

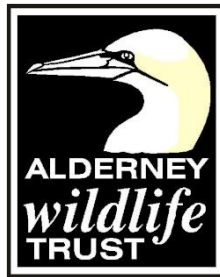
# Longis Nature Reserve Annual Review 2021

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## Executive summary

The purpose of this document is to provide a summary of the key works which have taken place over the course of 2021 to sustain Longis Nature Reserve (LNR) as a key environmental and social resource for the island. All action is underpinned by three key aims; to increase our understanding of the natural value of the reserve; to undertake practical management of the site in order to maintain the diverse range of important habitats; and to encourage access and engagement on the site and Alderney as a whole. Key actions include:

- Continuation of the Alderney Grazing Animal Project (AGAP) for the maintenance of the species rich coastal and dune grassland; two of the most valuable habitats to Alderney. Collaboration with Kiln Farm to sustain the vital conservation grazing work.
- In-depth ecological study of the reserve to assess the natural value and to evaluate the management success. Key Alderney flagship species, including the Dartford Warbler, Sand Crocus, Glanville Fritillary and Alderney Sea-lavender are present on the reserve. 161 bird species were recorded on the site.
- Reedbed management at Longis and Mannez Ponds to sustain a healthy reedbed, as well as areas of open water for invertebrates and prevent encroachment of Bramble, Willow and White Poplar for the benefit of rare species such as Water Rail and Fan-tailed Warbler which rely on an open water habitat.
- Control of invasive species, such as Sour Fig which outcompetes native species including Marram grass. Training of staff and volunteers on mapping Sour Fig using ARCGIS Fieldmaps.
- Engagement with the community through various projects including citizen science marine studies, twice-weekly volunteer sessions and community beach cleans. Benefits to mental and physical health from outdoor activities are well-documented.

Whilst the majority of the targets set out in the 2021 action plan have been achieved, there have been some delays caused by COVID-19 and related issues. The following key recommendations are priorities to be incorporated into the 2022 Action Plan, as well as the proceeding 5-Year Action Plan which is due for renewal this year.

- Undertake a review of current grassland management through analysis of Phase 1 Habitat surveys to ensure optimum positive impact on species-rich grassland habitats.
- Surveys in 2019, 2020 and 2021 established that dragonfly and damselfly populations in Mannez Pond have seen reductions, potentially due to the loss of open water; it is recommended that sections of reed mace are cleared in early 2022. It is also recommended that funding be secured to restore and improve the dam at Mannez, in summer 2022.
- Collaboration with the SoA to develop Invasive Non-Native Species (INNS) Policy and species control and ensure footpath maintenance works are efficient and effective.
- Community Engagement to raise awareness of the reserve and the importance of Conservation Volunteering in its future, through monthly volunteer spotlights and events.

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## Introduction

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This document will evaluate the delivery of the work programme as laid out in the Longis Reserve Management Plan 2017-2021 (Manzano-Rubio & Whyte 2017) and the 2021 Annual Action Plan (Harper 2021). As with 2020, COVID-19 has disrupted the work programme with limited work being possible between late January and early March because of a Bailiwick wide lockdown. This affected planned cuts around Longis pond Action 2.2.2 (see figure 8) and water high point reedbed survey Action 1.2.1. While most of the essential work was carried out as normal this year, it is important the upcoming winter is utilised to contact a number of active management activities. Notably scrub and bracken control, reed bed cuts, and sour fig removal from private land adjacent to Longis common.

This review will examine the successes and failures of the management and action plans and provide recommendations for future management. It is intended as a companion piece to its corresponding Annual Action Plan, and as such, is designed to mirror its layout and structure.



**Figure 1** Boundaries of Longis Reserve

## Background

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The Longis Nature Reserve (LNR) is Alderney's oldest and largest reserve. Located at the eastern end of the island, Fig.1., it comprises approximately 105Ha of various habitats of conservation importance including high energy intertidal shore, species-rich grassland, freshwater pools with reedbeds and coastal heathland. Established in 2003 under a Memorandum of Understandings and agreements between the Alderney Wildlife Trust (AWT), the States of Alderney (SoA) and several private landowners, the AWT manages the site for the purpose of wildlife conservation ensuring established public use of the site is not affected unduly.

The Longis Reserve Management Plan (LRMP) (Manzano-Rubio and Whyte, 2017) is the primary management tool defining the main aims guiding the long-term management of the Longis Reserve. The specific guidance for 2021 will be further informed by the 2020 Action Plan and Review (Marceau, 2020a, 2020b).

**AIM 1:** To increase the knowledge about the natural value of the Longis Reserve and its importance within both local and international context.

**AIM 2:** To conserve the natural value of the Longis Reserve by preserving the diverse range of habitats and species.

**AIM 3:** To advance the education of the public about the natural value of the Longis Reserve and promote a sustainable recreational use of it.

## Objectives

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Within each of the main aims laid out in the LRMP, there are a series of key objectives. To work towards these objectives (listed below), a series of actions will be undertaken in 2021. The success of these objectives will be evaluated against each area of work throughout this document.

**Objective 1.1** To update existing data about the size and condition of the important habitats of the Longis Reserve.

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

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

**Objective 2.1** To maintain the current size, plant communities and species richness of dune grasslands and coastal grasslands present within the Longis Reserve.

**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 and encouraging 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 Herbé'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 the Longis Reserve's marine environment.

**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 the Longis Reserve whilst maintaining visual impact to a minimum.

**Objective 3.3** To maintain and if possible, enhance the existing infrastructure i.e. Longis and Mannez bird hide facilities.

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

## Work Programme Review

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The following sections are numbered according to the actions described in the 2021 Action Plan. Work undertaken this year will be detailed in this section, and recommendations will be made for the 2021 Action Plan.

An updated Gantt chart detailing the timetable of works for 2021 is presented in Appendix 1.

### 1. Ecological surveying and monitoring

The 2021 survey effort was largely successful with support from the Outreach Officer, Ecologist, Avian Ecologist, Ramsar Officer and Lindsay Pyne ensuring that all planned surveys were completed to a high standard. Survey conditions were not optimal on several occasions so timings had to be altered to allow for survey completion.

**Objective 1.1** seeks to update the existing data about the size and condition of the important habitats of the Longis reserve. To achieve this the following actions are proposed for 2021:

#### Action 1.1.1 Phase 1 Surveys

The most recent Phase 1 Habitat Survey of Longis reserve was carried out in 2019 with the intention of using it as a comparison to the first Phase 1 survey of the site conducted in 2010. This was hoped to allow for the identification of changes in habitat types within the reserve and to evaluate the impacts of conservation action and the Alderney Grazing Animals Project (AGAP). However, a comparison is still in need of completion.

**An action that still needs to be addressed.** A desk-based comparison of the 2010 and 2019 surveys must be completed by the beginning of 2022 or the 2019 survey will be too dated to draw valid conclusions. Furthermore, forthcoming surveys should focus on following the UKHab methodology which offers greater classification detail and comparison with EU habitat surveys.

Recommendations for late 2021/2022:

- Compare the updated Phase 1 map to previous versions to identify changes in habitat types and to inform where conservation actions such as scrub control are particularly necessary.

- Compare the updated maps to previous versions to assess land use changes and the success of management actions.
- Use updated map to evaluate the AGAP strategy.
- Ensure that a UKHab survey is conducted across the site by either the Conservation officer or terrestrial ecologist.

**Objective 1.2** seeks to update the existing data about the breeding status and presence of the important species of the Longis Reserve. To achieve this the following actions are proposed for 2021:

#### **Action 1.2.1 Reedbed monitoring**

Systematically monitoring the health of Longis reedbed and the species diversity within it is important for informing the long term management strategy of the area. As of 2019 a standardised reedbed monitoring plan has been implemented (Sydanmaa, 2019).

The COVID-19 lockdown experienced in February of 2021 prevented the survey of the reedbed at the highest water level of the year. However, the lowest water level survey was completed on the 25th August 2021. A survey form was built in ArcGIS online and used in the ESRI Field Maps mobile application. The method worked well with inputted data automatically updated to the ArcGIS cloud where they can be downloaded for offline use.

Recommendations for 2022:

- Complete reedbed monitoring transects at the highest (February) and lowest (August) water levels of the year.
- Continue to use ArcGIS online and Field Maps to collect the data, downloading the data to the server upon completion.

#### **Action 1.2.2 Bat monitoring**

Before 2021 there was already an established bat monitoring route through the reserve (Fig. 1), set up following the National Bat Monitoring Programme (NBMP) guidelines and methodologies. The launch of the Bailiwick Bat Survey from 2021 to 2024 has increased the scale and accuracy of bat recording within the site.

Increased bat monitoring across the reserve has offered us a much clearer picture of the species using the site. Although not previously record on the island, both Daubenton's and Lesser horseshoe bats were picked up in the surveys. Expert verification needs to be sought to ensure these records can be treated as true presence (Table 1). The following recording squares fall with the site (Figure 2):



Figure 2. Bailiwick Bat Survey squares that fall within Longis Reserve.

Table 1. Bat species recorded within Longis squares and the amount of ID's.

Square	Season Period	Species	No. of ID's	Note
WA5908NW	1	Common Pipistrelle	185	
		Serotine	3	Needs verification as would be new island record
		Lesser Horseshoe	1	Needs verification as would be new island record
	2	Daubenton's	50	Needs verification as would be new island record
		Kuhl's Pipistrelle	1	
		Common Pipistrelle	610	
		Nathusius' Pipistrelle	1	
		Lesser Horseshoe	82	Needs verification as would be new island record
WA5908NE	1	Soprano Pipistrelle	11	
		Greater Horseshoe bat	1	Needs verification as would be new island record
		Kuhl's Pipistrelle	1	
		Nathusius' Pipistrelle	1	
		Common Pipistrelle	263	
		Soprano Pipistrelle	3	
	2	Brown Long-eared bat	1	
		Grey Long-eared bat	5	
WA6008NW	1	Daubenton's	7	Needs verification as would be new island record
		Common Pipistrelle	27	
WA6008NW	1	Common Pipistrelle	17	
		Daubenton's	17	Needs verification as would be new island record

WA6008NW	2	Common Pipistrelle	99	
		Soprano Pipistrelle	23	
		Lesser Horseshoe	274	Needs verification as would be new island record
WA6008NE	1	Natterer's	4	
		Common Pipistrelle	32	
WA6008NE	2	Natterer's	2	
		Common Pipistrelle	71	
WA5908SW	Surveyor Error	No data		
WA5908SE		Request results from BTO		
WA6008SW	1	None	0	
WA6008SW	2	Daubenton's	1	Needs verification as would be new island record
		Common Pipistrelle	157	
		Kuhl's Pipistrelle	1	

#### Recommendations for 2022:

- Completed NBMP surveys twice in July, following established route and methodology.
- Ensure that all Bailiwick bat survey squares are completed for both parts of the survey season.
- Ensure that all interesting recordings and analysis output is stored within the biological records centre server. See \\AWT2\Share\Alderney Records Centre\Biological Records\Terrestrial\Mammals\BATS\Bailiwick Bat Survey\_BTO.
- Ensure the survey data is available to the public by sharing it with the Alderney Biodiversity Centre.

#### Action 1.2.3 Butterfly monitoring

There is already a UK Butterfly Monitoring Scheme (UKBMS) transect located in the reserve (Fig. 3) and this is monitored annually following a set methodology. Butterfly surveys were successfully completed throughout 2021.

#### Recommendations for late 2021/2022:

- Ensure all 2021 data is uploaded to the UKBMS portal and download outputs to AWT master Butterfly survey excel sheets. See \\AWT2\Share\Alderney Records Centre\Biological Records\Terrestrial\INVERTEBRATES\Butterflies
- Continue with the established UKBMS survey effort.

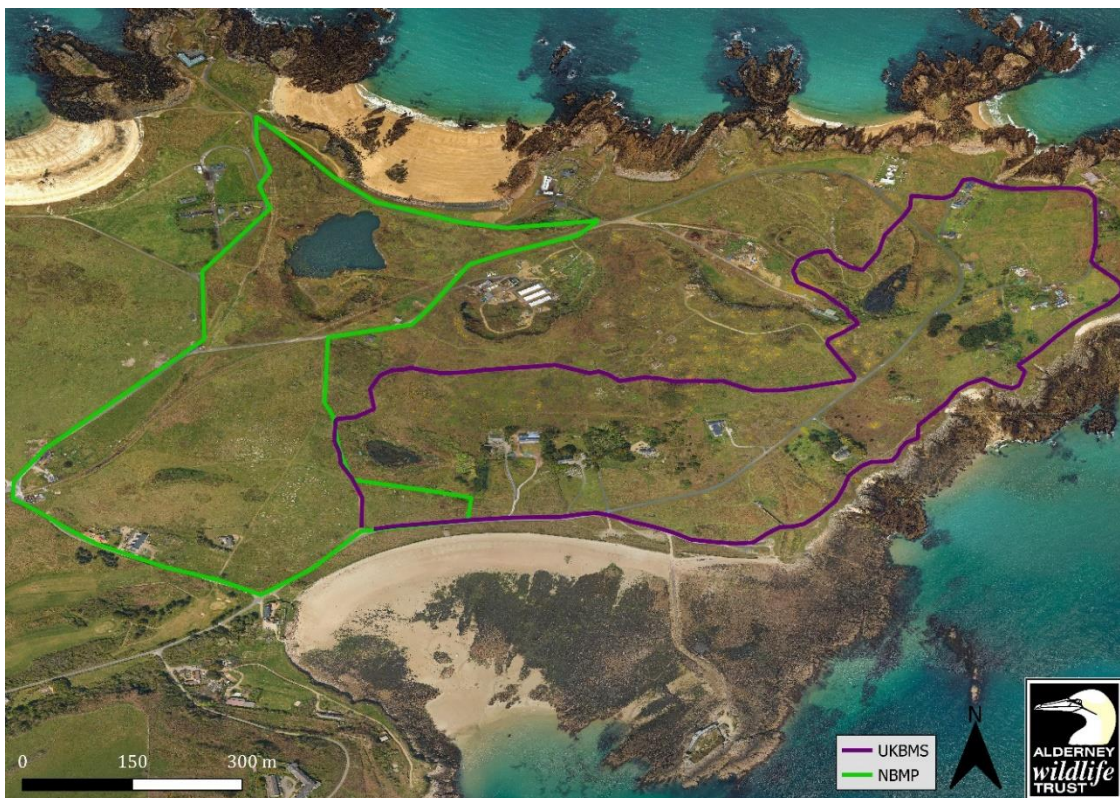


Figure 3. National Bat Monitoring Program (NBMP) and UK Butterfly Monitoring Scheme (UKBMS) transects within Longis Reserve.

#### Action 1.2.4 Bee monitoring

A bee monitoring plan was established in 2017 following the already established UKBMS transects (Figure 8) in 5 key locations across Alderney, with one of them passing through Longis reserve. 2021 saw the successful completion of all transects. The Bumblebee Conservation Trust has now enabled transect data to be uploaded to their web portal and no longer requires paper copies be scanned and sent. However, the survey routes need to be set up on the site and previous years' data still needs to be uploaded. See \\AWT2\Share\Alderney Records Centre\Biological Records\Terrestrial\INVERTEBRATES\Hymenoptera\Bumblebees\Beewalk

Recommendations for 2022:

- Train a desk volunteer to upload historic data to the BCT portal.
- Continue bee surveys in the reserve as part of the island wide effort, liaising with the Bumblebee Conservation Trust

#### Action 1.2.4 Moth monitoring

Moths are key pollinators and should be surveyed alongside bees and butterflies. The AWT take part in the Garden moth scheme, with a moth trap run from Essex Farm weekly.

The garden moth scheme was successfully carried out by the Ramsar officer in 2021.

Recommendations for 2022:

- Ensure that the Trust continues to participate in the scheme once the current Ramsar officer has left.

- Begin survey effort from 5<sup>th</sup> March through to 5<sup>th</sup> of November, ensuring all records are submitted to the Garden Moth Scheme regional coordinator.

#### **Action 1.2.5 Dragonflies and damselflies**

Historically Mannez pond has experienced the most diverse range of dragonfly species of any site on the island, housing many of Alderney's 16 species. Concerns raised over the impact of reedbank management on over wintering birds and restricted access to the site due to the placement of net rides has limited reedbed work. After 3 years of failure to maintain areas of open water within the pond a survey of dragonflies was conducted in 2019. Four species of dragonfly and one unidentified damselfly were observed at Longis pond but only emperor dragonflies were recorded at Mannez. In 2020, 5 species of dragonfly and three species of damselfly were recorded on Longis Pond. 4 species of dragonfly were recorded on Mannez pond but no damselfly species were seen. This year's results are slightly more negative than last year's. 3 species were recorded from Longis Bird Hide (2 dragonfly and 1 damselfly), and 3 from Mannez (2 dragonfly and 1 damselfly). Dragonfly activity is highly dependent on environmental conditions; therefore, surveys should be carried out during sunny, calm and dry weather conditions. Several of the surveys were conducted in sub-optimal conditions. In 2022 it is vital that a stricter survey protocol is followed to ensure under sampling doesn't occur.

Recommendations for late 2021/2022:

- Ensure that open water extent increases in both ponds, but especially Mannez, to recover the overall invertebrate and Odonata diversity.
- Cut and/or pull vegetation, including lesser reedmace from the areas defined in action 2.2.6 during the winter of 2021/22.
- Examine how the survey technique could be improved by conducting a literature review of Odonata survey techniques. Under sampling of species richness was certainly an issue within 2021.
- If the current survey method is deemed adequate, conduct 5 x 30-minute point counts at the ponds at the following times of year: late May, June, July, August and early September. These point counts MUST be carried out during sunny, calm and dry weather conditions.
- Ensure the survey data is available to the public by sharing it with the Alderney Biodiversity Centre. See \\AWT2\Share\Alderney Records Centre\Biological Records\Terrestrial\INVERTEBRATES\Dragonflies

#### **Action 1.2.6 Amphibians and Reptiles**

Talks began in 2020 between Guernsey Biological Records Centre (GRBC) and the Amphibian & Reptile Conservation (ARC) Trust aiming to expand the National Amphibian and Reptile Recording Scheme (NARRS) to the Bailiwick. The aim is to create a bailiwick atlas of herpetological fauna.

Talks in early 2021 between GRBC, ARC and AWT led to agreement that the scheme would be named the Guernsey and Alderney Amphibian and Reptile Recording Scheme (GAARRS), however, delays caused by the spring COVID-19 lockdown and coordination efforts for the Bailiwick Bat Survey led to the launch of the survey being delayed to early 2022.

In 2021 a presence/absence survey using artificial refugia was conducted across the ACW and Mannez Garenne to determine if the lack of Slow worm records was a true absence (Figure 4). At the time of writing there is one more check to complete, but no evidence of slow worm presence has been found. This is hugely interesting because suitable Slow worm habitat is present in these areas and Slow worms have been seen regularly at Kiln Farm, only 10's of meters from the sites but intersected by a road.



Figure 4. Location of reptile refugia within Longis reserve.

Recommendations for late 2021/2022:

- Write up the findings of the 2021 presence/absence survey (contact the previous Conservation Officer details)
- Contact Liz Sweet before the end of 2021 to begin the process of launching the scheme in Alderney.
- Incorporate the GAARRS surveys into the survey programme for the Longis Nature Reserve
- Ensure the survey data is available to the public by sharing it with the Alderney Biodiversity Centre.

#### **Action 1.2.7 Bird Surveys**

Birds are useful species to monitor as they are key indicators of environmental change and their diversity, distribution and abundance are relatively easy to survey compared to other taxa. Surveys of breeding birds were undertaken throughout Longis Reserve. These entailed various methods, outlined in Gilbert *et al.* 1998, to adequately cover all species and habitats. They included Common Bird census (CBC) territory mapping, walkover surveys of coastal sites, vantage point counts and, for the more cryptic species, acoustic techniques that broadcast calls to elicit a response. Some additional island-

wide monitoring was also undertaken in-part on the reserve to i) estimate the productivity and breeding success of Swallows *Hirundo rustica*, ii) determine the abundance and distribution of wintering Water Rail *Rallus aquaticus* and iii) undertake general counts of water birds as part of the national BTO WeBS campaign.

In total 34 species of birds attempted to breed on the reserve and were recorded in apparently occupied territories (AOT), sites (AOS) or at nests (AON), Table 2. An additional two species, Garden Warbler *Sylvia borin* and Lesser Whitethroat *Sylvia curruca*, briefly sang on site in June too but did not linger to nest.

Coastal sites supported three species of nesting gull. These comprised Herring Gull and Lesser Black-backed Gull that nested on the east side of Godfrey's bay and Great Black-backed Gull that nested on Fort Raz and Fort Houmet de Florians. Oystercatchers were widely distributed along the entire coast but most (4 pairs) nested on Fort Raz. A colony of Common Terns occupied Fort Houmet Herbé from mid-May. At least 14 pairs just managed to fledge most of their chicks (c. 22) before an incursion by rats ousted them in the first week of August (c.f. the 2021 Annual Ramsar review for more details and planned rat management). A single pair of Shelducks nested in Longis Bay but no ducklings were seen. No Rock pipits bred.

Within the freshwater sites several pairs of Mallard attempted to raise broods on Longis pond and in Mannez Quarry (estimate between 5-10 females). Coots, Moorhen and Water Rail were present and bred at both these sites. A single pair of Little Grebe occupied Longis pond and bred successfully (raising at least three chicks to fledge). Reed warblers held territories within the phragmites reed bed around Longis pond and and bulrush *Typha sp.* in Mannez quarry. Cetti's Warbler and Zitting Cisticola were also present at Longis pond early in the season but only the latter remained throughout the summer.

Grassland sites primarily supported Meadow Pipits and Stonechats, but among areas of scrub, Whitethroat, Wren, Dunnock and Blackbird were also present. Other areas of scrub and coastal heath, particularly on the Mannez Garenne supported these species as well as Linnets, Greenfinch and Dartford warbler. Wren were especially abundant and occupied all terrestrial habitats that provided some ground cover. Song Thrush were found only where some additional tree growth had occurred around Longis pond and in Mannez Quarry. These sites also supported Woodpigeon, Blackcap, Chiffchaff, Goldfinch and Chaffinch. Stock doves occupied some of the derelict forts (Fort Houmet de Florians and Fort Houmet Herbé). A pair of Sparrowhawks nested in Mannez Quarry. Swallows nested within many of the disused concrete bunkers throughout the reserve.

The following observations were noteworthy:

- The reserve supported a high density of Wren *Troglodytes troglodytes* territories 0.78/Ha.
- A pair of Dartford Warbler *Sylvia undata* were present on the Mannez Garenne. These were the first recorded there since the species extirpation from the reserve following the cold snap (the Beast from the East) in March 2018.
- A single male Zitting Cisticola *Cisticola juncidis* held territory around Longis pond but remained unpaired throughout the season despite making four nesting attempts last year.
- Water rail were present throughout the summer at Longis pond and in Mannez quarry, the first time since at least 2016. Video footage from a trail camera located at the former site showed that one pair hatched at six chicks and likely fledged two from one nesting attempt.

- The Common Tern colony on Fort Houmet Herbé comprised at least 14 nesting pairs and raised at least 22 chicks to fledging. This was the largest breeding count since 2018 and the best breeding success likely in the last decade.
- The number of Oystercatchers nesting within the reserve (7 pairs) were counted and monitored for the first time.

Table 2. The breeding birds of LNR in 2021.

Species (non-passerines)	No. present*	Density (Ha)#	Species (passerines)	No. present *	Density (Ha)#
Mallard	P		Swallow	10	
Sheduck	1		Meadow Pipit	9	0.11
Little Grebe	1		Wren	63	0.78
Water Rail	3	0.02	Dunnock	17	0.21
Moorhen	3	0.02	Robin	3	0.04
Coot	2		Song Thrush	11	0.14
Oystercatcher	7		Blackbird	2	0.02
Herring Gull	6		Stonechat	7	0.09
Lesser Black-backed Gull	5		Blackcap	3	0.04
Great Black-backed Gull	3		Whitethroat	13	0.16
Common Tern	14		Dartford Warbler	1	0.01
Sparrowhawk	1	0.01	Reed Warbler	8	0.06
Woodpigeon	3	0.04	Chiffchaff	2	0.02
Stock Dove	4		Zitting Cisticola	1	0.01
			Great Tit	4	0.05
			Crow	1	0.01
			Chaffinch	2	0.02
			Goldfinch	P	
			Greenfinch	6	0.07
			Linnet	P	

P = present and likely bred but could not be censused with accuracy, \*represents AOT, AOS or AON depending on species monitoring method (see Gilbert *et al.* 1998), #densities given for species with AOT only.

### Swallow demography

On Alderney, Swallows are a potential bio-indicator species whose demography, population and status could help reveal the qualitative status of the environment.

Swallows are a good species to obtain demographic data because the timing of their breeding (laying dates) and breeding success (number of eggs laid and chicks fledged) are easy to measure. Their nests are easy to locate too. This is especially so on Alderney as a large proportion of the Swallow population nests within disused concrete bunkers built during the 2nd world war, Fig 5. In addition, many of the bunker nesting birds are habituated to occasional disturbance caused by people (typically tourists, entering the bunkers to explore) and can tolerate the examination of their nest contents every few days (usually every 10 days) without causing significant disturbance. Note, this was done unobtrusively using a telescopic inspection mirror with an LED light and completed in a matter of seconds.

This year, demographic data from the island's nesting Swallows were collected for the 5<sup>th</sup> year in row (since 2017).



Figure 5. The location of bunkers occupied by nesting Swallows between 2017-2021. The highest concentration occurs at the east end of the island within the bunker complex on the Mannez Garenne in the LNR.

Table 3. Swallow demography, including productivity and nest survival probability on Alderney from 2017-2021.

Year	Brood	n#	Mean 1st egg date (r)	Mean clutch (r)	Mean hatched (r)	Mean fledged (r)	Productivity*	Survival**
2017	1st	11	31st May (17th May - 26th June)	4.5 (2-6)	4 (3-6)	4 (3-6)	0.9	83%
	2nd	6	22nd July (14th July - 26th July)	3.2 (2-4)	2.5 (2-3)	2.25 (2-3)	0.75	100%
2018	1st	13	26th May (15th May - 11th June)	4.6 (4-5)	4 (2-5)	3.7 (2-5)	0.8	84%
	2nd	10	19th July (4th July - 9th August)	3.9 (3-5)	3.3 (2-5)	2.9 (2-5)	0.74	87%
2019	1st	24	28th May (3rd May - 17th June)	4.3 (3-5)	4.0 (3-5)	3.7 (3-5)	0.79	88%
	2nd	15	17th July (3rd July - 28th July)	3.6 (2-4)	3.2 (2-4)	3.1 (2-4)	0.5	50%
2020	1st	19	23 <sup>rd</sup> May (10 <sup>th</sup> May – 20 <sup>th</sup> June)	4.6 (3-5)	4.3 (2-5)	3.5 (1-5)	0.77	94%
	2nd	16	16 <sup>th</sup> July (26 <sup>th</sup> June – 5 <sup>th</sup> August)	3.9 (3-5)	3.1 (2-4)	2.7 (2-4)	0.69	76%
	3rd	1	23 <sup>rd</sup> August	4	4	3	0.75	100%
2021	1st	19	7 <sup>th</sup> June (27 <sup>th</sup> May - 10 <sup>th</sup> July)	4.8 (4-5)	3.9 (3-5)	3 (3-5)	0.58	62%
	2nd	11	24 <sup>th</sup> July (19 <sup>th</sup> July - 3 <sup>rd</sup> August)	4.6 (3-7)	3.9 (3-6)	3.7 (3-5)	0.80	92%

n# = sample size. (r) = range. \*Productivity = total no. of chicks fledged/eggs laid. \*\*Mayfield estimation of nest survival (Mayfield 1975).

Laying dates, if not observed, were estimated by assessing the age of chicks from their feather growth (Fernaz *et al.* 2012) and back-calculating the number of days to hatching and laying assuming i) a mean incubation period of 16 days (<https://app.bto.org/birdfacts/>), ii) an egg was laid one day at a time and iii) incubation began on the day the penultimate egg was laid. Nest survival probabilities were calculated by recording the stage or fate of eggs/nestlings during each nest visit and counting 'nest exposure' days following the Mayfield (1975) method. All data from each nest visit were submitted online to the BTO nest record scheme.

Up to 2019, data were collected from an increasing sample of nests as more occupied bunkers were found, Table 2. By 2021, 28 bunkers were under observation although not all of these were occupied by nesting Swallows each year, Fig. 5.

So far, the data from 2017-2021 indicates that the Swallows timing of breeding and nesting success were likely most impacted by the weather. Notably, an exceptionally cool and wet spell in August 2019 reduced second brood productivity and nest survival to 50%, whilst this year's cold Spring not only likely reduced first brood productivity and nest survival but also delayed the start of breeding by on average two weeks, Table 3. Furthermore, the slow start to the nesting season this year reduced the period of time between the laying of first and second broods too, Table 4, and probably forced the birds to complete each nesting cycle in less time.

Interestingly, there appears to be a general downward trend in productivity (particularly for first broods), Table 3, and this warrants further monitoring in the years to come.

Table 4. The average difference in days between the first egg dates of first and second broods and the latest date first brood clutches were laid at nest sites where second broods were also laid (not including replacement clutches after a 1<sup>st</sup> brood loss).

Year	Mean difference (r)*	Latest date (dd/mm)	(n)**
2017	63 days (60-67)	27/06	3
2018	58 days (46-85)	02/06	9
2019	59 days (51-66)	28/05	10
2020	57 days (45-79)	20/06	14
2021	52 days (46-59)	27/06	9

\*r = range. \*\*n = sample size.

Clearly these data could form the basis of a long-term study that could help reveal both regional and international changes in the species fortunes as the climate warms up and becomes more changeable. Data from Alderney could be of particular value as they'd represent some of the most southern nest records from the British Isles. Furthermore, if these data exemplify environmental change underway on the island, they could also help remonstrate new policy necessary to better ameliorate the impacts of climate change on the local community.

The demographic data from each year are only described here. No statistical comparisons between years are presented due to too few data. But if monitoring continues local trends in demography can be sought from subsequent years using a larger dataset for future comparisons. However, any comparisons of these data between years will require careful consideration because Swallows are often site faithful (Cramp & Simmons 1988) and a high but unknown proportion of nest sites were probably used by the same individuals in each year. Data from each

year were therefore not independent or were only partially so and likely comprised an unknown proportion of matched pairs. Ringing the adults and then re-trapping them each year could help elucidate which nest sites were being re-used by the same individuals in different years so that certain assumptions in the data need not be broken during any statistical comparisons between years. Chick ringing would also enable more data to be got on philopatry, site fidelity, longevity and lifetime reproductive success.

### Water rail census

A 'call count' survey of wintering Water Rail *Rallus aquaticus* using broadcast vocalisations to elicit a response has been undertaken annually on Alderney since winter 2018/2019 and was repeated in winter 2020/2021 for the third time.

The initial aim of the surveys were to undertake a pilot study to determine if the species population could be counted on the island using acoustic techniques. The results of these surveys indicated that this seems to be the case, Hart (2020), and that surveys repeated annually could accurately monitor the island's wintering Water Rail population in the future but also represent a potential indicator or measure of environmental change.

Sampling occurred in mid-winter to avoid counting birds on passage. Vocalisations were played from 73 points across the island, Fig 6. The sample points were not randomly selected but chosen according to their suitability for Water Rail following information on habitat preferences available in Cramp & Simmons (1980) and Taylor & van Perlo (1998). On Alderney the sample points were selected from three types of habitat or biotopes with the following characteristics; 1) water bodies, including ponds and flooded quarries with standing water and emergent vegetation such as reed *Phragmites sp.*, *Typha sp.* and iris *Iris pseudocorus* or sometimes sedges *Carex sp.*, rushes *Juncus sp.* and willow carr *Salix sp.*, 2) wooded valleys or creeks with running streams and dense ground vegetation such as ivy *Hedera helix*, ferns *Asplenium sp.*, willow carr *Salix sp.* and alder *Alnus glutinosa* in wet woodland or rushes and bracken *Pteridium aquilinum* elsewhere and 3) bramble thickets *Rubus sp.* with various amounts of bracken, rank grass and interspersed scrub. Habitats not assessed included urban areas, recreational green spaces and gardens, brownfield sites, beaches, open grassland, open agricultural land such as pasture, tilled fields and allotments, woodland without ground cover, tall scrub, steeped sided hills, cliff edges, poorly vegetated quarries and heathland comprising gorse and heather.

At each sample point vocalisations were played using an MP3 player (SanDisk clip) and a voice amplifier (Aker MR1505). Vocalisations comprised the generic sequence of territorial calls or 'sharming' pig like squeals that typically initiates a response from either sex (Gilbert *et al.* 1998). The calls were broadcast following the methodology outlined in Hart (2020). At sites that required several sample points to adequately cover the habitat each sample point was located a minimum 80m apart and care taken not to re-record the same individuals. Experience indicated that birds greater than 50m away may not respond. All sample points were surveyed between 1<sup>st</sup> – 8<sup>th</sup> December to minimise the possibility of double counting birds that may have moved between sites. Points were sampled throughout the day in calm weather conditions. Days with winds greater than Beaufort four and/or prolonged rain were avoided to reduce sound interference and possible behavioural diffidence.



Figure 6. Water distribution and abundance of Water rail found during acoustic surveys in winter 2020/21. Note the concentration of birds in the LNR at the east side of the island.

A minimum 39 Water Rail were counted and were located in similar numbers and habitat to previous years, Table 2. Most birds (c.19) were found singly in bramble thickets but the highest concentrations occurred in wet sites with standing water and reed. These all occurred in the LNR at Longis pond and Mannez quarry and highlighted the importance of the reserve for this species.

Table 5. The abundance of Water Rail in Alderney over the last three winters and the proportion of their occurrence in three biotopes.

Biotope	Winter Surveys		
	2018/2019	2019/2020	2020/2021
1 <i>Standing water with reed</i>	0.32	0.3	0.31
2 <i>Streams and wet wooded valleys</i>	0.3	0.32	0.2
3 <i>Bramble thickets</i>	0.38	0.38	0.49
Total count	34	34	39

In addition, another pilot study on Water rail was set up around Longis pond to investigate their pre-migratory behaviour. This was done using trail cameras to remotely record the birds' presence and, in particular, to log the incidence of mysterious 'flap and dash' behaviour. Flap and dash behaviour in Water rail is not noted in the literature but has been regularly recorded by trail cameras in previous winters (2018-2020), Fig. 7. The 'flap' component of this behaviour comprises vigorous flapping of the wings while the bird either stands still or jumps high into the air whereas the 'dash' component comprises sudden rushing around where the bird runs rapidly back and forth apparently without obvious provocation.



Fig. 7. A Water Rail, air sacs inflated, showing 'flapping' behaviour.

The function and purpose of the 'flap and dash' behaviour is not known, however, previous footage of it suggests it may occur more frequently in early autumn and spring when the birds are likely preparing to migrate and in a state of pre-migratory restlessness. To test if this was the case, and there was a seasonal pattern to the behaviour, three trail cameras were deployed among

small clearings in the reedbed and other cover surrounding Longis pond. Any footage obtained was then reviewed to calculate the incidence of the behaviour and determine if it occurred more frequently during autumn passage and late winter prior to spring migration.

Unfortunately, no clear results were found and natural events prevented these data from being used to establish a link between 'flap and dashing' and migration in Water rail. This was because the principal birds under observation chose not to migrate but stay on site and nest. As a result, insufficient data were obtained and the data that was collected could not be partitioned into migratory or non-migratory behaviour.

The birds likely chose to stay and nest because the water level in the pond had become higher than previous years and the surrounding habitat became much better suited for nesting. Consequently, the pilot study should be postponed, at least until conditions become drier again and the pond becomes a site only suitable for wintering once more. For now, the function or purpose of 'flap and dash' behaviour in Water Rail will have to remain a mystery.

Recommendations for 2022:

- Repeat the breeding bird surveys (annually or biennially) so that data can be compared over time and used to help identify the impacts of management decisions, land use and climate change in the future.
- Ensure the survey data are available to the public through the Alderney Biodiversity Centre and technical reports published online.
- Submit any nest records to the BTO nest record scheme.
- Support a hand over of the Swallow study to the bird observatory so that the nest recording can continue with the additional benefits of chick ringing and adult ringing/retrapping.
- Maintain oversight of the wintering Water Rail population by undertaking annual acoustic surveys. Continue monitoring their behaviour using trail cameras.
- Continue participation in BTO WeBS.

**Action 1.2.8 Marine and intertidal surveys**

The Longis Reserve boundary extends into the low water mark of Longis Bay. For the Longis Reserve Management Plan 2017-2021, a series of marine and intertidal surveys were developed and successfully completed. This included completing intertidal habitat mapping exercises, intertidal species assessments and supporting citizen science projects (such as Seasearch dive/scuba surveys). These surveys (and the information collated) were developed to link and feed into the AWT Living Seas Programme, and were also completed with other key sites (i.e. the island's Ramsar Site) across Alderney. All marine information is held by the AWT and submitted to the Guernsey Biological Records Centre or affiliated recording body/project, such as Seasearch.

## Intertidal habitat mapping survey

The most recent survey of Longis Bay was completed in 2021, with a total number of 34 marine intertidal habitat biotopes recorded. The survey results showed that the upper/mid shore of the bay comprised of sheltered seaweed dominated habitat biotopes (such as *Fucus vesiculosus* on bedrock), with more exposed habitat biotopes (such as exposed bedrock covered in barnacles) found across the lower shore. A large proportion of these recorded marine intertidal habitat biotopes were identified as EU Annex I habitats of conservation importance (Reef habitat). Of particular importance was the presence of Common Eelgrass (*Zostera marina*) recorded in patches across the lower shore. This survey also identified a significant increase of the invasive non-native species: *Sargassum muticum* and rockpools dominated by *Bifucata bifucata*, compared to a previous survey completed in 2017.

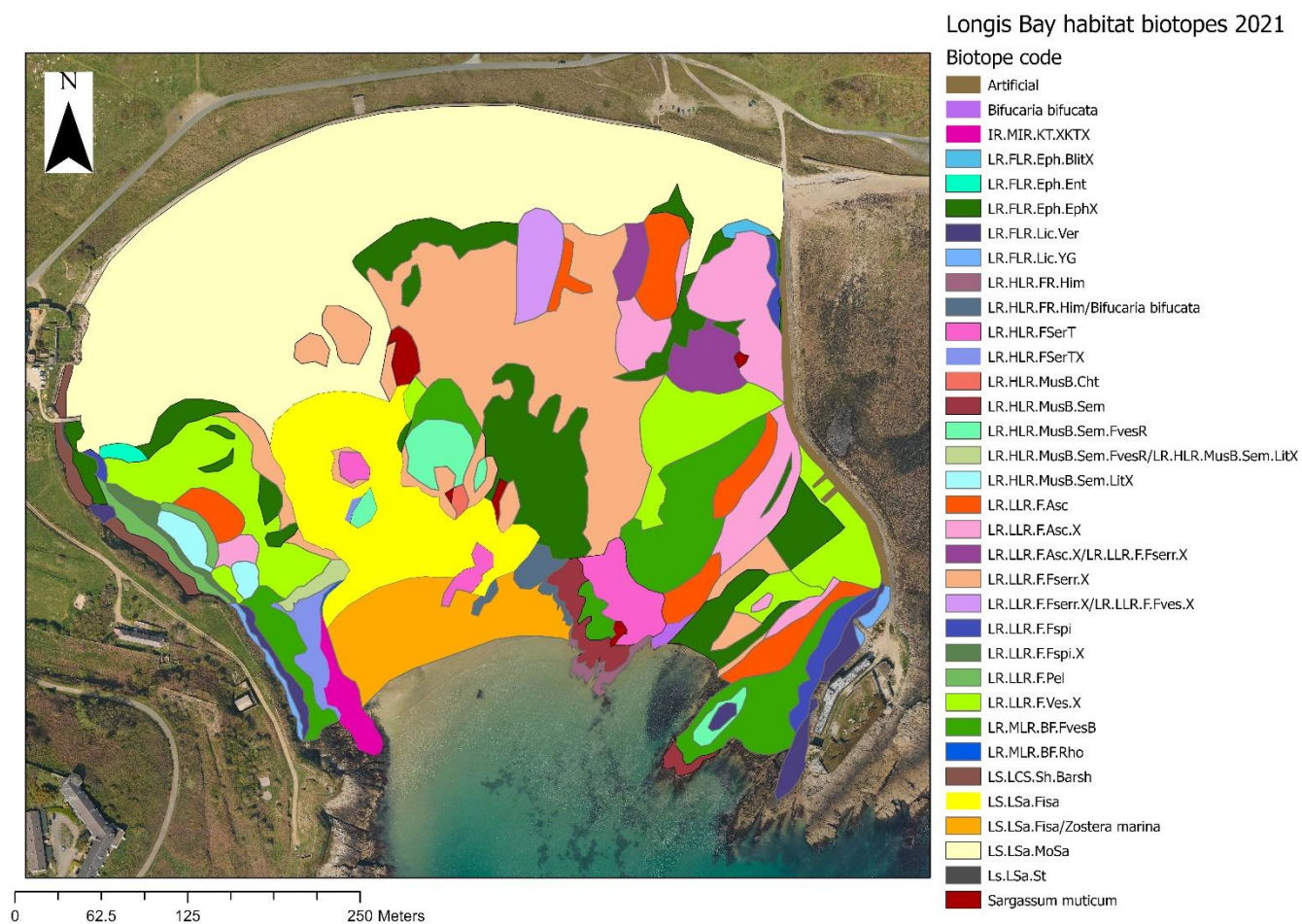


Figure 8. Intertidal habitat biotope map of Longis Bay, 2021.

## Intertidal species assessments

A number of intertidal species assessments have been completed within Longis Bay, from 2017 – 2021. This included:

- Phase II intertidal species assessment (completed in 2018). This survey recorded 15 marine algae species and 7 invertebrate species within a number of selected intertidal habitat biotopes (taken from the 2017 habitat biotope mapping exercise).

- Green ormer (*Haliotis tuberculata*) population dynamics/ shell tagging surveys (completed annually since 2017). Several individuals have been tagged within Longis Bay.
- Intertidal crab (*Xantho/ Cancer pagurus*) species population surveys (completed annually since 2020). A total number of 17 crab individuals were recorded in 2020, including Montagu (*Xantho* spp), Chancer/Edible (*Cancer pagurus*) and Velvet Swimming (Necora puber) crab species.
- Strandline survey (completed annually but now ended). This survey measured the extent and composition of Longis Bay's strandlines, with results showing strandlines to differ in size annually but compose primarily of seaweed debris.

### Citizen Science projects

Several marine based citizen science projects have been completed within Longis Bay, with approximately 10+ volunteers, since 2017, including:

- Seasearch (dive/snorkel based surveys undertaken by trained Seasearch volunteers). A large number of Seasearch snorkel/dive surveys have been completed by trained Seasearch surveyors since 2017. Surveys have recorded a variety of marine habitats and species, including fish.
- TWT Shoresearch surveys (intertidal walkover surveys). These surveys have identified over 70 intertidal species, with volunteers, from 2020.
- Natural History Museum Big Seaweed Search surveys. This survey recorded several species of seaweed with members of the public, from 2020.
- UK Co-Coast intertidal surveys (project now ended). Information has not yet been provided by Co-Coast organisers.

Recommendations for late 2021/2022:

- Phase II intertidal species assessment to be completed in 2022.
- Continuation of citizen science projects, such as Seasearch and TWT Shoresearch.
- Develop a long-term monitoring strategy for the Eelgrass (*Zostera marina*) bed within Longis Bay. This should include measuring the extent of the bed (last measured in 2010 by Seasearch surveyors), supporting Seasearch surveys (within the bed) and consider recommending alternatives to the traditional moorings present within the bay (i.e. consider the use of advanced mooring systems).

### Action 1.2.9 Scaly Crickets

Scaly crickets (*Pseudomogoplistes squamiger*) were discovered in Alderney in 2020. Survey methodology for this species is simple and not time sensitive and consists of burying a small trap (e.g. a cup with holes perforated in the bottom) in suitable habitat, baiting it, and leaving it overnight. An annual survey is not necessary because much of the habitat of the species does not require active management. However, monitoring its presence is important. As such, survey of the species is recommended every 3 years.

Recommendations for late 2021/2022:

- Perform Scaly cricket surveys in 2023.

**Objective 1.3** seeks to promote scientific research in the Longis Reserve's ecological features, and ensure the results of this research are available to the wider community. To achieve this the following actions are proposed for 2021:

#### **Action 1.3.1 Promotion and use of Alderney Biodiversity Centre (ABC)**

The Alderney Biodiversity Centre (ABC) website is in development. The Centre has been established to promote the centralisation of the island's biological records and to encourage the development and use of long term data sets in order to allow for stronger evidence based conservation actions.

A busy summer period has stalled progress on the development of the ABC; therefore a key winter objective for the Terrestrial Ecologist is to update the centre's website and to encourage local recording.

Recommendations for late 2021/2022:

- Support the Terrestrial Ecologist to ensure that all 2021 and 2022 records are uploaded to the ABC (excluding those associated with data collection schemes already connected with the National Biodiversity Network).
- Improve citizen record collection engagement through the promotion of iRecord as a recording tool.

## **2. Land Management**

### **2.1 Grassland Management**

**Objective 2.1** seeks to maintain the current size, plant communities and species richness of dune grasslands and coastal grasslands present within the Longis Reserve. This is currently tackled with a combination of mechanical cutting, Alderney Grazing Animal Projects (AGAP) and control of undesirable species (see section 2.4). To achieve objective 2.1, the following actions were proposed for 2021:

#### **Action 2.1.1 Alderney Grazing Animal Project**

Figure 9 highlights areas where grazing has historically been undertaken by the AGAP herd. The results of the 2019's floral survey, indicated that the current grazing intensity was lower than optimal.

So far, in 2021, the plots Coast 1b, Football, Longis 1, Longis 2 and Longis 3 have been grazed. The herd has been replenished to 7 cows, with 2 adult females (Guernsey) and 5 juvenile males (Guernsey/Aberdeen Angus Hybrid). The current informal agreement with Stuart Cox is to continue to supplement the herd with young males on rotation. The addition of 5 new cows has helped to establish a grazing intensity closer to that required to maintain the grassland system on Longis. However, having only 2 cattle on the site for almost a year has caused the encroachment of scrub, particularly within the Football plot.

Recommendations for late 2021/2022:

- Prioritise grazing around Longis pond to promote Common Reed (*Phragmites australis*) establishment and inhibit rank grass extent (Fig. 9, Reedbank 1).
- Push back scrub encroachment at Football by performing a mechanical cut and collect.

- Subject to COVID 19 restrictions, organise outside researchers to replicate the National Vegetation Classification (NVC) survey methods of 2004 in order to determine areas of the highest conservation value within the grazing plots. Use this information to provide a more evidence based grazing rota.

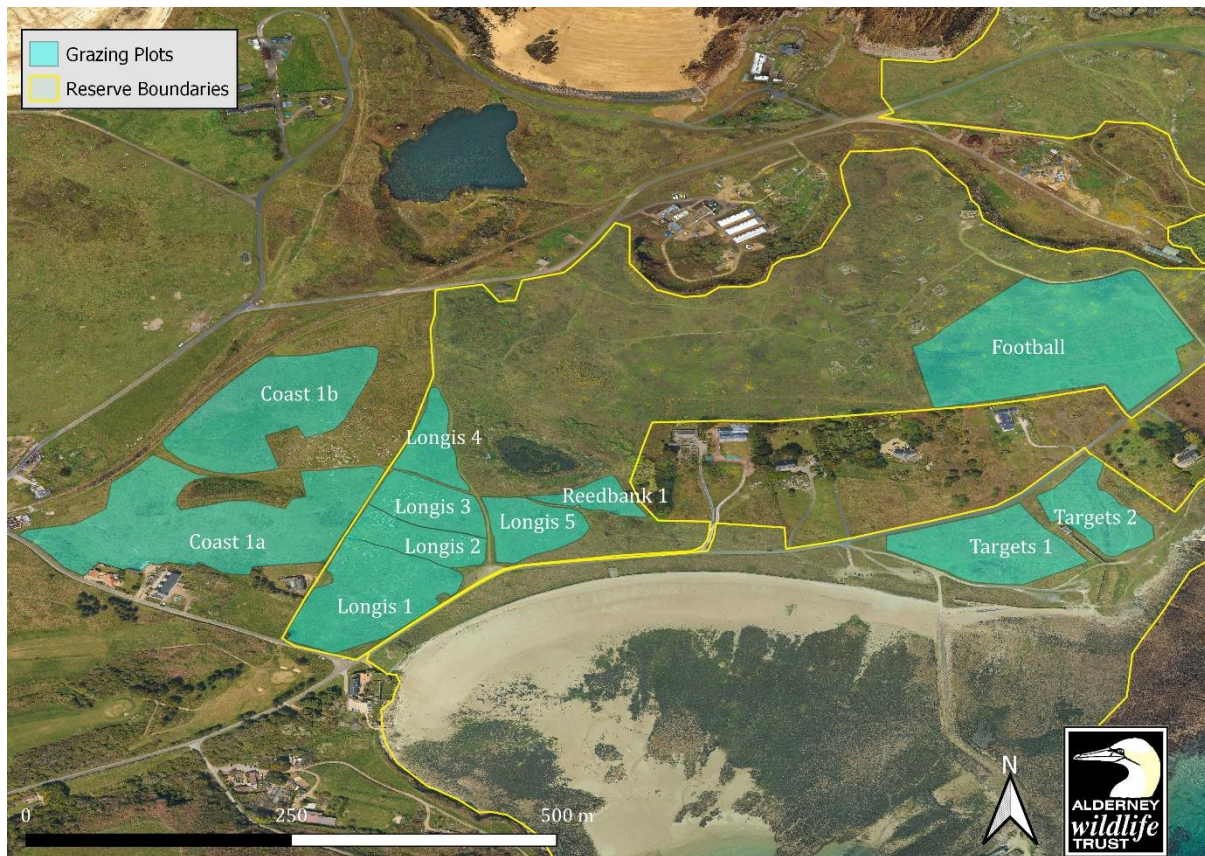


Figure 9. Alderney Grazing Project plots.

### Action 2.1.2 Mechanical Cutting

In areas where cattle grazing is not feasible mechanical cuts are required. Mechanical cutting is largely undertaken along footpaths and the Houmet Herbé coastal path (Fig. 10). It is important to maintain these cutting regimes to promote species richness and to prevent the encroachment of bracken and scrub.

After disruption within 2020, the mechanical cutting regime was able to return to a similar regime seen in 2019. Both the Houmet Herbé cuts were completed in early spring, with noticeable benefits to floral diversity when compared to areas left uncut (Fig. 10). It is recommended that this cutting regime continues to promote the presence of Green-winged orchid (*Anacamptis morio*) and Small-flowered Catchfly (*Silene gallica*).

The coastal heather (Bell and Common) found to the eastern boundary of the lower Houmet Herbé plot (see Fig. 10) is being encroached by bramble and bracken which need to be controlled. Hand cutting around these areas is required by Autumn 2021.

The impact of livestock grazing on the Football grazing plot (see figure 9) over recent years has not been adequate to prevent bramble encroachment on this coastal grassland site. As such it is recommended that a mechanical cut and collect is performed across the site, with a few islands of bramble left to create a mosaic habitat.

Recommendations for late 2021/2022:

- Continue the mechanical cutting regime of 2021.
- Perform 'Lower Houmet Herbé Cut' in early autumn and spring to inhibit rank grass establishment and promote the presence of Green-winged orchid (*Anacamptis morio*) and Small-flowered Catchfly (*Silene gallica*)(see Wilson, 2008).
- Monitor any areas within the AGAP grazing plots which would benefit from mechanical cutting due to the current understocking issue.
- Mechanically cut the Football grazing plot.



Figure 10. The Houmet Herbé coastal path where grass is mechanically controlled (green areas).

## 2.2 Longis Pond habitat management

**Objective 2.2** seeks to maintain an appropriate balance of tree and shrub cover of Longis Pond's surrounding vegetation whilst maintaining the current size and species richness of open water and reedbed, allowing and encouraging their natural expansion into adjacent grasslands.

Longis Pond is the most important freshwater habitat on the island. Ongoing management is necessary to halt the spread of invasive species and arrest the succession of the ecologically important reedbeds into scrub. To achieve this the following actions were proposed for 2021:

### Action 2.2.1 Yellow-flag iris control

Although a native and valuable species to pollinators, the yellow-flag iris (*Iris pseudacorus*) can spread prolifically through a pond if left unchecked. Control is undertaken to remove as much growth as possible to allow space for other aquatic plants and reeds (Figure 11). Initial evidence

suggests that previous control methods have been ineffective and thus our methods should be reviewed.

**An action that still needs to be addressed.** A literature review of the most up to date understanding of yellow-flag iris removal techniques and ecology needs to be conducted before the end of 2021. Using this information and the evidence of success from our own removal efforts., determine the most appropriate method, if any, to reduce yellow-flag cover.

Recommendations for late 2021/2022:

- Review success of previous removal techniques, referring to the most recent understanding of effective removal and applying it to our context.
- Continue to monitor the extent of yellow-flag iris around Longis pond.
- Depending on the outcome of the review, perform iris control and removal, avoiding bird breeding times.



Figure 11. Area of historical yellow-flag Iris control on Longis pond.

### Action 2.2.2 Longis Reedbed management

The reedbed at Longis needs to be cut rotationally to create a varied age structure and prevent natural succession to woodland (Figure 12). In 2019, following advice from the National Trust Jersey, Isles of Scilly Wildlife Trust and the British Trust for Ornithology, a reedbed monitoring plan was implemented and a survey of the reedbed undertaken (Sydanmaa, 2019).

The spring COVID-19 lockdown prevented the delayed 2020 cut being completed before the bird breeding season. Therefore, both the proposed 2020 and 2021 cuts still need completing. The 2020 cut must be carried out as soon as possible. The path previously fragmenting the reedbed was flooded for much of the spring and was not cut during the summer. As such its use is now

minimal. It is suggested that the path is now left to become unusable in order to protect birdlife in its immediate area.

Recommendations for late 2021/2022:

- Carry out delayed 2020 cut as soon as possible (Fig. 12).
- Carry out 2021 cut in the latter half of the winter.
- Continue with monitoring plan at high and low annual water levels.
- Leave path that intersects the delayed 2020 cut area to return to nature (Fig. 12).
- Setup the monitoring of abiotic conditions on the site to be compared with Mannez to help understand why New Zealand Pigmyweed (*Crassula helmsii*) and Parrot's-feather (*Myriophyllum aquaticum*) has not established on the site (salinity, pH, etc.).

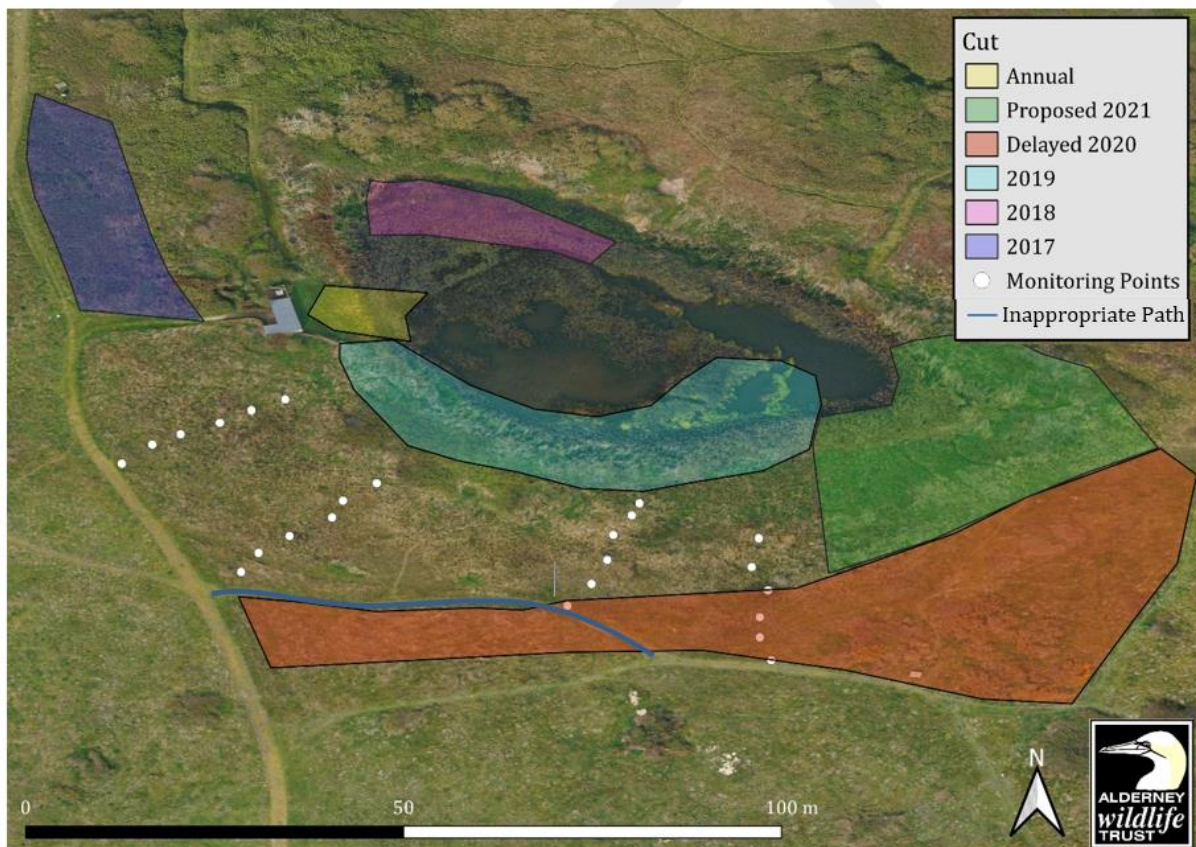


Figure 12. Work undertaken on Longis pond during the current 5 year planning cycle (2017-21).

### Action 2.2.3 Tree aftercare

A screen of willow species surrounds the perimeter of the pond and the entrance to the bird hide.

The screen was maintained throughout 2021. However, it has yet to be established which pest is causing the sooty mould on the screen.

Recommendations for late 2021/2022:

- Establish which pest may be causing the sooty mould, then identify and potentially remove affected trees from the screen.
- Continue cutting back the willow likely to be catching the wind.

#### **Action 2.2.4 White poplar control**

White poplars (*Populus alba*) are non-native and can quickly encroach onto an area of freshwater. They are also extremely thirsty trees; a 15m tree can consume 51 litres of water a day, whereas a beech (*Fagus sylvatica*) or birch (*Betula spp*) tree will consume a third of this. White poplar was removed from within the reedbed to the east of the bird hide. However, control is still required on the far eastern end of the pond before the next breeding season.

Recommendations for late 2021/2022:

- Seek support from the State's Agricultural Team to undertake direct control, this has been delayed due to change of staff on the States Team but direct contact with the new staff member has been made. Care needs to be taken in the application of chemicals to prevent leaching into the waterbody.
- Continue to control any other areas of white poplar spread in, or adjacent to, the Longis reedbed.

#### **Action 2.2.5 Floating island construction**

Previously a floating island was maintained in the open water, providing a resting area for water birds. The island fell into disrepair and was removed from the pond in the hope that it would be replaced with a similar structure. However, upon consultation with the Ecologist it was determined that a floating island was not appropriate for the site and resources were better used for other projects.

### **2.3 Mannez pond habitat management**

The Mannez pond is a hotspot for dragonfly and damselfly diversity, but has seen worrying declines in species presence in recent surveys. It is also the only area on the island with lesser reedmace (*Typha angustifolia*) present.

#### **Action 2.2.6 Mannez reedbed management**

The lesser reedmace (*Typhus angustifolia*) beds are an important habitat in Alderney; however, without proper management the plant can dominate a pond causing it to eventually succeed into scrub. At the time of writing the 2021 reedbed cut (Fig. 12) has yet to be carried out. There now is almost total vegetation cover within the pond. It is therefore vital that a cut and/or hand pull within the 2021 cut area is completed before the start of the 2022 breeding season.

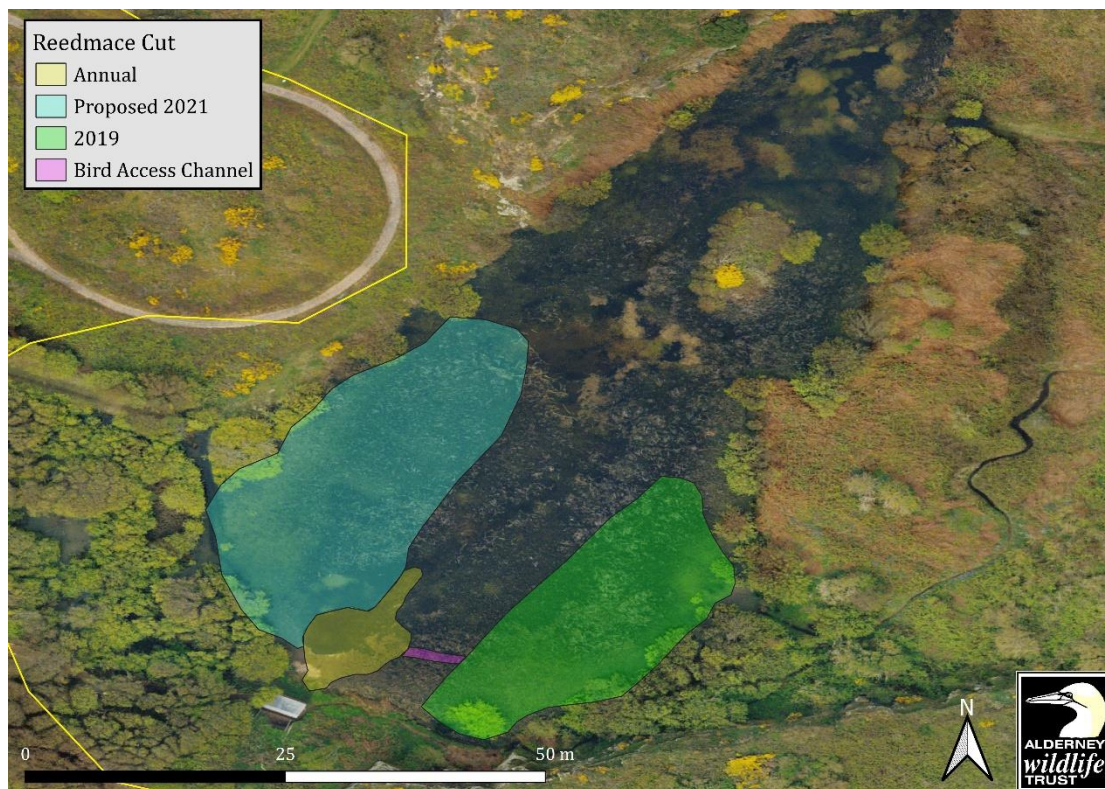


Figure 13. Work undertaken at the Mannez Pond in 2019 and planned for 2021.

Recommendations for late 2021/2022:

- Perform annual cuts to maintain open area in front of the hide (Fig. 13).
- Setup the monitoring of abiotic conditions on the site to be compared with Longis (salinity, pH, etc.).
- Ensure the 2021 cut is completed in the area shown in Figure 13.
- Pile reedmace cuttings to provide a habitat for invertebrates and amphibians.
- See action 2.4.5 for biosecurity measures.

#### **Action 2.2.7 Maintaining areas of open water**

The action to repair the Mannez dam in late summer was again not completed in 2021. It is important that the States are contacted to decide if the project can still go ahead in the summer of 2022.

Recommendations for late 2021/2022:

- Subject to available funding and discussions with the States: during late summer when the pond is at its lowest, repair the dam and replace the drains at the North-Eastern end of the pond to limit water loss from this area. With the assistance of the State's Agricultural Team and an excavator the site can be accessed by the railway cutting to the north and disturbance should be fairly minimal overall.
- Control the spread of yellow-flag iris if deemed necessary.
- Control the spread of New Zealand Pigmyweed (*Crassula helmsii*) and Parrot's-feather (*Myriophyllum aquaticum*) – see action 2.4.5.

### **Action 2.2.8 Rusty Sallow management**

Rusty sallow (*Salix cinerea*) has become well established along the southern margin of the pond. Whilst these plants are a useful screen from the path to the pond they can spread into the main areas of the pond if left unmanaged. Rusty sallow inhibiting access to the Mannez paths was cut back during 2021. Much of the organic matter was left in situ to promote invertebrate and fungal presence.

Recommendations for late 2021/2022:

- Continue ongoing maintenance.

## **2.4 Maintaining habitat richness and extent**

Control of undesirable species are important actions required to achieve objectives 2.1, 2.4, 2.5, 2.6 and 2.7. These objectives refer to the importance of maintaining the current size and species richness of coastal grassland, heathland, scrub, open dune and marine habitats.

### **Action 2.4.1 Ragwort control**

Ragwort (*Senecio jacobea*) is classed as a 'mauvaise herbe' and its control must be undertaken by the land manager. Ingestion of ragwort can be harmful to both animals and humans. Ragwort was controlled during 2021 in areas grazed by AGAP. Ragwort is a native species which supports diverse range of invertebrates (over 200 species recorded in the UK), including the Cinnabar moth (*Tyria jacobaeae*). Therefore, it is important to begin a conversation with the appropriate stake holders in order to reclassify the species and perform control on a case-by-case basis rather than across all managed land. Unfortunately, no progress has been made in regards to reclassifying Ragwort.

Recommendations for late 2021/2022:

- Control ragwort during the flowering season (May-July) where it is present in areas grazed by the Grazing Animal Project herd by hand pulling and dispose far from site either by composting under tarpaulins or at the impot.
- Take steps towards getting ragwort reclassified so that control can be performed on a case by case basis rather than mandated by law.

### **Action 2.4.2 *Carpobrotus* species control**

Sour Fig (*Carpobrotus edulis*), Sally-my-handsome (*Carpobrotus Acinaciformis*) and Angular Sea Fig (*Carpobrotus glaucescens*) are non-native, invasive plants present in Alderney's coastal areas where important flora species occur. If left unmanaged, they can quickly spread and smother the growth of native plants. New plants can propagate from small sections of stem so effective removal is necessary to reverse its spread. Over recent years the main focus area is along the Houmet Herbé coastal path but other sites are continually monitored and controlled. ARCGIS Fieldmaps has been used to survey for Sour Fig within the reserve, training for all staff members has been conducted.

An area of concern was the established patch of *Carpobrotus* found on the private land in the centre of the reserve. However, one of the land owners, Nigel Dupont has expressed a desire to remove the plant from his land with help from the AWT. This is a vital opportunity to removal a key source of *Carpobrotus* from the reserve and should be made a priority.

Recommendations for 2022:

- Liaise with Nigel Dupont about the possibility of removing *Carpobrotus* from his land.
- Continue to use CVs to regularly hand pull areas of *Carpobrotus* spp. and dispose of through incineration at the Impot.
- Map areas of *Carpobrotus* removed during CV sessions in order to monitor regrowth.

#### Action 2.4.3 Scrub control

Scrub can be a useful habitat corridor for wildlife and areas of dense scrub should be maintained. Similarly, gorse stands below a certain age have been strongly linked to the breeding success of Dartford warblers. However, limiting the spread of scrub is important to avoid it becoming dominant within Longis reserve. Much of the scrub control carried out within 2021 has been around the edges of footpaths. It is important that a gorse cutting rotation plan is developed to maximise the benefit it has to local biodiversity. Furthermore, as mentioned in Action 2.1.2 the coastal heathland close to the Houmet Herbé is being encroached on by bracken and bramble. The loss of this site would be a major loss to local biodiversity and aesthetic beauty. Scrub control in the areas adjacent are thus a priority.

Recommendations for late 2021/2022:

- Maintain areas of dense scrub but prevent its encroachment onto grassland areas using hand tools and tractor equipment where appropriate.
- Develop and carry out a gorse cutting regime to create a varied age structure of gorse. Ensure that best practice is followed by referring to the most up to date management literature (see RSPB and Natural England resources, and Conservation Evidence).
- Perform scrub control around the coastal heathland close to the Houmet Herbé trenches.

#### Action 2.4.4 Bracken control

Bracken (*Pteridium* spp.) will quickly become dominant in an area if left unchecked. Regular cutting 3 times a year is necessary to halt its spread. Bracken can spread rapidly through the rhizome and cutting alone will not damage the underground roots.

Bracken control has been one of the areas most affected by the pandemic during both 2020 and 2021, as lockdown was in force while the early cuts would have otherwise occurred. The bracken was cut in September 2021. A second winter cut should be performed before the start of the breeding season. Where dense grass and bracken are present the cutting must be collected to avoid enrichment.

Recommendations for late 2021/2022:

- Undertake regular cutting sessions outside the breeding season using tractor mounted and handheld equipment, collecting organic matter where there is rank grass present.
- Refer to most recent management literature to ensure our removal methods are the most effective available.

#### Action 2.4.5 New Zealand pigmyweed and Parrot's Feather

New Zealand pigmyweed (*Crassula helmsii*) and Parrot's Feather (*Myriophyllum aquaticum*) are invasive non-native species which are highly competitive and can quickly smother native species. Control of these, and of lesser reedmace, is necessary to maintain the extent of open water. New

Zealand Pigmyweed regenerates rapidly after control measures and can be difficult to eradicate (Ewald, 2014). This has become especially concerning after a series of very mild winters has enabled these species not to die back as normal but to continue to thrive and develop biomass year on year.

Work on *Carpobrotus* mapping, planning and control has dominated the invasive species work within 2021. However, current studies of removal techniques were examined. A report produced by Hampshire and Isle of Wight Wildlife Trust trialed a number of *Crassula* removal methods. None of the techniques they trailed completely eradicated this invasive, with cover returning within a year; however, the results highlighted that herbicide effectiveness is dependent on the ponds pH and nutrient load. Herbicide can be more effective if the pond is acidic with a low nutrient load (Ewald, 2014). Thus exploring the abiotic conditions of both Mannez and Longis is important to understand before planning any removal efforts.

Actions for 2021:

- Implement robust biosecurity measures with all other site users including Alderney Railway Society and ABO Ltd. and to prevent the spread from Mannez to Longis pond.
- Investigate whether abiotic conditions are responsible for the lack of *Crassula* in Longis Pond and whether salinization or herbicide treatments could reduce the incidence in Mannez Pond.
- Liaise with other Wildlife Trust's which also have Pygmyweed and Parrot's feather invasion to promote learning and collaboration in regard to eradication attempts.
- Contact invasive research groups to determine if they would be interested in conducting trials at the Mannez site.

#### Action 2.4.6 Brown-tail moth

The larvae of the brown-tail moth (*Euproctis chrysorrhoea*) can cause extremely adverse allergic reactions to both some people and animals. As the brown-tail population was at a low level during 2021 there was no need to remove the tents of these moths.

Recommendations for late 2021/2022:

- Continue monitoring the footpaths for brown-tail moth larvae and remove where appropriate.

## 3. Public engagement and education within Longis Reserve

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Longis Common is a popular area for dog walkers and the AWT maintains a network of footpaths throughout the site. Maintaining and improving access to the site and features is a key commitment from the AWT to the community.

**Objective 3.1** seeks to maintain the current level of public access to Longis reserve and to its condition. To achieve this objective, the following actions are proposed in 2022:

### **Action 3.1.1 Footpath cutting**

Footpaths were regularly cut to prevent scrub and grass encroachment and allow continued access. While a particularly wet summer led to increased grass growth, an increase in the frequency of cuts ensured access was maintained. In 2022 particular focus must be taken to ensure paths adjacent to the Roman Fort and Odeon visitor centres are consistently maintained throughout the year.

Recommendations for late 2021/2022:

- Perform regular cuts of the footpaths using the Powerscythe and tractor mounted equipment and, where appropriate, hand cutting

### **Action 3.1.2 Marker stones**

White marker stones mark paths and important features throughout the reserve. As a public resource, these stones should be maintained. Clearly marking paths will also help to limit the disturbance of the public on sensitive areas. Marker stones were repainted and cleared several times in 2021. The white stone opposite the entrance to Longis Pond needs to be written on with black paint before the end of 2021. A map of the marker stones was updated and can be found on the server under Reserves & Sites/Footpath Management.

Recommendations for 2022:

- Clear vegetation from around the stones
- Repaint marker stones at least once a year
- Collaborate with Visit Alderney to ensure that marker stones are properly incorporated into island and tourism literature

### **Action 3.1.2 Houmet Herbé trench maintenance**

The trench system along the Houmet Herbé path is prone to flooding and additional work is necessary to ensure this site is safe and remains accessible to the public. During 2021 the edges of the trenches were painted white to make them more obvious. The use of a solar power pump was also trialled; however, the pump was unable to keep up with the rate of rainfall. The time resources required were greater than expected and it is not recommended to continue the effort in 2022.

Recommendations for 2022:

- Monitor water levels within trenches and pump water on a reactive basis.

**Objective 3.2** seeks to increase on-site signage about boundaries, features and management of the Longis Reserve whilst maintaining visual impact to a minimum. To achieve this objective, the following actions are proposed in 2021:

### **Action 3.2.1 Signage, information and important features**

In collaboration with Visit Alderney, signage was maintained throughout the reserve. The renovation of the Odeon means that there is a possibility that the public will attempt to drive up to the site. To avoid this temporary signage has been installed. If funding can be acquired, installing permanent 'No car access' signage on the emergency access road will help prevent an increase in traffic in the area.

Recommendations for 2022:

- Continue to work with the Visit Alderney team to improve access and information points around the site.
- Maintain all other signs and information boards around the site.

**Objective 3.3** seeks to maintain and if possible enhance the existing infrastructure i.e. Longis and Mannez birdhide facilities. To achieve this objective, the following actions are proposed in 2022:

**Action 3.3.1 Maintenance and enhancement of Longis infrastructure**

The Longis Reserve is an important amenity resource for the community and maintaining the features of the site is a crucial part of its long term management. Alongside the existing historical features such as the Odeon and Roman Fort visitor sites, the AWT has constructed a number of amenity features such as the bird hides at Mannez and Longis ponds.

The bird hides at Longis and Mannez ponds are popular visitor attractions and should be kept in good order to allow full enjoyment from these areas. They were closed during the 2021 lockdown, and were then regularly monitored and maintained thereafter.

Recommendations for 2022:

- Regularly sweep and clean the inside of the hides
- Maintain and re-treat the outside of the hides
- Maintain and update the information boards as necessary
- Record sightings from sightings book

**Objective 3.4.** To involve the community in regular events and activities. To achieve this objective, the following actions are proposed in 2022:

**Action 3.4.1 Conservation Volunteers**

Conservation volunteers (CV) are a vital resource to the AWT, as of 17/09/2021 CVs have offered 618 hours of effort. However, engagement with under 50's has been suboptimal. Furthermore, few new regular CVs have been recruited during 2021, with several long-term volunteers retiring from the physical work. A number of new islanders have expressed interest and it is important that we continue to promote the sessions on the radio, local print media and on social media. The physicality of the work is alienating some of the more elderly volunteers, as such, it is important to emphasise when sessions have less intense work available.

Recommendations for 2022:

- Liaise with the Outreach Officer to advertise and promote the sessions to encourage new members to join.
- Encourage individuals to get involved in longer term projects and/or take on greater responsibilities for the AWT.
- Offer a diverse and engaging work programme, suitable for all ages and abilities.

### **Action 3.4.2 Community Rock pooling**

Rockpooling offers a great way for community members of all ages to gain greater exposure to the rich diversity of inter-tidal species found within Longis Reserve. As with previous years the Marine Ecologist, Outreach Officer and Ramsar Officer conducted rock pool sessions throughout the year.

Recommendations for 2022:

- In collaboration with the Ramsar, Marine and Outreach officer's, offer both day and evening rockpooling events through the late spring and summer (dependent on COVID 19 restrictions).

### **Action 3.4.3 Beach Cleans**

AWT's CV's conducted a number of beach cleans within 2021, collecting at least 500 kilograms of rubbish.

Recommendations for 2022:

- In collaboration with the Outreach Officer, promote the Big Channel Island Beach Clean event (February), particularly encouraging households to perform cleans within the coastal areas of Longis Reserve.
- In collaboration with the Outreach Officer, promote the Big Spring Beach Clean with Surfers Against Sewage (April).
- In collaboration with the Outreach Officer, organise a beach clean as part of World Oceans Day (June).

### **Action 3.4.4 Wildlife Week (dates tbd)**

Recommendations for 2022:

- Ensure the Longis Reserve is well represented within the events programme. Possible events could include: Wild flower walk and ID, hedgehog walk, BBQ and stargazing/night walk.

### **Action 3.4.5 Big Wild Weekend (tbd)**

The Big Wild Weekend is the main event of the Wildlife Trusts' 30 days wild.

Recommendations for 2022:

- Ensure the Longis Reserve is well represented within the events programme, ensuring activities are integrated into and around the annual Wildlife and Alderney week.

### **Action 3.4.6 Alderney Week (tbd)**

Recommendations for 2022:

- Ensure the Longis Reserve is well represented within the events programme. Possible events could include: Bat walks, guided kayak and snorkelling trips, wild flower walk and ID, open air music gig.

### **Action 3.4.7 Great Nurdle Hunt (tbd)**

Recommendations for 2022:

- Promote nurdle hunts along the coastline of Longis reserve, particularly within the month of the Great Nurdle Hunt.

## References

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## Appendices

### Appendix 1 Gantt Chart Detailing Work Programme for the Year 2021.

LONGIS RESERVE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AGAP												
Grassland cutting												
Bramble control												
Longis Pond/Reed-bed												
Mannez Pond/Reed-bed												
Footpath maintenance				Breeding season: avoid tractor in breeding								
Ragwort Control												
<i>Carpobrotus</i> spp. Removal												
Bracken Control												
Amenity Features												
Litter picking												
Brown Tail Moth Control												
Planning												
Aftercare of planted trees												
<b>Survey and monitoring</b>												
<b>Terrestrial</b>												
Phase 1 and NVC surveys												
UKBMS transect (butterfly)				1st April to 29th September								
BCT surveys (bumblebees)			Last Week of each month									
Amphibians (ARC and GBRC)	3 Visits											
Reptiles (ARC and GBRC)			3 Visits									
Garden Moths Scheme			5th of March to Friday 5th November									
NBMP Field survey (bats)												
Breeding Birds Survey (CBC Method)												
Wetlands Bird Survey												
Dragonfly Survey												
<b>Intertidal (Conducted by Marine Ecologist and Ramsar Officer)</b>												
Habitat mapping survey												
Intertiday crab surveys												
Green ormer pop. assessment												
Invasive species assessment												
Seasearch Surveys												
Eelgrass ecology survey												
Fish and shellfish assessment												