular New Zealand Pigmyweed (*Crassula helmsii*) and Parrot's Feather (*Myriophyllum aquaticum*). Due to their high capacity of spread, both are banned from sale in the UK and according to the Wildlife and Countryside Act 1981, it is an offence to grow these species in the wild in England and Wales. Both species can outcompete native plants and can cause oxygen depletion (Lansdown, 2011). Nevertheless, some concern exists about the potential negative impacts of the removal on wildlife present and the costs involved in this. A viability analysis of removing both non-native species must therefore be first undertaken before any further management is carried out. This analysis should include:

1. Impact assessment of the proposed removal on wildlife currently using the site. The actions from Objective 1.1. will provide the ecological data needed for this.
2. Practicality of complete removal.
3. Expert advice.
4. Economical assessment of the costs involved.

This analysis will be undertaken in co-ordination with the ABO to ensure delivery does not cause unnecessary disturbance of the reedbed and pond habitats.

ACTION 2.3.3. Remove New Zealand Pigmyweed and Parrot's Feather in new colonized areas outside open water.

Control of the above mentioned species will be needed where they are spreading into adjacent water bodies or wet habitats.

A combination of herbicide treatment following shading or physical removal seems to be the only effective way to eradicate New Zealand Pigmyweed (CEH, 2004; Kelly & Maguire, 2009). Newly colonized areas in the adjacent wet areas must be sprayed with herbicide and shaded out with black plastic. Mechanical/manual removal only is not recommended as it may result in many small fragments being left in the water which make the plant spread more rapidly.

Chemical, mechanical and manual controls of Parrot's Feather all seem to be effective in different situations (CABI, 2015; Angling Trust, 2016). Manual removal of Parrot's Feather is a cheap and efficient way to eradicate it from small areas and therefore is the method to be used. Removed fragments must be covered and burned when dried. However, the method of control will only be selected after future consideration and research.

ACTION 2.3.4. Allow Bramble and Rusty Sallow to develop naturally outside open water.

Mature Rusty Sallow and Bramble don't require management to persist and therefore should be left unmanaged. Fallen trees and branches should be left on site as dead wood provides important habitat for lichens, invertebrates and mosses. New naturally established trees in already occupied, dry areas should not be removed to allow natural processes and increase screening for the wetland. Exceptional coppicing might be required to facilitate the growth of new shoots through dense stands or tall mature trees, increasing the age structure.

ACTION 2.3.5. Maintain a minimum area of open water by cutting Lesser Bullrush (*Typha angustifolia*) back.

Similar to Rusty Sallow, Lesser Bullrush is a native species which needs control to stop it from invading further open water. Control will be undertaken either mechanically or manually when water levels allow avoiding breeding season (Mar-Aug). Remains can be piled at the pond's edge to provide refuge for invertebrates and newts.

Control effort will be undertaken with support from the ABO to reduce disturbance and make use of the labour resource provided by the ABO's resident volunteers.

Objective 2.4. To maintain the current size and condition of Houmet Herbe's heathland.**ACTION 2.4.1. Remove Hottentot Fig and other *Carpobrotus* spp. through hand pulling.**

Action 2.1.5 applies here.

ACTION 2.4.2. Remove new Bracken and Bramble shoots through mechanical cutting.

Action 2.1.4 applies here.

Objective 2.5. *To maintain existing Mannez scrub to a favourable status for breeding Dartford Warblers.*

ACTION 2.5.1. To develop a management plan for Mannez gorse scrub.

Gorse starts losing its value for wildlife after 10 years, when its compactness and regeneration capacity decreases (Natural England, 2006; Taylor et al, 2003; RSPB, 2015). Data suggests that breeding Dartford Warblers select areas where gorse stands of 60-150cm dominate the vegetation (Bibby & Tubbs, 1975). Therefore management is required to keep gorse in its most favourable status for Dartford Warblers and other wildlife.

A management plan will be produced specifying the techniques and areas to be managed. Literature and expert advice will be included in this plan. First suggestions are the following:

1. The aim should be to create a mosaic of gorse age structure and keep stands younger than 10 years by cutting 1/10th of the area occupied by gorse.
2. An assessment of the impacts of the proposed management on present wildlife using the site must be first undertaken. The actions from Objective 1.1. will provide this data. Visual impact should also be considered.
3. A map specifying the areas to be cut each year should be produced. The proposed areas must exclude important stands for wildlife (e.g. nesting birds). The most mature stands should be cut first (Figure 10, plot 1).
4. Young gorse already growing on site should be included in the plan but left unmanaged until it exceeds 150cm in height (Figure 10, plot 2).
5. Work must be undertaken in winter to avoid disturbance on nesting birds.
6. Management of small areas can be done by hand and therefore be included in the Alderney Conservation Volunteers work programme.
7. Accumulated cut stumps should be removed from site to avoid soil enrichment that could help Bracken to colonise. These stumps can be sold as firewood to help cover the costs of the management.
8. The area cut must be inspected annually to monitor gorse growth and control would be undertaken if Bracken is detected.

9. Gorse enhancement in some Bramble areas should be considered in order to increase habitat connectivity between patches and total area occupied (Figure 10, plot 3). This can be achieved by Bramble clearing following seeding from local gorse. Subsidiary cutting, or other control, of any bracken to colonise cleared areas must take place.



Figure 10. Suggested areas for managing Mannez gorse. 1 – mature stands >2m, to be coppiced; 2 – young stands <1m, no intervention; 3 – scattered stands >1,5m, (to be considered) Bramble clearance and Gorse seeding.

Objective 2.6. To maintain the current size and condition of Longis open dune.

ACTION 2.6.1. Remove Hottentot Fig and other *Carpobrotus spp.* along Longis open dune through hand pulling.

Action 2.1.5 applies here.

Objective 2.7. To maintain the current habitat and species richness of LNR marine environment.

ACTION 2.7.1. Support the Marine Management group, the Alderney British Marine Life Rescue Divers group and other management activities.

When required, the recently set up Marine Management group comprising key marine users, the local British Marine Life Rescue Divers group and any other management activities happening within LNR should be supported.

AIM 3 To advance the education of the public about the natural value of LNR and promote a sustainable recreational use of it.

Objective 3.1. To maintain the current level of access and its condition.

ACTION 3.1.1. Maintain the footpath network and access.

LNR is a public open space for the local community and visitors. In order to ensure it fulfils an amenity role good access is vital throughout the year enabling a full enjoyment of the site and as part of the existing Island footpath network.

Footpath maintenance will include cutting scrub to prevent its encroachment, remove fallen branches for safety and keeping grass paths short. This will be carried out using a tractor or in less accessible sites by hand. The annual maintenance should consider the following:

- The needs for cutting of paths will depend on the rate of growth and their location. Priority will be given taking into account the level of use by the local community and the desire to encourage visitors to the site.
- Access will be kept with little formal construction as part of LNR's natural appeal, however, where ever possible cutting management will aim to ensure paths stay as level and access friendly as possible in order that they can be used by people with mobility impairments
- In the paths located around wetland where there could be flooding problems, the placement of boardwalks must be considered.
- In sensitive areas like Longis and Mannez ponds, access to open water and inside the reedbed must be restricted all year around to avoid disturbance on breeding and wintering birds.
- Regular monitoring of the access routes and infrastructures should be conducted to ensure public access during the whole year.
- Removal of a number of minor paths to reduce disturbance, possible re-routing of the path past the west of Longis Reedbank to reduce disturbance and improve reedbank development.

ACTION 3.1.2. Undertake regular litter picking and beach clean-up sessions.

Regular litter picking and beach clean-up sessions must be undertaken in order to avoid litter accumulation, especially after stormy weather.

All staff, volunteers and visitors will be encouraged to pick up as the walk through the reserve. AWT and ABO staff and volunteers will be tasked with setting an example to be seen picking up litter throughout the reserve whenever they are passing through or working within the area.

ACTION 3.1.3. Remove Ragwort through hand pulling.

Action 2.1.3. applies here.

ACTION 3.1.4. Remove Brown-tailed Moth (*Euproctis chrysorrhoea*) nests from footpaths and road verges.

The Brown-tailed Moth (*Euproctis chrysorrhoea*) is a native species the hairs of whose caterpillar can cause strong allergic reactions in people.

The control of Brown-tailed Moth nests is a service which the Alderney Wildlife Trust undertakes as part of its MoU with the States of Alderney because of the public health concern where there are high concentrations of the caterpillar. Control actions must be undertaken in order to reduce the number of Brown-tailed Moth caterpillars near frequented areas and nests found along paths, road verges and carparks must be removed and burned.

Objective 3.2. *To increase on-site signage about boundaries, wildlife present and management of LNR whilst maintaining visual impact to a minimum.*

Signage can promote a more sustainable and enjoyable recreational use of LNR by informing visitors about the ecological importance of the site, where the boundaries lie, the animals and plants present and the different management works needed to conserve these. Although in 2015 there was a significant increase in signage installed across LNR, areas which visitors use most like the Nunnery car park and Longis Common car park still lack of signage. Therefore the installation of interpretation boards must be considered in these two locations, explaining the natural values of LNR and encouraging visitors to use the site respecting these values. This effort will be co-ordinated with the ABO, SoA and Alderney Society to maximize benefit whilst minimizing the number of signs actually deployed. Where ever possible these will be made out of natural materials and contained within information points which make the signs less visible to the public for a distance.

Objective 3.3. *To maintain Longis and Mannez birdhide facilities.*

The annual work programme must include managing facilities and opportunities for recreation, so that people can continue enjoying LNR's natural values. Maintenance work must ensure safe access. These will include a major overhaul of the Longis Hide scheduled at the time of drafting for the winter of 2016/17. The reserves bird hides must be kept clear of soil and vegetation, and steps and ramps made safe for visitors. Reed and Lesser Bullrush growing immediately in front of the bird hides must be regularly cut to ensure a view is maintained, avoiding the use of power tools during breeding season (Mar-Aug). Provision of interpretation should be inspected regularly and any damage repaired and the contents updated when necessary. Birdfeeders at Longis Pond must be topped up when needed.

Maintenance effort will be undertaken with support from the ABO to reduce disturbance and make use of the labour resource provided by the ABO's resident volunteers.

Objective 3.4. *To involve the community in regular events and activities.*

- Increase involvement of local community in conservation within their own land. This could mean increasing environmental awareness for horse owners, engaging land owners to manage their land with conservation in mind, or promoting wildlife gardening.
- Provide opportunities for local community and interested people to get involved in practical conservation work through Alderney Conservation Volunteers sessions and wildlife monitoring through public ecological surveys.
- Co-ordinate educational events with the ABO to gain maximum value for effort.
- Hold events annually to engender an environmental culture such as:
 - World Wetland Day
 - Bioblitz
 - WATCH
 - Birdwalks
 - Beach clean-up
 - Rockpooling

• MONITORING

Monitoring is a vital stage of any management plan when assessing effectiveness of it through the observation of how features of interest respond to the management actions. Monitoring must provide the data needed when reviewing the present management plan (see section 7).

.1. TERRESTRIAL

Table 3 shows the core surveys which must be carried out to monitor LNR terrestrial features. For each terrestrial feature, it outlines the proposed survey methods, time and frequency. The surveys described in Objectives 1.1. and 1.2. in the Implementation section are also included here as they will provide the baseline data for the monitoring. Giving the existing time and staff constraints, some surveys cannot be undertaken as frequently as recommended by experts (e.g. yearly surveys for breeding birds), therefore the suggested frequency for LNR core surveys is 5 years.

Table 3. Core surveys to be undertaken in order to monitor LNR terrestrial features.

Survey	Method	Time	Frequency	Notes
Terrestrial habitats	Habitat mapping following JNCC Phase 1 Habitat Survey (JNCC,2010)	April-October, one visit	Every 5 years	
Plant communities	2x2m quadrat sampling following JNCC National Classification System (NVC; Rodwell, 2006). 5 fixed quadrats per habitat.	May-July, one visit	Every 5 years	Only for dune grassland, coastal grassland, reedbed, dune scrub, saltmarsh, open dune, crevice, heathland and Mannez Pond's adjacent grasslands.
Breeding Birds	Territory mapping following Common Bird Census (CBC; Marchant, 1983)	April-June, 3 visits per month	Every 5 years	
Wintering Birds	Territory mapping following Common Bird Census (CBC; Marchant, 1983)	November-March, once a month	Every 5 years	
Wetland Birds	Vantage point count following Wetland Bird Survey (WeBS; BTO).	All year	Every 5 years	Once a month. Longis and Mannez ponds.
Bird Presence	Constant Effort ringing from various net rides throughout the LNR	All year round with special effort in Spring and Autumn Migrations	Every year	Run by the ABO
Freshwater invertebrates	3 min sweep-netting following National Pond Survey (NPS; Biggs et al., 1998)	March-May (1 st visit) June-August (2 nd visit),	Every 5 years	

		September-November (3 rd visit), December-February (4 th visit).		
Water Quality	Max. pond depth, turbidity, pH, T ^o C, conductivity	March-May (1 st visit) June-August (2 nd visit), September-November (3 rd visit), December-February (4 th visit).	Every 5 years	Every three months. If resources allow, measure other important parameters such as nitrates, dissolved oxygen, ammonia or metals. Survey can be done simultaneously with freshwater inverts.
Dragonflies and damselflies	Transect survey following Dragonfly Monitoring Scheme (BDS; Smallshire et al., 2010)	May-September, every month	Every 5 years	
Terrestrial invertebrates (other)	Pitfall trapping, pan trapping, sweep netting	April-June (1 st visit), July-September (2 nd visit).	Every 5 years	2 visits to record both spring and summer species.
Moths	Light trapping	Summer, several visits	Every 5 years	
Butterflies	Transect count following UK Butterfly monitoring scheme (UKBMS)	March-October, weekly	Every 5 years	Already on going every year.
Bats	Field and roost surveys following BCT National Bat Monitoring Programme (BCT NBMP)	June (roost survey) July (2 visits, field survey)	Every 5 years	Field surveys already on going every year.
Small mammals	Longworth trapping following JNCC National Monitoring Scheme for Small Mammals (Sibbald et al., 2006)	May-June (1 st visit), November-December (2 nd visit).	Every 5 years	

However, in years when staff and time availability allows, it is strongly recommended to repeat the surveys listed in Table 3 (excluding Phase I Habitat and plant communities surveys) as one-every-5-years surveys can be skewed by annual, natural fluctuations of animal populations. More frequent surveys will also allow review the effectiveness of this plan as one-every-5-years surveys would only provide one set of data for the plan period.

For Breeding and Wintering Birds, transect counts and not territory mapping are recommended for these additional surveys as these are easier to carry out (Table 4). However, core surveys must be done following the territory mapping technique as this allows a much more detailed assessment of species breeding status, nesting habitat and number of breeding pairs than the transect count technique.

Table 4. Method to be used for the additional Breeding and Wintering Birds surveys (subject to time/staff available).

Survey	Method	Time	Frequency	Notes
Breeding Birds	Transect count following Breeding Bird Surveys (BBS BTO)	April-June, two visits.	Every year	
Wintering Birds	Transect count following Breeding Bird Surveys methods (BBS BTO)	November-March, once a month	Every year	Following same technique as for Breeding Bird Surveys.

.2. MARINE

Table 5 shows the surveys which must be carried out to monitor LNR marine features. For each marine feature, it outlines the proposed survey methods, time and frequency. Survey methods may change over time due to new sampling techniques, available funding or resources (i.e. boat access) and weather/tide restrictions. A review of all these surveys may be undertaken in 2018-2019, to assess their efficiency.

These proposed surveys are managed under the Alderney Living Seas Programme (ALSP). The aims of the Alderney Living Seas Programme are:

- To support existing, and future projects or management plans with similar objectives associated to the conservation of the island's marine environment and beyond;
- To focus on investigating the island's marine species and habitats, to improve our knowledge of the island's marine environment; and
- To develop links with marine users and the public to share the knowledge of Alderney's important marine environment and raise the profile of ALSP.

It should also be noted that some of the marine feature surveys will be completed across other locations on Alderney at the same time (i.e. eelgrass surveys completed within the Ramsar Site). This is to help support the aims of the Alderney Living Seas Programme.

Table 5. Surveys to be undertaken in order to monitor LNR marine features.

Survey	Method	Time	Frequency	Notes
Intertidal habitats	Mapping using aerial photographs, following JNCC Intertidal Resource Mapping using Aerial Photographs (Davies et al, 2001)	April-October	Every 4 years	
Phase II Species monitoring survey	Following JNCC Littoral Monitoring using Fixed Quadrat Photography (Davies et al, 2001)	April-October	Every 4 years	
Wetland Birds	Vantage point count following Wetland Bird Survey (WeBS; BTO) and transect count following Non-Estuarine Wetland Bird Survey (NEWS; BTO)	All year	Every 5 years (yearly when resources allow)	Once a month. Vantage point count for Longis Bay at high tide, transect count for Longis Bay at low tide.
Eelgrass (<i>Zostera marina</i>)	Video habitat and species assessment of eelgrass and associated species (using snorkel and Go-Pro video techniques).	July-September	Annual	
Green Ormer (<i>Haliotis turberculata</i>)	Assess ormer presence, shell size and quality in conjunction with La Societe Guernesaise.	April and October	Annual	It can be undertaken as a citizen science project.
Grey Seal (<i>Halichoerus grypus</i>)	Photographic ID catalogue following guidance from Cornwall Seal Group Research Trust.	All year	Annual	
Strandline	Assess strandline presence, size and composition (dead, live and litter content).	July-August	Annual	
Pelagic Water Quality	Key seawater parameters sampling (parameters TBC due to funding availability).	March-October	Annual	
Marine Mammals (constant effort)	Effort based land/boat surveys following Seawatch Foundation survey methods (Sea Watch Foundation, 2016).	April-October	Annual	
Marine Mammals (public sightings)	Marine user/public marine recording strategy, following SWF survey methods and collating records from the public (Sea Watch Foundation, 2016).	All year	Annual	
Capturing our Coast survey	Following Capturing our Coast methods.		Annual	This project includes general quantitative information of intertidal species and invasive species and can be undertaken as a citizen science project.
Seasearch survey	Scuba diving		Annual	Liaise with and support regional Seasearch group to conduct scuba diving ecological surveys.

.3. MONITORING PROGRAMME

Table 6. Monitoring programme for LNR. It is also strongly recommended to repeat the terrestrial animal surveys in years when resources allow.

Survey		2017	2018	2019	2020	2021
TERRESTRIAL	Terrestrial habitats					
	Plant communities					
	Breeding birds					
	Wintering birds					
	Wetland birds (Longis & Mannez ponds)					
	Freshwater invertebrates					
	Water Quality					
	Damselflies & dragonflies					
	Other terrestrial invertebrates					
	Moths					
	Butterflies					
	Bats					
	Small mammals					
	Intertidal habitats					
MARINE	Phase II Species monitoring survey					
	Wetland birds					
	Eelgrass					
	Green Ormer					
	Grey Seal					
	Strandline					
	Pelagic Water Quality					
	Marine Mammals (constant effort)					
	Marine Mammals (public sightings)					
	Capturing our Coast survey					
	Seasearch survey					

• **MANAGEMENT PLAN USE AND REVIEW**

This Management Plan covers the five year period from 2017 to 2021 and has been prepared by the AWT in discussion with the States of Alderney and the stakeholders with interest in the LNR area.

A public consultation will be run prior to the plan's publication and all relevant comments received from both stakeholders, and the general public, will be considered and integrated into the plan. A clearly described comments section will be appended to the plan so that the States of Alderney can review the comments received from the public consultation and how they have been integrated into the final document.

After the public consultation the States of Alderney, through the GSC, and other private landowners with interests in the LNR, will be given a final opportunity to feed into and subsequently approve the final LNR Management Plan 2017-21.

Annual review

The aims and objectives of the plan will be reviewed annually by the AWT staff and specific ANNUAL ACTION PLANS prepared for consideration and approval by the GSC. These action plans will describe:

- The aims and objectives to be met from the LNR Management Plan as a whole
- The annual programme of works
- The methodologies in use
- The resources required

The annual plans will be reviewed towards the end of each year and the results of the work for that year presented to GSC in an annual review, alongside the following year's annual plan.

In the final year of the 5-year cycle the work of the previous 5 years as a whole will be reviewed and the results presented to the GSC, alongside outline proposals for the new 5 year management plan for the reserve.

Resources

Whilst the AWT is committed to the management of the LNR to meet the objectives of this 5-year plan, it is still a charity with limited income and staffed largely by volunteers. The mechanisms for delivering this plan are diverse and historically include limited cost of materials support in some areas from the States of Alderney; however, much of the work is dependent on project-by-project fundraising, or the organisation's limited capital reserves. Therefore AWT recognises the 'Longis Nature Reserve Management Plan 2017-22' as an aspirational document, which it commits to deliver wherever resources allow.

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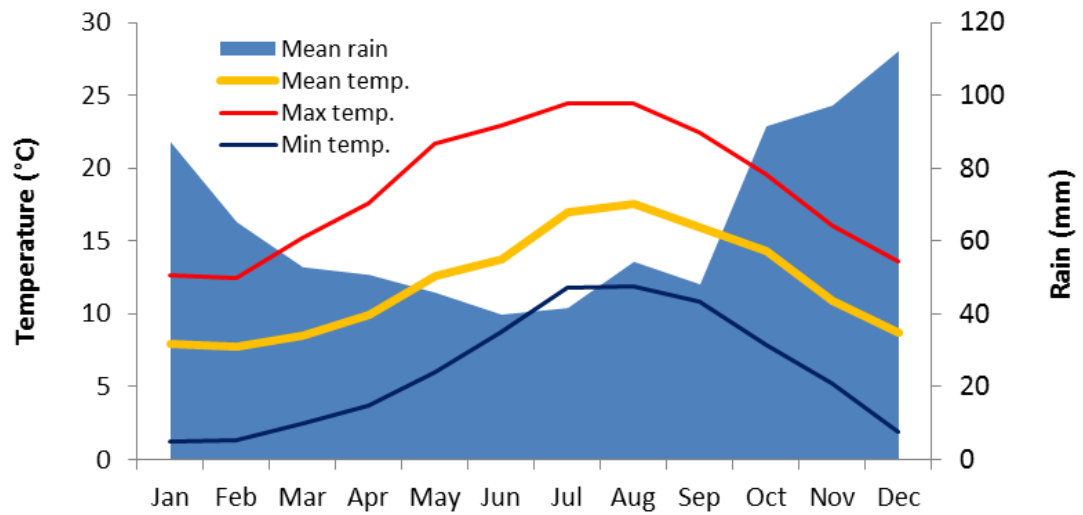
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• APPENDICES

APPENDIX 1 – ALDERNEY CLIMATE



APPENDIX 2 – CONSERVATION STATUS AND LEGAL PROTECTION OF LNR SPECIES

The lists compile all LNR species of interest due to their conservation status or for being protected in the UK and Europe by UK BAP and EU Habitats Directive. Terminology for conservation status differs between groups because different criteria are used for the assessment by their respective environmental bodies. UK/EU conservation status or legal protection columns are not shown when no assessment exists or the species is not under conservation concern.

Table 7. Flora present at LNR of interest due to their conservation status, rarity or legal protection. Status has been taken from Cheffings & Farrell (2005) and the Botanical Society of Britain & Ireland assessments.

English name	UK status	UK BAP	English name	UK status	UK BAP
Small-flowered Catchfly	EN & NS	Yes	Bermuda-grass	NR	
Alderney Sea-lavender	Not Present		Four-leaved Allseed	NR	
Land Quillwort	VU & NR		Orange Bird's-foot	NR	
Sand Catchfly	VU & NR		Small Restharrow	NR	
Sand Crocus	VU & NR		Sharp Rush	NS	
Small Hare's-ear	VU & NR		Autumn Squill	NS	
Yarrow Broomrape	VU & NR		Bastard-toadflax	NS	
Dodder	VU		Clustered Clover	NS	
Nettle-leaved Goosefoot	VU		Dune Fescue	NS	
Smooth Cat's-ear	VU		Golden Samphire	NS	
Nottingham Catchfly	NT & NS		Hairy Bird's-foot-trefoil	NS	
Slender Bird's-foot-Trefoil	NT & NS		Least Soft-brome	NS	
Allseed	NT		<i>Bromus hordeaceus subsp. thominei</i>	NS	
Autumn Lady's-tresses	NT		Suffocated Clover	NS	
Common Cudweed	NT		Western Clover	NS	
Eelgrass	NT		White Horehound	NS	
Green-winged Orchid	NT				

Legend for Status: EN, Endangered; VU, Vulnerable; NT, Near Threatened;; NS, Nationally Scarce; NR, Nationally Rare.

Table 8. Bird species annually present at LNR and of interest due to their conservation status, rarity or legal protection. Status for UK and EU has been taken from Eaton et al. (2015) and BirdLife International (2015).

English name	UK status	EU status	UK BAP	EU Habitats Directive
Curlew	Red	VU	Yes	
Herring Gull	Red	NT	Yes	
Redwing	Red	NT		
Cuckoo	Red		Yes	
Fieldfare	Red			
Grasshopper Warbler	Red		Yes	
House Sparrow	Red		Yes	
Linnet	Red		Yes	
Ring Ouzel	Red		Yes	
Ringed Plover	Red			
Shag	Red			
Skylark	Red		Yes	
Song Thrush	Red		Yes	
Spotted Flycatcher	Red		Yes	
Starling	Red		Yes	
Whimbrel	Red			
Whinchat	Red			
Woodcock	Red			
Yellow Wagtail	Red		Yes	
Coot		NT		
Kingfisher	Amber	VU		Yes
Oystercatcher	Amber	VU		
Dartford Warbler	Amber & Rare	NT		Yes
Meadow Pipit	Amber	NT		
Razorbill	Amber	NT		
Common Tern	Amber			Yes
Marsh Harrier	Amber			Yes
Mediterranean Gull	Amber			Yes
Sandwich Tern	Amber			Yes
Black-headed Gull	Amber			
Brent Goose	Amber		Yes	
Common Sandpiper	Amber			
Dunlin	Amber			
Duncock	Amber			
Great Black-backed Gull	Amber			
Grey Plover	Amber			
House Martin	Amber			
Kestrel	Amber			
Lesser Black-backed Gull	Amber			
Mallard	Amber			
Reed Bunting	Amber		Yes	
Shelduck	Amber			
Shoveler	Amber			
Snipe	Amber			
Swift	Amber			
Teal	Amber			
Turnstone	Amber			
Wigeon	Amber			
Willow Warbler	Amber			
Cetti's Warbler	Rare			
Fan-tailed Warbler	Rare			

Legend for Status in Europe: VU, Vulnerable; NT, Near Threatened.

Table 9. Butterflies, dragonflies, damselflies, moths and mammals present at LNR and of interest due to their conservation status, rarity or legal protection. Status has been taken from Fox et al. (2010, butterflies),

the Bat Conservation Trust (2014, bats), the NBN Gateway distribution maps (moths and damselflies), the JNCC UK priority species pages (moths) website and Wembridge (2011, hedgehogs).

English name	UK Status	UK BAP	EU Habitats Directive	English name	UK Status	UK BAP	EU Habitats Directive
Butterflies				Sand Dart	S		
				Forester	S & D	Yes	
Glanville Fritillary	EN & R	Yes		Narrow-bordered Five-spot Burnet	S		
Grayling	VU	Yes		Cream-spot Tigeeer	S		
Wall	NT	Yes		Clouded Buff	S		
Small Heath	NT	Yes		Bordered Sallow	S		
Queen of Spain Fritillary	R			Bordered Straw	S		
Long-tailed Blue	R			Scarce Bordered Straw	S		
Large Tortoiseshell	R			Pale Shoulder	R		
Dragonflies & damselflies				Four-spotted	S & D	Yes	
Willow Emerald Damselfly	R			Striped Hawk	S		
Moths				Death's Head Hawk	S		
Jersey Emerald	NP			Speckled Footman	R & D	Yes	
Spanish Carpet	NP			Red-necked Footman	S		
Horse Chestnut	R			Mammals			
Grass Eggar	R			Common Pipistrelle			Yes
Gypsy Moth	R			Soprano Pipistrelle		Yes	
Barrett's Marbled Coronet	R			Nathusius Pipistrelle	R		
White Spot	R & D	Yes		European Hedgehog		Yes	
Orache	R			Greater White-toothed Shrew	R		
Cream-boredred Green Pea	S						

Legend for Status: EN, Endangered; VU, Vulnerable; NT, Near Threatened; NP, Not Present; R, Rare; S, Scarce; D, Declining.

APPENDIX 3 – SUGGESTIONS FOR HABITAT CONDITION AND STOCKING LEVELS FOR DUNE AND COASTAL GRASSLANDS

Table 10. Guidelines for monitoring UK dune and coastal grasslands as recommended by JNCC (2004) and stocking levels, retrieved from different sources (cited on text). These habitat targets and stocking levels must be used as a reference only.

Habitat	Habitat condition targets	Stocking levels
Dune grassland	<ul style="list-style-type: none"> - Bare ground or sand present, but no more than 10% total area. - 30-70% of sward to comprise species-rich short turf, 2-10 cm tall. - Typical species to be present for Calcareous dune grasslands (SD7,8,9,19): <i>Aira praecox</i>, <i>Arrhenatherum elatius</i> (SD 9 only), <i>Astragalus danicus</i>, <i>Carex arenaria</i>, <i>Carex flacca</i>, <i>Cerastium fontanum</i>, <i>Crepis capillaris</i>, <i>Cladonia</i> spp., <i>Erodium cicutarium</i>, <i>Euphrasia officinalis</i>, <i>Festuca rubra</i>, <i>Galium verum</i>, <i>Geranium molle</i>, <i>Hypnum cupressiforme</i>, <i>Hypochaeris radicata</i>, <i>Linum catharticum</i>, <i>Lotus corniculatus</i>, <i>Luzula campestris</i>, <i>Odontites verna</i>, <i>Ononis repens</i>, <i>Peltigera</i> spp., <i>Pilosella officinarum</i>, <i>Plantago lanceolata</i>, <i>Prunella vulgaris</i>, <i>Rhinanthus minor</i>, <i>Rhytidadelphus squarrosus</i>, <i>Rhytidadelphus triquetrus</i>, <i>Thymus praecox</i>, <i>Tortula muralis</i>, <i>Trifolium repens</i>, <i>Sedum acre</i>, <i>Veronica chamaedrys</i>, <i>Viola canina</i>, <i>Viola riviniana</i>, <i>Viola tricolor</i>. - Communities with <i>Carex arenaria</i> are typical on blowouts or areas revegetating after secondary disturbance. 	As low as 0.06-0.3 animals per ha. If the vegetation is rank and neglected then for an initial period 3-4 times higher stocking levels are needed (Boorman & Boorman, 2001).
Coastal grassland	<ul style="list-style-type: none"> - Maritime sward <10cm tall. - At least two other desirable maritime species should be recorded at least from 21-40% of stops throughout the sward (occasional): <i>Anthyllis vulneraria</i>, <i>Armeria maritima</i>, <i>Crithmum maritimum</i>, <i>Daucus carota gummifer</i>, <i>Hyacinthoides nonscripta</i>, <i>Plantago coronopus</i>, <i>P. maritima</i>, <i>Silene uniflora</i> or <i>Scilla verna</i>. - The following species should be not recorded more than in 1-20% of stops (rare): <i>Cirsium arvense</i>, <i>Cirsium vulgare</i>, <i>Lolium perenne</i>, <i>Rumex obtusifolius</i>, <i>Rumex crispus</i>, <i>Senecio jacobaea</i>, <i>Trifolium repens</i>, <i>Urtica dioica</i>. - In exposed situations broadleaved grasses such as <i>Agrostis stolonifera</i>, <i>Dactylis glomerata</i> and <i>Holcus lanatus</i> should be sub-dominant to <i>Festuca rubra</i>. 	<p><u>Calcareous grassland</u></p> <p>4 animals/ha during 8 weeks.</p> <p><u>Neutral grassland</u></p> <p>6 animals/ha during 8 weeks.</p> <p><u>Acidic grassland</u></p> <p>3 animals/ha during 8 weeks.</p> <p>(Crofts & Jefferson, 1999)</p>

APPENDIX 4 – STATES OF ALDERNEY; ALDERNEY STATES’ ESTATE MANAGEMENT POLICY

1. Introduction

Between 2013 and 2015 the States of Alderney (SoA), and other on and off island partners, ran a joint tourism project aimed at identifying and exploiting the Island’s key historic and natural assets, through Heritage and Wildlife Tourism, for the benefit of the island as a whole. This project successfully developed a new approach to the marketing of Alderney, created new facilities, improved existing infrastructure (to the benefit of visitors and residents alike) and established cooperation between the partners involved.

The project did expose the lack of a States of Alderney Estate Management Policy, and there were examples of duplication of effort and inefficient use of resources between the States’ work force and volunteer labour from local NGOs (principally the AWT), which this paper addresses.

Agreeing an Estates Management Policy and directing the development of the Management Plans that will sit underneath it is a highly cost-effective way to manage the estate to deliver strategic objectives, while securing better value for taxpayers in the public services delivered.

2. Aim

For the States and its partner NGOs to work collaboratively to ensure Alderney’s built and natural heritage resources (both terrestrial and marine) are conserved, sustainably managed and developed, in order to grow visitor numbers, improve visitor experience and enhance the quality of life of island residents, in line with States’ strategic goals relating (inter-alia) to Economic Development and Land Use Planning.

N.b. this aim will be met through the co-ordination (i.e. prevention of duplication) and adaptation of existing land management effort expended by the SoA and other partner organisations and where necessary, resources allowing, new effort.

3. Objectives:

I. To review all relevant areas of existing Estate management including Public Green Spaces, Cambridge Battery and Bibette Head sites, the Ramsar Site, Community Woodland, and Island Nature Reserves for the purpose of developing them to meet the aims of this policy, whilst reducing duplication of effort.

II. To ensure the island’s existing infrastructure (e.g. footpaths, car parks, litter and dog bins) is maintained, or where necessary improved upon, with support of all relevant SoA departments and other partners.

III. To consider new opportunities to develop the island’s heritage and natural resource to meet the aims of this policy.

IV. To create the necessary mechanisms to ensure that work is developed in co-ordination with the relevant States’ Departments, and all other groups who are willing to support this policy to ensure its success.

V. To establish simple measures for the use and enjoyment of Alderney’s natural and built heritage, by both visitors and residents (i.e. questionnaires, visitor counts), to enable the monitoring of this policy’s success.

4. Enabling and Assessment

This policy will be enabled and monitored through the following mechanisms:

I. A Joint Working Group (JWG), which will be responsible for meeting the aims and objectives of this policy and which will include:

- a. SoA Management Team – Economic and Business Development Officer, Technical Services Officer, Economic Development Officer
- b. SoA Agricultural Team Manager
- c. Any other partners co-opted by the JWG*

II. Estate management plans (EMPs), through which the aims and objectives of this policy will be delivered. These EMPs will be developed collaboratively by SoA, and any other partners co-opted by the JWG. They will incorporate existing management plans i.e. Ramsar and annual verge cutting programme. The EMPs will be developed using an agreed planning template, the format of which will be agreed by the JWG and will:

- a. Be established on a priority basis
- b. Be open to public consultation, through a framework agreed by the JWG
- c. Have clear goals which can be monitored and reported on to the JWG on an agreed schedule

III. The creation of a simple channel of communication between the JWG, SoA Tourism/Marketing/Heritage Department and any other stakeholders identified by the JWG, to ensure an appropriate feedback loop is established between Estate Management and the Stakeholders.

IV. A simple reporting process by which the JWG can show the achievements of the policy to the relevant Committees of the SoA and other partners on an annual basis.

5. Definitions and Terminology

I. **Estate** – the terrestrial and marine environments under the management of the partners represented by the JWG. This includes its physical and cultural heritage features as well as its infrastructure and biodiversity (recognised as its habitats and associated species)

II. **Built Heritage** – includes both its cultural heritage (i.e. that heritage which has come from the human occupation of the island over time including language, customs and population structure) and its built heritage, (e.g. its buildings, monuments and topography where it has been altered by man)

III. **Natural heritage** – the natural environment, both terrestrial and marine, inclusive of its physical features (e.g. tidal flows, cliffs, intertidal reefs) and its biodiversity (e.g. its habitats and associated species)

IV. **Public Green Spaces** – those areas of the SoA Estate cared for by the Land Management Team and other relevant departments of the SoA, including Braye, Platte Saline and Mannez Commons, footpaths and Garden Areas (e.g. St. Anne's Churchyard and Memorial Gardens).

V. **Cambridge Battery Fort Tourgis** – the area of the Battery, its features (historic and natural) and its approaches

VI. **Bibette Head** – the area of headland its features (historic and natural) and its approaches

VII. **Ramsar Site** – The Alderney West Coast and Burhou Islands Ramsar Site, inclusive of Burhou and its associated reefs, Les Etacs and Ortac and the coastline up to the spring high water mark from Platte Saline's western edge to directly north of Les Etacs as described in the official Ramsar Map. This area is subject to a 5 year management strategy adopted by the SoA and administered by the AWT

VIII. **Community Woodland** – the areas described as Les Rochers and identified with the Alderney Community Woodland (ACW) Management Plan, adopted by the SoA. This area includes infrastructure and signage **The Longis and Vau du Saou Nature Reserves** – areas adopted as nature reserves by the AWT, consisting of SoA and privately owned land and which are managed under 5 year management plans

IX. **Quality of Life** – Understood to be all aspects of the natural and built heritage environment which support the day-to-day and long-term wellbeing of island residents inclusive of recreational, amenity and business activities.

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