Longis Nature Reserve
Annual Action Plan 2021

Report compiled by: Jack Harper

Reviewed by: Roland Gauvain and Lindsay Pyne

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Alderney Wildlife Trust
48 Victoria Street
Alderney, GY9 3TA
Channel Islands
conservation@alderneywildlife.org
www.alderneywildlife.org

Contents

Introduction

The Longis Reserve (Fig. 1) consists of a varied mosaic of habitats that provide for a wide range of plant, animal and insect-life. It is also a key recreational area for residents and visitors to Alderney, popular with dog-walkers, beach-goers and those drawn by the wildlife on offer. The purpose of this document is to outline the 2021 management actions required to deliver the objectives described in the Longis Reserve Management Plan 2017-2021 (Manzano-Rubio and Whyte, 2017). The Longis Reserve Management Plan 2017-2021 was ratified by the General Services Committee (GSC) of the States of Alderney (SoA) in February 2017 and represents the first formal Management Plan for the Reserve since the initial 3-year Management Plan expired in 2006. The commitment to produce an Annual Action Plan to be ratified by the GSC and subsequently an annual review to be presented to the GSC for each year of the Management Plan is laid out in the Management Plan document.

Figure 1 Boundaries of Longis Reserve

Background

The Longis Reserve is Alderney's oldest Nature Reserve established in 2003 under a Memorandum of Understandings 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 while ensuring that the established public use of the site is not affected.

The Reserve covers around 80ha at the eastern end of the island. It contains fifteen different terrestrial habitats and forty-nine marine biotopes. Two freshwater ponds provide key habitats for some of Alderney's flagship species and the coastal areas and common are important areas for Alderney Sea-Lavender, Sand Crocus, and the Glanville Fritillary. The reserve as a whole is a crucial refuge for breeding and wintering birds.
It also encompasses significant historical features including numerous bunkers and other German and Victorian fortifications. Longis Common is the site of numerous Bronze Age and Roman artefacts which are part of the rich cultural history of Alderney's landscape.
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

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.

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.

Actions

A Gantt chart detailing the timetable of works is presented in Appendix 1.

1. Ecological surveying and monitoring

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.

Actions for 2021:

- 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.
- Undertake a repeat Habitat Phase 1 survey.

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)(Appendix 2).

Actions for 2021:

- Complete reedbed monitoring transects at the highest (~late February if COVID-19 restrictions allow) and lowest (August) water levels of the year.
- Continue to monitor the cover of yellow flag Iris (*Iris pseaudacorus*)

Action 1.2.2 Bat monitoring

There is already an established bat monitoring route through the reserve (Fig. 1), set up following the National Bat Monitoring Programme (NBMP) guidelines and methodologies (Appendix 3).

Actions for 2021:

- Complete NBMP surveys twice in July, following established route and methodology.
- Use historical data to examine any trends within the Longis site.

Action 1.2.3 Butterfly monitoring

There is already a UK Butterfly Monitoring Scheme (UKBMS) transect located in the reserve (Fig. 1) and this is monitored annually following a set methodology (Appendix 4). Butterfly surveys were successfully completed throughout 2020, even despite lockdown.

Actions for 2021:

- Continue with the established UKBMS survey effort.
- Use historical data to draw conclusions on the butterfly populations in Longis.

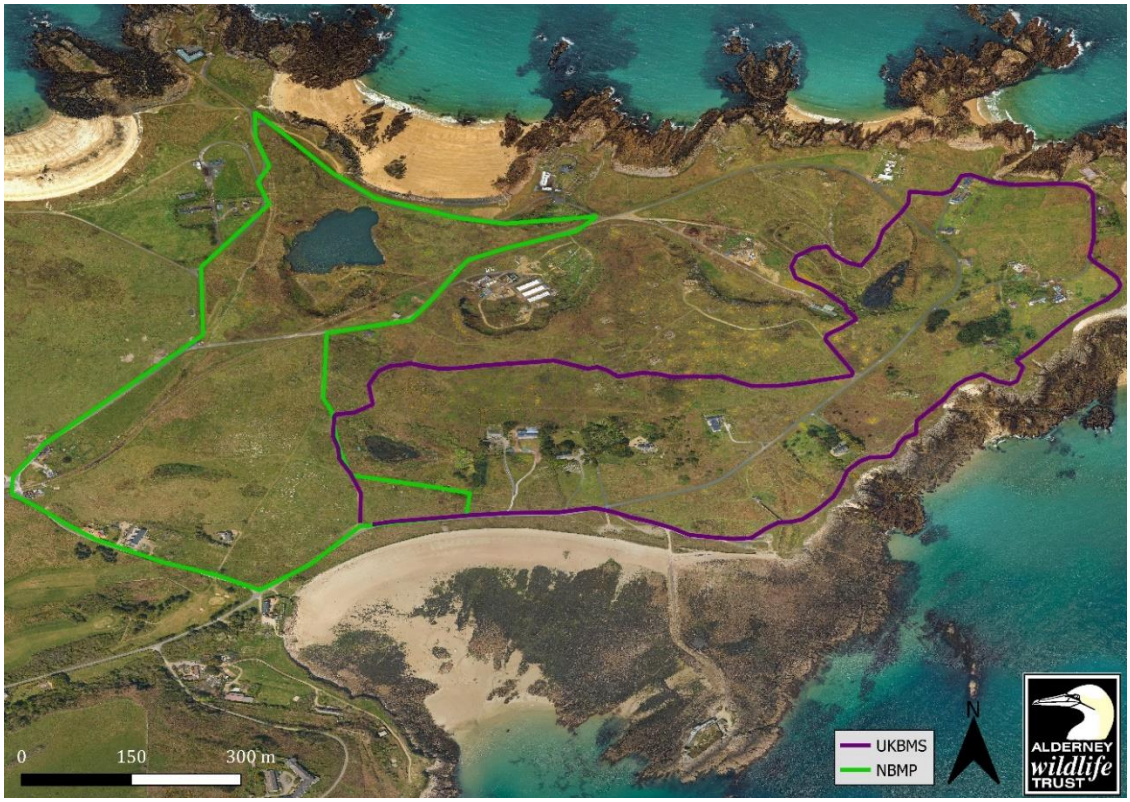

Figure 1. National Bat Monitoring Program (NBMP) and UK Butterfly Monitoring Scheme (UKBMS) transects within Longis Reserve.

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 (Appendix 5).

Actions for 2021:

- Continue bee surveys in the reserve as part of the island wide effort, liaising with the Bumblebee Conservation Trust.
- Continue to examine the historical data to determine if any trends are present for the abundance of Bee species within Longis reserve.
- Use findings from monitoring data to review management practices on the reserve.

Action 1.2.4 Moth monitoring

Moths are key pollinators and should be surveyed alongside bees and butterflies. The AWT runs a moth trap at Essex Farm, and it would be worth assessing the diversity and abundance of moths inhabiting the Longis Nature Reserve, particularly in light of the ongoing Alderney Grazing Animal Project operating across the reserve. See Appendix 6 for Garden Moth Scheme methodology.

Actions for 2021:

- Liaise with the Ecologist (remotely - dependent on Covid19 restrictions in place) to develop a study on the effectiveness of AGAP in relation to moth diversity and abundance on the Longis Nature Reserve.

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. 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.

Actions for 2021:

- 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 should be carried out during sunny, calm and dry weather conditions.
- Maintain areas of open water in both ponds, but especially Mannez, to recover the overall invertebrate and Odonata diversity.

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, similar to Jersey's JARRS. The aim is to create a bailiwick atlas of herpetological fauna.

Actions for 2021:

- Continue discussions with the GBRC and ARC
- Incorporate these surveys into the survey programme for the Longis Nature Reserve

Action 1.2.7 Breeding birds

There has been sporadic participation in the BTO Breeding Birds Survey (BBS) on the reserve historically. Common Bird Census (CBC) methodology may act as a more accurate measure of the breeding birds on Longis Reserve, but requires additional surveying effort of more elusive species. All breeding bird surveys will be carried out by the Avian Ecologist.

Actions for 2021:

- Follow CBC methodology in order to detect and define breeding birds on Longis reserve.
- Incorporate additional species specific surveys of more elusive species (water birds, coastal nesting waders, birds of prey and reed nesting species) following the methods outline in Gilbert et al (1998).
- Make survey data available to the public by sharing it with the Alderney Biodiversity Centre.

Action 1.2.8 Marine and intertidal surveys

The Longis Reserve boundary extends into the low water mark of Longis Bay. The bay contains 49 marine biotypes but is often overlooked in the management of the reserve.

Actions for 2021:

- Undertake survey for ormers and invasive species during low spring tides in March.

- Liaise with the Ramsar officer and Marine Ecologist to develop survey plans and conservation actions for Longis Bay (Appendix 1).
- Ensure that the findings of the recent master's project on available intertidal survey methods are applied to the monitoring regime of the site.

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.

Actions for 2021:

- Conduct Scaly cricket surveys at least once within the Houmet Herbé and Longis Bay areas.
- Depending on the COVID 19 restrictions later in the year, invite off-island experts to continue to survey Alderney's arthropod species, building on the work conducted in 2020.

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 website is in the later stages of 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.

Actions for 2021:

- Ensure that all 2021 records are uploaded to the ABC (excluding those associated with data collection schemes already connected with the National Biodiversity Network (NBN)).
- 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 are proposed for 2021:

Action 2.1.1 Alderney Grazing Animal Project

Figure 2 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 2020 plots were grazed in smaller areas than previously, the plots labelled Longis 1, 2, 3 and Coast 1a and 1b were grazed during 2020.

Actions for 2021:

- Urgently replenish the herd to avoid under-grazing and proliferation of rank grass.
- Liaise with Stuart Cox regarding the feasibility of using some of his herd to supplement our regime during the winter and spring months.
- Prioritise grazing around Longis pond to promote Common Reed (*Phragmites australis*) establishment and inhibit rank grass extent (Fig. 2, Reedbank 1).
- 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.

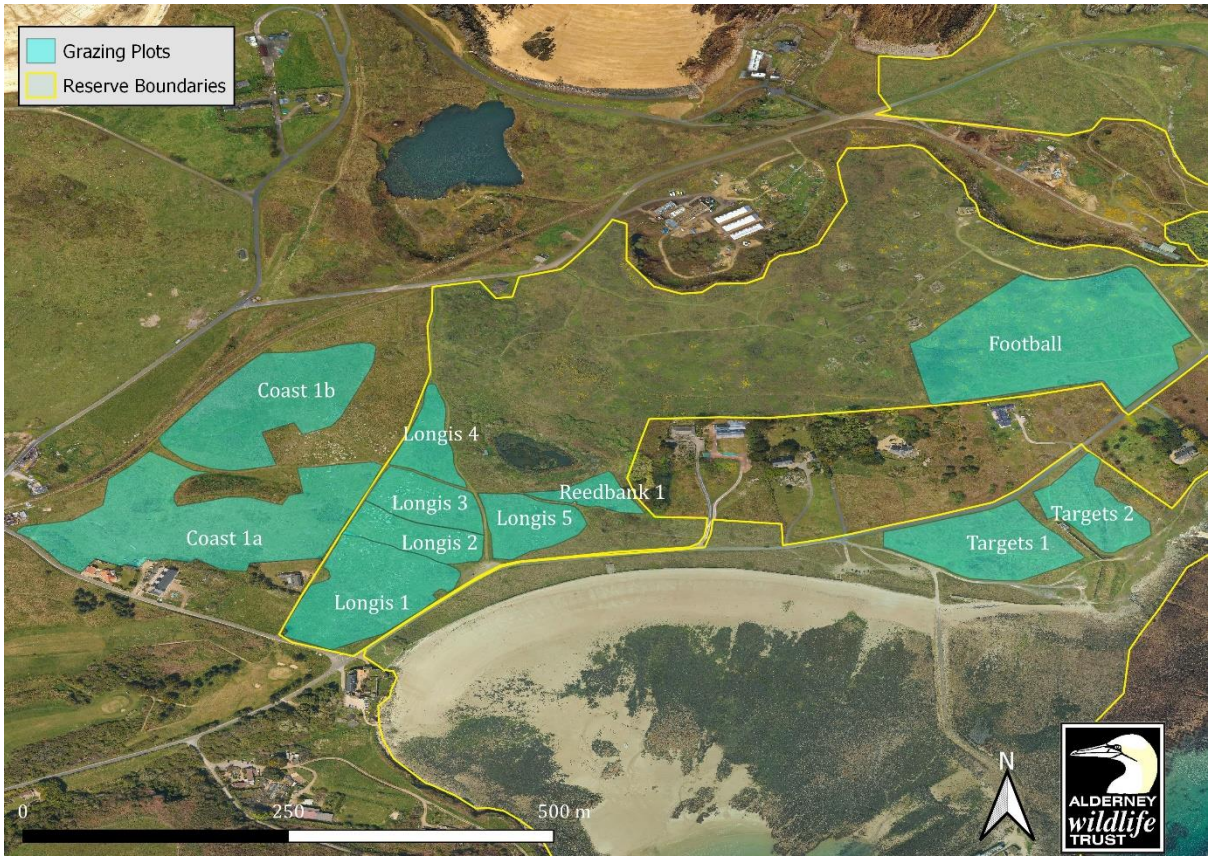

Figure 2. Alderney Grazing Project plots.

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. 3). It is important to maintain these cutting regimes to maintain species richness and to prevent the encroachment of bracken and scrub. The mechanical cutting regime of 2020 was disrupted by the COVID-19 pandemic.

Actions for 2021:

- Return to mechanical cutting regime of 2019.

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

Figure 3. 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 are proposed for 2021:

Action 2.2.1 Yellow-flag iris control

Although a native and valuable species to pollinators, the yellow-flag iris (*Iris pseaudacorus*) 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 (Fig. 4). Initial evidence suggests that previous control methods have been ineffective and thus our methods should be reviewed. However, it is important to take into account the trade-off between removing this plant to benefit the reedbank and the disturbance caused by its removal to the species currently present in the habitat.

Actions for 2021:

- 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 4. 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 (Fig. 5).

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).

Actions for 2021:

- Continue with monitoring plan at high and low annual water levels.
- Carry out delayed 2020 cut as soon as COVID-19 restrictions allow (Fig. 5).
- Carry out 2021 cut in the latter half of the year.
- Monitor salinity and pH and other abiotic factors in the pond throughout the year.
- Alter the path to the bird hide to avoid the current fragmentation of various patches of reed, this will need to be done with public consultation including both regular dog walkers on site and via local press.

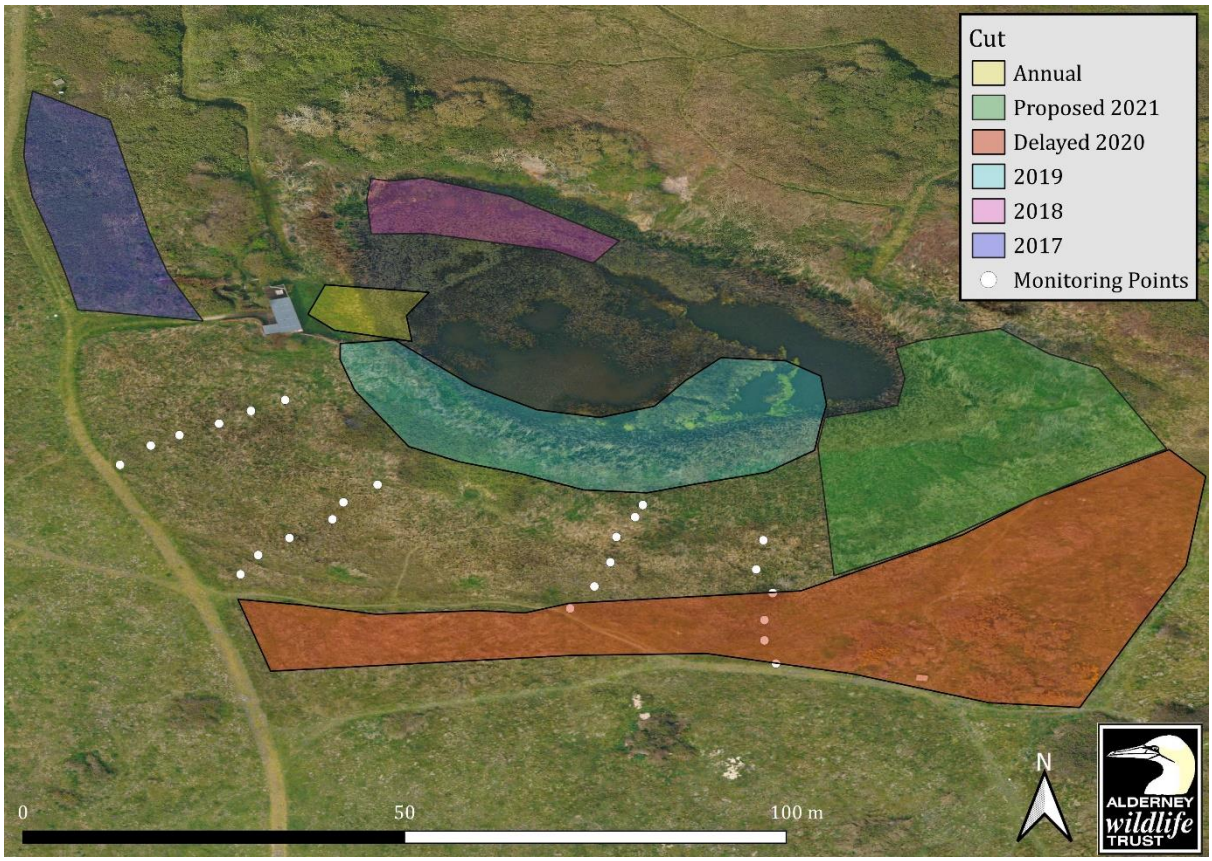

Figure 5. Work undertaken on Longis pond during the current 5 year planning cycle (2017-21).

Action 2.2.3 Tree aftercare

A screen of willow species surrounds the perimeter of the pond and the entrance to the bird hide. Many of the trees that make up this screen are covered in sooty mould. The screen requires regular maintenance.

Action for 2021:

- Develop a plan for the wooded, scrubby area in the North-western corner of the pond.
- 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. Scheduled control of poplar spread was limited by COVID-19 restrictions for part of 2020. Nonetheless, two clearance sessions were undertaken, in late spring and late summer, outside of the breeding season.

Actions for 2021:

- Treat stumps with appropriate herbicides/copper nails in collaboration with the State's Agricultural Team. 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, constructed with more natural materials. Sustainably sourced materials from the Alderney Community Woodland and the other AWT sites have been suggested.

Actions for 2021:

- Test floating island and establish if current design is adequate.
- If not, construct a new floating island using conservation volunteers to deploy this alongside reed management work to reduce disturbance.
- Use natural materials such as brushwood faggots for buoyancy and hazel weaving for structure.

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. In 2019, the reedmace was cut in early November to maintain the visibility from the hide, as part of the rotational management of the reedmace (Figure 6). As cuts were made late in 2019, cuts were not performed in 2020.

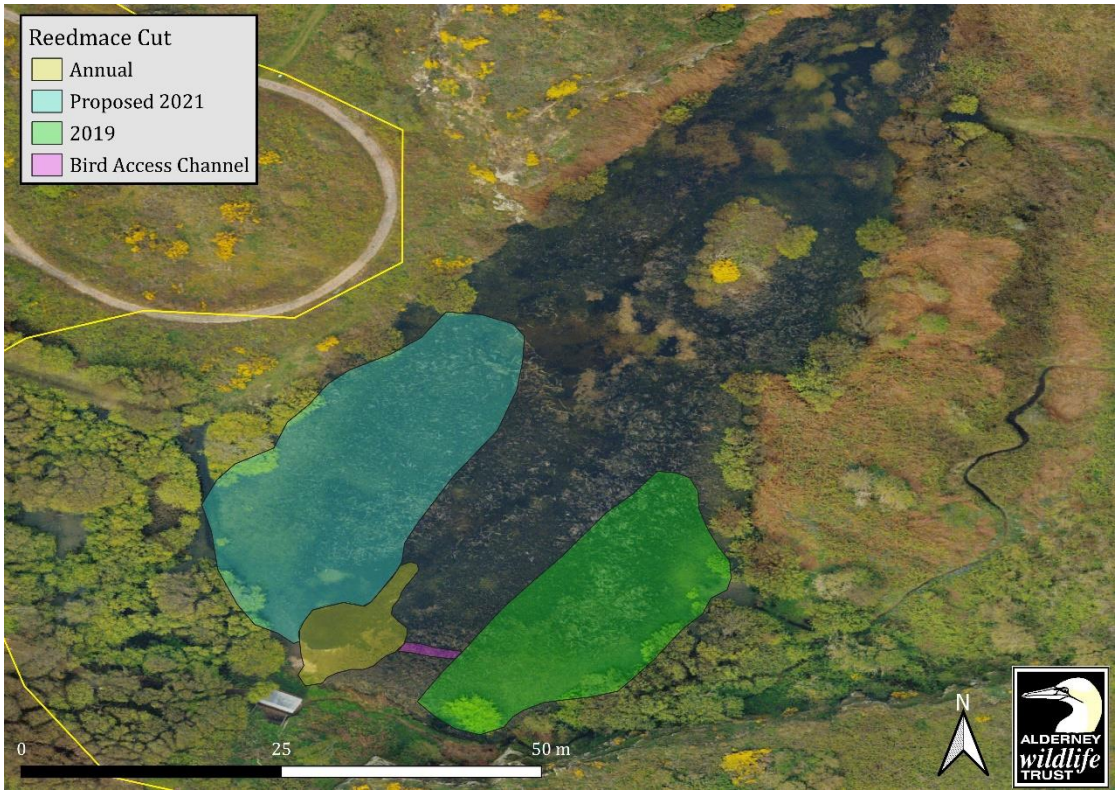

Figure 6. Work undertaken at the Mannez Pond in 2019 and planned for 2021.

Actions for 2021:

- Perform annual cuts to maintain open area in front of the hide (Fig. 6).
- Continue monitoring abiotic conditions (salinity, pH, etc.).
- As part of a management scheme, ¼ of the reedmace should be cut back every two years. Cutting should next be done in 2021 in the area shown in Figure 6.
- 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 dam in late summer was not completed in 2020, because of funding restrictions due to COVID-19, and should funding become available could be considered for 2021.

Actions for 2021:

- Subject to available funding: 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.

Actions for 2021:

- 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 2020 in areas grazed by AGAP. However, Ragwort is a native species which supports diverse range of invertebrates (over 200 species recorded in the UK), including the Cinnabar moth (*Tyria jacobaeae)*. It is therefore 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.

Actions for 2021:

- 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.

Recommendations for 2021:

- Map areas where *Carpoprotus* spp. is present in order to monitor its spread, forming part of an all island mapping effort in conjunction with the SoA public works under the SoA/AWT SLA.
- Use mapped areas to create a more systematic removal and monitoring plan.
- Continue to use CVs to regularly hand pull areas of *Carpoprotus* spp. and dispose of through incineration at the Impot.

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.

Actions for 2021:

- Maintain areas of dense scrub but prevent its encroachment onto grassland areas using hand tools and tractor equipment where appropriate.
- Create a varied age structure of gorse by clearing more mature stands outside of the breeding season using hand machinery and tractor mounted equipment where appropriate. However, well-established areas with no undergrowth should be maintained for their habitat quality.

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 was one of the areas most affected by the pandemic, as lockdown was in force while the early cuts would have otherwise occurred. Nevertheless, a full cut of all areas was performed in September 2020. It is crucial that cuts are performed at the start of the season and regularly thereafter in 2021 in order to minimise the setback to the control of bracken spread.

Actions for 2021:

- Undertake regular cutting sessions outside the breeding season using tractor mounted and handheld equipment
- 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 (Cr*assula helmsii*) and Parrot's Feather (*Myriophyllum aquaticum*) are invasive non-native species which are highly competitive and can quickly smother native species. Control is necessary to maintain the extent of open water and lesser reedmace. 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.

Due to the condensed practical workload and reduced resources during 2020 an invasive management plan to deal with the *Crassula* situation was not developed. Efforts need to be made in 2021 to begin addressing this issue.

Actions for 2021:

- Implement robust biosecurity measures with the ABO Ltd. and others working in and around Mannez pond to prevent the spread from Mannez pond to Longis.
- While water level is low in summer, undertake control measures for Parrot's Feather and *Crassula* down to the rhizome through manual removal in conjunction with the reedmace control plan (Action 2.26).
- Investigate whether abiotic conditions are responsible for the lack of *Crassula* in Longis Pond and whether salinization 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.

Action 2.4.6 Brown-tail moth

The larvae of the brown-tail moth (*Euproctis chrysorrhoea*) can cause extremely adverse allergic reactions to both people and animals. As the brown-tail population was at a low level during 2020 there was no need to remove the tents of these moths.

Actions for 2021:

- 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 proposed in 2021:

Action 3.1.1 Footpath cutting

Footpaths need regular cutting to prevent scrub and grass encroachment and allow continued access. While footpaths were unable to be maintained during the lockdown of 2020, volunteers' willingness to carry out holding work using hand tools during their exercise period over lockdown enabled a quick recovery for the programme and all paths were maintained as normal.

Actions for 2021:

- 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 2020.

Recommendations for 2021:

- Create a map of marker stones for the reserve
- 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.

Action for 2021:

- Install a solar powered pump during the wettest months to prevent flooding and ensure access.
- Mark the trench edges so that they are clearly visible to the public to avoid risk of accident

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 conjunction with the Visit Alderney, funding that was previously reserved for work at the Odeon has been released and could be considered for other works around Alderney including signage and information boards.
In collaboration with Visit Alderney, we will continue to maintain and improve signage around the reserve. During 2020 new signage was installed in several sites on Longis Reserve, including both bird hides.

Recommendations for 2021:

- Work with the Visit Alderney team to improve access and information points around the site.
- In line with recommendation 4.5.3 of the 2020 Ramsar review, liaise with the Ramsar officer and avian ecologist to determine if signage is required to warn against the disturbance of sensitive breeding birds. If breeding site selection is judged to be subject

to regular human disturbance seek the appropriate planning permission for sign installation.

- 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 2021:

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 fortifications 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 2020 lockdown, and were then regularly monitored and maintained thereafter. They were reclosed during mid-January 2021 because of the latest COVID-19 lockdown.

Actions for 2021:

- 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 2021:

Action 3.4.1 Conservation Volunteers

Conservation volunteers (CV) are a vital resource to the AWT, providing hundreds of hours of effort annually. However, engagement with under 30's is poor.

Actions for 2021:

- 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 Rockpooling

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.

Actions for 2021:

- 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 perform a number of beach cleans annually, collecting 100's of kilograms of rubbish. However, specific beach clean events are important to both highlight the issue of plastic pollution to the wider community and as a valuable opportunity to encourage people to volunteer more regularly.

Actions for 2021:

- In collaboration with the Outreach Officer, promote the Big Channel Island Beach Clean event (12th – 14th 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 (17th – 25th April).
- In collaboration with the Outreach Officer, organise a beach clean as part of World Oceans Day (8th June).

Action 3.4.4 Wildlife Week (31st May – 6th June)

Actions for 2021:

- 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 (18th – 20th June)

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

Actions for 2021:

- Ensure the Longis Reserve is well represented within the events programme, ensuring activities do not overlap with events planned for Wildlife and Alderney week.

Action 3.4.6 Alderney Week (2nd – 9th August)

Actions for 2021:

- 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 (1st – 30th October)

Actions for 2021:

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

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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												
Carpobrotus 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												

Appendix 2 Reedbed Monitoring Plan

The Longis pond – Reedbed monitoring

1. Reedbeds

1.1. Common reed (*Phragmites australis*)

Common reed (*Phragmites australis*) is a tall, perennial, rhizomatous grass growing in wetlands. It commonly forms extensive stands known as reedbeds. Common reed tolerates a wide variety of environmental conditions and it is able to withstand submerged conditions. It can grow both in shallow standing water and on shore. The stems grow to 2-4m tall. The leaves are 20-30cm long. Inflorescence is a large, dense, dark purple panicle, about 20-50cm long.

The aboveground growth begins in the spring when soil and ambient temperatures trigger growth from belowground tissues. Growth continues throughtout the summer until seed set. Common reed flowers in late summer. After the seeds are formed plants begin to senesce and shift resources to belowground tissues. Although dead, the strong stems will remain erect throughout the winter. The stems remain standing the following year, helping to aerate the submerged roots.

Common reed reproduces primarily vegetatively from a vast underground rhizome network. Common reed's seeds are spread by wind. Wind-dispersed seeds and seed banks can play an important role in establishing new plants in areas free of vegetation.

1.2. Reedbeds

Reedbeds are wetland habitats primarily dominated by common reed. They are transitional habitats found in the zone between water and land. Young reeds colonise open water or wet ground. Over time reedbeds can gradually dry out as they build up a thick litter layer that eventually rises above the water level. More plants are able to colonise the drier areas where litter has accumulated. Eventually reedbeds will be encroached by scrub and succeed to woodland if they are left unmanaged.

1.3. Management

Management is important for maintaining a range of successional phases and variety of ages within the reedbed. Reedbed management focuses primarily on two issues: the water regime and the removal of vegetation. Natural water regime with cycles of higher water levels in the winter and lower water levels in the summer is generally more benefitial to the wildlife than having stable deep water year round.

The vegetation can be removed by cutting, by burning either cut or standing vegetation, or by removing the surface layers of reed litter. Grazing can also be used to manage reedbeds. In conservation, reed cutting (or vegetation removal by other methods) is done for two main reasons: to slow, or reverse, the natural succession to scrub and woodland and to increase structural variation in the reedbed. Cutting reduces the rate of litter accumulation and at the same time stimulates the production of new reed.

Conservation cutting to maintain reed dominance is undertaken in the winter during the non-growing season. Summer cutting of reed reduces its competitive ability allowing a more diverse mix of vegetation and ultimately eliminates the reed. The reedbed is cut in rotation to ensure a varied age structure. Burning can be used to remove already cut reed or standing reed in late winter when the reed is dead and dry. Due to the small size of the reedbed at Longis pond, burning standing reed is not a suitable method. However, raised burning areas have been established successfully in the past. Cut reed has been manually raked and gathered to the raised burning areas and burnt on site that way. Surface layers of reed litter can be removed to promote growth from the rhizomes. By removing both the litter and rhizome the area can be returned to open water. Grazing of reedbeds is a potentially valuable method for maintaining early succession reedbed. In areas where grasslands are present, low intensity grazing can be used to create dynamic reed-wet grassland interfaces (White et al., 2014).

2. Biodiversity value of reedbeds

Reedbeds are diverse transitional wetland habitats, which can support rich wildlife. Reedbeds value for wildlife is affected on three different levels:

Size of the reed bed
Proportion of different successional phases within the reedbed
Structural variability within the successional phases

In general, larger sites allow more habitat variation and are more likely to support viable populations of wetland species. Reedbed sites should include areas of open water. Inward encroachment of the reed might need to be controlled to maintain an area of open water. Having areas of deeper water within the water bodies helps to decrease the inward encroachment. Scrub removal might be needed to control the scrub encroachment and to maintain the size of the reedbed. The aim should be to keep the reed dominant, but not necessarily remove all scrub. Having some scrub within the drier parts of the reedbed can benefit the wildlife (White et al., 2014).

2.1. Successional phases

All parts of the hydrological gradient from open water to dry reed have biodiversity value. Successional phases of reedbed can be devided into four categories: open water, wet reed, seasonally flooded reed and dry reed. All of them support different fauna and flora. Thus,

ideally all stages of reedbed succession should be present within a site to support maximal amount of species. Below are listed some of the species associated with different successional phases. The lists are mostly based on Bringing reedbeds to life project and report led by RSPB. Bringing Reedbeds to Life was a large-scale programme of scientific research and habitat monitoring, coupled with practical habitat management. The importance of reedbeds for birds is discussed on a separate paragraph after that.

Open water

- Varied open water bodies are important for aquatic invertebrates and macrophytes.

Wet reed (wet year round)

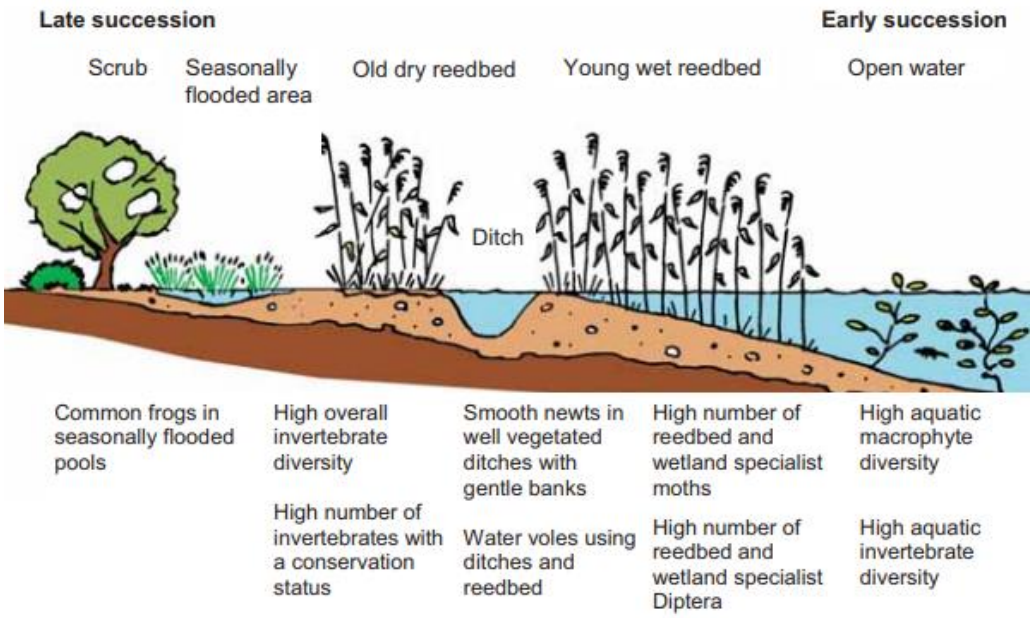
- Early successional reedbeds are important for reedbed and wetland specialist invertebrates.
- Well-vegetated ditches are important for newts.

Seasonally flooded reed

- Seasonally flooded pools are important for common frogs.
- Blue-zone areas (seasonally wet parts of reedbed) tend to be highly productive for invertebrates and amphibians such as Palmate newts. As such they are good feeding areas for birds.

Dry reed

- The older, drier parts of the reedbed support the highest overall invertebrate diversity.
- As water level declines and reed dominance decreases, the number of associated plants rises. Thus, dry reeds have the highest plant diversity.



Picture 1. Invertebrate and amphibian species associated with different parts of the reedbed (picture taken from Bringing Reedbeds to Life report)

The reedbed at Longis pond is an important habitat for birds. In the winter it provides cover for resident waterfowl such as mallard, coot and little grebe as well as wintering teal, wigeon, snipe and water rail. The reedbed is also used by little egret and grey heron. During the spring and autumn migration numerous birds, including a wide variety of warblers, forage among the reeds. Migrating swallows and sand martins also use the reedbed to roost in and their presence often attracts raptors such as the resident sparrowhawk as well as transient species such as hobby and merlin. In the summer reed warbler, coot, moorhen, little grebe and mallard all nest among the reedbed. Some rarer species such as fan-tailed warbler and Cetti's warbler have also been seen and may occasionally breed.

2.2. Structure

The structure of the reed naturally varies along the hydrological gradient. It is also highly influenced by cutting and other management actions. The goal of the reedbed management is to have variable reed structure and variety of ages within a site. Besides varied reed structure, having varied underwater topography is also benefitial. The open water within the reedbed should ideally consist of both shallow and deep water. Shallow waters (<1.5m) provide habitats for submerged and emergent plants. Areas of deeper water (>1.5m) are required to reduce the potential for reed dominance. Connectivity of water bodies is important to allow water flow.

In general, reedbed that dries up has sparser reed, but the reed stems are taller and thicker. The diagram below shows how the specific characteristics of reed structure change when moving from young, wet reed to old, dry reed.

Young, wet reed  **Old, dry reed**

Reed height increases

Stem diameter increases

Live stem density decreases

Total stem density decreases

Reed degeneration results in lower live stem/rhizome density, and fewer panicles/lower seed production. Cutting is used to stimulate the production of new reed. The effects of reed cutting on the reed structure are listed below.

Cutting **increases** reed stem density and the number of panicles (flowering heads).

Cutting **decreases** reed height, stem diameter, and the number of dead stems.

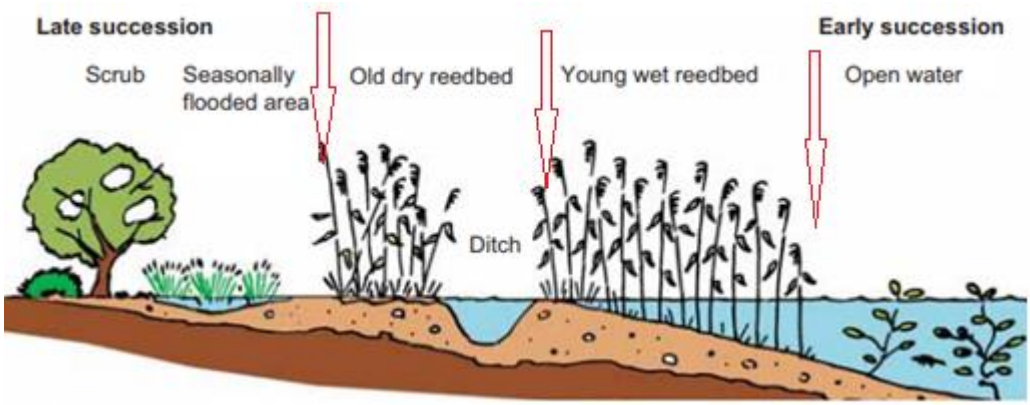
REEDBED MONITORING WILL INCLUDE

1. Using aerial photographs (interval depending on the availability of new aerial photographs):

- size
- the area of open water (to monitor the inward encroachment)
- scrub encroachment

2. Using transects from dry reed to open water (twice a year)

- hydrological regime: winter and summer water levels
- proportions of different successional phases: open water, wet reed (standing water year round), seasonally wet reed, dry reed
- in practice three points are needed: 1. the start of dry reed, 2. the start of standing water, 3. the start of open water (picture below)
- the same transect should be monitored twice a year, once in the winter (highest water level) and once in the summer (lowest water level)



3. Using quadrats along the transect (would only be measured in late summer)

- the structure of the reedbed
    - reed stem height
    - reed stem diameter
    - number of live stems (density)
    - number of dead stems (density)
    - total number of stems (density)
    - number of panicles (flowering heads)/percentage of stems in flower
    - standing water
- 3-4 quadrats along the transect: dry reedbed, seasonally flooded reedbed, wet reedbed

4. Recording the management

5. Recording the spread of flag iris

TIMING:

The vegetation of wetlands is most developed late in the summer (July-September) and is best monitored in August when water levels are at their lowest (Hill et al. 2005). The presence of breeding birds may also restrict access at the other times of year.

Since reedbeds are wetland habitats, the rise and fall of the water table are important factors determining the plants and communities that occur. Hydrological regimes should therefore be monitored (Hill et al. 2005). To monitor the hydrological regime adititional visit should be made in late winter (February) when the water levels are the highest. Alternatively or additionally, the boreholes sited to either side of the pond could be used to establish a water table profile for the pond, montioring hights alongside a measuremet from a fized point in the pond to establish how the gound water profile effects the water levels in the pond and fluctuates during the course of the year.

References:

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Appendix 3 Bat Conservation Trust guidelines in how to participate in the National Bat Monitoring Program

Field Survey card (noctule, serotine, pipistrelle)

Planning your survey
Survey dates: 1st to 15th July; 16th to 30th July
Materials: route map, spot descriptions, survey form/notebook
Ensure that you have read the health & safety checklist, walked your route during daylight & secured permission from relevant landowners
Be in position to start the survey approximately 20 minutes after sunset at ..... pm
(see sunset timetable & pencil in the start time here)

Starting your survey
Just prior to starting, record the following details:
Temperature Weather conditions (cloud, wind, rain)
Date Start time
Don't forget to record the make of bat detector that you have
used & your experience/skill level on the survey form

Methodology

1. Begin the first walk with your detector tuned to 25kHz.
2. Listen for noctules/serotines only. Pause to check identification if necessary & then resume.
3. If it is unclear whether a bat is a noctule or serotine, record as 'unsure'. Record results as Walk 1.
4. Ignore ALL other species.
5. At first spot, re-tune detector to 50kHz and record pipistrelle activity - common (45kHz) & soprano (55kHz) - for two minutes.
6. If you cannot identify the species of pipistrelle, record as 'unsure' under Spot 1.
7. Ignore ALL other species.
8. At the end of two minutes, re-tune your detector to 25kHz and commence Walk 2. Repeat the method until you have completed your route.
9. After completing Spot 12, stop the survey and record your finishing time.
10. Note any changes that you have made to the route.
11. If abandoning the survey at any time, record the point at which you stopped & the reason for stopping.

Appendix 4 Guidelines on how to conduct UK Butterfly Monitoring Scheme transects

WHEN TO MAKE TRANSECT COUNTS

Time of year: A full season's transect counts take place once a week for 26 weeks from the beginning of April to the end of September. Week 'one' runs from 1st-7th April, week 'two' 8th-14th April and so on, until week 'twenty-six' which runs from 23rd-29th September. You can record earlier than 1st April (25th-31st March is week 0, 18th-24th March is Week -1 etc.) or after September (30th Sept- 6th Oct is Week 27, and so on). If the weather conditions are suitable, you should record even if there are not likely to be any butterflies present (e.g. early/late in the season) – a negative result is still a result.

How many weeks: As many weeks should be walked as possible, as gaps reduce the quality of the data and too many can render it virtually useless. The more gaps the less species-indices can be calculated. Where it has been decided that a transect is aimed a single, usually rare, species (or sometimes for two or three species) then weeks should be walked that cover the flight period(s), with zero counts at either end.

Time of week: You can record on any day of the week, but should aim to walk the transect on the first opportunity that the weather is suitable (some weeks you may not get a second chance!). You only need to record more than once a week if the weather on your first walk did not meet the criteria.

Time of day: Transect counts should ideally be made between 10:45 and 15:45 hours, though between 10:00 and 17:00 hours is usually allowable, though butterfly activity may drop off rapidly during the late afternoon so later times should be avoided.

Weather conditions: Transect walks should only be carried out in warm and at least bright weather, with no more than moderate winds and not when it is raining. The minimum criteria are either 13-17ºC with at least 60% sunshine, or if there is no sunshine the temperature must be 17ºC or above. Windspeed (Beaufort scale) should be no more than 5 unless the transect route is sheltered from the wind. Do not record if the temperature is below 13ºC except in northern upland areas where, if butterflies are active, they may be recorded in temperatures down to 11ºc. Check that conditions are suitable before you start the transect, and that if the temperature is less than 17ºC there is likely to be sufficient sun.

Recording butterflies: walk at a slow, steady pace counting all butterflies seen within a fixed distance – the recommended distance is 2.5m either side of the transect line and 5m ahead. In some habitats e.g. along sea cliffs or woodland rides, it is acceptable to record at a width of 5m along one side only of the transect line. A wider area is recorded on part or all of some transects (e.g. 10m instead of 5). Always stick to the limits established when the transect was set up. Try to avoid double counting where possible e.g. when an individual butterfly repeatedly flies in and out of your recording zone. However, if you lose sight of an individual, and later regain sight of the same species do not assume this is the same individual. Do not count butterflies behind you. Try to identify and separate all species you encounter, including where possible 'difficult' species such as Small and Essex Skipper, whites and the fritillaries. If similar species such as Small White and Green-veined White are flying together at a site you may want to net a sample (a small clear plastic pot can be very useful to temporarily confine the butterfly so it can be

examined more easily – hold pot in the shade), to determine the proportion of each species present -you can then divide up your overall counts accordingly. For example, if you catch and identify 8 Small Whites and 2 Green-veined Whites, a count of 30 unidentified whites can be converted to an estimated 24 Small Whites and 6 Greenveined Whites. Note that you will need a license to capture High Brown Fritillary and the use of nets may be prohibited in some areas - contact BC for details. If you are not sure how to identify any species of butterfly you are likely to encounter with certainty then you should take a good identification guide with you. If you see interesting species outside your recording area these should not be included in the transect count but can be recorded in the notes section at the foot of your form or on the back of the form.

Appendix 5 Guidance on recording Bumblebees during Bee Walk, Bumblebee Conservation Trust.

Recording bumblebees

• Bumblebees should be recorded on the monthly recording form. A separate form should be used for each month. Honeybees should also be noted if possible. You do not need to record solitary bees.

• Fill in the environmental and transect details first. Before you begin walking fill in your name, site, date, weather conditions and start time in the spaces provided on the form.

• Walk your transect route at a steady pace. Do not linger in hotspots to improve your count, as this will bias results.

• Record all the bumblebees you see within your 'recording box'. This extends 2m either side of you and 4m ahead. Do not look behind, and do not count bees seen outside this box.

• Where possible record the caste (queen, worker, male) of each individual as well as species, and make a note of any interesting behaviour, such as mating. Record unknown bumblebee or caste for any bumblebees you are unsure of.

• Nets and pots can be used to capture bumblebees for closer examination when necessary. For details on suppliers see the BeeWalk website.

• Ensure that all recording is completed on the form at the end of each walk. Double-check for errors and omissions, as it will be impossible to accurately fill in any blanks later.

• Where estimates have to be made (e.g. when numbers are too large to count accurately) make sure an actual figure is recorded (e.g. 45 rather than 40+).

• If something unusual is recorded, add a note at the bottom of the recording sheet to confirm that what you have recorded is correct. If it's an unusual species, it should ideally be photographed for confirmation. Unusual data will be followed up via email.

• Don't forget to fill in the finish time at the end of your walk.

Appendix 6. Garden Moth Scheme methodology

Please refer to http://www.gardenmoths.org.uk/ for latest methodology.