

Longis Nature Reserve Annual Review 2022

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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 2022 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 achievements 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 in 2022.
- Reedbed management at Longis and Mannez Ponds to sustain a healthy reedbed 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 to create an island-wide map which will allow us to track increases over time.
- 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.

The following key recommendations are priorities to be incorporated into the 2023 Action Plan, as well as the proceeding 5-Year Action Plan which is due for renewal.

- Undertake a review of current grassland management through analysis of National Vegetation Classification (NVC) data to assess the effectiveness of the grazing regime.
- Collaboration with the SoA to develop Invasive Non-Native Species (INNS) Policy and species control.
- Undertake a review of Longis Reedbed survey data to establish trends over the last 3 years.

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Introduction

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), extended by agreement with the States of Alderney (SoA) General Services Committee (GSC) to cover 2022/23 and the 2022 Annual Action Plan (Harper 2021).

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

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 105 ha 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 (MoU) and agreements between the Alderney Wildlife Trust (AWT), the 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. This has been carried over to 2022 and is under review pending the approval of the Alderney

Biodiversity Strategy for the States of Alderney. The specific guidance for 2023 will be further informed by the 2022 Action Plan and Review (Smith, 2022). The following three aims underpin all work on the reserve:

AIM 1: To increase the knowledge about the natural value of the Longis Reserve and its importance within both the 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

Within each of the three main aims, there are a series of key objectives. To work towards these objectives (listed below), a series of actions will be undertaken in 2023. 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.

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Work Programme Review

The following sections are numbered according to the actions described in the 2022 Action Plan. Work undertaken this year will be detailed in this section, and recommendations will be made for the 2023 Action Plan.

An updated Gantt chart detailing the timetable of works for 2023 is presented in Appendix 1.

1. Ecological surveying and monitoring

All ecological surveying conducted by the AWT is guided by the environmental Evidence Base, the reference database which contains the description, tasking and responsibilities for all ecological surveys conducted by the AWT. This ensures consistency and means that key species and habitats are monitored. The 2022 survey effort was largely successful with support from the Outreach Officer, Ecologist, Avian Ecologist, Ramsar Officer, Lindsay Pyne and other volunteers, ensuring that all planned surveys were completed to a high standard. Survey conditions were not optimal on several occasions, so timings sometimes 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.

Action 1.1.1. Phase 1 Surveys

To monitor the impact of the conservation grazing regime in place on Longis Nature Reserve, we have historically conducted NVC surveys on different grazing plots. The surveys were conducted in 2022 but were rather late: this should be avoided in future years since the environmental Evidence Base clearly sets out survey windows. It is the intention that NVC surveys will be replaced by UKHAB map in 2023.

Prior to 2022 the previous NVC of Longis reserve was carried out in 2019 with the intention of using these as a comparison to the first NVC of the site conducted in 2010. Three years of data will 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 still needs to be completed.

An action that still needs to be addressed. Completion of a desk-based comparison of the 2010, 2019 and 2022 vegetation surveys.

Recommendations for 2023:

- Compare the results from vegetation surveys to identify changes in habitat types and to inform where conservation actions such as scrub control and increased grazing 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.

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 2023:

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). This was successfully performed in 2022 at both high and low water levels.

Recommendations for 2023:

- 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 inform survey locations.
- Perform analysis of reedbed data to establish whether current management is appropriate.

Action 1.2.2 Bat monitoring

Before 2022, there was already an established bat monitoring transect route through the reserve, set up following the National Bat Monitoring Programme (NBMP) guidelines and methodologies, and feeding into the NBMP database. The launch of the Bailiwick Bat Survey from 2021 to 2024 has increased the extent and accuracy of bat recording within the site, with the following recording squares encompassing the site (Figure 2).



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

Increased bat monitoring across the reserve has offered us a much clearer picture of the species using the site. Having not been previously recorded on the island, both Daubenton's (*Myotis daubentonii*) and Lesser Horseshoe (*Rhinolophus hipposideros*) bats were picked up in the surveys although expert verification needs to be sought to ensure these records can be treated as true presence (Table 1).

Table 1. Bat species recorded within the BBS survey squares covering the Longis reserve, with the number of identifications (IDs) per species per season period (season 1 = April to mid-July, season 2 = mid-July to October).

Square	Season Period	Species	No. of IDs	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
		Soprano Pipistrelle	11	
		Greater Horseshoe bat	1	Needs verification as would be new island record

WA5908NE	1	Kuhl's Pipistrelle	1	
		Nathusius' Pipistrelle	1	
		Common Pipistrelle	263	
		Soprano Pipistrelle	3	
		Brown Long-eared bat	1	
		Grey Long-eared bat	5	
	2	Daubenton's	7	Needs verification as would be new island record
		Common Pipistrelle	27	
WA6008NW	1	Common Pipistrelle	17	
WA6008NW	2	Daubenton's	17	Needs verification as would be new island record
		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 2023:

- Complete 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 by encouraging volunteer participation, and, where necessary, filling in as AWT staff.
- Ensure that all recordings and analysis are stored internally on the server.
- 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 an existing UK Butterfly Monitoring Scheme (UKBMS) transect located in the reserve (Fig. 3) that is monitored annually following a set methodology. Butterfly surveys were successfully completed throughout 2022 (transects completed for 25 out of 30 weeks between 15th April and 20th October). The key findings were:

- 4,398 total butterflies recorded, of which 3,323 (75.5%) were between 17th June and 28th July (weeks 12-17).
- 17 different species recorded - most commonly seen 1) Gatekeeper (2,380 records, 54%) 2) Common Blue (865 records, 19.7%) 3) Meadow Brown (518 records, 11.8%)
- By way of comparison, in 2021 2,914 butterflies were recorded across 15 species. The transect was done on 17 weeks (between 27th May and 13th October), but with two weeks

in the peak period (weeks 14 and 20) not done. Most commonly seen species were 1) Common Blue (776) 2) Gatekeeper (769) 3) Meadow Brown (574) and 4) Small Heath (299).

Recommendations for 2023:

- Continue with the established UKBMS survey effort, ensuring surveys are performed on most appropriate weather days.
- Ensure all 2023 data is uploaded to the UKBMS portal by end of October. Download outputs to AWT master Butterfly survey excel sheets.

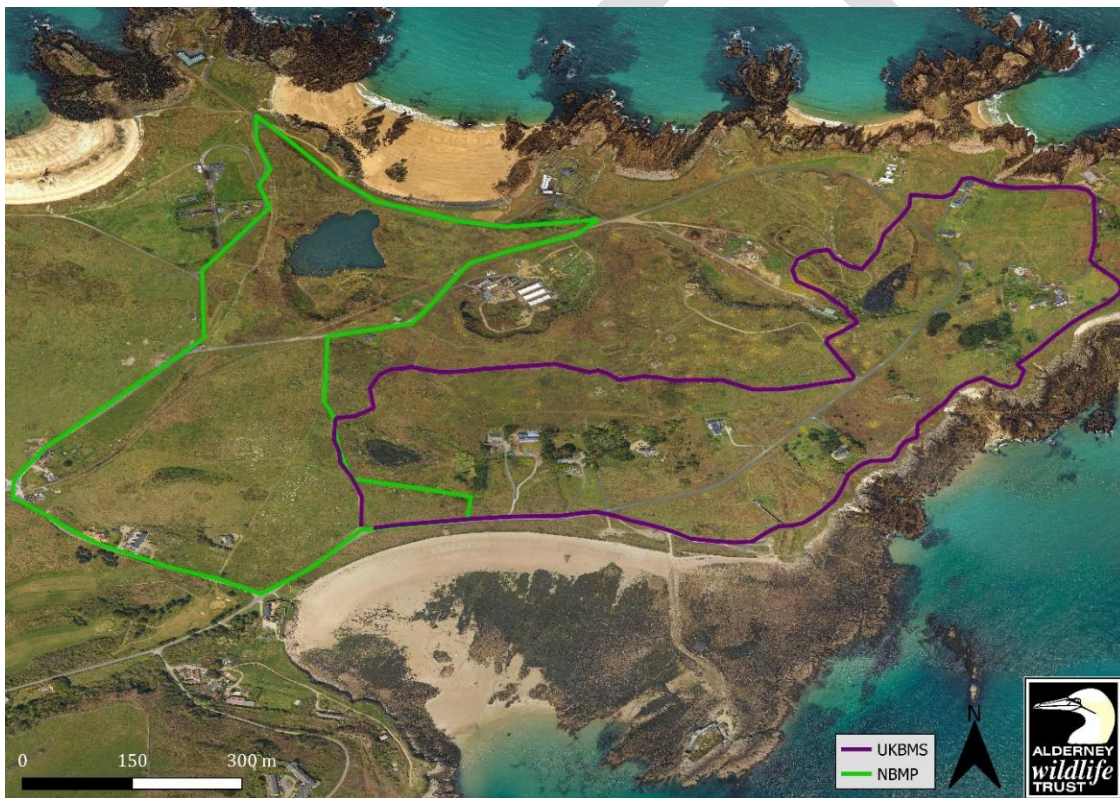


Figure 3. National Bat Monitoring Program (NBMP) and UK Butterfly Monitoring Scheme (UKBMS) transects within Longis Reserve.

Action 1.2.4 (a) Bee monitoring

A bee monitoring plan was established in 2017 following the already established UKBMS transects (Figure 3) in 5 key locations across Alderney, with one of them passing through Longis reserve. 2022 saw the successful completion of all transects but data has not yet been submitted as although 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, the online maps do not currently appear to extend to the Channel Islands. Consequently, the survey routes need to be set up on the site if possible and 2022 and previous years' data still needs to be uploaded.

Recommendations for 2023:

- Liaise with The Bumblebee Conservation Trust regarding upload of data. Assuming this is possible, set up the Alderney survey routes on the site and input 2022 data otherwise submit paper copy as in the past.
- 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 (b) Moth monitoring

Moths are key pollinators and should be surveyed alongside bees and butterflies. The AWT has taken 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 Ecologist in 2022.

Recommendations for 2023:

- Ensure that the AWT continues to participate in the scheme.
- Begin survey effort from 5th March through to 5th 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 reed bank management on over wintering birds and restricted access to the site due to the placement of net rides has limited reedbed work. After three 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. The following year saw an improved species richness at both sites, with five dragonfly species and three damselfly species at Longis, and four dragonfly species at Mannez. In 2021, the species richness unfortunately fell again, with three species were recorded from Longis Bird Hide (two dragonflies and one damselfly), and three from Mannez (two dragonflies and one damselfly). Following this, some clearance work was completed at Mannez at the end of 2021 to beginning of 2022, with the hope of improving the site for these species. In 2022, three dragonfly and one damselfly species were recorded at Longis pond (Table 2a), with two dragonfly species recorded at Mannez (Table 2b). These results may not initially seem encouraging, but this is because the increased open water habitat would only have boosted counts for migrants or multivoltine species that have several generations within a year. The results for 2023 will better reflect the impact of this management on the breeding dragonfly and damselfly populations at Mannez, for which larval development takes at least a year.

Table 2a: Results for the Longis pond dragonfly monitoring

Surveyors	Date	Weather	Temp	Wind	Start	End	Species	Number	Sex
ES, JH, LP	28-Jun	Scattered clouds	18	22	14:05	14:35	Emporer	2	
ES	26-Jul	Sunny	19	15	11:00	11:30	Emporer	5	Male(4), Female (1)
ES	30-Aug	Sunny	20	29	11:50	12:20	Unidentified damselfly		
ES	15-Sep	Scattered clouds	17	19	13:40	14:10	Common Darter	3	
							Emporer	2	
							Southern Hawker	1	

Table 2b: Results for the Mannez pond dragonfly monitoring

Surveyors	Date	Weather	Temp	Wind	Start	End	Species	Number	Sex
ES, JH, LP	28-Jun	Scattered clouds	18	22	14:50	15:20	Emporer	2	Male(2)
ES	26-Jul	Sunny	19	15	11:40	12:10	Southern Hawker	1	
							Emporer	2	Male(1), Female(2)
ES	30-Aug	Sunny	20	29	12:30	01:00	Emporer	1	
ES	15-Sep	Scattered clouds	17	19	14:45	15:15	Emporer	4	
							Southern Hawker	1	

Recommendations for 2023:

- 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 reedmae from the areas defined in action 2.2.6 during the winter of 2022/23
- Examine how the survey technique could be improved by conducting a literature review of Odonata survey techniques.
- 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.

Action 1.2.6 Amphibians and Reptiles

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) No evidence of slow worm presence was found.

Recommendations for 2023:

- Continue to follow developments of GAARRS (Guernsey and Alderney Amphibian and Reptile Recording Scheme)
- If resources become available, investigate an appropriate survey methodology for 2024, perhaps utilising citizen science of university students to achieve this. To date, amphibian and reptile surveys have been insufficient or unsuccessful.

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 and also general counts of water birds as part of the national BTO Wetland Bird Survey (WeBS) campaign. In 2022, Longis Bay was surveyed once a month as part of the WeBS campaign, recording 25 different species (Figure 4).

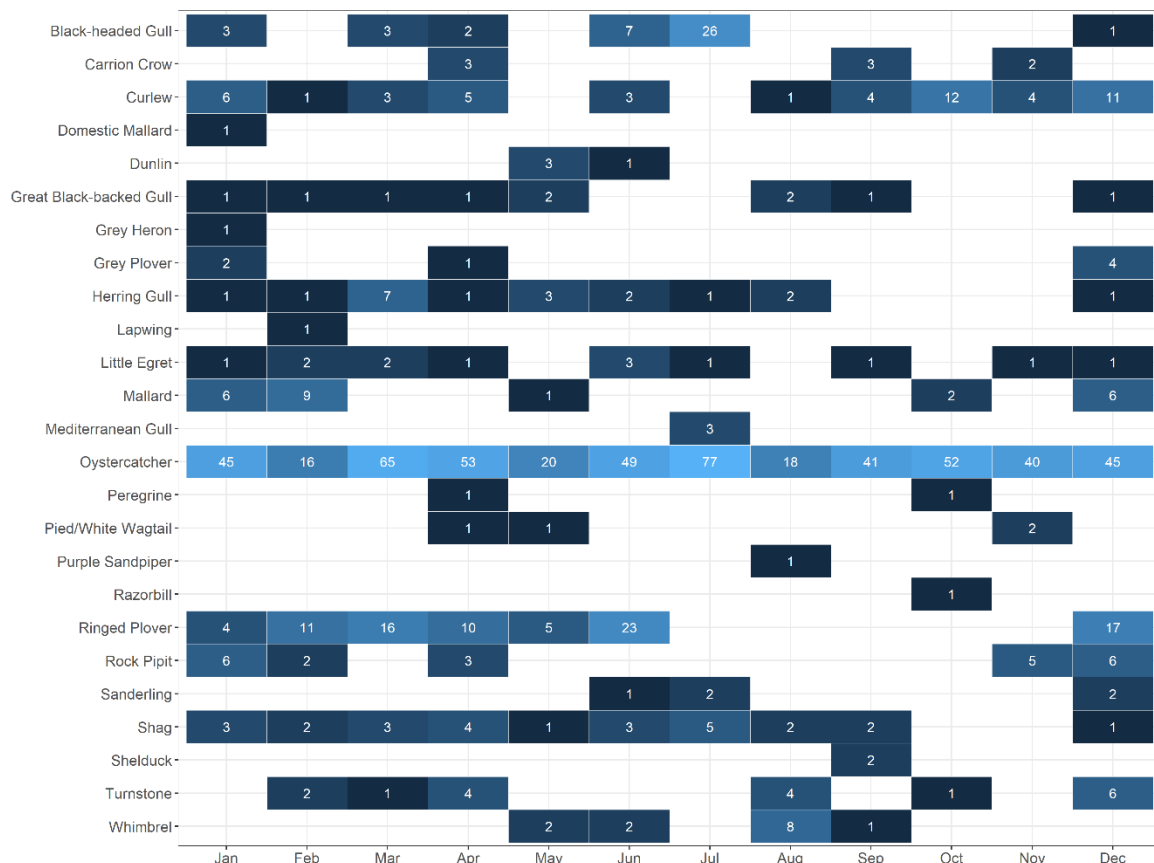


Figure 4: The species recorded as part of the Wetland Bird Survey (WeBS) counts in Longis Bay for every month of 2022.

Water rail census

The Water rail census surveys were completed in 2021 by Justin Hart, but did not take place in 2022 to allow for a focus on other survey work.

Recommendations for 2023:

- Plan for a repeat of the Water Rail census in 2024 to maintain a three-year sampling rate

Action 1.2.8 Marine and intertidal surveys

The Longis Reserve boundary extends into the low water mark of Longis Bay. For 2022, a series of marine surveys were developed and successfully completed. This included completing intertidal species assessments, supporting citizen science projects (such as Seasearch dive/scuba surveys) and trialling survey methods within the bay's shallows (e.g. the subtidal sections). These surveys (and the information collated) were developed to link and feed into the AWT Living Seas Programme, which is the mechanism for all the AWT's marine based activities.

Intertidal phase II survey

Following an intertidal habitat biotope survey completed in 2021, a phase II survey was undertaken this year. This survey aims to quantitatively record all intertidal seaweed and infauna species (and their relative abundance) within selected priority habitat biotopes (from the intertidal habitat survey), using 1m² quadrats. This survey was completed previously in 2011 and 2018, within the same habitat biotopes.

In 2022, a total number of 21 seaweed species and 9 faunal species were recorded across the priority habitat biotopes. The composition of the seaweed species across the three years was similar (ANOSIM R^{YEAR} : 0.098, $p = 0.341$; see Table X). The composition of faunal species differed across the three years, specifically between 2011 and 2022 (ANOSIM $R^{YEAR} = 0.085$, $p = 0.004$; see Table X).

Table X. Simper (%) results of intertidal seaweed species recorded across all priority habitat biotopes for 2011, 2018 and 2022.

Seaweed species	Simper (%)		
	Year		
	2011	2018	2022
<i>Ahnfeltia plicata</i>	0.53	0	0
<i>Ascophyllum nodosum</i>	0.56	0	3.97
<i>Cladophora rupestris</i>	0	0.46	0
<i>Corallina</i> species	0.41	0	0
<i>Ectocarpus</i> species	0	0	7.31
<i>Fucus serratus</i>	2.57	0.75	26.35
<i>Fucus spiralis</i>	3.49	0	0
<i>Fucus vesiculosus</i>	35.71	38.06	19.94
<i>Laurencia</i> species	0	0	0.6
<i>Lithothamnion</i> species	14.07	0.75	0
<i>Lomentaria articulata</i>	0	0	0.32
<i>Pelvetia canaliculata</i>	0.68	0	0
<i>Sargassum muticum</i>	0.24	0	0
<i>Ulva</i> species	41.26	59.32	40.89
Unidentified red species	0	0.66	0.62
<i>Vertebrata lanosa</i>	0.48	0	0

N.B. Bold indicates $\geq 15\%$.

Table X. Simper (%) results of intertidal faunal species recorded across all priority habitat biotopes for 2011, 2018 and 2022.

Infauna Species	Simper (%)		
	Year		
	2011	2018	2022
<i>Actinia equina</i>	3.76	0.58	0
<i>Littorina mariae</i>	0.25	0	0
<i>Nucella lapillus</i>	0.23	0	0
<i>Patella vulgata</i>	61.35	72.74	90.77
<i>Phorcus lineatus</i>	19.11	17.39	1.43
<i>Steromphala umbilicalis</i>	15.3	9.29	7.8

N.B. Bold indicates $\geq 15\%$.

Intertidal species assessments

A small number of intertidal species assessments were completed in 2022, this included:

- *Green ormer (Haliotis tuberculata) population dynamics/ shell tagging surveys*. One Green Ormer was recorded and tagged this year.
- *Intertidal crab species population surveys*. Two surveys were completed, with a total number of 137 crab individuals recorded. A large number ($n = 70$) of Long Clawed Porcelain Crabs (*Pisidia longicornis*) were identified in addition to 32 Montagu (*Xantho* spp.) and 5 Chancer/Edible (*Cancer pagurus*) crab species.

Citizen Science projects

Several marine based citizen science projects were completed this year, which included:

- *Seasearch (dive/snorkel-based ecology surveys undertaken by trained Seasearch volunteers)*. A small number of Seasearch surveys were completed this year, primarily within the bay's Eelgrass bed (*Zostera marina*). Results will be provided by Seasearch in spring 2023.
- *TWT Shoresearch surveys (intertidal walkover surveys)*. Five Shoresearch walkover surveys were completed, which recorded a total number of 114 intertidal species. This included a wide range of species, such as intertidal seaweeds, crustaceans, starfish and mollusc species.
- *Natural History Museum Big Seaweed Search surveys*. This intertidal survey recorded several priority seaweed species, such as climate change indicators.

Eelgrass surveys

In addition to Seasearch surveys, a variety of surveys were implemented to record Eelgrass (*Zostera marina*) within the bay. This species is known as a 'habitat forming species' and is considered important based on the range of ecosystem services it can provide (e.g. sites of high biodiversity,

refuge/nursery grounds for juvenile fish and shellfish, food, reduces coastal erosion etc.). Surveys included:

- *Eelgrass extent using drone footage.* Drone photographs (donated by a member of the public) of the bay aided the identification of the full extent of the Eelgrass bed (see Figure Xa).
- *Intertidal boundary assessment.* The upper (intertidal) boundary of Eelgrass was recorded through a shore walk and quadrat assessment (recording density and blade/leaf abundance/length).
- *Subtidal drop-down video camera survey.* A drop-down video camera survey was completed within the subtidal sections of Longis Bay (deployed in a grid layout, every 50 metres). The results complemented the drone survey and enabled the verification of the Eelgrass bed boundary.
- *Traditional mooring impact assessment.* An assessment of the ecological impact of two (privately owned) traditional moorings upon the Eelgrass bed within Longis Bay was undertaken by a volunteer scuba diver. Surveys comprised of the volunteer scuba diver recording Eelgrass % cover, number of Eelgrass shoots and length of Eelgrass shoots at graduated distances away from each traditional mooring. Preliminary results highlight one mooring within the Eelgrass bed, potentially scouring the seafloor (and in turn the Eelgrass bed present). The results will be used to compare with other mooring impact surveys completed within other sites, such as Braye Bay and various bays round Guernsey. The aim is to provide appropriate conservation recommendations, to help protect Eelgrass beds (such as the replacement of the traditional mooring with an advanced mooring system) in the future.

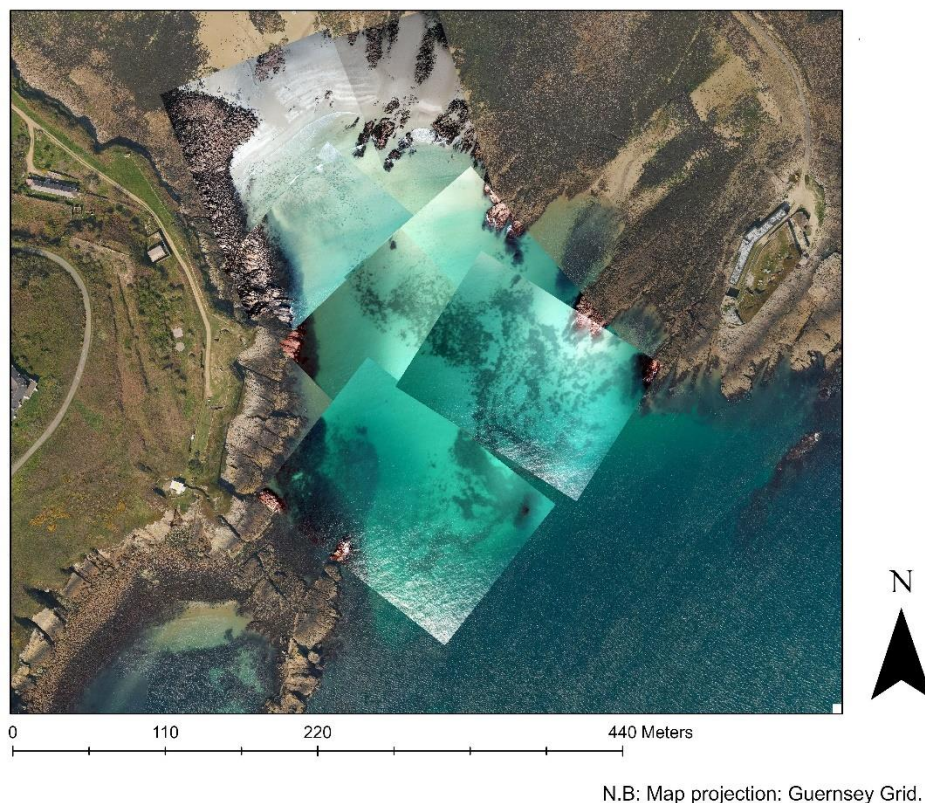


Figure Xa. Drone photographs of Longis Bay taken in 2022 (overlain on a digital photograph taken in 2019) to help assess Eelgrass (*Z. marina*) bed boundary, Alderney.

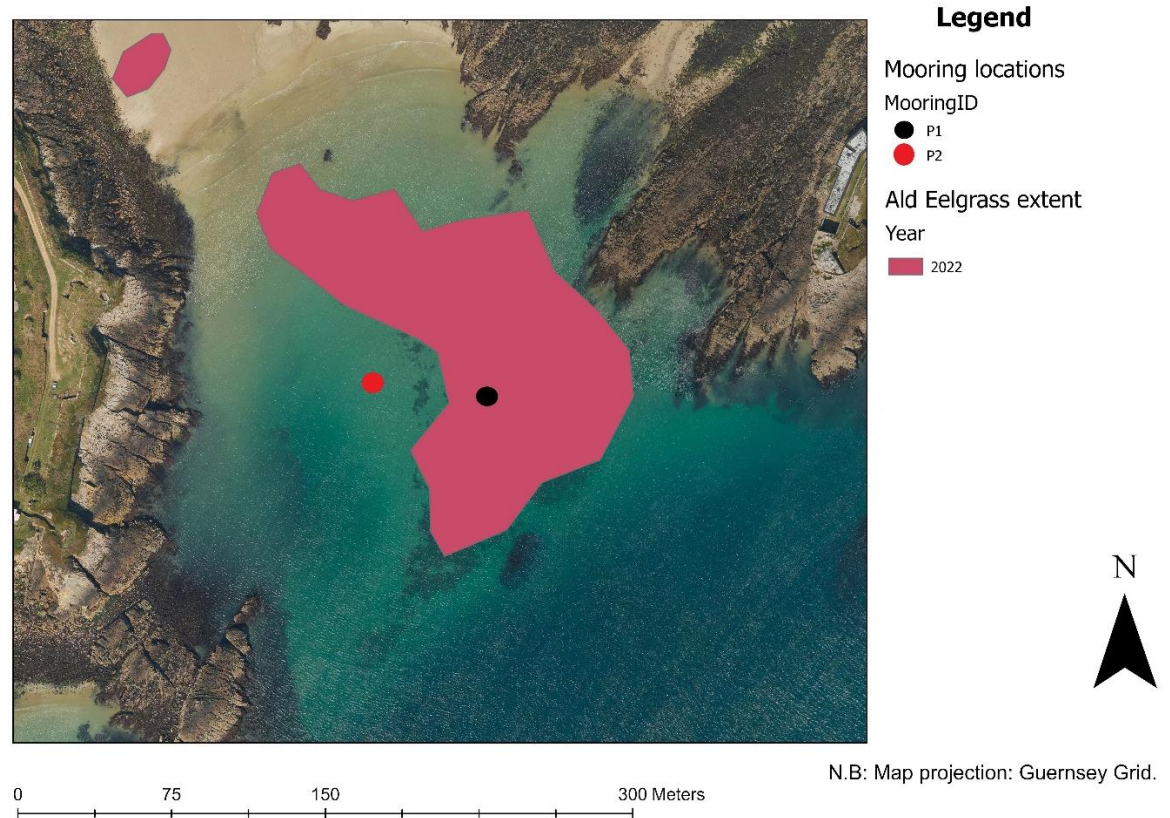


Figure Xb. Eelgrass (*Z. marina*) bed extent (assessed from drone survey and drop-down video camera survey) and traditional mooring locations, 2022.

Side scan sonar surveys

In 2022, side scan sonar equipment was jointly funded by Alderney Electricity and Charles Asprey for the AWT. This enabled an initial trial of the equipment within the subtidal sections of Longis Bay, which comprised two side scan sonar survey lines. This preliminary survey helped identify key features of the bay's seafloor, including water depth and substrate type (e.g. sand, boulders or bedrock etc.; see Figure X).

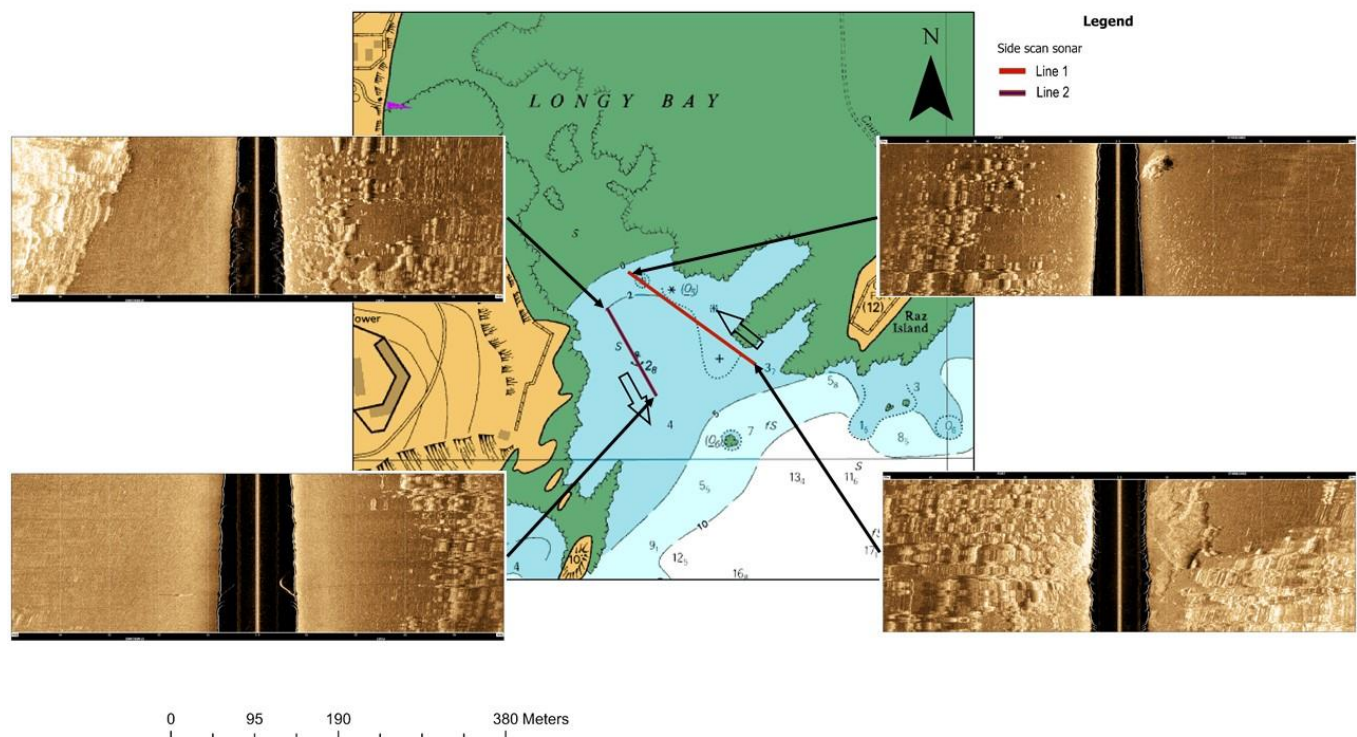


Figure X. Side scan sonar results within Longis Bay, 2022.

N.B. Side scan sonar output show flat sandy sections and irregular rock form features along the two survey lines.

Recommendations for 2023:

- Continuation of the intertidal surveys and citizen science projects, such as Seasearch and TWT Shoresearch.
- Continue long-term monitoring of the Eelgrass (*Zostera marina*) bed within Longis Bay, linked to the Bailiwick Eelgrass Exploration Project.
- Consider implementing existing and new complementary survey techniques, such as baited underwater video surveys (BRUV) and planktonscope surveys.

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 2023:

- 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 2023:

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 2023:

- 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 2022:

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.

In 2022, all plots except Longis 1 (grazed late 2021) were grazed. The herd currently consists of 6 juvenile males (Guernsey/Aberdeen Angus Hybrid). The current informal agreement with Stuart Cox (Kiln Farm) is to continue to supplement the herd with young males on rotation and this has helped to establish a grazing intensity closer to that required to maintain the grassland system on Longis.

Recommendations for 2023:

- 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.

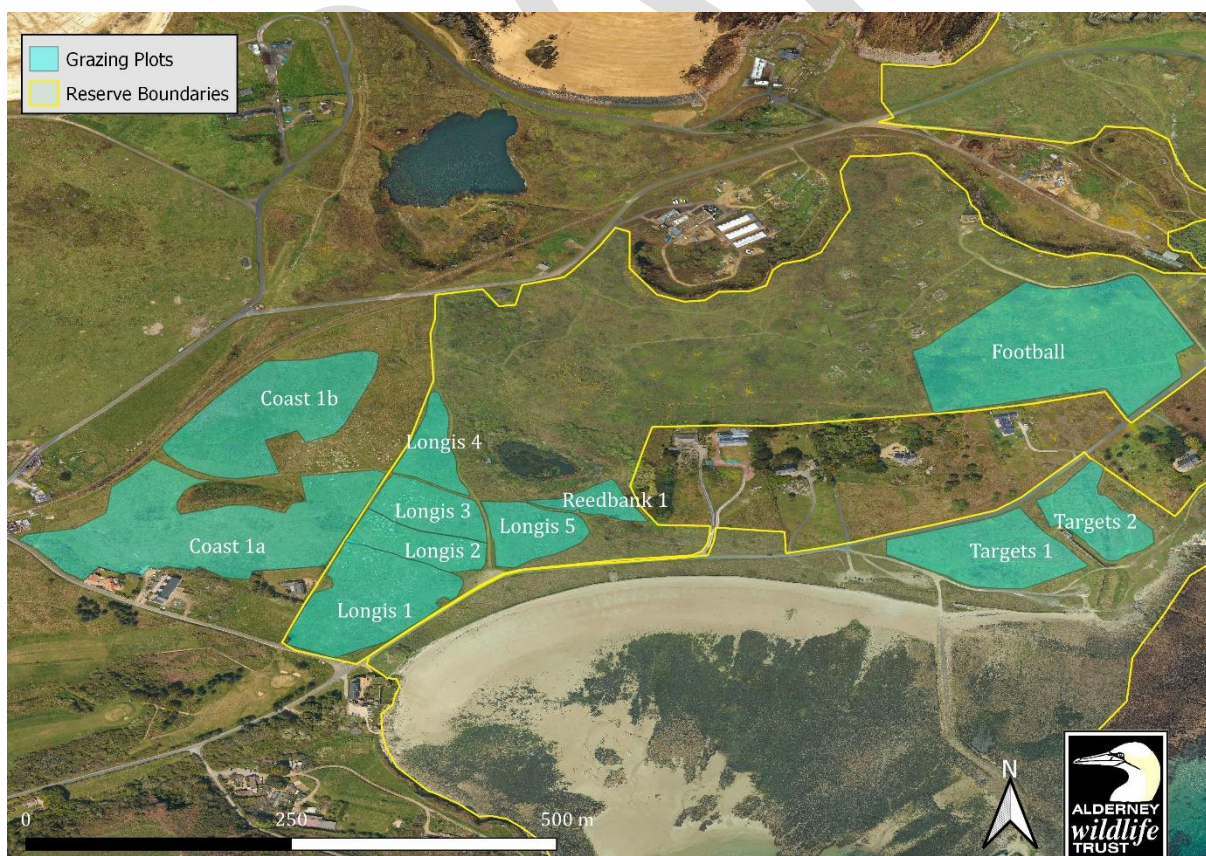


Figure 9. Alderney Grazing Project plots.

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 2021, with noticeable benefits to floral diversity when compared to areas left uncut (Fig. 10); however, cuts were not undertaken in 2022. 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 during the winter of 2022/23 or Autumn 2023..

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. Mechanical cutting of part of the site took place in 2022

Recommendations for 2023:

- Continue the mechanical cutting regime of 2021 and 2022.
- Perform 'Lower Houmet Herbé Cut' in early autumn or early 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).
- 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 prevent the spread of invasive species and arrest the succession of the ecologically important reedbeds into scrub. To achieve this the following actions are proposed :

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. 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 2023:

- 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). At the end of 2021 into early 2022 part of the reedbed was grazed by the AGAP herd and this was followed by a cut of the grazed area.

Recommendations for 2023:

- Carry out delayed 2021/22 cuts as soon as possible. Thereafter continue regular cutting regime
- Continue with reedbed monitoring schedule at high and low annual water levels.

- If resources become available, set up 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.).

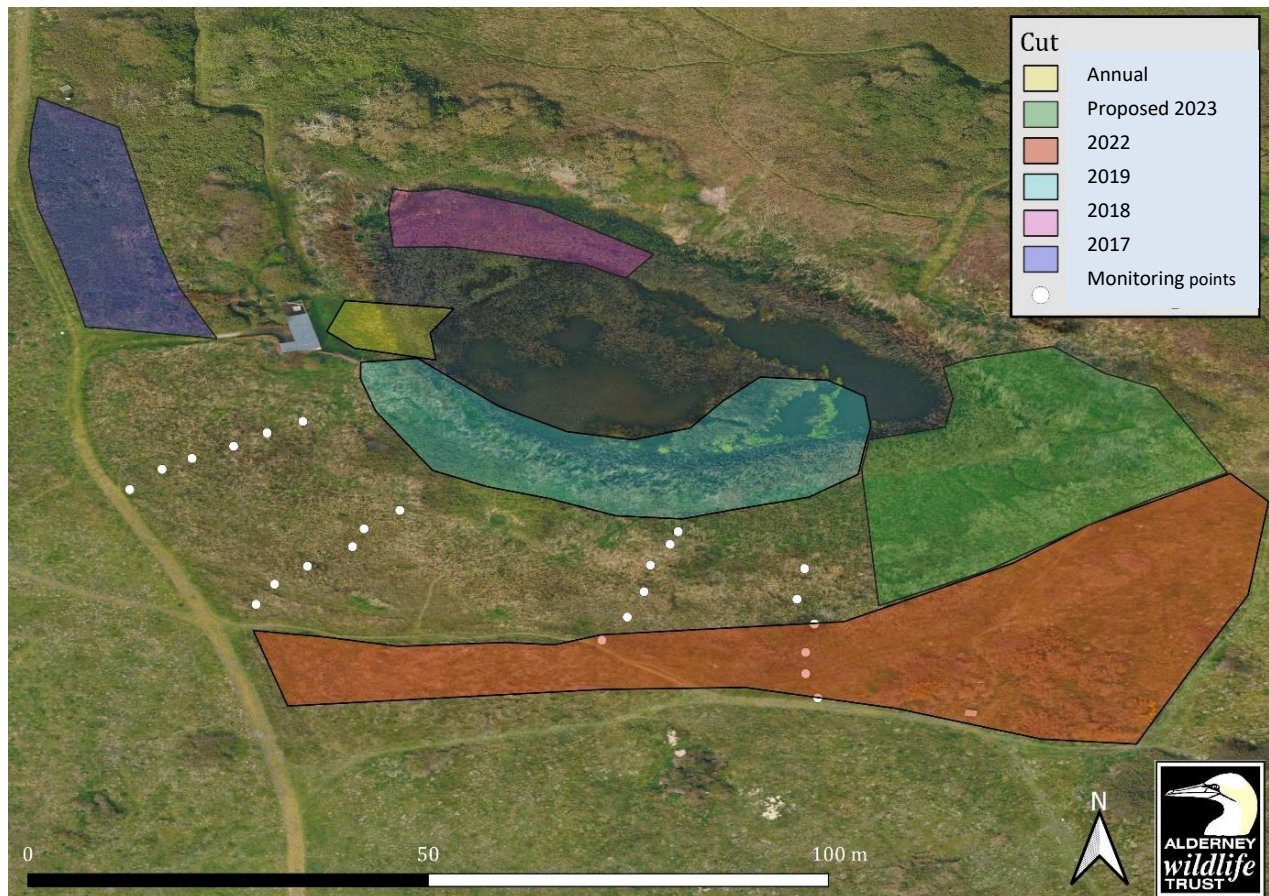


Figure 12. Work undertaken on Longis pond during the current 5 year planning cycle (2017-21).

Action 2.2.3 Tree aftercare

A screen of willow species surrounds the perimeter of the pond and the entrance to the bird hide and this was maintained throughout 2022.

Recommendations for 2023:

- Continue cutting back willow likely to be catching the wind and where it is rubbing against the structure of the bird hide.

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 has been 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 2023:

- Seek support from the State's Agricultural Team to undertake direct control. 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.

2.3 Mannez pond habitat management

The Mannez pond was a hotspot for dragonfly and damselfly diversity, but has seen worrying declines in species presence in recent years. 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 (*Typha 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. We have successfully created areas of open water during Autumn/Winter 2022 and this will provide an important habitat for birds over wintering, and dragonflies in spring.

Recommendations for 2023:

- Perform annual cuts to maintain open area in front of the hide (Fig. 13).
- Pile reedmace cuttings to provide a habitat for invertebrates and amphibians.
- See action 2.4.5 for biosecurity measures.
- If resources become available, set up the monitoring of abiotic conditions on the site to be compared with Longis (salinity, pH, etc.).

Action 2.2.7 Maintaining areas of open water

The action to repair the Mannez dam in late summer was again not completed in 2022. It is important that the States are contacted to decide if this is feasible in 2023.

Recommendations for 2023:

- 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 2022. Much of the organic matter was left in situ to promote invertebrate and fungal presence. Cuttings were also taken from existing plants to thicken up screening along the path to the bird hide and also along the edge of the pond to the ringing nets.

Recommendations for 2023:

- Continue ongoing maintenance.
- Consider planting native species suitable for this site to the south eastern side of the pond as part of the Alderney Community Woodland Autumn planting.

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 2022 in areas grazed by AGAP. Ragwort is a native species which supports a 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 2023:

- 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 take to the impot for incineration.

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. This is part of an island-wide study of Sour Fig to monitor encroachment.

On-going clearance by staff and volunteers, including groups of Duke of Edinburgh award students, has taken place throughout 2022, both on the Reserve and elsewhere on the island. However, the quantity and volume of debris has caused problems at the Impot and consideration needs to be given as to methods of future disposal

Recommendations for 2023:

- Continue to use WVs to regularly hand pull areas of *Carpobrotus* spp.
- Liaise with Nigel Dupont about the possibility of removing *Carpobrotus* from his land.
- Liaise with States Works Department re possible alternative methods of disposal.
- Map areas of *Carpobrotus* removed 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 2022 has been around the edges of footpaths.

Recommendations for 2023:

- Maintain areas of dense scrub but prevent its encroachment onto grassland areas using hand tools and tractor equipment where appropriate.
- Perform scrub control around the coastal heathland close to the Houmet Herbé trenches.

If resources allow, 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)

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 cutting took place during summer 2022 but in most areas only one cut was undertaken. A winter cut should be performed before the start of the breeding season if possible. Where dense grass and bracken are present the cutting must be collected to avoid enrichment.

Recommendations for 2023:

- 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 2022; however, current studies of removal techniques for *Crassula* were examined. A report produced by Hampshire and Isle of Wight Wildlife Trust trialled a number of *Crassula* removal methods. None of the techniques they trialled 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 2023:

- Implement robust biosecurity measures with all site users, including Alderney Railway Society and ABO Ltd, 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 Trusts 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 2022 there was no need to remove the tents of these moths.

Recommendations for 2023:

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

3. Public engagement and education within Longis Reserve

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 necessary:

Action 3.1.1 Footpath cutting

Footpaths were regularly cut during 2022 to prevent scrub and grass encroachment and allow continued access.

Recommendations for 2023:

- Perform regular cuts of the footpaths using the Power scythe 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 cleared and repainted in 2022.

Recommendations for 2023:

- Clear vegetation from around the stones
- Repaint marker stones as necessary but at least annually
- 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 2023.

Recommendations for 2023:

- Monitor water levels within trenches and pump water on a reactive basis.
- Ensure that the trench edges are kept clear and repaint as necessary.

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:

Action 3.2.1 Signage, information and important features

In collaboration with Visit Alderney, signage was maintained throughout the reserve.

Recommendations for 2023:

- 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:

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 have been regularly monitored and maintained during 2022,

Recommendations for 2023:

- 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 books
- Replace flooring in the ringing area of Longis Hide where this has rotted out.

Objective 3.4. To involve the community in regular events and activities. To achieve this objective, the following actions are proposed for 2023:

Action 3.4.1 Wildlife Volunteers

Wildlife Volunteers (WVs) are a vital resource to the AWT, and despite falling numbers at the beginning of the year, the group has been steadily increasing and we now have a good number attending most sessions. To ensure this continues, we must make sure to engage with them on the type of tasks they like to do as well as continuing with outreach for new members.

Recommendations for 2023:

- 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 Living Seas Coordinator, Outreach Officer and Ramsar Officer conducted rock pool sessions throughout the year.

Recommendations for 2023:

- In collaboration with the Marine and Outreach teams, offer both day and evening rockpooling events through the late spring and summer.

Action 3.4.3 Beach Cleans

AWT's WVs participated in a number of beach cleans during 2022, across all beaches. Some were part of the Marine Conservation Society surveys which involved recording each item found. This will contribute towards a wider dataset which seeks to track major sources of rubbish and pollution.

Recommendations for 2023:

- 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).
- Promote nurdle hunts along the coastline of Longis reserve, particularly within the month of the Great Nurdle Hunt (September/October).

Actions 3.4.4/3.4.5/3.4.6/3.4.7 Wildlife Week/Big Wild Weekend/Alderney Week/Wildlife Festival

Recommendations for 2023:

- Ensure the Longis Reserve is well represented within the events programme [for the year](#).

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Appendices

Appendix 1 Gantt Chart Detailing Work Programme for the Year 2022

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												
Survey and monitoring												
Terrestrial												
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												
Intertidal (Conducted by Marine Ecologist and Ramsar Officer)												
Habitat mapping survey												
Intertiday crab surveys												
Green ormer pop. assessment												
Invasive species assessment												
Seasearch Surveys												
Eelgrass ecology survey												
Fish and shellfish assessment												