Alderney's West Coast and Burhou Islands Ramsar Site (and Other Sites) **Annual Action Plan 2025**

Prepared by:	Alex Purdie (Alderney Ramsar Secretariat, States of Alderney)
Contributors:	Dr Mel Broadhurst-Allen[1], Abigail de Castella[1], Dr Tara Cox[1], , Kelly Huitson[2] (RVN, AVPN), Katherine Kissock[2] (RVN), Matt Lewis [1] , Niamh McDevitt[1]
	1 Alderney Wildlife Trust, 2 Alderney Animal Welfare Society
ARAG Scientific review by:	Dr Phil Atkinson, Paul Buckley (RSPB), Francis Binney (Director of Marine Resources, Government of Jersey), David Chamberlain (States Veterinary Officer, Bailiwick of Guernsey)
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http://www.ci-ramsar.com
Ramsar Site - States of Alderney

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1. Introduction

The document sets out the work objectives to be carried out in 2025.

Information has been provided by the activity organisations, which carry out the work on the Alderney West Coast and Burhou Islands (and Other Sites) Ramsar Site. This includes Alderney Wildlife Trust (AWT) and the Alderney Animal Welfare Society (AAWS). This document has been compiled by the Ramsar Secretariat, on behalf of the States of Alderney (SoA). The Ramsar programme is overseen by the SoA and is reviewed annually by their General Services Committee (GSC), with scientific review provided by the Alderney Ramsar Advisory Group (ARAG).

All activities within Alderney's Ramsar site should be fully risk assessed and covered by the Activity Organisations' insurance and SoA issued licenses where applicable.

2. Background

Description

On 25th August 2005, the Alderney West Coast and Burhou Islands Ramsar Site was designated and gained global recognition as a wetland of international importance under the Ramsar Convention being the first of its kind within the Bailiwick of Guernsey. The site covers over 1,500 hectares of land and sea.

The Ramsar Site comprises the western coast of Alderney and adjacent shallow waters and islets in the strongly tidal, high-energy system of the northern Channel Islands. It contains diverse and inter-related ecosystems, notably rocky shore, sea cliffs and islets, tide swept habitats, kelp forest and coastal grassland.

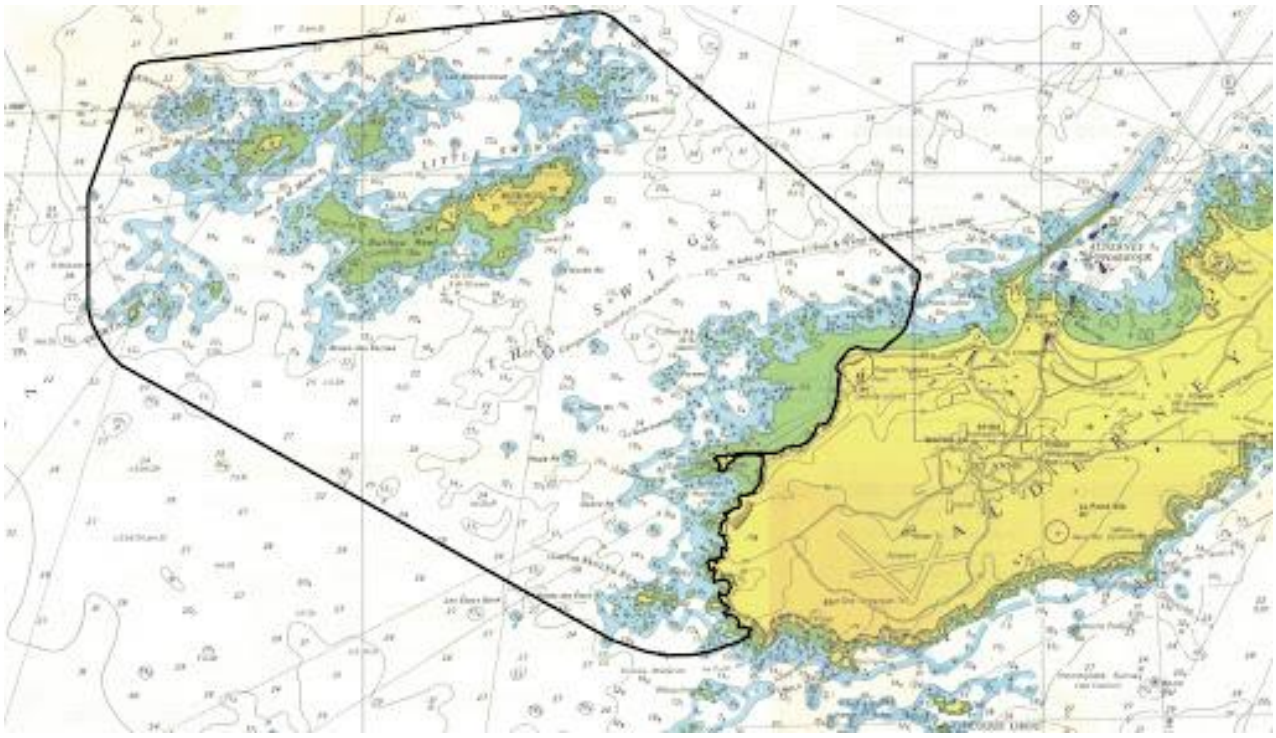

Figure 1. A map of the Alderney West Coast and Burhou Islands Ramsar Site.

Designation

The site was originally designated under five criteria which highlight its international importance. These included: 1, 3, 4, 6, 7. An additional three criteria are included in the 2024 updated Ramsar Information Sheet (Criterions 2, 5, 8). The criteria include:

- (Criterion 1) Representative, rare, or unique natural or near-natural wetland types
- (Criterion 2) Rare species and threatened ecological communities
- (Criterion 3) Biological Diversity
- (Criterion 4) Support for species at critical stages of their life cycles and during adverse conditions
- (Criterion 5) Over 20,000 waterbirds
- (Criterion 6) Supports 1% of the individuals in a population of a species of waterbird
- (Criterion 7) Significant and representative fish
- (Criterion 8) Fish spawning and nursery grounds

In 2019, the GSC approved the updating of the current 2017-2021 Ramsar Management Strategy's title to include 'and other sites.' enabling the site's five-year and annual management plans and review documents to include specific habitats and species which may occur outside of the defined Ramsar Site but have a degree of interdependence with the site.

It also has also ensured that monitoring and conservation measures are properly documented and reviewed by the SoA and ensures a wider view is taken of species information and conservation measures which protect species and habitats within the Ramsar site. Locations will be clearly detailed within the annual action plans and reports to ensure it is clear if a work item occurs inside or outside of the defined Ramsar site.

Examples of these include ringed plover, which breed both within the Ramsar Site, such as at Clonque or the west of Platte Saline, and outside of the site such as at Saye bay. Other examples include European shag, in which a portion of the population breeds outside of the Ramsar site.

Management Process

The Alderney Ramsar Site is managed through multi-year strategies with annual reviews and action plans.

Work on the site is carried out by The Activity Organisations

They carry out work set out in annual action plans. They may draw on funding to cover cost of work - not staff time. They submit reports and proposals to the Alderney Ramsar Secretariat.

Administration is carried out by the Alderney Ramsar Secretariat

As a pro-bono role under the States of Alderney they compile reports into Annual Reviews, and proposals into annual Action Plans for the States of Alderney and provides administrative support for the site and the States of Alderney.

Scientific Advice and Review is carried out by The Alderney Ramsar Advisory Group

They review proposals for new work and provide feedback on the Annual Reviews. The ARAG is made from scientific experts who are independent from the site's stakeholders.

Feedback and suggestions are given at the Alderney Ramsar Stakeholder Forum

Groups and individuals who interact with the site, both commercially such as charter boats, and non-commercially such as local sea anglers.

Funding is provided through a recovery of costs budget overseen by the SoA

This budget can be accessed by organisations carrying out activities described in the action plan. They can only recover costs and not staff time. Funding breakdowns for planned works are provided in Appendix 3.

Final decisions are made by the States of Alderney's General Services Committee.

They review final reports, proposals and action plans, and approve use of the recovery of cost budget and licences where required for work.

3. Objectives

To meet the objectives of the ARS3, and new recommendations following the 2024 Ramsar Review, the following objectives are to be completed in 2025*.

*Please note that by approving this plan, the General Services Committee of the States of Alderney agrees to all proposed work herein to be undertaken by the Activity Organisations. Similarly, the Activity Organisations commit to the delivery of the work described (accepting the availability of resources and favourable weather conditions). The Activity Organisations understand the requirement to inform the appointed SoA representative through the 'Changes to Alderney Ramsar Work Programme' procedure (Appendix A) if any aspect of the work requires significant alteration from the parameters contained within this Action Plan.

Table 1. Objectives of the 2024 Action Plan, with objective number on the left and page number on the right.

4. Further Details

All methodologies and proposals for new surveys can be found in Appendix 1., and 2. respectively.

How to use this section

Work is separated into the following layout:

X.X Theme (e.g. “Seabirds”, or “Education and Community Outreach”)

X.X.X Individual Work stream (e.g. “Northern Gannet Monitoring”, or “Ramsar Signage”)

X.X.X.X Objective (e.g. “Monitor the Impact of Anthropogenic Materials”, or “Produce and Replace Ramsar Information Boards”)

The contributing organisations and the location (inside or outside of the site) are listed below each objective (or at the highest-level heading where objectives can be grouped).

Activities to fulfil objectives are briefly described in the text. This includes whether work will occur within or outside of the Ramsar Site.

Methodologies work are in Appendix 1., and funding summaries are in Appendix 2. Methodologies for new work have been extracted from proposals and included with methodologies in Appendix 1.

4.1 Seabirds

Seabird monitoring will continue in accordance with the JNCC Seabird Monitoring Handbook (Walsh et al., 1995), RSPB guidelines and the 2017 – 2021 Ramsar Management Strategy (Wieckowski & Ferrar, 2016) with adaptations as detailed and approved in the 2024 Ramsar Action Plan (Purdie et al., 2024), unless otherwise stated. Data will be shared with the national Seabird Monitoring Programme (SMP). This monitoring will enable us to continue to measure how these populations are changing, in line with the aims of the Ramsar convention. This has become more important given the general decline in UK seabird populations (Harris et al., 2024), as well as the devastating impact that high-pathogenicity avian influenza (HPAI) has had on Alderney's Northern Gannet (*Morus bassanus*) population and more widely on the UK's breeding seabirds in 2021 and 2022 (Tremlett et al., 2024).

All activities involving potential disturbance to and the handling of wildlife (birds) will be covered by an appropriate licence from the States of Alderney, the local licensing authority. Detailed risk assessments to include mitigation measures for disturbance, however caused, as well as issues of biosecurity, will be collated prior to accessing seabird colonies. Any works which involve entering seabird colonies will be subject to review, should another HPAI outbreak occur in Alderney in 2025. Seabird monitoring methodologies (not including seabird ringing) are appended in detail in Appendix 1.

4.1.1 Atlantic Puffin Monitoring

Inside Ramsar Site

Contributors – Alderney Wildlife Trust, Alderney Animal Welfare Society

The Puffins will be monitored from March to August using a variety of survey methodologies to establish productivity, breeding population size and rates of kleptoparasitism and predation. The PuffinCam will be essential for this work.

4.1.1.1 Productivity Monitoring Through PuffinCam

Productivity will be assessed by reviewing video footage recorded remotely via 'PuffinCam', following the same protocol used since 2019 (Clifford et al., 2020). This will enable estimates of productivity to be comparable between years. In 2025, an additional method of monitoring fish returns will be trialled, alongside the current method, to determine if the accuracy and efficiency of the productivity surveys could be improved. The new method will require two 16-hour (dawn to dusk) watches on selected productivity plots in the late season to record fish returns. This better aligns with SMP methodology (Walsh et al., 1995).

Instances of kleptoparasitism and predation will be monitored from recorded video and by controlling the cameras remotely in real time. Citizen scientists will be utilised, particularly in the early season, to identify active burrows.

4.1.1.2 Population Assessment Through Raft Count and AOB Survey

The size of Burhou's Atlantic puffin population will be estimated using data from two surveys; early season raft counts and an apparently occupied burrow (AOB) survey. The maximum early season raft count, obtained from counts undertaken through April to mid-May, can be used as an approximation of the number of breeding pairs. This is because during this time, each puffin pair will be incubating their egg with one member of the pair within its burrow and the other at sea. Therefore, the maximum number of puffins seen 'rafting' on the water near the colony in this period represents the best approximation of the total number of pairs present (Wieckowski & Ferrar, 2016). Only the raft counts made early in the season can be used as, later in the season both members of the pair may be absent from the colony searching for food to feed their hatched chick and non-breeding birds arrive, thus boosting the number of birds present. The raft counts can be recorded via 'PuffinCam', or during boat-based operations.

The post-season AOB survey will be undertaken in early August when adults have finished breeding, unless there is evidence that there are still puffins occupying burrows. Surveyors will check the entrances of all burrows for recent signs of occupation in areas known to be occupied across the island, following the same methodology as in previous years (Purdie et al., 2024). The accuracy and precision of the post-season AOB survey will be validated following the same methodology used in 2024 (Purdie et al., Unpublished).

Chance encounters with storm petrels still nesting within any examined burrows will be recorded. If an appropriately licensed handler is present, the adult may also be temporarily extracted to look for the presence of a ring.

4.1.1.3 Kleptoparasitism, Avian Interactions and Predation Monitoring Through PuffinCam

Instances of kleptoparasitism, avian interactions and predation will be recorded when observed during productivity observations. The use of citizen scientists to review these interactions will be tested in 2025, which will enable a greater volume of video data to be analysed in a timely manner.

4.1.2 Northern Gannet Monitoring

Inside Ramsar Site

Contributors – Alderney Wildlife Trust

Northern gannets will be monitored from their arrival until their departure with productivity monitoring, impact of anthropogenic material surveys, and a census conducted. Geolocators may be recovered from northern gannet on Ortac.

4.1.2.1 Overall Productivity Monitoring

Northern gannet productivity will be assessed on Les Etacs by observing a representative sample of nests from a vantage point on the adjacent Alderney coastline. The proportion of nests fledged from the sample will be used as a proxy for the productivity of the colony as a whole. Observations will be conducted following JNCC guidelines (Walsh et al., 1995). They will be conducted weekly and commence early enough in the season so that sufficient data can be collected to ensure outcomes are not misinterpreted or lost. Sufficient observations should be made to identify non-laying birds so that the proportion of non-breeders and single birds can be established and accounted for in the final productivity estimate and inform analysis of census data.

4.1.2.2 Repeat Productivity Monitoring

Data from 2019-2024 will be reviewed in 2025 to assess the benefits of continuing this survey in addition to the overall productivity monitoring. While this review is taking place, high quality photographs of Pyramid stack will continue to be taken weekly from the same vantage point as in previous years (Purdie et al., 2024), but the data will only be processed if the review concludes there is an ongoing benefit to doing so.

4.1.2.3 Ortac Productivity Monitoring

Monitoring productivity of Ortac using boat-based surveys was trialled in 2024 but was ineffective due to the distribution of nests on Ortac (Purdie, et al. Unpublished). In 2025, photos captured during monthly drone surveys of Ortac will be used to measure productivity, for example by comparing nest counts in the early season (March-May) with the number of chicks fledged in the late season (August-October). A proposal form for this survey detailing justification and methodology has been included in Appendix 1.

4.1.2.4 The 'Track-a-Gannet' (TAG) project – Review and Potentially Retrieve Geolocators

There is a need for up-to-date information on the movements of Alderney's northern gannets to understand the potential impact of offshore windfarm developments on the colonies. The foraging ranges of northern gannets vary annually and the impact of HPAI in 2022 on their movements is unknown.

The AWT will consult with other relevant stakeholders to identify if recovery of geolocators is possible during 2025 , following the same methods as used in previous years (Purdie et al., 2022).

4.1.2.5 Monitor the impact of anthropogenic materials

The assessment of the return rate of plastic materials to Les Etacs will not be continued in 2025 based on recommendations from the 2024 report. Entanglements of gannets will still be recorded following the same methods as previous years.

Seabird necropsies will be undertaken opportunistically in collaboration with AAWS.

4.1.2.6 Gannet Census - using aircraft and drone surveys

If resources allow, a full census of Les Etacs and Ortac will be conducted in 2025 following the methodology used in previous years (Purdie et al., 2022). In addition to this, a drone census will be conducted using the same method as used in 2024 (Appendix 1). If successful, in the long-term drone-surveys may facilitate more frequent, environmentally friendly and accurate censuses of Les Etacs and Ortac. Furthermore, UK operators are also moving towards drone surveys of gannetries and therefore this will ensure Alderney's counts are as comparable as possible.

4.1.2.7 Gannet Tissue Sampling

Contributors – Alderney Animal Welfare Society, Alderney Bird Observatory, Alderney Wildlife Trust, States of Guernsey Veterinary Officers

Tissue samples from Gannets which strand dead and have 'black-eyes' will be taken by Activity Organisations and sent on by AAWS RVN's or the States of Guernsey Veterinary Officer to investigate the physiological impact of this condition on the birds.

4.1.3 Northern Fulmar monitoring

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.1.3.1 Productivity and Population Monitoring

The number of sites occupied by breeding pairs of northern fulmar around Alderney's coastline and inshore islets will be assessed by observing apparently occupied sites from the sea cliffs and during boat-based surveys. Productivity will be assessed by recording the contents and outcome of these sites. Recording protocols will follow JNCC guidelines. The locations and outcome of nest sites will be compared with previous records of the same sites to help us understand if some sites are more successful than others.

4.1.4 Common Tern monitoring

Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.1.4.1 Productivity and Population Monitoring

If a new or existing common tern colony is occupied in 2025, estimates of common tern productivity and colony size will be monitored from vantage points on shore.

4.1.4.2 Protection against disturbance and predation

Contributors – Alderney Wildlife Trust, States Public Works

If terns occupy a site, new rat control measures will be imposed to minimise potential nest loss. Deployment of A24 lethal traps on the onshore area adjacent to the tern breeding area should be considered to reduce the likelihood of an incursion. If avian predation should again appear to be impacting breeding terns, supplementary feeding of these predators may be attempted (resource dependent).

The SoA's Manager of Estates, Infrastructure and Environment will be asked to erect temporary signage warning the people of the presence of the tern colony, with the permission of relevant landowners. As in previous years, this should include temporary signage informing the public of tern breeding activity at onshore areas following the arrival of nesting terns.

To increase public awareness of potential common tern breeding activity at Fort Houmet Herbé, we propose additional temporary signage is also deployed at the entrance of the fort. This should be done prior to the arrival of breeding birds to avoid disturbance that would be caused during deployment (see section 4.5.4.3 of the 2024 Ramsar Review for rationale).

Contributors – Alderney Wildlife Trust

4.1.5 Ringed Plover monitoring

Inside and Outside Ramsar Site

4.1.5.1 Productivity and Population Monitoring

The number of nesting pairs and their productivity will be monitored on Alderney's beaches throughout the breeding season using vantage point observation and remote camera traps around nest sites.

4.1.5.2 Beach Cordons and Signage

Temporary cordons and signs will be set up around ringed plover nests and nesting areas on Platte Saline and in Saye Bay in 2024. Permission was granted under a Building and Development Control Committee planning application for these cordons provided erection commenced prior to March 2025. As the cordons have been erected annually since permission was granted, the planning department of the SoA have advised the AWT that the permission is extant and does not need renewal. Permission to erect other temporary signage warning the public of other sensitive breeding birds may also be

sought from the SoA where disturbance may occur (see section 4.5.5), using a SoA approved format. The signage will inform people of the birds' presence, encourage them to avoid the vicinity and keep their dogs under control. The signage will be removed once the birds have finished nesting.

4.1.6 Other seabird monitoring

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.1.6.1 Round Island Surveys

Three boat-based round island surveys in combination with vantage point counts will be used to estimate the numbers of breeding great cormorants, European shags, gulls, guillemot and razorbill, as well as any other species observed nesting around the coast of Alderney and its other islets. The surveys will be scheduled to take into account the breeding ecology for each species and will take place between late April and mid-June. Additional surveys will be scheduled if necessary.

4.1.6.2 Round Island Surveys Using Drones

If resources allow, drone surveys will be trialled on a subsection of Alderney's coastline, focusing on a section of the South cliffs, alongside round island boat surveys in 2025. A proposal form for this survey detailing justification and methodology has been included in Appendix 1. If successful, drones may eventually substitute round island boat surveys, reducing cost and potentially improving count accuracy. This will enable more precise mapping of seabird distribution, though boat surveys may still be needed in certain weather conditions..

4.1.6.3 Gull Census on Burhou

The populations of lesser black-backed, great black-backed and herring gulls will be censused on Burhou following the same methodology as in previous years (Purdie et al., 2022; Walsh et al., 1995), as well as other seabirds breeding (excluding burrow/ crevice nesting species) on the island (e.g. European shag). This will require access to Burhou in late-May to early June.

4.1.6.4 Guillemot and Razorbill Population and Productivity Monitoring

Estimates of guillemot population size, distribution and breeding success at selected sites will be measured through a combination of round island seabird surveys, vantage point surveys and remote camera trapping. The causes of nest loss will be investigated. Razorbill nesting sites will be recorded on an ad hoc basis, and during the round island surveys.

4.1.6.5 Wetland Bird Survey Core Counts

Core counts of all waterbirds present in Clonque Bay, Hannaine bay and on Platte Saline will be carried out each month for the national Wetland Bird Survey (WeBS), BTO, RSPB and JNCC, (https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/core-counts). Counts will be carried out following the standard WeBS protocols. Additional counts at other designated sites may also be conducted if time and personnel allow.

4.1.6.6 Eurasian Oystercatcher Trial Census

The next census of Eurasian oystercatcher breeding on the mainland between Hanaine Stack and Fort Tourgis will be conducted in 2027 as agreed in the 2024 Ramsar Action Plan (Purdie, 2024).

4.1.6.6 Manx Shearwater Monitoring

The 2024 Alderney Ramsar Review included a review of methods of monitoring Manx Shearwater, which found that conventional methods used elsewhere were largely unsuitable or could involve disturbance with limited evidence of current presence to justify their use. Passive acoustic monitoring (deploying remote audio recorders to capture bird calls) is a low disturbance approach that has been proven to capture shearwater activity levels. Recorders fitted with Lithium ion batteries and a delayed start will be deployed during the closed season and set to start recording in early June. From then, recordings will be made between 23:00-04:00 each night until late August. The recorders will be retrieved and analysed with automated bird song ID tools, with any calls identified as Manx Shearwater then manually verified. This will give a measure of Manx Shearwater activity on the island during the breeding season which is an important precursor to any later work establishing breeding density.

4.1.7 Seabird Ringing

Inside and Outside Ramsar Site

4.1.6.5 Review Seabird Ringing Programme

Historically seabird ringing on the Ramsar Site has been carried out by ringers from the Channel Islands Bird Ringing Scheme and has been facilitated by the Alderney Bird Observatory since its founding. However, the ABO and CIBRS have elected to remove themselves from Ramsar activities in Alderney. It is hoped that the ABO and CIBRS will rejoin the Ramsar programme in the future.

The Ramsar seabird ringing programme should be reviewed by Stakeholders, the States of Alderney and the ARAG in 2025.

The programme of seabird ringing generally involves the ringing of chicks (pulli) from the following species; Northern gannets, great cormorant, European shag, great black-

backed gull, herring gull, and lesser black-backed gull, common tern (if present), plus adult or immature storm petrels caught by mist net.

All seabird ringing activities within the Ramsar Site must be approved through the Ramsar process, either in annual review or (for 2025) as described below.

In 2025, should an individual or organisation wish to undertake ongoing ringing works in the Alderney Ramsar Site the following standard requirements must be met (the same as other works in this plan):

- Formal application is received by SoA Harbour Authority prior to any work being undertaken, and the ARAG has an opportunity to review them. **Methods must be submitted >4 weeks before trip.** Application should include:
    - Methodology templates (available from SoA Harbour Authority)
    - Funding templates (available from SoA Harbour Authority)
    - Ringing license requirements

  ARAG feedback is provided to the SoA Harbour Authority.

- Data and metadata collected must be reported for the annual Ramsar Review.
- Relevant licenses are in place for ringing work.

If all the above requirements are met, the SoA Harbour Authority may then authorise work to go ahead based on ARAG feedback.

Under the Ramsar budget, costs of work may be covered (but not staff time).

If work in addition to the ongoing effort is proposed for the Ramsar Site, the following requirements must be met:

- Formal application is received by SoA Harbour Authority prior to any work being undertaken, and the ARAG has an opportunity to review them. **Proposal must be submitted >4 weeks before trip.** Application should include:
    - **Proposal** templates (available from SoA Harbour Authority)
    - Funding templates (available from SoA Harbour Authority)
    - Ringing license requirements

  Full requirements of a proposal are given in the proposal form. The ARAG may require an in person presentation, this can also be requested on submission. ARAG feedback is provided to the SoA Harbour Authority.

- Data and metadata collected must be reported for the annual Ramsar Review.
- Relevant licenses are in place for ringing work.

Proposals and ARAG feedback will then be submitted to GSC for their consideration.

4.1.8 Seabird Strandings

Inside and Outside Ramsar Site

Contributors – Alderney Animal Welfare Society

4.1.8.1 Recovery of live stranded seabirds by AAWS

Live stranded seabirds which will be reported to AAWS who will oversee any treatment.

4.1.8.2 Testing of suitable dead stranded seabirds by AAWS

Dead stranded seabirds or other target species (e.g. wildfowl and poultry, birds of prey) will be recorded, and, until otherwise instructed by the States Veterinary Officer, any fresh (e.g.) their chest cavity and cloaca not exposed, will be reported to AAWS and tested for HPAI, with swabs sent to the States Veterinary Officers. Any rings found on live or dead stranded seabirds will be reported to the relevant ringing body e.g. the Channel Island Bird Ringing Scheme (CIBRS), for Channel Island rings.

4.2 Terrestrial

4.2.1 Biosecurity

Inside and Outside Ramsar Site

Contributor: Alderney Wildlife Trust

4.2.1.1 Biosecurity on Burhou

In 2025, rodent presence will be monitored on Burhou using non-toxic wax chew blocks in tamper proof bait stations and camera traps. Should a rodent incursion occur, rodent control could rapidly be deployed, protecting nesting seabirds and other native wildlife. If resources allow, rodent presence will also be monitored on La Nache and Coque Lihou.

4.2.1.2 Biosecurity on Common Tern Nesting Sites

As in 2024, a close watching brief will be maintained on any species sensitive to rat predation with particular attention paid to the any return of nesting common terns. Deployment of new bait stations may be required at short notice should the terns select a site not under the current control plan.

4.2.1.3 Biosecurity on Les Etacs

In 2025, thermal drone surveys will be carried out on Les Etacs. They will investigate the presence of rodents on the stack, to rule out invasive rodent predators as a factor which may be impacting seabirds. A proposal form for this survey detailing justification and methodology has been included in Appendix 1.

4.2.1.3 Monitoring Predation on Guillemot Nesting Sites

Remote cameras will be deployed on known guillemot nesting sites to investigate the potential impact of rats and/or other predators on their breeding performance. Locations of cameras may be shared upon request in advance of anyactivity where individuals may come into contact with any deployed cameras. Data will be stored following AWT GDPR (General Data Protection Regulation) policies.

4.3 Marine

This document summarises the marine survey workstream objectives for the '*Alderney's West Coast and Burhou Islands Ramsar Site (and Other Sites) Annual Action Plan 2025'*. This comprises of 15 on-going (including those not completed in 2024) marine surveys:

- Phase I intertidal survey
- Phase II intertidal survey
- Shoresearch
- Climate change driver assessment

- Green ormer survey
- Intertidal crab survey
- Marine invasive non-native species assessments
- Seasearch
- Marine mammal surveying
- Marine mammal strandings
- Marine Conservation Society beach cleans
- BRUV
- Seawater testing
- Planktoscope surveys
- Fish Intel Project

In addition, a new survey is also recommended:

- European eel (elver stage) presence

Academic projects were previously reported in this section but have now been moved to Section 4.5 Administration and Miscellaneous. Information related to each survey is provided below, including the general recommendations for 2025.

4.3.1 Intertidal Habitat Survey

Inside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.1.1 Phase 1 Intertidal Survey of Les Etacs

Phase I intertidal habitat biotope mapping surveys will be carried out for the intertidal zone of Les Etacs.

4.3.1.2 Phase 2 Intertidal Survey of Clonque Bay

Following the phase I intertidal habitat survey of Clonque Bay completed in 2024, a phase II intertidal survey should take place in 2025. This survey consists of selecting a sub-set of priority habitats (from the phase I intertidal habitat survey and previous phase II surveys completed in 2020 and 2015) and quantifying associated intertidal species presence and abundance (per selected habitat).

AWT will undertake a phase II intertidal survey within Clonque Bay in 2025.

4.3.2 Shoresearch

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.2.1 Shoresearch Quadrat Surveys

Quadrat surveys will not be continued due to resourcing and will only be conducted on an ad hoc basis.

4.3.2.2 Shoresearch Walkover Surveys

These surveys are completed with members of the public as an outreach citizen science project initiated by the Royal Society of Wildlife Trusts (UK). Surveys are completed across several rocky-shore bays on Alderney, with information such as intertidal habitat description and species presence recorded by citizen scientists.

AWT will continue to implement Shoresearch walkover surveys within the Ramsar Site (Clonque Bay) and other sites across Alderney in 2025.

4.3.3 Climate change driver assessment

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.3.1 Coastal Erosion Surveys

Coastal erosion has been monitored at Braye Bay, Clonque Bay and Corblets Bay, since 2023. The aim of these surveys is to measure the length of erosion of cliff/path edges at graduated distances away at each selected coastline.

AWT will continue to undertake coastal erosion monitoring assessment annually at selected monitoring stations within Clonque Bay and other sites across Alderney in 2025.

AWT will inform SWD of any significant coastal erosion, which may need associated works.

4.3.4 Green Ormer (*Haliotis tuberculata*) surveys

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.4.1 Green Ormer Tagging and Abundance Surveys

Over the last two years, citizen science surveys have been implemented by the AWT, to record the abundance, distribution, population structure and movement patterns of green ormer (*H. tuberculata*) individuals across several rocky-shore bays.

AWT to continue to undertake green ormer surveys across the Ramsar Site (Clonque Bay) and other sites on Alderney, for 2025.

4.3.5 Crab surveying

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.5.1 Intertidal Crab Abundance, Population Dynamics and Photo Bank

Two intertidal crab surveys have been implemented by the AWT over the last two years at selected rocky-shore bays on Alderney: intertidal crab abundance and population dynamics surveys and, an intertidal crab photo bank. Collectively, these surveys will provide key ecological information of Alderney's intertidal crab species.

AWT will continue intertidal crab abundance and population dynamics surveys within the Ramsar Site (Clonque Bay) and other sites in 2025.

AWT will continue intertidal crab photo bank within the Ramsar Site and other sites for 2025.

4.3.6 Marine Invasive and Non-Native Species Assessments

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

In 2024, the AWT initiated a marine invasive non-native species (marine INNS) plan, as part of the AWT Living Seas Programme. For 2025, the aim will be to continue developing the plan and subsequent objectives, including:

4.3.6.1. Marine INNS monitoring.

AWT to continue to record the presence, location, abundance and habitat preference of both 'established' and 'under-recorded/new' marine INNS, across Alderney's marine environment. Specific marine INNS surveys will be undertaken within the Ramsar Site (Clonque Bay), focusing on recording the presence of the marine INNS, devil's tongue weed (*Grateloupia turuturu*) and other sites across Alderney in 2025.

4.3.6.2. Marine INNS Outreach and Education.

This comprises of increasing public awareness of marine INNS and how to potentially reduce the risk of marine INNS spread within Alderney's territorial waters.

AWT to support public marine INNS outreach and education activities where possible, for 2025.

4.3.6.3. Management of Marine INNS.

This includes considering potential management options of marine INNS present on Alderney, such as species eradication or use (e.g. as a food source or fuel).

AWT to support marine INNS management options where possible, for 2025.

4.3.7 Seasearch

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust, Seasearch volunteers

4.3.7.1 Promote Seasearch snorkels and dives within the Ramsar Site

Seasearch is a valuable citizen science project developed by the Marine Conservation Society to record marine habitats and species with interested recreational snorkellers and scuba divers. Currently, records are collected by trained Seasearch volunteers either whilst visiting the island (e.g. for recreational purposes) and/or with the AWT Seasearch Snorkel Group.

AWT to encourage and support Seasearch (snorkel/ scuba dive) surveys to be completed within the Ramsar Site and other sites by trained Seasearch volunteers in 2025.

4.3.7.2 Invite Seasearch Representatives onto the Alderney Ramsar Stakeholder Forum

Representatives from Seasearch will continue to be invited to Alderney Ramsar Stakeholder Forum meetings.

4.3.8 BRUV

Inside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.8.1 BRUV Surveys in Hannaine Bay

In 2024, a baited underwater video survey (BRUV) was scheduled with the aim to record fish/shellfish presence and abundance at Hannaine Bay. This was cancelled due to poor weather conditions in the autumn (2024).

AWT to consider undertaking this survey within Hannaine Bay and other sites for 2025.

4.3.9 Inshore Plankton

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.9.1 Planktoscope Surveys in Clonque Bay

Inshore plankton surveys (species type/presence) using a planktoscope was scheduled for Clonque Bay and other sites across Alderney in 2024. Unfortunately, the camera lens part of the planktoscope equipment became cloudy/marked and as such was unable to take accurate, clear photographs of plankton species (within collected seawater samples).

AWT to review this survey method during 2025, with the option to still collect plankton samples (within seawater samples) within Clonque Bay and other sites across Alderney in 2025 but use alternative methods of taxonomic identification (e.g. a microscope), if the planktoscope camera lens cannot be fixed.

4.3.10 Fish-Intel Project

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust (supporting Jersey's Marine Resources Department)

4.3.10.1 Support for Fish-Intel Project

The Fish-Intel project was initiated across the Channel Islands in 2022, managed by the State of Jersey's Marine Resources team and the University of Plymouth, with support from the AWT and SoA. The project comprises of a network of acoustic monitoring equipment deployed across the islands, with the aim to record the distribution, movement patterns and habitat preferences of commercially important fish species and cetaceans. On Alderney, two buoys with mounted acoustic receivers have been deployed within Hannaine Bay and Longis Bay. The results from 2024 are pending. For 2025 – 2026 funding for this project will be provided by the AWT following a public fundraising event in 2023. The AWT will support the Fish-Intel project in 2025, where appropriate.

4.3.11 Seawater Quality Testing

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.11.1 Test Physical Parameters of Seawater

From June (2024), the AWT began regular inshore seawater testing across a small number of intertidal bays on Alderney, as part of a citizen science project. Due to time constraints, poor weather conditions and available AWT staff resources, sampling within the Ramsar Site was not completed in 2024.

AWT to begin seawater parameter testing within the inshore bays of Clonque, Hannaine Bay and other sites across Alderney for 2025.

4.3.12 Marine Mammal surveying

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

Marine mammal species, such as the grey seal (*Haliochoerus grypus*) are considered priority species across the Channel Islands, UK and Europe. As a result, several survey methods are adopted by the AWT to help quantify their presence, abundance and population structure within the Ramsar Site and throughout Alderney's territorial waters.

4.3.12.1 Effort-based Grey Seal surveying

AWT to continue seal effort (boat) based surveys and land-based observation surveys within the Ramsar Site for 2025. These may be supported by AAWS where staff are available.

4.3.12.2 Grey Seal Identification

AWT to continue to develop the grey seal photographic identification catalogue for 2025.

4.3.12.3 Cetaceans

Opportunistic recording of cetaceans should continue in 2025 with photographic records obtained where possible. This includes those taken during boat-based activities, and from public sightings data.

Furthermore, two F-pods, which monitor the acoustic communications of dolphin, are already deployed (in 2022) as part of the Fish Intel project (see section 4.3.10)

4.3.13 Marine Mammal Strandings

Inside and Outside Ramsar Site

Contributors – Alderney Animal Welfare Society, Alderney Wildlife Trust

4.3.13.1 Support BDMLR response to marine mammal strandings

This objective comprises of supporting on-island British Divers Marine Life Rescue (BDMLR) volunteers and subsequent action plans related to managing marine mammal strandings (both alive and dead marine mammal individuals).

BDLMR trained AAWS and AWT staff to;

- continue to support the BDMLR with marine mammal strandings throughout the Ramsar Site and other sites for 2025, if required.
- help review marine mammal stranding action plan for 2025.
- liaise with the BDMLR Channel Islands Coordinator during active strandings
- maintain the volunteer roster to assist with monitoring live strandings, and coordinating any appropriate intervention, relocation or rehabilitation of live stranded animals.

- assess, treat, rehabilitate or relocate any marine mammals who strand and require intervention, as well as providing timely and appropriate euthanasia if required

BDMLR training will be provided to equip volunteers with expertise to respond to live marine mammal strandings in order to treat animals appropriately and safely, appropriate due to breeding site of grey seals on Burhou and increased sightings of cetacean species locally. The BDMLR Channel Islands Coordinator will be liaised with to arrange training. A full proposal form is completed for this training, see Appendix 1.

4.3.14 Marine Conservation Society Beach Cleans

Inside and Outside Ramsar Site

Contributors – Alderney Wildlife Trust

4.3.14.1 Beach Cleans at Clonque, Hannaine and Platte Saline

Recording marine litter in collaboration with the Marine Conservation Society increases the opportunity to engage with the public on waste issues whilst aiding cleaner shores.

AWT to implement MCS beach clean surveys within the Ramsar Site and other sites across 2025.

4.3.15 European eel (*Anguilla anguilla*) presence survey

Inside and Outside Ramsar Site

4.3.15.1 Investigate presence of European eels in the Ramsar Site

The European eel (*A. anguilla*) is considered critically endangered species (see here for OSPAR 2022 status review: https://oap.ospar.org/en/ospar-assessments/committee-assessments/biodiversity-committee/status-assesments/european-eel/) and has been recorded on Alderney. Currently little information on its presence within the Ramsar Site is available. In 2024, the AWT trialed a small field-based survey at Longis Bay to record the presence of juvenile (glass eel life stage) European eels.

AWT to complete a field-based survey to investigate the potential presence of European eels (glass eel life stage) in the Ramsar Site (Clonque Bay) and Longis Bay in 2025. Survey in Longis Bay are extraneous to this Action Plan, however, data will be submitted as part of the 2025 Report to better represent eel distribution on Alderney.

4.4 Education and Community Outreach

The events and outreach programme aims to promote and make the Ramsar Site accessible to a wide range of people, especially residents, in line with the aims of the Ramsar convention. Education forms a cornerstone of this and is a common feature for all objectives detailed below.

4.4.1 Wildlife Webcams

Contributors – Alderney Wildlife Trust

4.4.1.1 Live Streaming Wildlife Webcams

Live streaming of wildlife webcams will continue in 2025. 'PuffinCam' and 'GannetCam' will be reinstalled. The video feeds will continue to be used to assist the seabird monitoring programme outlined in section 4.1.1 allowing 'live viewing' or real-time observation of both puffin and gannet colonies as well as the opportunity to review recorded video for later analyses.

The PuffinCam livestream will be available through the AWT Staff Facebook page and the AWT Website, and the GannetCam livestream will be available through the Living Islands Facebook page and the AWT website. The AWT will also maintain a livestream from the cameras at the AWT Information Centre on Victoria Street, St Anne. From here it will be possible to remotely control the camera and expand the view available for set periods during the day i.e. when the cameras position does not need to be fixed for survey purposes. Continued interest in the cameras will be maintained through ongoing outreach.

4.4.1.2 New Potential Webcams

SealCam was trialled in 2024, but deemed to have little value for surveying seal populations (Purdie et al., Unpublished) so the stream was not continued. There are no plans for new webcams in 2025.

4.4.1.3 Review Webcams Community Impact

A review of the webcams' community impact and how we measure this will be conducted, particularly for the local Alderney community, to optimise their benefits to the island. Additionally, work will continue with Visit Alderney to maximise the value of the cameras for tourism and marketing purposes for the island.

4.4.1.4 Activation of PuffinCam

PuffinCam' will be reactivated on Burhou in 2025 using the same equipment and procedures as in 2024. To minimise disturbance to the seabird colony on Burhou, it will be activated before 15th March when Burhou closes for the puffin breeding season. The camera will be located outside of the puffin colony. The cameras will be uninstalled and

removed at the end of the puffin breeding season, serviced and reinstalled prior to the 2026 closed season.

It is important that PuffinCam and the relay equipment remains operational throughout the 2025 season and any trips required for maintenance within the closed season will be coordinated by the ARAG and will follow methodology approved in 2024, with the Harbour Office and SoA notified.

4.4.1.5 Investigate Further Uses for PuffinCam

The use of the camera for other work, including but not limited to resighting of colour ringed gulls by the Alderney Bird Observatory, or monitoring any potentially injured or diseased wildlife on Burhou by Alderney Animal Welfare, will be made possible when the camera is not required for Atlantic puffin observations, and this can be arranged on request.

4.4.1.6 Activate GannetCam

'GannetCam' will be activated again in 2025. As the data link from Burhou to Alderney will be used to relay the 'GannetCam' feed from the west cliffs of Alderney, the transmitter array will be kept in place on Burhou until the end of the gannet breeding season.

4.4.2 Boat tours

Contributors – Alderney Wildlife Trust

4.4.2.1 Boat Tours on Sula of Braye

The AWT operate an MCA Category 2 coded vessel named 'Sula of Braye' to assist the Ramsar management strategy by providing an 'on sea' platform for marine research as well as access to the offshore islets and boat tours. The AWT will also support other boat operators with information on request, as to the Ramsar site's ecology, seabird populations etc. wherever possible, to help with their development of tour activities.

4.4.2.2 Free educational boat tours for Year 6 students at St Anne's School

Contributors – Alderney Wildlife Trust

Furthermore, as some may be unable to access this provision via the school, e.g. through being unavailable on the scheduled tour or because of being in homeschooled education, all young people between ages eleven and twelve will be offered a free educational boat tour ticket. In time, it is hoped that all children growing up on Alderney should have accessed the Ramsar site from the water. This promotion will be completed through St Anne's School, Youth Commission, The Journal, and social media. An evaluation method will be created to gather feedback to highlight the

benefits of running free tours. Any children not supervised by the school will require supervision from an adult or guardian.

4.4.3 Community engagement and public awareness events

Contributors – Alderney Wildlife Trust

4.4.3.1 Public Engagement Events

At least six public engagement events will be undertaken in the Ramsar site throughout the year. Where possible, these will be incorporated into events for World Wetlands Day, Wildlife Week, National Marine Week, Alderney Week and the August Bank Holiday weekend, drawing attention to the site's species and habitats. Additional events such as rock-pooling and special boat trips, such as 'pelagic trips' to observe marine life at sea, will also be scheduled wherever possible. Fundraising events will continue to support the free events involved in this programme, namely Marine Tank Sessions, Beach Cleans and surveys.

4.4.3.2 Citizen Science

In 2025, AWT will continue to promote opportunities for local people to get involved in citizen science on the Ramsar site, through public intertidal surveys, coastal erosion surveys and water parameters surveys.

4.4.4 Ramsar Signage

4.5.4.1 Produce and Relace Ramsar Information Boards

Pending approval by BDCC where required, the Ramsar Information Boards will be produced and placed at the agreed upon locations. The Burhou and Outer Islands sign will be replicated and positioned at Fort Clonque as agreed in the 2024 Action Plan.

4.5.5 Erect Sensitive Wildlife Signage

Contributors – Alderney Wildlife Trust

As in 2024, temporary signage alerting the public to sensitive wildlife (for example breeding waders on Platte Saline) will be deployed. Planned signage is detailed in Sections 4.1.4 & 4.1.5.

The SoA has given notice that it is appropriate that permission to deploy interim signs where there is an urgent need to prevent harm to breeding wildlife may be actioned through Richard Phelan, Head of States Works, who has standing permission from the SoA to erect signage necessary for the operations of the States.

The installation of signage for the protection of wildlife requires careful consideration which should be made on a case-by-case basis and will target only those who may inadvertently cause harm to wildlife. Installation will be subject to a documented assessment of the risks/ benefits.

4.5 Advisory and Legislative

4.5.1 ARS4

4.5.1.1 Deliver ARS4

The Alderney Ramsar Strategy 2026-2030 (ARS4) is currently in development and should be submitted to GSC in the first quarter of 2025. Pending approval from GSC, this should go through another round of stakeholder and public consultation, before being published in 2025. 2025 will be the year-0 of this plan, with the plan covering 2026-2030. This timing aligns with the management strategies for Jersey's Ramsar Sites.

In development of ARS4, stakeholders will be consulted regarding potential areas where the Ramsar Site may be extended or new designations should be applied for, to cover areas of important breeding grounds or wetland habitat such as eelgrass beds.

4.5.1.2 Update Terms of Reference for the Ramsar Site

The Terms of Reference of the Ramsar Site will be updated in 2025. This will be reviewed by the ARAG and Activity Organisations and submitted to GSC. They will be presented to Stakeholders.

4.5.2 Scientific Advisory

4.5.2.1 ARAG Review of Ramsar Work

All activities, as well as the annual action plan and report, will be reviewed in consultation with Alderney's Ramsar Advisory Group (ARAG) before submission to GSC. Any changes to the work programme outside of the Alderney Ramsar Action Plan will also be reviewed by the ARAG before submission to GSC. The ARAG offers technical and expert advice to the GSC on work proposals and outcomes on behalf of the States of Alderney. The ARAG should aim to meet in person at least once per annum, with this facilitated by the States of Alderney and the Alderney Ramsar Secretariat.

4.5.2.2 Increase ARAG Membership

The ARAG membership should be expanded to include two additional members. This should be a person with experience in community engagement. New members of ARAG should not be affiliated with any stakeholders of the Alderney Ramsar Site, or current or previous activity organisations (e.g. Alderney Wildlife Trust, Alderney Animal Welfare Society, Alderney Bird Observatory, the Channel Islands Bird Ringing Scheme). The SoA will arrange the application process, with support and input from the ARAG.

4.5.2.2 ARAG Terms of Reference

The ARAG recommended that they review their Terms of Reference in their 2024 Report (which can be read here). GSC approved their report, so the ARAG's review of their Terms of Reference should be facilitated, alongside the general review of Terms of Reference (see section 4.5.1).

4.5.2.2 Review Standardised Reporting Forms

Standardised methodology, proposal and funding forms were used for the first time this year. These forms should be reviewed prior to the 2025/2026 Ramsar Review process.

4.5.3 The Puffin Friendly Zone

4.5.3.1Support and Advertise the Puffin Friendly Zone

Support for the Puffin Friendly Zone via the Alderney Harbour Office and stakeholders will continue in 2025. Marine users will be asked to submit incursions they observe to the Alderney Harbour Office.

4.5.4 Networking with other Channel Island Ramsar Sites

4.5.4.1 Attend the IIEM

The maintenance of links and collaboration with other Channel Island Ramsar Sites will continue in 2025. The Ramsar Administrator and activity organisations (resource dependent) will attend the Inter-Islands meeting in 2025, at which a pan- Island Ramsar meeting will be held. This may include an in-person ARAG meeting, subject to resources.

4.5.4.2 Meet with Managers of Channel Island Ramsar Sites

The Alderney Ramsar Administrator will continue to meet virtually monthly with the managers of other Channel Islands Ramsar Sites.

4.5.4.3 Maintain Links with International Community

International links and joint projects such as the grey seal monitoring network will be maintained and improved wherever possible. The Channel Islands Ramsar Website and IIEM should be used as platforms to promote Alderney on the international stage.

4.5.5 Websites

4.5.7.1Maintain Channel Island Ramsar Website

The Alderney Ramsar Secretariat will continue to maintain the Channel Island Ramsar Website. They will work with the managers of the Jersey and Guernsey Ramsar sites to improve this website and its management.

4.5.5.2 Upload Alderney Ramsar Documentation to SoA Website

New Alderney Ramsar documentation will be uploaded to the SoA website.

4.5.6 RIS Update

4.5.6.1 Upload RIS Sheet

When the RIS is updated by the UK's Department for Environment, Food, and Rural Affairs this should be publicized on Alderney. The Alderney Ramsar Secretariat will

continue to work with DEFRA and the JNCC to update and improve the RIS where appropriate and resources allow.

4.5.7 Ramsar Stakeholder Forum

4.5.7.1 Support Two Ramsar Stakeholder Forums in 2025

Two Alderney Ramsar Stakeholder Forums will be hosted in 2025 with the Harbour Master chairing. The first of these will be held in April 2025.

4.5.8 Burhou Maintenance

4.5.8.1 Repairs to Burhou Warden's Hut

The Warden's Hut on Burhou, which houses sensitive webcam equipment, was repaired in 2024 by the Burhou Warden. If additional repairs are required, there is funding from a previous Ramsar Budget available for this.

4.5.8.2 Path Cutting

The Burhou Warden has proposed that paths be cut around the island, which will reduce the impact visitors have on sensitive breeding areas. The AWT have offered to support the Burhou Warden in this. This should be reviewed prior to the opening of Burhou on the 1st of August.

4.5.9 Academic Projects

4.5.9.1 Support Academic Projects

Support for academic projects will be continued in 2025, if resources allow and suitable projects can be found. Any projects which require active data collection within the Ramsar site, or wish to draw funds from the Ramsar programme, should be presented to ARAG and then GSC for consideration, in particular if they will change the existing Ramsar work programme or require licensing.

5. Reference List

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Walsh, P., Nevo, A. de, Halley, D. J., Sim, I. W. M., & Harris, M. P. (1995). *Seabird monitoring handbook for Britain*. Joint Nature Conservation Committee.

Wieckowski, F., & Ferrar, A. (2016). *Alderney West Coast and Burhou Islands Ramsar Site Management Strategy 2017-2021.* (No. 3; Alderney Ramsar Strategy, p. 24). Alderney Wildlife Trust. www.alderneywildlife.org/conservation-projects/ramsar

6. Appendices

Appendix 1. Methodologies

The following are methods for approved works for the Alderney Ramsar Action Plan 2025 (approved by SoA's GSC on 14/03/2025). The methods form all approved proposal forms have also been included here for this published version of the 2025 Action Plan.

Contents

Seabirds

Method/ Action title
Atlantic puffin post-season apparently occupied burrow survey
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.1.2
Aim(s) and intended outcome(s)
Census of the number of apparently occupied Atlantic puffin burrows (AOB) on Burhou to give an estimation of the size of the breeding population. The accuracy of the post-season AOB census method will be validated by comparing the number of

AOBs on recorded Burhou with the number of active burrows recorded in the early season via PuffinCam.

Methodology

Species: Atlantic puffin

Location: Burhou (The survey will require a team of AWT ecologists to land on Burhou for around six hours)

Date and time range: Early August data collection, late August – November data analysis

Methods:

1. Known puffin burrow areas on Burhou are mapped to identify survey area. Any areas which are deemed inaccessible, or too sensitive to survey (decision by survey team, or at advice of ARAG), e.g. due to very fragile ground, are marked off limits.
2. Before landing, monitor for signs of Atlantic puffin activity using PuffinCam and boat obs. At minimum 8 hours of observation.
3. On Burhou, surveyors walk around breeding areas, taking care not to damage burrows, looking at every potential burrow for signs of occupation, including: puffin eggshell, discarded fish, down or feathers, guano streaked at burrow entrance, the presence of a strong smell of ammonia, and the lack of rabbit droppings.
4. Burrows showing more than two signs of occupation are tallied as "confident" AOBs, burrows with just one sign are tallied as "potential" AOBs.
5. Any burrow that has been reviewed has a pasta shell places at the entrance to avoid double counting.
6. Burrows which are identified as confident within the productivity plots previously mapped using PuffinCam in the early season (see Atlantic puffin productivity methodology) are marked with a flag, and the areas are photographed from the viewpoint of PuffinCam. Repeat for burrows identified as potential if time allows.

Protocol and timeline for analysis of data: August-November

7. The accuracy and precision of the post-season AOB survey is validated by comparing the number of AOBs known to be active through monitoring with PuffinCam with those identified as confident and potentially active in person on Burhou.
8. A confusion matrix is constructed from these data, and the F-1 score of the AOB survey is calculated, giving the accuracy of the AOB survey in correctly identifying all active AOBs (https://medium.com/analytics-vidhya/confusion-matrix-accuracy-precision-recall-f1-score-ade299cf63cd)

Data archiving and public access protocols:

9. Submit AOB count with the best F-1 score to Seabird Monitoring Programme (SMP) database. Consider submitting both counts as upper and lower estimates.
10. Report in Ramsar review, giving upper ("potential") and lower ("confident") AOB estimates.

Additional information

The validation using a confusion matrix should be reviewed in 2027. Notes on grass growth, weather leading up to the survey, observers etc, may also be useful.

NOTE FROM AAWS

On receipt of notice of a planned excursion, AAW will arrange an RVN who can volunteer to accompany the organisation and assist with all activities undertaken as

well as make considerations specific to the welfare of the all species and populations in the area.

This assistance is given on a voluntary basis and is subject to sufficient staffing levels and caseload or emergencies occurring at the clinic which must take priority for RVNs on duty or under sole charge conditions.

During the monitoring or assessment activities if any such urgent issue should arise where the RVN feels they must give advice or intervene with unnecessary or excessive disturbance activities, relocate or treat an animal due to injury, or suggest a change in protocol of the activity, they will discuss with the relevant organisation who have organised the activity, colleagues and peers potentially including veterinary surgeons such as States Veterinary Officer.

In all cases RVNs will endeavour to appreciate the scope and parameters of monitoring activities before the task is undertaken, so that any suggestions or concerns can be raised in ample time. If after the event during discussion any unforeseen concerns arise these will be discussed with the organisers immediately.

References

Confusion matrix and F-1 score methods: https://medium.com/analytics-vidhya/confusion-matrix-accuracy-precision-recall-f1-score-ade299cf63cd

Method/ Action title

Atlantic puffin raft counts

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.1.2

Aim(s) and intended outcome(s)

Census & late season potential recruitment counts. Early season raft counts within the Puffin Friendly Zone through April and May when puffins are likely to be incubating eggs to give an estimate of the number of pairs. Late season raft counts to give an estimation of recruitment to the colony.

Methodology

Species: Atlantic puffin
Location: Puffin Friendly Zone of Burhou (via PuffinCam and boat)
Date and time range: Early season raft counts in April and May, late season raft counts in June and July, data analysis August
Methods:

1. Counts of Atlantic puffin rafting within the Puffin Friendly Zone bay are conducted ca. every two days through the early season, using either PuffinCam or by boat.
2. Sea state, visibility, weather conditions, count method (e.g. camera live, camera recorded, boat) and other species present are recorded.
3. Counts are continued where possible in the late season, to estimate the number of non-breeding birds which visit the colony in comparison to other years.

Protocol and timeline for analysis of data: August

4. Calculate maximum and mean number of individuals recorded in early and late seasons.

Data archiving and public access protocols:

5. Submit maximum raft count to Seabird Monitoring Programme (SMP) database
6. Report in Ramsar review, giving maximum and average number of individuals recorded in early and in late seasons.

Additional information

References

Method/ Action title
Atlantic puffin mapped burrows with remote camera observations
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.1.1, 4.1.1.3
Aim(s) and intended outcome(s)
Map active burrows and record fish returns to estimate Atlantic puffin productivity
Methodology

Species: Atlantic puffin
Location: Burhou via PuffinCam
Date and time range: April – July PuffinCam recording, April – August footage review, September – November data analysis
Methods:

1. Select productivity plots and set PuffinCam to track between each plot ca. hourly.
2. Several watches are made during the early season (April – May), ca. 5 hours per plot minimum. Label AOBs which are used on two separate days as active.
3. Monitor through the late season (June-July), any active burrows that have at least one fish return are marked as successful.
4. Also record any predation or kleptoparasitism events and link to a burrow if possible.

Protocol and timeline for analysis of data: September - November

5. Calculate the weighted mean productivity (accounting for the different number of burrows in each productivity plot).

Data archiving and public access protocols:

6. Submit weighted mean productivity to Seabird Monitoring Programme (SMP) database.
7. Report in Ramsar review, giving total number of active burrows, successful burrows and weight mean productivity.

Additional information

In 2025, an additional method of monitoring for fish returns using PuffinCam will be trialled alongside the current methods (See proposal sheet Proposal documents 2025.pdf). In summary, two productivity plots will be selected and each plot will be recorded continuously for a 16-hour period, from dawn to dusk, on two separate days

in the late season. The number of active burrows marked as successful using this additional method will be compared to the number of successful burrows recorded in these productivity plots using the current method. This aims to develop a more efficient method of monitoring fish returns, reducing the effort required and thereby increasing the precision and accuracy of productivity estimates in future.

References

Method/ Action title

Atlantic puffin productivity - continuous watches

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.1.2, 4.1.1.3

Aim(s) and intended outcome(s)

1. Record productivity of puffins using an updated methodology with continuous dusk-till-dawn observations.
2. Compare the results of this to the pre-existing productivity survey.

If year one of this survey is a success, continue to conduct it alongside the existing survey for several years, after which the existing survey can be phased out.

Methodology

Species: Atlantic Puffin
Location: Burhou (No in-season access required)
Date and time range: June-August recording, August-November data analysis
Study design:
What will be measured: *Fish returns to active puffin AOBs, interactions with predators*
Samples taken? *No*
Control variables: *Existing AOB survey*
Requirements to handle wildlife: *No*
Data collection method:

1. *Record AOBs using method used for existing productivity survey in March-June 2024.*
2. *Select a minimum of two plots with sufficient AOBs to create a sufficient sample (e.g. ~25 AOBs total).*
3. *Set the guard tour on PuffinCam to record two 16hr watches on each site during June and July. These watches should be during good weather conditions (e.g. good visibility, < force 4). Check these have been successfully recorded immediately after each survey and repeat if required.*
4. *Watch footage on 2 x speed. Record any fish returns, and interactions with predators (noting the type of interaction, predator species, and the associated burrow if applicable).*

Protocol and timeline for analysing data: *August-November*

5. *Calculate the productivity by dividing the number of burrows with fish returns by the number of active burrows.*
6. *Compare the results of this survey to the existing AOB survey, recording where burrows were marked as successful or unsuccessful in each survey. For example, depending on data, perform a binomial GLM (e.g. Burrow outcome ~ Survey type, method = binomial).*
7. *Compare ability of the survey to record predator interactions.*

Data archiving and public access protocols:

8. *Report outcome in 2025 Ramsar Review.*

If survey is more effective than existing method, report productivity data to SMP alongside existing survey. This is a publicly accessible database.

Additional information

References

Method/ Action title

Northern gannet aerial census

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.2.6

Aim(s) and intended outcome(s)

Full colony census of Les Etacs and Ortac using counts of AOTs from aerial photographs

Methodology

Species: Northern gannet

Location: Les Etacs and Ortac

Date and time range: June or July photographs, August – November data analysis

Methods:

1. Aerial photographs are taken in June or July

Protocol and timeline for analysis of data: August - November

2. Plots are marked out on these photographs, and they are distributed to counters (n = ca. 5)
3. The unit to count is apparently occupied site (AOS), i.e. a site occupied by one or two adults irrespective of whether nest material is visible/present – if a site is suitable for breeding it is counted
4. Birds occupying "club" sites are not counted. Where non-breeders and immatures are mixed with breeders, particularly on the lower slopes, the presence of nest material or the "suitability of the site for nesting" is used to determine an AOS from a site occupied by a non-breeder. Non-suitable sites include sites located on sheer faces, inadequate ledges or positions too close to the high-water mark and splash zone.
5. To avoid bias, each counter works individually and does not see any other counter's count.
6. The final assessments are based on the mean of the counts (with standard deviation).

Data archiving and public access protocols:

7. Submit full census counts for Les Etacs and Ortac combined to Seabird Monitoring Programme (SMP) database.
8. Report in Ramsar review, giving total counts of AOSs for both sites individually and for entire colony.

Additional information

1. It is advised that apparently occupied nests (AONs) are identified where possible as well as mapping all AOTs.

2. In 2025, drone surveys will be carried out to census Les Etacs and Ortac (following the methods outlined in 4.1.2.6) alongside the aerial census. Counts using both methods will be compared.

References

Method/ Action title
Northern gannet drone census
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.2.6
Aim(s) and intended outcome(s)
Full colony census of Les Etacs and Ortac using a drone
Methodology

Species: Northern gannet
Location: Les Etacs and Ortac
Date and time range: June or July data collection, August – November data analysis
Methods:

1. A Guernsey Aerial Work Permit (issued by the Channel Islands Director of Civil Aviation [DCA]) and permission from Alderney Air Traffic control are obtained prior to the census. All drone pilots must also have a minimum of the A2 Certificate of Competency qualification.
2. Weather forecasts for flight location are checked at least 24 hours before planned flight and monitored until and during deployment to ensure safe drone operation and usable imagery.
3. Pre-deployment checks are carried out, including checks for any hazards in the vicinity of the flight area.
4. Conduct two separate drone censuses, one of Les Etacs and another of Ortac. For Les Etacs, launch from land at 'The Guns', and for Ortac, launch from either 'The Guns' or from the AWT's boat, depending on feedback from the Channel Islands Director of Civil Aviation (CIDCA). Use flight paths that aim to overlap by at least 70%–80% forward/backward overlap and 60% sideways overlap to ensure orthomosaic imagery can be stitched (Edney et al., 2023).
5. Deploy the drone and approach both colonies at a minimum distance of 200m, maintaining a distance of at least 50m, but not exceeding a height of 122m, throughout the flight (Edney et al. 2023).
6. Throughout the surveys, two observers equipped with scopes/binoculars and experienced in detecting alert behaviour in gannets are situated on cliff vantage points to monitor the surrounding area for safety hazards and potential disturbance to the colony. Observers maintain constant communication with the drone pilot, relaying information and instructions by telephone.

Protocol and timeline for analysis of data: August - November

7. Automated counts of gannets are conducted using orthomosaic images and AI software.

Data archiving and public access protocols:

8. Submit full census counts for Les Etacs and Ortac combined to Seabird Monitoring Programme (SMP) database.
9. Report in Ramsar review, giving total counts of AOSs for both sites individually and for entire colony.

Additional information

Review practice after the first flight of each project, each season, to check whether adjustments are needed to avoid disturbance etc.

References

Edney, A., Hart, T., Jessopp, M., Banks, A., Clarke, L., Cugniere, L., Elliot, K., Juarez Martinez, I., Kilcoyne, A., Murphy, M., Nager, R., Ratcliffe, N., Thompson, D., Ward, R., & Wood, M. (2023). Best practices for using drones in seabird monitoring and research. Marine Ornithology, 51(2), 265–280.

Method/ Action title

Northern gannet drone-assisted survey of Ortac productivity

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.2.3

Aim(s) and intended outcome(s)

Aim: Monitor breeding activity of northern gannets at 50 AOSs on Ortac using images captured during a monthly drone survey.

Outcomes: Northern gannet productivity for Ortac and archived orthomosaic images of the colony (should assessments of productivity at additional AOSs be needed for future studies).

Methodology

The species, habitat(s), feature(s), etc, studied/affected: Ortac's northern gannet colony

The location(s): Ortac

Date and time range(s): March–November. Monthly drone flights to survey Ortac during daylight hours between March – October, followed by a write up of results in November.

The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.

Equipment

A DJI Mavic 3 Pro will be used. The device is a quadcopter with a mass of 958g, dimensions of 34.8 x 29.1 x 10.8 cm (L x W x H) and a maximum wind resistance of 12 m/s. Attached to the device is a 20-megapixel camera with a focusing range of 1 m to ∞.

Participants

All participants will undergo briefings and training, including emergency drills (see Additional Information).

Pilot

Role: Pilot the drone and capture images of Ortac.

Requirements: Qualified with A2 Certificate of Competency and training from Seabird Watch 'Best Practice for Drones in Seabird Monitoring and Research'. Experienced with aircraft and flight plan. Listed on Aerial Work Permit as a pilot *(see Additional Information for current pilots)*.

Observer

Role: Maintain watch on the drone, communicate with Liaison Officer, and act as back-up pilot in emergencies.

Requirements: Qualified with Flyer ID (having passed minimum of basic flying test). Be experienced in detecting alert behaviour in gannets. First aid trained.

Liaison Officer

Role: Maintain contact with Pilot/Observer and relay communications to Air Traffic Control and if required, AWT Office staff (e.g. CEO, or a member of ecology team) and emergency services. Maintain watch on the drone.

Requirements: First aid trained

Pre-flight

1. Agreement with Air Traffic Control will be sought prior to any flights.
2. The drone should be launched and land from either the 'the Guns' (Alderney's West Coast), or from the AWT's boat, depending on feedback from the Channel Islands Director of Civil Aviation (CIDCA).
3. If launching and landing from the Guns, a radio check must be performed between the Pilot, Observer and Liaison Officer upon arrival to the site. The

Pilot and Observer will walk to the take-off site and maintain contact with the Liaison Officer, who will remain in an area with phone signal coverage. The Guns generally has mobile phone coverage, so the Liaison Officer may remain with the survey team in this scenario.

4. Pilot and Observer to make final call on conditions using the below weather requirements:
    - Winds not exceeding 12 m/s (26.8 mph).
    - No low cloud (<1000 m) or fog.
    - Not below 0°C.
    - No heavy precipitation forecast (e.g. above 2 mm per hour).
5. Pilot and Observer to complete pre-flight checklists and the I M S A F E (illness, medication, stress, alcohol, fatigue, eating) checklist (*see Additional Information*).
6. Pilot to confirm with Liaison Officer that they are ready to fly.
7. Liaison Officer to call local Air Traffic Control number to confirm flight can go ahead and specify Flight Plan (*see Additional Information*), then advise the Pilot they are permitted to fly.
8. Pilot will turn on drone and ensure its navigation lights are on.
9. Observer and Pilot to confirm no uninvolved people are too close, and alert anyone nearby.

During flight

10. Throughout the survey, the Observer must be equipped with a scope and/or binoculars to monitor the drone and the surrounding area for safety hazards. The Observer should maintain constant communication with the Pilot and Liaison Officer, relaying information and instructions by radio, telephone (if all the survey team is within an area of mobile phone coverage) or verbally (if the survey is conducted from the AWT boat).
11. If any plane, helicopter or other aerial vehicle is detected in the vicinity of the survey area at any time during the flight, Pilot must immediately return drone to the take-off site, if safe to do so.

12. The drone must approach the colony at a minimum distance of 200 m and maintain a distance of at least 50 m from the colony at all times.
13. In line with requirements enforced by the CIDCA, the drone will not exceed a height of 120 m throughout the flight.
14. Pilot will fly over the colony in a lawnmower pattern using a route with at least 70%–80% forward/backward overlap and 60% sideways overlap to ensure an orthomosaic image of the colony can be stitched.
15. Pilot to end flight when no less than 30% of drone battery remains. Pilot to inform Observer and Liaison Officer when returning from survey.
16. Pilot and Observer to confirm with Liaison Officer when the drone has landed, who will notify Air Traffic Control.

The protocol and timeline for analysis of data.

After each survey, an automated approach will be used to stitch the high-resolution aerial photographs into one orthomosaic of Ortac using open-source software, such as 'Web OpenDroneMap' https://opendronemap.org/webodm/. From the orthomosaic produced after the first survey in March, 50 AOSs will be randomly selected. Breeding activity at these sites will then be monitored using images from subsequent monthly surveys, recording details such as the number of adults present and the presence of chicks

Following the final drone survey in October, productivity will be calculated for the 50 sites and be presented in the upcoming Alderney Ramsar Review.

Data archiving and public access protocols:

Productivity will be reported in the upcoming Alderney Ramsar Review and submitted to the Seabird Monitoring Programme (SMP) database (BTO and JNCC).

1.

Additional information

Pilots

All pilots have gone through Seabird Watch training, 'Best Practice for Drones in Seabird Monitoring and Research', for flying drones to collect ecological data around

seabird colonies. Additionally, all pilots hold a minimum of A2 C of C and be listed on the AWT's Aerial Work Permit. Current pilots are:

- Dr. Tara Cox
- Matthew Lewis
- Niamh McDevitt
- Alex Purdie

Flight Plan

Review practice after the first flight of each project, each season, to check whether adjustments are needed to avoid disturbance etc.

During work hours, flight plan is completed and is confirmed with Alderney Air Traffic Control and AWT Office. Flight plan to include the following:

- Pilot details (name, qualifications, contact details).
- Drone details (make).
- Location of take-off site and access route to take-off sight.
- Flight description (e.g. flight route, altitude, purpose, photography or videography to be taken).
- Flight schedule (e.g. approximate take off time and landing time).
- Emergency procedures
- Contact numbers

Emergency Provisions Checklist

1. Flight plan and contact details of survey team to be confirmed with Alderney Air Traffic Control before flight. Liaison Officer to ensure they are within mobile signal range and maintain radio contact with Pilot and Observer.
2. Survey team to have:
   - Fully charged radios.
   - Fully charged mobile phones with spare battery pack and charger.

- Whistles.
- Warm clothing, including waterproof clothing.
- High visibility jackets.
- Shoes with good quality tread for rocky and muddy conditions (e.g. hiking shoes or boots, work boots). Preferably ankle protecting.
- Two first aid kits, one with the Liaison Officer, one with the Pilot and Observer.
- Food and drink.
- Powder fire extinguisher
- Copy of the Aerial Work Permit.

3. Survey team to drill Emergency Procedures (*see below*) regularly, and before each deployment.

IN THE EVENT OF AN EMERGENCY INVOLVING ANOTHER AIRCRAFT OR LOSS OF CONTROL OF THE DRONE, SURVEY TEAM TO IMMEDIATELY NOTIFY THE POLICE ON 999.

Drone Maintenance Checklists

Checks should be performed to ensure the safety and airworthiness of the drone. A record should be kept of all checks. These must be performed routinely as outlined below.

Daily checks **(**to be done before each flying day/period):

- No panels and body parts have any signs of cracks or looseness.
- Surfaces are dry and no water has not entered the drone.
- Arms hinge smoothly and remain in place securely.
- Gimbal moves freely and is secure.
- Motors rotate by hand, and that they are smooth and silent.
- Propellers are securely attached and in the correct motor position.

*Preflight checks (*to be done before each individual flight):

- Camera lenses are free from dirt or water.
- Propeller blades are free from dirt, damage or cracks.
- Memory card is fitted and checked to have adequate free space for the planned task.
- When powered and in take-off location; displayed location and heading is correct.
- Flight battery and transmitter battery charge level is adequate to carry out planned flight with suitable margin.
- Weather conditions are within limits (*see Methods: Pre-flight)*.

In the event of any heavy landing or collision, daily checks must be completed before proceeding to fly again, even if it is during the same operational period or day.

*Day-end checks (*to be completed when daily flying has finished):

- Surfaces free of water, dust or dirt wiped clean from surfaces.
- Motors clear of dirt or dust.
- If no further flying is planned within 10 days:
    - Battery discharged to 40-65% where 3 bars show on the charge indicator.
    - Transmitter and systems powered off for storage.

Other checks and logs:

- Battery charging and flights should be logged.
- Battery endurance during practice flights logged.

Emergency Procedures

Fly away (drone flying away not responding to controls)

1. Call “EMERGENCY – FLYAWAY” to warn the Survey Team and people nearby.
2. Instruct all nearby Survey Team to visually track the drone.
3. If possible, switch to Attitude (‘ATTI’) Mode (i.e. manual flying mode).
4. If control not recovered, raise transmitter above your head and repeatedly attempt to shut down the drone using Combined Stick Control input (both sticks down to the centre). If possible, switch to ATTI Mode (manual).
5. If the drone continues to fly away, take note of flight path, estimated flying time and notify any relevant local parties, including the most appropriate Air Traffic Control unit and the Police.

Fire (drone or controller catches fire)

1. Call “EMERGENCY – FIRE” to warn Survey Team and people nearby.
2. Execute an emergency landing at the most suitable landing area (visual observer may be able to offer guidance).
3. Use fire suppression equipment to control any ensuing fires. Avoid inhaling any toxic fumes.

Pilot incapacitation (Pilot becomes unable to operate the drone)

In the event that the Pilot is incapacitated and therefore unable to operate the aircraft:

1. The Pilot or Observer should activate the Return To Home (RTH) function and call “FAILSAFE” to warn Survey Team and people nearby.
2. Pilot or Observer (if present) should clear the landing area of any items or equipment and people
3. Monitor the drone as it executes the RTH function.
4. Once the aircraft has landed, disarm the battery, shut it down, and turn off the controller.

Air Incursion (Another aerial vehicle approaches or enters the operating area)

If you or your observer notice an incursion into the flight operations area by another aircraft:

1. The Pilot should be immediately informed by the Observer calling "AIR INCURSION" and pointing or verbalising the location of the incursion.
2. The Pilot will assess the risk of collision and if necessary, take whatever avoiding action most reduces or eliminates this risk. This will generally be to descend the drone as quickly as possible. However, the Pilot must make a judgment based on the situation.
3. Resume operations only once the other aircraft has cleared the area.

Ground incursion (Incursion by an uninvolved person, animal, vehicle etc on the ground)

Should you or your Observer notice an incursion into the flight operations area by a person, animal, vehicle or any other ground-based hazard:

1. The Pilot should be immediately informed by the Observer calling "GROUND INCURSION" and pointing or verbalising the location of the incursion.
2. The Pilot will assess the risk of collision and, if necessary, take action to avoid collision. This may include flying the drone away from the point of incursion and/or descending the drone to land as quickly as possible. However, the Pilot must make a judgment based on the situation.
3. Resume operations only once the incursion has been cleared or has been brought under the control of the Survey Team.
4. Observer may interact with incursion e.g. to move animals from hazardous area or warn people.

Air incursion – wildlife (Incursion on operations area by a bird or bat which is likely to cause a collision)

DO NOT FLY WITHIN 50 M OF RESTING BIRDS. AVIOD TAKING OFF NEAR BIRD AND BAT ACTIVITY.

If a bird or bat enters the operational zone and poses a collision risk:

1. Call HAZARD – BIRD/BAT and note the location of the animal relative to the drone.

2. If required, fly the drone slowly away from the animal and its flight path (preferably either moving up or down). Conduct a rapid flyaway if required.

IF ANIMAL ACTIVELY ATTACKS DRONE

1. Move drone down (if this will not result in a collision) or up, following rapid & erratic movement procedures.
2. Fly the drone away from the aggressive animal. Land if required, and do not resume the survey until the animal has left the area.

References

NB – Extracted from original proposal document, so not all references may be referred to in this text.

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Method/ Action title
Northern gannet randomly selected mapped AONs
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.2.1
Aim(s) and intended outcome(s)
Map and observe randomly selected nest sites on Les Etacs from mid-March through to October to determine the proportion which fledged a chick and therefore estimate productivity.
Methodology
Species: Northern gannet **Location**: Les Etacs **Date and time range**: Mid-March to October data collection, October – November data analysis **Methods**: 1. 350 nests in total are selected. 50 nests are selected at random from within five plots (Pyramid, West-Rock Gully, West-Rock West-End, North-Stack High and North-Stack Low) and 100 nests from West-Rock Plateau (Purdie et al. 2023). 2. Nest sites are observed weekly noting behaviour, number of adults present, the presence and age of any chicks or eggs, any dead birds, or other species occupying the site. 3. Nest sites are marked as successful if a chick reaches 11 weeks and is absent the following week. 4. Non-layers and the stage of failure (e.g. egg, chick) are identified. **Protocol and timeline for analysis of data:** October - November 5. Calculate productivity for each plot and overall Les Etacs colony. **Data archiving and public access protocols:** 6. Submit Les Etacs colony overall productivity to Seabird Monitoring Programme (SMP) database. 7. Report in Ramsar review, giving productivity for each plot and for the colony as a whole.
Additional information
References
Purdie, A., Broadhurst-Allen, M., Whitelegg, D., Lewis, M., & Horton, J. (2023). Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2022 (Annual Ramsar Review, p. 118). Alderney Wildlife Trust.

Method/ Action title
Northern gannet annually repeated mapped AONs
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.2.2

Aim(s) and intended outcome(s)

Map and observe pre-selected nest sites on Les Etacs from mid-March through to October to determine the proportion which fledged a chick and therefore estimate productivity.

Methodology

Species: Northern gannet
Location: Pyramid stack on Les Etacs
Date and time range: Mid-March to October data collection, mid-March to November data analysis
Methods: In 2025, only photographs of the 100 pre-selected AONs on Pyramid stack will be taken in real time but will not be analysed. Data from 2019-2024 will be reviewed.

Should the data be analysed in the future, the following standardised method may be used:

1. 100 pe-selected AONs are monitored on Pyramid stack through the season.
2. Nest sites are observed weekly noting behaviour, number of adults present, the presence and age of any chicks or eggs, any dead birds, or other species occupying the site.
3. Nest sites are marked as successful if a chick reaches 11 weeks and is absent the following week.

Protocol and timeline for analysis of data:

4. Laying date, non-layers and the stage of failure (e.g. egg, chick) are identified.
5. Calculate overall productivity of Pyramid stack.

Data archiving and public access protocols:

6. Report in Ramsar review, giving overall productivity for Pyramid stack, average laying date and comparison matrix of outcome of nests.

Additional information

1. For AON map see 2022 Ramsar review (Purdie et al. 2023).
2. In 2025, only photographs of the 100 pre-selected AONs on Pyramid stack will be taken in real time but will not be analysed. Data from 2019-2024 will be reviewed.

References

Purdie, A., Broadhurst-Allen, M., Whitelegg, D., Lewis, M., & Horton, J. (2023). Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2022 (Annual Ramsar Review, p. 118). Alderney Wildlife Trust.

Method/ Action title

Northern gannet anthropogenic material survey – Entanglements

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.2.5

Aim(s) and intended outcome(s)
Record the number of entanglements of adult gannets and chicks on Les Etacs
Methodology
Species: Northern gannet **Location**: Les Etacs **Date and time range**: Early March – October data collection, October-November data analysis **Methods**: 1. Throughout the gannet nesting season (early March – early October), telescopes (x25) are used to search Les Etacs every seven days for entangled birds. 2. The colony is observed from The Guns North vantage point, from which about 70% of the occupied part of the colony is visible. 3. Observations are made for approximately 15 minutes, which was enough time to slowly scan the whole colony. 4. The date the entanglement is observed, the region of Les Etacs the individual is entangled in, age of the individual entangled (adult/chick) and whether the individual is alive, or dead will be recorded. 5. Observations are not conducted in conditions that limited visibility (i.e. rain, wind above Beaufort Force 6, low fog), with weather conditions recorded for the period of observation (temperature, wind speed, wind direction, cloud cover, percent of rain in observation window, estimated visibility (km)). **Protocol and timeline for analysis of data:** October - November 6. Calculate total number of entanglements recorded for adults and chicks, the number of entanglements recorded each month, and the proportion of pairs in which one individual suffered lethal entanglement. **Data archiving and public access protocols:** 7. Report in Ramsar review, giving total number of entanglements recorded for adults and chicks, the number of entanglements recorded each month, and the proportion of pairs in which one individual suffered lethal entanglement.
Additional information
References

Method/ Action title
Northern fulmar nest site mapping
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.3.1
Aim(s) and intended outcome(s)
Productivity and partial census of northern fulmar. Perch points are mapped from vantage points and consistently occupied nests are identified and observed through the breeding season to estimate productivity.
Methodology
Species: Northern fulmar

Location: West cliffs
Date and time range: May – September data collection, October – November data analysis
Methods:

1. From vantage points, map northern fulmar occupying sites. Visit every two days for ca. 10 days, map those consistently occupied as AONs.
2. Monitor AONs weekly, recording if adults or chicks are present and their behaviour, e.g. brooding posture or standing
3. Mark chicks as fledged if they are observed with full, or near full, plumage and are absent the following week.

Protocol and timeline for analysis of data: September - November

4. Calculate productivity as the number of AONs that successfully fledged chicks divided by the number of consistently occupied nests.

Data archiving and public access protocols:

5. Submit the total number of fulmar AONs located around Alderney (including those recorded during round island seabird censuses) and the productivity of AONs located within the West Cliffs survey area to the Seabird Monitoring Programme (SMP) database.
6. Report in Ramsar review, giving an estimate of total number of fulmar AONs located around Alderney's coast (including those recorded during round island seabird censuses), the number of AONs located inside survey area and productivity.

Additional information

Additional northern fulmar AONs are recorded during round island seabird censuses.

References

Method/ Action title
Common tern census and productivity
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.4.1
Aim(s) and intended outcome(s)
Census and monitor common tern nest sites to determine the proportion of nests which fledged chicks and therefore estimate productivity.
Methodology

Species: Common tern
Location: Houmet Herbé, Houmet des Pies and Houmet de Agneaux
Date and time range: Mid-May – August data collection, September – November data analysis
Methods:

1. Begin with periodic onshore vantage point observations of all historic nesting sites (Fort Houmet Herbé, Houmet des Pies and Houmet de Agneaux [the east Saye bay promontory]) until the birds have settled.

2. Continue with weekly onshore vantage point observations of apparently occupied site(s). Record the location of each site, behaviour (e.g. incubating, fish return), and if possible, the number and age of chicks, predator activity and whether chicks successfully fledged.
3. During weekly observations, also record the total number of terns observed at the site (i.e. standing and flying). Use the maximum count of total birds observed for year-on-year comparison.
4. Continue weekly observations until breeding has finished and no terns remain at the nesting site.

Protocol and timeline for analysis of data: September - November

5. Estimate productivity as proportion of nests which fledged chicks

Data archiving and public access protocols:

6. Submit maximum count of total individuals, number of AONs and productivity to the Seabird Monitoring Programme (SMP) database.
7. Report in Ramsar review, giving maximum count of total individuals, number of AONs and productivity for each site.

Additional information

NB – Below information added post publishing, accidentally not included in original submission.
A24 rodent traps and toxic bait may be deployed in collaboration with the SoA's Public Works department. These will be placed prior to the breeding season where possible, and will be removed following the breeding season. The CRRU code will be followed.

References

CRRU Code - Think Wildlife

Method/ Action title

Guillemot productivity

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.6.4

Aim(s) and intended outcome(s)

Record the success of observable guillemot AOSs through vantage point observations and camera trap observations to estimate productivity.

Methodology

Species: Guillemot
Location: Coque Lihou, La Nache and North Stack High on Les Etacs
Date and time range: April – June data collection, July – November data analysis
Methods:

1. Monitor breeding activity (e.g. fish returns, attendance) via onshore observations with a scope alongside population counts between mid-May to early June (designated 'in-season' for guillemots).
2. Where trail cameras are deployed overlooking nesting areas, images are also used to count nesting attempts and their outcomes recorded.

3. Any signs of previous nesting activity, such as broken eggshells found at new loci during the post-season site visits, are also added to the counts.
4. On North Stack High, observe guillemot AOS every 1-2 days from the day the first chick is observed, and monitor all active sites through to jumping.

Protocol and timeline for analysis of data: July – November

5. Estimate mean productivity across all sites following Seabird Monitoring Handbook guidelines (Walsh, et al. 1995).

Data archiving and public access protocols:

6. Submit mean productivity across all sites to the Seabird Monitoring Programme (SMP) database.

Report in Ramsar review, giving mean productivity across all sites.

Additional information

North Stack High is observed differently because a large sample of guillemot AOS are clearly visible from the shore and chick growth and jumping can be directly observed.

References

Walsh, P., A. de Nevo, D. J. Halley, I. W. M. Sim, and M. P. Harris. 1995. Seabird monitoring handbook for Britain. Joint Nature Conservation Committee, Peterborough.

Method/ Action title

Guillemot population size

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.6.4

Aim(s) and intended outcome(s)

Estimate population size of guillemots and, where possible, razorbills at all potential sites.

Methodology

Species: Guillemot
Location: Coque Lihou, La Nache, Ortac and North Stack High on Les Etacs
Date and time range: April – June data collection, July – November data analysis
Methods:

1. Conduct three onshore observations of North Stack High, Coque Lihou and La Nache, as well as three boat-based photographic surveys of Ortac, between mid-May to early June (designated 'in season' for guillemots).

2. Counts from camera traps placed on Coque Lihou and La Nache overlooking areas less visible from shore are also included in the final population counts.

Protocol and timeline for analysis of data: July – November

2. Estimate population size for both species across all sites

Data archiving and public access protocols:

8. Submit maximum counts across all potential sites to the Seabird Monitoring Programme (SMP) database.

Report in Ramsar review, giving maximum counts across all potential sites.

Additional information

References

Method/ Action title
Manx shearwater passive acoustic monitoring
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.6.6
Aim(s) and intended outcome(s)
Record presence and timing of occurrence of Manx Shearwater on Burhou during the breeding season
Methodology
Species: Manx Shearwater **Location:** Burhou (No in-season access required) **Date and time range:** June-August recording **Study design:** passive acoustic monitoring ***What will be measured:*** *Calls of Manx Shearwater flying over Burhou* ***Samples taken?*** *No* ***Control variables:*** *N/A* ***Requirements to handle wildlife:*** *No* ***Data collection method:*** 9. *SongMeter Mini 2 Li recorder fitted with acoustic microphone, Lithium batteries and large SD card deployed on Burhou before the breeding season and configured to start recording from early June.* 10. *Recorders active between 23:00 to 04:00 each night from June to August, based on* Arneill et al. (2020). 11. *Retrieve recorders late August.* ***Protocol and timeline for analysing data:*** *September-November* 12. *Analyse calls using BirdNET* (Kahl et al. 2021) 13. *Manx Shearwater calls are manually verified.* 14. *Plot acoustic activity over time to determine how consistent presence is within the breeding season.*

Data archiving and public access protocols: *15. Report outcome in 2025 Ramsar Review.* *Sample of calls retained for review on request.*
Additional information
References
NB – Extracted from original proposal document, so not all references may be referred to in this text. Arneill, Gavin E., Emma Jane Critchley, Saskia Wischnewski, Mark J. Jessopp, and John L. Quinn. 2020. 'Acoustic Activity across a Seabird Colony Reflects Patterns of Within-colony Flight Rather than Nest Density'. *Ibis* 162(2): 416–28. doi:10.1111/ibi.12740. Guinness World Records (n.d.). 'Farthest distance travelled by a human voice'. Retrieved from https://www.guinnessworldrecords.com/world-records/farthest-distance-travelled-by-a-human-voice on 21/02/2025 Kahl, Stefan, Connor M. Wood, Maximilian Eibl, and Holger Klinck. 2021. 'BirdNET: A Deep Learning Solution for Avian Diversity Monitoring'. *Ecological Informatics* 61: 101236. doi:10.1016/j.ecoinf.2021.101236. Wildlife Acoustics (2024). 'What Is The Detection Range For My Sonic Microphones And Recorders?' Retrieved from https://www.wildlifeacoustics.com/resources/faqs/what-is-the-detection-range-for-my-sonic-microphones-and-recorders on 21/02/2025

Method/ Action title
Ringed plover population size and productivity
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.5.1
Aim(s) and intended outcome(s)
Monitor number and success of ringed plover nests to determine population size and productivity
Methodology
Species: Ringed plover **Location**: Platte Saline, Clonque, Crabby and Saye

Date and time range: Mid-March – July data collection, August – November data analysis

Methods:

1. Nests on Platte Saline, Clonque, Crabby and Saye are located as soon as possible once laying has begun through a combination of beach walkovers followed by retreat and observation of alarm calling ringed plover adults, and vantage point observations of potential sites. Each beach is checked twice a week in the breeding season for new nests.
2. Located nests are then checked regularly by vantage-point observation (using a telescope) at least two times a week. BTO behaviour status codes are used to classify adult (and where relevant) pulli behaviour, and observations last the minimum of the amount of time to determine the nest status and the number of chicks. When nests have failed, attempt to identify cause of failure based on observed predator interactions, and any remaining physical evidence at a nest inspection (e.g. punctures in eggshells caused by avian predation).
3. Where possible, located nests are placed under 24-hour observation using trail cameras to better identify causes of nest failure and reduce the number of in person observations required. Specifically, placing Ltl Acorn trail cameras with wide angle and close focus capabilities (or equivalent) two to three metres from each nest and camouflaging them using nearby flotsam (e.g. seaweeds) to minimise disturbance to the birds. Cameras are only placed in areas with sufficient cover that the camera would not itself draw the attention of people or predators (e.g. crows) to the nest.

Protocol and timeline for analysis of data: August – November

4. Review footage to identify causes of nest failure at egg stage and record any predator interactions.
5. Calculate egg and chick survival using the Mayfield method.
6. Calculate population size and productivity

Data archiving and public access protocols:

7. Report in Ramsar review, giving number of breeding pairs, number of nesting attempts, number of hatched chicks, number of fledged chicks, productivity and survival.

Additional information

References

Method/ Action title
Ringed plover nest cordons
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.5.2
Aim(s) and intended outcome(s)
Installation of rope cordons to protect ringed plover nests and improve clutch survival
Methodology
Species: Ringed plover **Location**: Platte Saline and Saye

Date and time range: Mid-March to July

Methods:

1. Identify probable nest sites ahead of the breeding season from locations that had been previously occupied, and which are located above the high-water mark and in suitable habitat.
2. Place rope cordons around these probable areas on Platte Saline, creating relatively large cordoned areas, unless an existing barrier (such as the wall to the East of the sand works) already limits potential disturbance.
3. Construct and install these cordons in mid-March by siting metal rebar poles at four-metre intervals to create a rectangle with a shortest side of approximately 20 m down the shoreline. Then attach two lines of manila rope to the top and middle of the poles. These heights allow birds underneath the rope while still acting as a deterrent to people and dogs entering.
4. Public information signs are displayed alongside the cordons. Once a nest at Saye is identified, place another rope cordon around this nest as well.
5. Remove cordons in July once ringed plovers have finished breeding.

Additional information

Permission was granted under a Building and Development Control Committee planning application for cordons to be erected on Platte Saline and Saye beaches provided erection commenced prior to March 2025. As the cordons have been erected annually since permission was granted, the planning department of the SoA have advised the AWT that the permission is extant and does not need renewal.

References

Method/ Action title

Round island census

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.6.1

Aim(s) and intended outcome(s)

Census of breeding birds around Alderney to estimate breeding population sizes

Methodology

Species: European shag, great cormorant, herring gull, lesser black-backed gull, great black-backed gull, common tern, northern fulmar

Location: Around the Ramsar site and Alderney

Date and time range: Late May – early June data collection, July – November data analysis

Methods:

1. Three boat-based surveys conducted between late May and early June.
2. AONs recorded based on species specific observations (see Walsh et al. 1995). AOTs or other lower designations may also be stipulated.
3. Maximum count of nest sites recorded as primary count.

Protocol and timeline for analysis of data: July - November

4. Calculate total number of AONs and AOTs for each species on each survey day.

Data archiving and public access protocols:

5. Submit the maximum counts for AONs and AOTs for each species to the Seabird Monitoring Programme (SMP) database.
6. Report in Ramsar review, giving the maximum counts (across the three survey days) for AONs and AOTs for each species.

Additional information

References

Walsh, P., A. de Nevo, D. J. Halley, I. W. M. Sim, and M. P. Harris. 1995. Seabird monitoring handbook for Britain. Joint Nature Conservation Committee, Peterborough.

Method/ Action title

Trial round island drone-assisted seabird census

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.1.6.2

Aim(s) and intended outcome(s)

Aim: To evaluate the feasibility of a drone-assisted round-island seabird census for Alderney by carrying out a pilot survey on a selected subsection of the island, specifically focusing on Alderney's South cliffs.

Outcomes: Proof of concept that the survey method is suitable for being used to census seabirds along mainland Alderney's coastline and be implemented in future years.

Methodology

The species, habitat(s), feature(s), etc, studied/affected: European shag, herring gull, lesser black-backed gull, great black-backed gull, common tern, northern fulmar, razorbill and common guillemot nesting on Alderney's South cliffs.

The location(s): Alderney's South cliffs.

Date and time range(s): Trial drone surveys between Late May-early June and conduct data analysis (census of AONs) and write up results between July-November.

The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.

Equipment

A DJI Mavic 3 Pro will be used. The device is a quadcopter with a mass of 958g, dimensions of 34.8 x 29.1 x 10.8 cm (L x W x H) and a maximum wind resistance of 12 m/s. Attached to the device is a 20-megapixel camera with a focusing range of 1 m to ∞.

Participants

All participants will undergo briefings and training, including emergency drills (see Additional Information).

Pilot

Role: Pilot the drone and capture images of the coastline.

Requirements: Qualified with A2 Certificate of Competency and training from Seabird Watch 'Best Practice for Drones in Seabird Monitoring and Research'. Experienced with aircraft and flight plan. Listed on Aerial Work Permit as a pilot *(see Additional Information for current pilots)*.

Observer

Role: Maintain watch on the drone, communicate with Liaison Officer, and act as back-up pilot in emergencies.

Requirements: Qualified with Flyer ID (having passed minimum of basic flying test). Be experienced in detecting alert behaviour in birds. First aid trained.

Liaison Officer

Role: Maintain contact with Pilot/Observer and relay communications to Air Traffic Control and if required, AWT Office staff (e.g. CEO, or a member of ecology team) and emergency services. Maintain watch on the drone.

Requirements: First aid trained.

Pre-flight

17. Agreement with Air Traffic Control will be sought prior to any flights.
18. The drone should be launched and land from Alderney's South cliffs.
19. Upon arrival to the south cliffs, a radio check must be performed between the Pilot, Observer and Liaison Officer.

20. The Pilot and Observer will walk to the take-off site and maintain contact with the Liaison Officer, who will remain in an area with phone signal coverage. Should the take-off site be in an area with mobile phone coverage, then the Liaison Officer will join the Pilot and Observer at the take-off site.
21. Pilot and Observer to make final call on conditions using the below weather requirements:
    - Winds not exceeding 12 m/s (26.8 mph).
    - No low cloud (<1000 m) or fog.
    - Not below 0°C.
    - No heavy precipitation forecast (e.g. above 2 mm per hour).
22. Pilot and Observer to complete pre-flight checklists and the I M S A F E (illness, medication, stress, alcohol, fatigue, eating) checklist (*see Additional Information*).
23. Pilot to confirm with Liaison Officer that they are ready to fly.
24. Liaison Officer to call local Air Traffic Control number to confirm flight can go ahead and specify Flight Plan (*see Additional Information*), then advise the Pilot they are permitted to fly.
25. Pilot will turn on drone and ensure its navigation lights are on.
26. Observer and Pilot to confirm no uninvolved people are too close, and alert anyone nearby.

During flight

27. Throughout the survey, the Observer must be equipped with a scope and/or binoculars to monitor the drone and the surrounding area for safety hazards. The Observer should maintain constant communication with the Pilot and Liaison Officer, relaying information and instructions by radio or telephone (if all the survey team is within an area of mobile phone coverage).
28. If any plane, helicopter or other aerial vehicle is detected in the vicinity of the survey area at any time during the flight, Pilot must immediately return drone to the take-off site, if safe to do so.
29. The drone must maintain a distance of at least 50 m from breeding seabirds at all times (Edney et al., 2023).

30. In line with requirements enforced by the CIDCA, the drone will not exceed a height of 120 m throughout the flight.
31. Pilot will fly parallel to the coastline using a route with at least 70%–80% forward/backward overlap and 60% vertical overlap to ensure an orthomosaic image of the colony can be stitched (e.g. Figure 1).
32. Pilot to end flight when no less than 30% of drone battery remains. Pilot to inform Observer and Liaison Officer when returning from survey.
33. Pilot and Observer to confirm with Liaison Officer when the drone has landed, who will notify Air Traffic Control.

The protocol and timeline for analysis of data.

After surveying the area, images of the coastline will be reviewed and any AONs recorded. In recent round island censuses, European shags, herring gulls, lesser black-backed gulls, great black-backed gulls, northern fulmar, razorbill and common guillemot have been recorded nesting on the south cliffs and adjacent stacks.

Data archiving and public access protocols:

Results from the trial will be reported alongside results from the boat-based surveys in the upcoming Alderney Ramsar Review.

Figure 1. Example of potential flight path for pilot drone survey of nesting seabirds on Alderney's South cliffs. The pre-programmed path runs parallel to the coastline, flying at multiple altitudes to achieve 60% vertical overlap and ensuring birds obscured by overhanging rocks, vegetation or rock formations are visible. The flight pattern will be pre-programmed with autonomous flight planning software, e.g. 'Litchi'.

1.

Additional information

Pilots

All pilots have gone through Seabird Watch training, 'Best Practice for Drones in Seabird Monitoring and Research', for flying drones to collect ecological data around seabird colonies. Additionally, all pilots hold a minimum of A2 C of C and be listed on the AWT's Aerial Work Permit. Current pilots are:

- Dr. Tara Cox.
- Matthew Lewis.
- Niamh McDevitt.
- Alex Purdie.

Flight Plan

Review practice after the first flight of each project, each season, to check whether adjustments are needed to avoid disturbance etc.

During work hours, flight plan is completed and is confirmed with Alderney Air Traffic Control and AWT Office. Flight plan to include the following:

- Pilot details (name, qualifications, contact details).
- Drone details (make).
- Location of take-off site and access route to take-off sight.
- Flight description (e.g. flight route, altitude, purpose, photography or videography to be taken).
- Flight schedule (e.g. approximate take off time and landing time).
- Emergency procedures
- Contact numbers

Emergency Provisions Checklist

1. Flight plan and contact details of survey team to be confirmed with Alderney Air Traffic Control before flight. Liaison Officer to ensure they are within mobile signal range and maintain radio contact with Pilot and Observer.
2. Survey team to have:

- Fully charged radios.
- Fully charged mobile phones with spare battery pack and charger.
- Whistles.
- Warm clothing, including waterproof clothing.
- High visibility jackets.
- Shoes with good quality tread for rocky and muddy conditions (e.g. hiking shoes or boots, work boots). Preferably ankle protecting.
- Two first aid kits, one with the Liaison Officer, one with the Pilot and Observer.
- Food and drink.
- Powder fire extinguisher.

- Copy of the Aerial Work Permit.

3. Survey team to drill Emergency Procedures (*see below*) regularly, and before each deployment.

IN THE EVENT OF AN EMERGENCY INVOLVING ANOTHER AIRCRAFT OR LOSS OF CONTROL OF THE DRONE, SURVEY TEAM TO IMMEDIATELY NOTIFY THE POLICE ON 999.

Drone Maintenance Checklists

Checks should be performed to ensure the safety and airworthiness of the drone. A record should be kept of all checks. These must be performed routinely as outlined below.

Daily checks **(**to be done before each flying day/period):

- No panels and body parts have any signs of cracks or looseness.

References

NB – Extracted from original proposal document, so not all references may be referred to in this text.

Buckland, S.T., Burt, M.L., Rexstad, E.A., Mellor, M., Williams, A.E. & Woodward, R. 2012. Aerial surveys of seabirds: the advent of digital methods. Journal of Applied Ecology 49: 960–967. doi:10.1111/j.1365-2664.2012.02150.x

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Choi, H-I., Nam, H-K. & Yoon J. 2020. Testing the potential of lightweight drones as a tool for monitoring the status of colonially breeding Saunders's gulls (*Saundersilarus saundersi*). Korean Journal of Ornithology 27: 10-16. doi: 10.30980/kjo.2020.6.27.1.10

Corregidor-Castro, A., Riddervold, M., Holm, T. E. & Bregnballe, T. 2022. Monitoring colonies of large gulls using UAVs: from individuals to breeding pairs. Micromachines 13: 1844. doi: 10.3390/mi13111844

Edney, A., Hart, T., Jessopp, M., Banks, A., Clarke, L., Cugniere, L., Elliot, K., Juarez Martinez, I., Kilcoyne, A., Murphy, M., Nager, R., Ratcliffe, N., Thompson, D., Ward, R., & Wood, M. (2023). Best practices for using drones in seabird monitoring and research. Marine Ornithology, 51(2), 265–280.

Lillesand, T.M. and Kiefer, R.W. (2015) Remote Sensing and Image Interpretation. 7th Edition, Wiley, New York.

Purdie, A., M. Broadhurst-Allen, D. Whitelegg, M. Lewis, T. Cox, J. Horton, and A. de Castella. 2024. Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2023. Pages 1–99. States of Alderney, Alderney.

Rush, G.P., Clarke, L.E., Stone, M. & Wood, M.J. 2018. Can drones count gulls? Minimal disturbance and semiautomated image processing with an unmanned aerial vehicle for colony-nesting seabirds. Ecology and Evolution 8: 12322–12334. doi: 10.1002/ece3.4495.

Scarton, F. & Valle, R. G. 2022. Comparison of drone vs. ground survey monitoring of hatching success in the black-headed gull (*Chroicocephalus ridibundus*). Ornithology Research 30: 271-280. doi: 10.1007/s43388-022-00112-2.

Stanbury, A.J., Burns, F., Aebischer, N.J., Baker, H., Balmer, D., Brown, A.F., Dunn, T., Lindley, P., Murphy, M., Noble, D.G., Owens, R. & Quinn, L. 2024. The status of the UK's breeding seabirds: an addendum to the fifth Birds of Conservation Concern in

the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 117: 471-487.

Valle, R. G. & Scarton, F. 2021. Monitoring the hatching success of gulls laridae and terns Sternidae: A comparison of ground and drone methods. Acta Ornithologica 56: 241-254. doi: 10.3161/00016454AO2021.56.2.010.

Method/ Action title
Wetland Bird Survey Core Counts
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.6.5
Aim(s) and intended outcome(s)
Monthly standardised counts of waterbirds using bays within the Ramsar site
Methodology
Species: Waterbirds **Location**: Bays within the Ramsar site (Clonque Bay and Platte Saline) **Date and time range**: Once per month January to December **Methods**: 1. WeBS core counts are conducted monthly, ideally at high tide when most wetland birds are least dispersed and easiest to count, and ideally two hours before or after high tide. Hanaine Bay, Clonque Bay and Platte Saline are monitored within the Ramsar Site. 2. All birds using (e.g. not simply transiting through) the bays are recorded. **Data archiving and public access protocols:** 3. Submit counts to the BTO (British Trust for Ornithology) 4. Report in Ramsar review, giving total number of species recorded, total number of individuals for each species, and the monthly peak counts for the four most frequently recorded species.
Additional information
References
BTO WeBS data submission: https://www.bto.org/our-science/projects/wetland-bird survey/data/submit-data-request

Gull transect census
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.6.3
Aim(s) and intended outcome(s)
Census of breeding gulls and other birds (which are not burrow nesting) on Burhou using transect counts.

Methodology
Species: Gulls and other birds (not burrow nesting) **Location**: Burhou **Date and time range**: Late May-early June **Methods**: SMP methodologies will be followed. The following is adapted from the Seabird Monitoring Handbook: (Walsh et al. 1995) 1. The counting unit is the active nest (equivalent to an AON), defined as a fully constructed nest containing eggs and/or chicks (in or near the nest), or empty but judged capable of holding a clutch (i.e. well-constructed). 2. Complete the count in the last week of May if possible. 3. Small colonies can be dealt with as a whole; large colonies should be divided into a number of areas along unambiguous landscape features (or if necessary rope boundary markers). Divide the colony or area into strips and station counters no more than 10 m apart. 4. Observers should zigzag across the strips so as to cover all the area. 5. Count and note contents of every complete (active) nest. 6. Mark each active nest as it is encountered. This is usually done by spraying a little paint on the side of the nest (avoid red paint or spraying the eggs), or by marking nests with bamboo canes. If the latter are used, count the canes before you start and subtract canes left over at the end to arrive at your transect totals. 7. At the end of the count, one or more observers (or better, someone who had not taken part in the count) should recount a sample of the area to determine the proportion of active nests that had been marked. This is best done by walking back and forth across the area at 90º to the route taken during the original count. 8. Repeat the above procedure for each transect. 9. The number of active nests in each area is recorded as: (no. active nests marked) x (total no. of active nests on recount / no. of marked nests on recount) **Protocol and timeline for analysis of data:** 10. Calculate total population as the sum of active nests in each area. **Data archiving and public access protocols:** 11. Submit population count to the Seabird Monitoring Programme (SMP) database. 12. Report in Ramsar review, giving census count for Burhou
Additional information
References
Walsh, P., A. de Nevo, D. J. Halley, I. W. M. Sim, and M. P. Harris. 1995. Seabird monitoring handbook for Britain. Joint Nature Conservation Committee, Peterborough.

Terrestrial

Method/ Action title
Biosecurity monitoring on Burhou and Coque Lihou
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.2.1.1

Aim(s) and intended outcome(s)

Monitor for presence of rodents on islands Burhou and Coque Lihou, where they are not currently present

Methodology

Species: Rodents spp.
Location: Burhou and (if resources allow) Coque Lihou
Date and time range: February-March, August-November
Methods:

1. Non-toxic wax chew blocks in tamper proof bait stations are deployed in;
    a. Burhou across a 75 x 100 m grid around the hut in addition to two stations at the east and west ends of the island.
    b. Coque Lihou at 25 m intervals across the whole of the islet
2. Trail cameras are deployed on both sites set on PIR mode.
3. Bait stations and trail cameras are checked monthly outside of the seabird breeding seasons for each site*

*Burhou bait stations checked in August when the island is opened to the public, storm petrel breeding season still ongoing at this point.

4. Should a rodent incursion be detected, rodent control will be rapidly deployed by AWT and in collaboration with the States Public Works. This will protect nesting seabirds and other native wildlife.
    a. If required, this control may include bromadiolone bait stations, A24 humane traps, other methods at the discretion of States Public Works.
    b. Campaign for Responsible Rodenticide Use (CRRU) code of conduct will be followed and it will be managed by qualified individuals, e.g. with Principles of Rodent Control qualification.

Additional information

Acoustic monitoring equipment, if deployed, may also be used to detect rodents on these sites.

References

CRRU Code of Conduct: https://www.thinkwildlife.org/code-of-best-practice/crru-code/

Rodent control certificate: https://training.killgerm.com/open-awards-level-2-award-in-the-principles-of-rodent-control/

Method/ Action title

Biosecurity monitoring: Identifying rodent presence on Les Etacs using a thermal drone

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.2.1.3

Aim(s) and intended outcome(s)

Monitor for presence of rodents on islands Burhou and Coque Lihou, where they are not currently present

Methodology

The species, habitat(s), feature(s), etc, studied/affected: Rodent spp, Les Etacs gannet colony

The location(s): Les Etacs

Date and time range(s): April-June. Five short drone flights (e.g. 15-20 minutes) after sunset on five separate nights.

The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.

Equipment

A DJI Mavic 3 Thermal will be used. The device is a quadcopter with a mass of 920 g, dimensions of 34.8 x 28.3 x 10.8 cm (L x W x H) and a maximum wind resistance of 12 m/s. Attached to the device is a 48-megapixel camera with a focusing range of 1 m to ∞ in addition to a 640 x 512 px thermal sensor.

Participants

All participants will undergo briefings and training including emergency drills (see Additional Information).

Pilot

Role: Pilot the drone, record rodents if present.

Requirements: Qualified with A2 Certificate of Competency and training from Seabird Watch 'Best Practice for Drones in Seabird Monitoring and Research'. Experienced with aircraft and flight plan. Listed on Aerial Work Permit as a pilot *(see Additional Information for current pilots)*.

Observer

Role: Maintain watch on the drone, communicate with Liaison Officer, and act as back-up pilot in emergencies.

Requirements: Qualified with Flyer ID having passed minimum of basic flying test. First aid trained.

Liaison Officer

Role: Maintain contact with Pilot/Observer and relay communications to Air Traffic Control and AWT Office staff (e.g. CEO, or member of ecology team, who will remain

active on survey evenings), where appropriate, and to the emergency services if required.

Requirements: First aid trained

Travel to and from site

1. Wear high visibility warm and waterproof clothing and carry torches.
2. Drive to nearest appropriate car parking site with phone signal.
3. Pilot and Observer discuss route to take off site with Liaison Officer.
4. Radio check performed between Pilot and Observer, and Liaison Officer.
5. Pilot and Observer make their way to pre-agreed take off site using torches and perform another radio-check with Liaison Officer.
6. Pilot and Observer to conduct surveys as described below.
7. Pilot and Observer may return together to Liaison Officer between surveys, for example to get refreshments or additional clothing.
8. Following completion of surveys, Survey Team to reconvene at vehicle.
9. Survey Team to notify AWT Office of completion of survey via WhatsApp or Text.
10. Survey team drive away from site.

Pre-flight

11. Agreement with Air Traffic Control will be sought prior to any flights. Alderney Air Traffic control has been consulted on this survey and are happy for it to be conducted. Practice flights will be completed in daylight, and at night prior to the seabird breeding season.
12. The take-off site will be 'The Guns', on Alderney's West Coast.
13. The Pilot and Observer will walk to the take-off site and maintain contact with the Liaison Officer, who will stay in phone signal coverage and, if out of audible range, maintain radio contact with the pilot and observer. The intended take-off point of the Guns generally has mobile phone coverage, so the Liaison Officer may remain with the survey team in this scenario.

14. Pilot and Observer will illuminate the take-off site using torches.
15. Pilot and Observer to make final call on conditions using the below required weather conditions:
    - Winds not exceeding 12 m/s (26.8 mph).
    - No low cloud (<1000 m) or fog.
    - Not below 0°C.
    - No heavy precipitation forecast (e.g. above 2 mm per hour).
16. Pilot and Observer to complete pre-flight checklists and the I M S A F E (illness, medication, stress, alcohol, fatigue, eating) checklist (*see Additional Information)*.
17. Pilot and Observer will confirm with Liaison Officer they are going to begin flight. Liaison Officer to notify AWT Office via WhatsApp or Text.
18. EVEN IF OUTSIDE OF AIRPORT OPERATING HOURS, Survey Team (Liaison Officer) to call local Air Traffic Control number.
19. If the flight is occurring within airport operating hours, Survey Team to confirm flight is ok to go ahead, as well as Flight Plan (*see Additional Information*), with Alderney Air Traffic Control.
20. Survey team to illuminate take off point with torches.
21. Pilot will turn on drone and ensure its navigation lights are on.
22. Observer and Pilot to confirm no uninvolved people are too close, and alert anyone nearby.

During flight

23. If any plane, helicopter or other aerial vehicle is detected in the vicinity of the survey area at any time during the flight, Pilot must immediately return drone to take-off site if safe to do so.
24. Pilot will take off and fly to survey area, using instruments on controller, whilst Observer maintains visual contact with the drone.
25. Pilot must approach the colony at a minimum distance of 200 m, whilst maintaining a distance of at least 50 m from the colony at all times.

26. Pilot to use instruments and viewfinder to conduct survey, whilst Observer maintains visual contact with the drone.
27. In line with requirements of the Office of the Director of Civil Aviation (ODCA) for the Bailiwick of Guernsey, the drone will not exceed a height of 120 m throughout the flight.
28. Pilot will fly over the colony in a lawnmower pattern using an automated route, with the ability to take direct control of the drone and use the camera's zoom and tilt capabilities to focus on and record potential rodents. See Figure 2. for an example map of the survey plan.
29. Rodents show up significantly more clearly on thermal imagery compared to seabirds (based on previous experience using thermal optics). Pilot will look for bright thermal signatures, which move erratically, and transit across the colony, unlike seabirds which have dimmer signatures and tend to remain in one spot when not flying.
30. Pilot to end flight when no less than 30% of drone battery remains. Pilot to inform Observer when returning from survey.
31. Pilot to land on open ground, turning off drone and replacing battery if required.
32. Pilot and Observer to confirm with Liaison Officer drone has landed. If within airport operating hours, or if Alderney Air Traffic Control was active on take-off, notify Air Traffic control that flight has ended.
33. Repeat steps 15 to 31 for each subsequent survey.

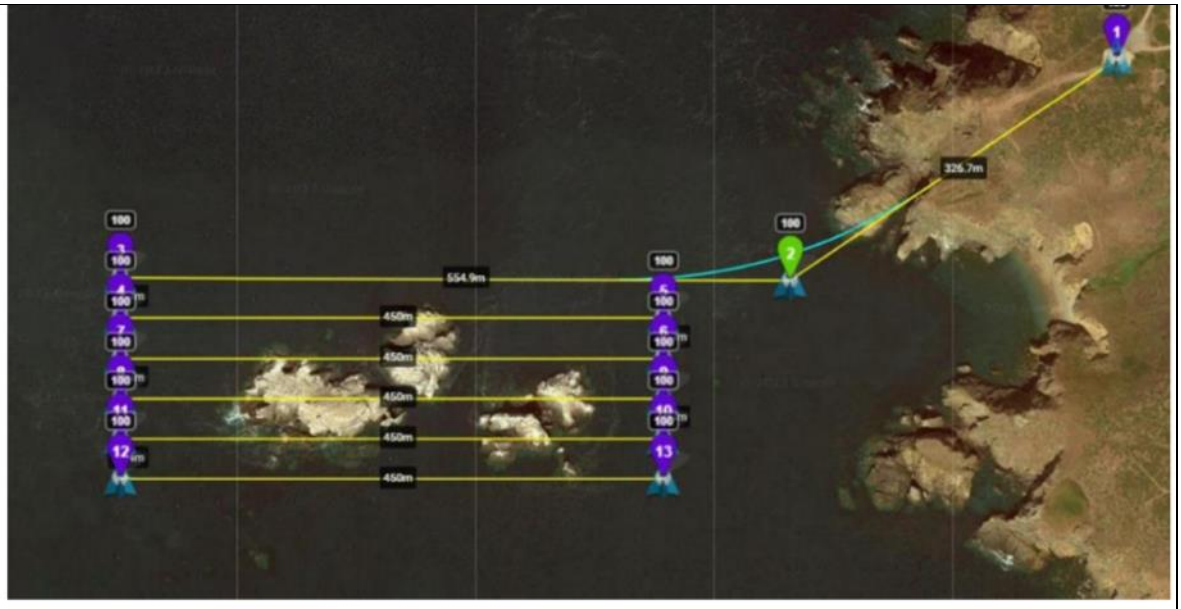

Figure 2. Example of potential flight paths for drone survey of Les Etacs following a lawnmower (grid) flight pattern, with 60% sideways overlap to ensure that no part of the colony is missed. The flight pattern will be pre-programmed with autonomous flight planning software, e.g. 'Litchi'. The pilot will be able to use the cameras viewfinder, and take direct control of the drone, to view suspected rodents.

The protocol and timeline for analysis of data.

Direct observations of rodents will be noted, including their location on Les Etacs (e.g. which stack). Suspected rodent thermal signatures will be recorded and viewed later. A table of rat distribution across the different stacks of Les Etacs will be produced for the Alderney Ramsar Review 2025.

Data archiving and public access protocols.

Rodent presence will be reported in the Alderney Ramsar Review 2025.

a.

Additional information

Pilots

All pilots have gone through Seabird Watch training, 'Best Practice for Drones in Seabird Monitoring and Research', for flying drones to collect ecological data around seabird colonies. Additionally, all pilots hold (or will hold prior to flying) a minimum of A2 C of C and be listed on the AWT's Aerial Work Permit. Current pilots are:

- Dr. Tara Cox.
- Matthew Lewis.
- Niamh McDevitt.
- Alex Purdie.

Flight Plan

Review practice after the first flight of each project, each season, to check whether adjustments are needed to avoid disturbance etc.

During work hours, flight plan is completed and is confirmed with Alderney Air Traffic Control and AWT Office. Flight plan to include the following:

- Pilot details (name, qualifications, contact details).
- Drone details (make).
- Location of take-off site and access route to take-off sight.
- Flight description (e.g. flight route, altitude, purpose, photography or videography to be taken).
- Flight schedule (e.g. approximate take off time and landing time).
- Emergency procedures
- Contact numbers

Emergency Provisions Checklist

1. Flight plan and contact details of survey team to be confirmed with Alderney Air Traffic Control before flight. Liaison Officer to ensure they are within mobile signal range and maintain radio contact with Pilot and Observer.
2. Survey team to have:
   - Fully charged radios.
   - Fully charged mobile phones with spare battery pack and charger.
   - Fully charged torches.

- Whistles.
- Warm clothing, including waterproof clothing.
- High visibility jackets.
- Shoes with good quality tread for rocky and muddy conditions (e.g. hiking shoes or boots, work boots). Preferably ankle protecting.
- Two first aid kits, one with the Liaison Officer, one with the Pilot and Observer.
- Food and drink.
- Powder fire extinguisher
- Copy of the Aerial Work Permit.

3. Survey team to drill Emergency Procedures (*see below*) regularly, and before each deployment.

IN THE EVENT OF AN EMERGENCY INVOLVING ANOTHER AIRCRAFT OR LOSS OF CONTROL OF THE DRONE, SURVEY TEAM TO IMMEDIATELY NOTIFY THE POLICE ON 999.

Drone Maintenance Checklists

Checks should be performed to ensure the safety and airworthiness of the drone. A record should be kept of all checks. These must be performed routinely as outlined below.

Daily checks **(**to be done before each flying day/period):

- No panels and body parts have any signs of cracks or looseness.
- Surfaces are free from water or moisture and water has not made itself inside.
- Arms hinge smoothly and remain in place securely.
- Gimbal moves freely and is secure.
- Motors rotate by hand, and that they are smooth and silent.
- Propellers are securely attached and in the correct motor position.

*Preflight checks (*to be done before each individual flight):

- Camera lenses are free from dirt or water.
- Propeller blades are free from dirt, damage or cracks.
- Memory card is fitted and checked to have adequate free space for the planned task.
- When powered and in take-off location; displayed location and heading is correct.
- Flight battery and transmitter battery charge level is adequate to carry out planned flight with suitable margin.
- Weather conditions are within limits (*see Methods: Pre-flight)*.

In the event of any heavy landing or collision, daily checks must be completed before proceeding to fly again, even if it is during the same operational period or day.

*Day-end checks (*to be completed when daily flying has finished):

- Surfaces free of water, dust or dirt wiped clean from surfaces.
- Motors clear of dirt or dust.
- If no further flying is planned within 10 days:
    - Battery discharged to 40-65% where 3 bars show on the charge indicator.
    - Transmitter and systems powered off for storage.

Other checks and logs:

- Battery charging and flights should be logged.
- Battery endurance during practice flights logged.

Emergency Procedures

Fly away (drone flying away not responding to controls)

6. Call “EMERGENCY – FLYAWAY” to warn the Survey Team and people nearby.
7. Instruct all nearby Survey Team to visually track the drone.
8. If possible, switch to ATTI Mode.
9. If control not recovered, raise transmitter above your head and repeatedly attempt to shut down the drone using Combined Stick Control input (both sticks down to the centre). If possible, switch to ATTI Mode (manual).
10. If the drone continues to fly away, take note of flight path, estimated flying time and notify any relevant local parties, including the most appropriate Air Traffic Control unit and the Police.

Fire (drone or controller catches fire)

4. Call “EMERGENCY – FIRE” to warn Survey Team and people nearby.
5. Execute an emergency landing at the most suitable landing area (visual observer may be able to offer guidance).
6. Use fire suppression equipment to control any ensuing fires. Avoid inhaling any toxic fumes.

Pilot incapacitation (Pilot becomes unable to operate the drone)

In the event that the Pilot is incapacitated and therefore unable to operate the aircraft:

5. The Pilot or Observer should activate the Return To Home (RTH) function and call “FAILSAFE” to warn Survey Team and people nearby.
6. Pilot or Observer (if present) should clear the landing area of any items or equipment and people
7. Monitor the drone as it executes the RTH function.
8. Once the aircraft has landed, disarm the battery, shut it down, and turn off the controller.

Air Incursion (Another aerial vehicle approaches or enters the operating area)

If you or your observer notice an incursion into the flight operations area by another aircraft:

4. The Pilot should be immediately informed by the Observer calling "AIR INCURSION" and pointing or verbalising the location of the incursion.
5. The Pilot will assess the risk of collision and if necessary, take whatever avoiding action most reduces or eliminates this risk. This will generally be to descend the drone as quickly as possible. However, the Pilot must make a judgment based on the situation.
6. Resume operations only once the other aircraft has cleared the area.

Ground incursion (Incursion by an uninvolved person, animal, vehicle etc on the ground)

Should you or your Observer notice an incursion into the flight operations area by a person, animal, vehicle or any other ground-based hazard:

5. The Pilot should be immediately informed by the Observer calling "GROUND INCURSION" and pointing or verbalising the location of the incursion.
6. The Pilot will assess the risk of collision and, if necessary, take action to avoid collision. This may include flying the drone away from the point of incursion and/or descending the drone to land as quickly as possible. However, the Pilot must make a judgment based on the situation.
7. Resume operations only once the incursion has been cleared or has been brought under the control of the Survey Team.
8. Observer may interact with incursion e.g. to move animals from hazardous area or warn people. Pilot must establish VLOS before observer breaks VLOS.

Air incursion – wildlife (Incursion on operations area by a bird or bat which is likely to cause a collision)

DO NOT FLY WITHIN 50 M OF RESTING BIRDS. AVIOD TAKING OFF NEAR BIRD AND BAT ACTIVITY.

If a bird or bat enters the operational zone and poses a collision risk:

3. Call HAZARD – BIRD/BAT and note the location of the animal relative to the drone.

4. If required, fly the drone slowly away from the animal and its flight path (preferably either moving up or down). Conduct a rapid flyaway if required.

IF ANIMAL ACTIVELY ATTACKS DRONE

3. Move drone down (if this will not result in a collision) or up, following rapid & erratic movement procedures.
4. Fly the drone away from the aggressive animal. Land if required, and do not resume the survey until the animal has left the area.

References

NB – Extracted from original proposal document, so not all references may be referred to in this text.

Cain, I. (2024) *Personal communication with Alex Purdie*, 08/10/2024.

Cantu de Leija, A., R. E. Mirzadi, J. M. Randall, M. D. Portmann, E. J. Mueller, and D. E. Gawlik. 2023. A meta-analysis of disturbance caused by drones on nesting birds. Journal of Field Ornithology 94.

Edney, A., T. Hart, M. Jessopp, A. Banks, L. Clarke, L. Cugnière, K. Elliot, I. Juarez Martinez, A. Kilcoyne, M. Murphy, R. Nager, N. Ratcliffe, D. Thompson, R. Ward, and M. Wood. 2023. Best Practices For Using Drones In Seabird Monitoring And Research. Marine Ornithology 51:265–280.

Horswill, C., and R. A. Robinson. 2015. Review of Seabird Demographic Rates and Density Dependence (JNCC Report No. 552):126.

Jones, H. P., B. R. Tershy, E. S. Zavaleta, D. A. Croll, B. S. Keitt, M. E. Finkelstein, and G. R. HOWALD. 2008. Severity of the Effects of Invasive Rats on Seabirds: A Global Review. Conservation Biology 22:16–26.

Purdie, A., M. Broadhurst-Allen, D. Whitelegg, M. Lewis, T. Cox, J. Horton, and A. de Castella. 2024. Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2023. Pages 1–99. States of Alderney, Alderney.

Russell, J. C., D. Towns, and M. Clout. 2008. Review of rat invasion biology: Implications for island biosecurity. Science for Conservation:1–53.

Marine

Method / Action title
European eel (*Anguilla anguilla*) presence survey

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf

4.3.15.1

Aims(s) and intended outcome(s)

To record the presence of European eel (glass eel/elver life stage) within Alderney's bays, including sites within the Ramsar Site.

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The presence of the European eel glass/elver life stage will be carried out at pre-selected intertidal coastal inlet habitat areas, from May – August (2025). The pre-selected areas are based on known habitat preference of European glass eels/elvers (see La Societe Jersiaise (2024) internal report for full habitat preference description). This includes upper-shore intertidal coastal areas with freshwater outlets and mixed substrata (such as cobbles, pebbles and gravel). Following a preliminary qualitative review of marine intertidal habitat information (completed by AWT) sites for assessment include: Braye Bay, Clonque Bay and Longis Bay. The survey months (May – August) were selected as this is the time period that glass/elver eels are known to approach coastal inlets in search of freshwater habitat for their next life stage (e.g. searching for freshwater for their yellow/adult life stages).

The field-based survey method to assess the presence of European eel glass/elver life stage follows sampling guidance from members of La Société Jersiaise who conduct regular, in-depth surveys of European eels on Jersey (see La Société Jersiaise, 2024). This survey method comprises of hand digging into the selected habitat, searching for hidden glass eel/elver individuals. Once found, individuals are transferred quickly to a tray and/or tube for qualitative assessment e.g. species verification, individual information such as potential length. All individuals will be photographed and released back into the same location shortly after the survey. General metadata will be recorded during each survey e.g. weather, location etc.

Location(s):

European eel surveys are carried out on accessible intertidal rocky-shore bays across Alderney, such as Longis Bay. Bays are selected based on their potential preference by European eels: intertidal habitats associated with shingle/cobble substrate and freshwater (e.g. running streams). Within the Ramsar Site, Clonque Bay is a key site for this survey.

Survey time range:

In general, once a year, per bay/survey site between May – August. The survey months (May – August) are selected as this is the time period that glass/elver eels are known to approach coastal inlets in search of freshwater habitat for their next life stage (e.g. searching for freshwater for their yellow/adult life stages).

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- European species presence/absence, abundance, size (length of individuals) and location.
- Associated intertidal habitat/localised area description.

Timeline/data analysis:

All data analysis and subsequent report writing will commence from November – December (2025).

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre.

Additional Information

References

NB – Extracted from original proposal document, so not all references may be referred to in this text.

Doble, C., Mowat, S., and Pecorelli, J. 2015. *The River Thames European Eel Monitoring Project Report, 2011-2014*. London: ZSL.

Environment Agency. No date. *Monitoring elver and eel populations. The Eel Manual – GEHO0211BTMY-E-E*. UK: Environment Agency.

Harrison, J.A., Walker, A.M., Pinder, A.C., Briand, C and Aprahamian, M.W. 2014. A review of glass eel migratory behaviour, sampling techniques and abundance estimates in estuaries: implications for assessing recruitment, local production and exploitation. *Rev Fish Biol Fisheries* DOI 10.1007/s11160-014-9356-8.

La Société Jersiaise. 2024. *Methodology Statement to support fieldwork studies on Anguilla anguilla*. Internal document for AWT. Jersey: La Société Jersiaise.

Pike, C., Crook, V. and Gollock, M. 2020. [Online:] *Anguilla anguilla*. The IUCN Red List of Threatened Species 2020: e.T60344A152845178. https://dx.doi.org/10.2305/IUCN.UK.2020 2.RLTS.T60344A152845178.en. [Accessed: 15/05/2024].

Method / Action title
PlanktoScope surveys in Clonque Bay
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.3.9.1.
Aims(s) and intended outcome(s)
To record ecological information (species type and potential abundance information) of pelagic species, including plankton and zooplankton taxonomic groups across selected Alderney's shallow, inshore sub-tidal environments/bays. This project is linked to the PlanktoScope project (see here: https://www.planktoscope.org/) and originally The National Oceanography Centre, University of Southampton (NOC).
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected** - **The location(s)** - **Date and time range(s)** - **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.** - **The protocol and timeline for analysis of data.** - **Data archiving and public access protocols.**

Method:
To assess pelagic species (plankton and zooplankton groups) presence and potential abundance, both field-based and desk-based (planktoScope equipment use) techniques will be used. The field-based element of this survey across was designed by the AWT. Guidance from NOC and the Yorkshire Wildlife Trust was given on how to use the Planktoscope equipment, through online sessions and survey manuals.

Field-based seawater sampling:
Pelagic species are collected within one seawater sample taken at one pre-selected survey station location, per bay. The location of each survey station is positioned on upper shore beach/bay areas that are easily accessible on foot, by surveyors. The location of each survey station is taken via GPS with complementary metadata (e.g. habitat/substrate type).
At each survey station, a surveyor throws a pelagic net (a fine mesh net with an attached bottle) 1 – 2 times into the water. Once the bottle is filled, the sample is coarsely filtered with additional filters on site. The sample is then taken to the AWT lab be analysed with the PlanktoScope equipment.

PlanktoScope sampling:
The seawater samples are added to the PlanktoScope equipment, which uses a Raspberry Pi computer software linked to a camera to 'take photographs' of pelagic species within each sample. The PlanktoScope equipment runs through a process of:
- Filtering samples pre-analysis
- Running samples through the PlanktoScope (linked to computer Planktoscope software)
- Uploading sample results to EcoTaxa (website: https://ecotaxa.obs-vlfr.fr/).

Location(s).
Surveys to be completed at Clonque Bay and Longis Bay (one station per bay).

Survey time range:
Seawater samples are to be taken in April and July (corresponding with potential natural pelagic species presence/abundance increase), during high/rising tide times, within neap tide cycles.

Parameters measured:
- General survey metadata (e.g. date/time/weather conditions).
- Pelagic species presence.
- Pelagic species relative abundance (per sample).

Timeline/data analysis:
Analysis of the results will be completed from September – December (2025).

Data archiving:
Currently, all information is freely available online on EcoTaxa.

Additional Information

The PlanktoScope equipment needs regular maintenance and unfortunately in 2024 did not work properly (the camera lens was marked). The equipment is currently being fixed (January 2025) with the aim for it to be working by the first sample period (April). If the equipment is still faulty, the AWT will continue to sample but use microscopes to identify pelagic species at a coarse taxonomic level.
References
PlanktoScope. 2025. [Online:] PlanktoScope. [Available at:] https://www.planktoscope.org/. [Accessed: 03/01/2025].

Method / Action title
Test physical parameters of seawater
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.3.11.1
Aims(s) and intended outcome(s)
To collect long-term, open-source seawater parameter evidence across Alderney with interested members of the community and AWT citizen scientists. The survey comprises of three objectives: a) Initiate seawater parameter survey b) Utilise survey and results as a new engagement tool c) Provide new evidence source to assess marine environment
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected** - **The location(s)** - **Date and time range(s)** - **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**

- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

Fixed monitoring stations (a site to collect seawater samples) will first be identified at key inshore bays across Alderney. This includes the Ramsar Site (Clonque Bay and Hanaine Bay), Braye Bay, Saye Bay, Arch Bay, Corblets Bay and Longis Bay (local nature reserve). The locations of the fixed monitoring station will be determined during preliminary site visits (e.g., away from freshwater outlets etc.) and assessment of local tide information, with approximately two stations located per bay (for replication effort). In general, surveys will be completed during high neap tide tides, potentially around the same time of day, where possible (for temporal bay comparison).

To assess the seawater parameters (samples taken at the fixed monitoring station), a seawater protocol will be implemented for each visit/fixed monitoring station, which comprises of:

For each bay visit, surveyors/citizen scientists/members of the public will first record general metadata e.g. weather conditions, state of tide etc. At each (pre-determined) monitoring station, one seawater sample will be taken in-situ using the appropriate seawater sampling equipment (Hanna Instruments HI98194 kit). This comprises of selecting a continuous 'log' setting for 30 samples on the meter, initially named the bay and station number (e.g. Longis S1). The Hanna Instrument will be used to sample sea surface temperature (SST), pH, salinity, total dissolved solids (TDS) and dissolved oxygen (O2). Information will be recorded electronically onto the Hanna Instrument.

It should be noted that the Hanna Instruments meter should be calibrated (quick calibration setting) regularly to ensure accurate results. All calibration/use of the kit should follow the Hanna Instruments instruction manual.

Survey time range:

Once a month (per bay).

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).

- Monthly seawater parameter values (SST, pH, salinity, dissolved oxygen (O2)) x 2 monitoring stations per bay.

Timeline/data analysis:

Seawater parameter information will be assessed during December 2025 – February 2026.

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre and is added regularly to the AWT website.

Additional Information

References

Method / Action title

Coastal erosion survey

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.3.1

Aims(s) and intended outcome(s)

As part of a AWT (Alderney Wildlife Trust) climate change assessment, the aim of this survey is to identify and measure coastal erosion at key areas across Alderney's coastlines (including coastal areas within the Ramsar Site).

- **Method(s) including:**

- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The coastal erosion survey method follows the stake site technique as described in Buzard *et al*., 2019. The method comprises of selecting a series of monitoring transects across coastal areas to identify sites prone to coastal erosion. A monitoring transect consists of three monitoring stations, with the first station located at the edge of a cliff/path. Further monitoring stations are then setup at graduated distances away, (approximately 15 m intervals) along the transect. The distance (m) between each monitoring station is then measured over time to identify coastal erosion (e.g. land lost over time).

Location(s):

For Alderney, this includes the coastal areas of: Braye Bay (East end), Clonque Bay (coastal path from Fort Tourgis carpark leading to Fort Clonque) and Corblets Bay (along grassy area adjacent to carpark).

Survey time range:

Annually.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Distance between monitoring stations (m).

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre. The results will be included within a Climate Change Assessment report, due to be completed by the end of 2025 (as a AWT Living Seas Programme objective).
Additional Information
N/A
References
Buzard, R.M., Overbeck, J.R., and Maio, C.V., 2019, Community-based methods for monitoring coastal erosion: Alaska Division of Geological & Geophysical Surveys Information Circular 84, 35 p. http://doi.org/10.14509/30182

Method / Action title
Green ormer tagging and abundance survey
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) **Alderney-Ramsar-Action-Plan-2024.pdf**
4.3.4.1
Aims(s) and intended outcome(s)
To record the presence, abundance, location, shell condition and movement patterns of green ormer (*Haliotis tuberculata*), within selected rocky-shore bays across Alderney (including bays within the Ramsar Site).
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected**

- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The green ormer survey method was developed by the AWT, following initial guidance from the States of Jersey, Société Jersiaise and the La Société Guernesiaise in 2013. This survey method was then updated in 2022 by the AWT to increase the opportunity to record previously tagged individuals.

The survey is undertaken within selected mid-lower rocky-shore bays across Alderney, including sites within the Ramsar Site. Within each bay, two $10m^2$ survey squares are established. General metadata (e.g., substrate type, weather conditions) and the GPS coordinates of each survey square's corner are taken. Within each survey square, surveyors stand in a line and walk in the same direction, turning rocks by hand, searching for green ormer individuals. If a green ormer individual is found, metadata (e.g., size, shell quality etc.) and photographs of the individual are taken. For large/adult individuals, a numbered yellow fish-tag is then attached with superglue to the topside of the shell (to assess movement patterns). Once the first survey square has been searched, surveyors will then establish the second survey square; adjacent to the first. The survey is then repeated within 72 hours, e.g. the 3rd day.

Location(s):

Green ormer surveys are carried out on accessible intertidal rocky-shore bays across Alderney, such as Braye Bay and Longis Bay. Within the Ramsar Site, Clonque Bay is a key site for this survey.

Survey time range:

During early spring and autumn only (two surveys within 72 hour period), to avoid key green ormer breeding period in the summer.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Green ormer species presence, abundance, location and shell condition.
- Green ormer tagging information (movement patterns).

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre.

Additional Information

N/A

References

Method / Action title

Intertidal crab abundance and population dynamics survey, and, intertidal crab photo bank

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.5.1

Aims(s) and intended outcome(s)

To record the presence, abundance, size, sex and shell condition of crab species, within selected intertidal rocky-shore bays across Alderney.

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**

- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The intertidal crab abundance and population dynamics survey method and the intertidal crab photo bank was developed by the AWT. Initial assistance on the recorded parameters: size and shell morphometric measurements was provided by the States of Jersey.

The surveys are undertaken within selected mid-lower sections of intertidal rocky-shore bays across Alderney, including sites within the Ramsar Site.

Surveys are completed within intertidal rocky-shore sub-habitats/areas (e.g. sub-survey sites with approximately area of 30 m^2) with volunteer citizen scientists. Surveyors first lay down a 20 m transect line and record latitude and longitude at start and end of the transect. Surveyors record general metadata of the site e.g. weather conditions, habitat type etc. Beginning at the two m mark, surveyors then turn over the nearest rock. Under each selected rock, the species type and abundance of each crab individual is recorded. For larger sized priority species such as the Chancre (*Cancer pagurus*), the sex, size and shell condition of each crab is recorded. A photograph of these crab individuals that show disease, poor shell condition or attached species (such as calcified worm species) is taken (for the photo bank). All crab individuals and rocks are returned to their original location.

This method is then repeated every two m intervals (totalling ten rocks) along the transect line. A second transect line is then set down, adjacent to the first transect line, approximately 10 m away, with the survey method repeated again.

Location(s):

The intertidal crab abundance and population dynamics survey and, the intertidal crab photo bank are carried out on accessible intertidal rocky-shore bays across

Alderney, such as Braye Bay and Longis Bay. Within the Ramsar Site, Clonque Bay is a key site for this survey.

Survey time range:

Four times a year (e.g. seasonal time-periods), per bay.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Intertidal crab species presence, abundance, sex, size and shell condition.
- Intertidal crab species' shell disease/poor condition.

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre.

Additional Information

N/A

References

Method / Action title

Phase I intertidal habitat survey of Les Etacs

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.1.1.

Aims(s) and intended outcome(s)

To record marine intertidal habitat presence, location, distribution, frequency and extent within selected intertidal bays across Alderney, including within the Ramsar Site.

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The Phase I intertidal habitat survey method follows the 'Procedural Guideline 1-1 Intertidal Resource Mapping Using Aerial Photographs' methodology from JNCC's Marine Monitoring Handbook (Davis *et al*., 2001). The method comprises of identifying intertidal habitats using high resolution aerial photographs during ground-truthing fieldwork (either on foot or boat-based).

Intertidal habitats are classified following The Marine Habitat Classification for Britain and Ireland Version 04.05 (revised by JNCC, Connor *et al*., 2004). This classification is fully compatible with the European EUNIS habitat classification system.

Location(s):

Phase I intertidal habitat surveys are carried out across accessible intertidal rocky-shore bays across Alderney, such as Longis Bay. Within the Ramsar Site, Les Etacs, Ortac, Clonque Bay, Hanaine Bay and Burhou are key sites to survey.

Survey time range:

In general, this survey method is repeated every five years, per bay/site.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Intertidal habitat presence, location, (spatial) distribution, frequency and extent.

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre.

Additional Information

N/A

References

Connor, D.W., Allen, J.H., Golding, N., Howell, K.L., Lieberknecht, L.M., Northen, K.O., & Reker, J.B. 2004. *The Marine Habitat Classification for Britain and Ireland Version 04.05*. Peterborough: Joint Nature Conservation Committee.

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C., & Vincent, M. 2001. *Marine Monitoring Handbook*. Peterborough: Joint Nature Conservation Committee.

Method / Action title

Phase II intertidal habitat survey of Clonque – Drone Assisted

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.1.2.

Aims(s) and intended outcome(s)

The aim of this survey is to quantify intertidal species presence and abundance within a subset of priority marine habitats at Clonque Bay. Outputs will include species ecological information for 2025 and comparisons with previous survey time periods (2020 and 2015). Clonque Bay is selected for study, as it is found within the island's designated Ramsar Site.

- **Method(s) including:**

- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

The survey method follows guidance from the JNCC Marine Monitoring Handbook (Davies *et al*., 2001). In 2015, a number of important marine habitat biotopes within Clonque Bay were selected for study based on a previous intertidal habitat biotope survey completed by the AWT in 2014. Selected marine habitats included:

- *LR.HLR.MusB.Cht. Description: Chthamalus spp. on exposed upper eulittoral rock*.

This habitat biotope was selected as it was one of the most abundant habitat recorded during the 2014 habitat biotope survey.

- *LR.HLR.MusB.Sem.LitX. Description: Barnacles and Littorina littorea on unstable eulittoral mixed substrata*.

The habitat biotope is regarded as rare across the British Isles and has a moderate importance status due to it being recognised as a UK Biodiversity Action Plan habitat.

- *LR.MLR.BF.FvesB. Description: Fucus vesiculosus and barnacle mosaics on moderately exposed mid eulittoral rock*.

This habitat biotope was selected as it was one of the most abundant habitat recorded during the 2014 habitat biotope survey.

- *LR.HLR.FT.FserTX. Description: Fucus serratus with sponges, ascidians and red seaweeds on tide-swept lower eulittoral mixed substrata*.

This habitat biotope was selected as it is regarded as uncommon across the British Isles and has a moderate importance status due to it being recognised as a UK Biodiversity Action Plan habitat.

Within each selected marine habitat, a 1 m^2 quadrat (square frame) will be placed five times within locations randomly selected in 2015 (recorded previously via GPS). Ecological and physical information will be recorded within each quadrat, including:

- Substrate type and percentage cover;
- Macroalgae species type and percentage cover (including cryptic species beneath other dense, dominating macro algae fronds);
- Faunal species type and abundance count (including species beneath dense, dominating macro algae fronds);
- Barnacle and sponge species type and density percentage cover (including species beneath dense, dominating macro algae fronds).

Field-work will be completed on foot at the lowest available mean water mark, beginning approximately two hours before the time of low tide.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Intertidal species presence/absence and abundance.
- Associated intertidal habitat/localised area description/ substrate information.
- Temporal ecological comparisons with previous surveys (2020; 2015).

Timeline/data analysis:

All data analysis (species abundance metrics between 2015, 2020 and 2025) and subsequent report writing will commence from November (2025) – February (2026).

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre.

Additional Information

Additional aerial photography survey methods may be required to assess other important marine habitats within Clonque Bay that may not be accessible by foot. This may include the use of a drone, during low spring tides in September/October, to

identify habitats on offshore rocks within the bay. Drone usage (including licence conditions) and guidance will be with AWT colleagues with appropriate drone licences.

References

Conner, D.W., Allen, J.H., Golding, N., Howell, K.L., Lieberknecht, L.M., Northen, K.O., and Reker, J. B. 2004. The Marine Habitat Classification for Britain and Ireland Version 04.05. Joint Nature Conservation Committee, Peterborough.

Conner, D. W., Brazier, D.P., Hill, T.O., and Northen, K.O. 1997. *Marine Conservation Review: marine biotope classification for Britain and Ireland. Vol.1. Littoral biotopes*. Version 97.06. Joint Nature Conservation Committee, Peterborough. Report, No. 229.

Connor, D.W., and Hiscock, K. 1996. *Data collection methods. In: Marine Nature Conservation Review: rationale and methods* (Ed. K. Hiscock), pp. 51-65. Joint Nature Conservation Committee, Peterborough. [Coasts and seas of the United Kingdom, MNCR Series].

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C., and Vincent, M. 2001. *Marine Monitoring Handbook*. 405 pp. Joint Nature Conservation Committee, Peterborough.

Sanderson, W.G. 1996. *Rare Marine Flora and Fauna in Great Britain: the development of criteria for assessment*. Provisional list of Rare and Scarce Marine Species (not red-listed). Joint Nature Conservation Committee. Peterborough.

UKBAP. 2008. *UK Biodiversity Action Plan; Priority Habitat Descriptions.* BRIG (ed. Ant Maddock).

Wentworth, C.K. 1922. A scale of grade and class terms for clastic sediments. *Journal of Geology*, 30: 377 – 39.

Method / Action title

Marine INNS: Devil's tongue survey

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.6.1

Aims(s) and intended outcome(s)

To record the marine invasive non-native species (marine INNS), devil's tongue (*Grateloupia turuturu*) presence, location, extent and habitat preference within selected rocky-shore bays across Alderney.

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The marine INNS devils tongue survey method was developed by the AWT, for the AWT Living Seas Programme's marine INNS plan (2024). This field-based method comprises of surveyors walking along intertidal rocky-shore bays searching for the presence of the marine algae, devil's tongue (*Grateloupia turuturu*). Once the marine algae species is found, the extent/distribution of this species and localised habitat type present is recorded.

Location(s):

Marine INNS devils tongue surveys are carried out on accessible intertidal rocky-shore bays across Alderney, such as Braye Bay and Longis Bay. Within the Ramsar Site, Clonque Bay is a key site for this survey.

Survey time range:

In general, once a year, per bay/survey site.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).

- Devils tongue species presence, location and extent/distribution.
- Associated intertidal habitat/localised area description.

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre.

Additional Information

N/A

References

Method / Action title

Marine mammal surveying

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.12.1

4.3.12.2

4.3.12.3

And also:

4.3.13.1

Aims(s) and intended outcome(s)

To record marine mammal species presence, location, abundance, population structure and behaviour across Alderney's territorial waters, including the Ramsar Site. This includes recording stranded marine mammal individuals.

Note from AAWS

To assist and accompany any and all activities and organisations who request assistance with monitoring marine mammal populations including grey seals, or to

visit previously active breeding sites to assess for any signs of ill health, any disturbance activities which may impact the populations and make any applicable suggestions to changes in protocol or procedure which may be supportive.

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

To assess marine mammal species presence, location, abundance, population structure and behaviour across Alderney's territorial waters, a series of survey methods have been adopted by the AWT. This includes: grey seal effort (boat) based surveys, photographic identification catalogue development, land-based effort surveys and general collation of marine mammal sightings, including stranded (alive/dead) individuals.

The grey seal effort (boat) based surveys follow a survey method developed by Groupe Mammalogique Normand (GMN). This method comprises of regular boat-based surveys which transit to known offshore grey seal haul out sites around Alderney. Experienced surveyors (a minimum of two) spot and record grey seal presence (abundance counts), location (sub survey site) and population information such as age (adult, juvenile/weaner, pup or unknown), sex (male, female or unknown), behavioural information of each seal individual (e.g. hauled out, swimming, feeding, bottling, disturbance (looked at boat, entered water, stampede)) during the survey. Photographs are taken of each individual seal (where possible) for the photographic identification catalogue.

The photographic identification catalogue comprises of high-resolution photographs of grey seal individuals (head, neck and body, either hauled out on rocks or in water).

This information can help complement grey seal abundance surveys, through accurately identifying grey seal group dynamics/structure and distribution/movements. The on-going development of this catalogue comprises of the AWT collating photographs during surveys (e.g. boat-based surveys) or those donated by members of the public and updating/matching photographs with known/easily identifiable seal individuals within the catalogue.

The land-based survey method follows the Sea Watch Foundation (SWF) survey technique. This survey comprises of experienced surveyors recording general metadata, environment conditions and the presence, abundance, movement and behavioural patterns of marine mammals every 15 minutes from a fixed high position, such as a cliff-face.

General marine mammal sighting collation by the AWT includes collecting sightings of species (such as grey seals) from the public, stakeholders and groups, opportunistically. This includes collating sightings via the AWT sightings book (within the AWT Information Centre), AWT website, AWT social media platforms and irecord (online recording platform).

For opportunistic sightings of stranded marine mammal individuals (alive or dead), the species type, status and condition of the individual is recorded, where appropriate (either by AWT staff, AAWS, marine life rescue volunteers, SoA personnel and members of the public).

Location(s):

Grey seal effort (boat) based survey: throughout the offshore islets within the Ramsar Site e.g. Ortac, Nannals etc.

Land-based effort survey: cliff-based locations across Alderney.

Survey time range:

Grey seal effort (boat) based survey: monthly, where possible (based on weather/tide conditions/ volunteer time).

Photographic identification catalogue development: all year round.

Land-based effort survey: once a year, where appropriate.

General collation of marine mammal sightings/stranding information: all year round.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Marine mammal species presence, location, abundance, population structure and behaviour.
- General species sighting records (including stranded individuals). This includes species type, location, date/time spotted, size, population information etc. For stranded individuals this may also be status (alive/dead), sex, age, condition and individual body size.

Data archiving:

Information for these surveys are held within the Alderney Biodiversity Centre. Grey seal effort (boat) based survey information is submitted to GMN. Land-based effort survey information is submitted to the SWF. Dead stranded marine mammal information is submitted to the UK Cetacean Strandings Investigation Programme (CSIP).

Additional Information

For the management and also the recording of marine mammal strandings, two internal policies are adopted (live/dead) which are developed and implemented by AWT, AAWS and SoA. See Ramsar Objective 4.3.13 for further details.

Note from AAWS

On receipt of notice of a planned excursion, AAW will arrange an RVN who can volunteer to accompany the organisation and assist with all activities undertaken as well as make considerations specific to the welfare of the all species and populations in the area.

This assistance is given on a voluntary basis and is subject to sufficient staffing levels and caseload or emergencies occurring at the clinic which must take priority for RVNs on duty or under sole charge conditions.

During the monitoring or assessment activities if any such urgent issue should arise where the RVN feels they must give advice or intervene with unnecessary or excessive disturbance activities, relocate or treat an animal due to injury, or suggest a change in protocol of the activity, they will discuss with the relevant organisation who have organised the activity, colleagues and peers potentially including veterinary surgeons such as States Veterinary Officer.

In all cases RVNs will endeavour to appreciate the scope and parameters of monitoring activities before the task is undertaken, so that any suggestions or concerns can be raised in ample time. If after the event during discussion any unforeseen concerns arise these will be discussed with the organisers immediately.
References

Method / Action title
Beach cleans at Clonque, Hanaine and Platte Saline
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) **Alderney-Ramsar-Action-Plan-2024.pdf**
4.3.14.1
Aims(s) and intended outcome(s)
To undertake public beach clean events and record collected litter waste, following the Marine Conservation Society's (MCS) beach clean survey method.
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected** - **The location(s)** - **Date and time range(s)** - **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.** - **The protocol and timeline for analysis of data.** - **Data archiving and public access protocols.**

Method:

The beach clean survey method follows the MCS beach litter survey technique (see here: https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/). The method comprises of recording collated litter (type and abundance) along a 100 m section of a beach with members of the public, alongside a general beach clean event.

Location(s):

Beach cleans are carried out across accessible bays on Alderney, such as Longis Bay. Within the Ramsar Site, beaches such as Clonque Bay, Platte Saline and Hanaine Bay are cleaned and surveyed.

Survey time range:

In general, one-two times per bay/beach annually.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Litter type and abundance.
- Overall number and weight of bagged litter.

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre. The results are submitted to the MCS beach clean national database.

Additional Information

N/A

References

MCS. 2024. [Online:] *Beach Cleans*. [Available at:] https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/ [Accessed: 19/12/2024].

Method / Action title
Promote Seasearch snorkels and dives within the Ramsar Site
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.3.7.1
Aims(s) and intended outcome(s)
To record marine subtidal habitats and species through citizen science, with volunteer scuba divers and snorkellers across Alderney's territorial waters.
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected** - **The location(s)** - **Date and time range(s)** - **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.** - **The protocol and timeline for analysis of data.** - **Data archiving and public access protocols.**
Method: Seasearch is a citizen science project led by the Marine Conservation Society (MCS) to record marine habitats and species with volunteer scuba divers and snorkellers (see here: https://www.seasearch.org.uk/). Trained volunteers record key environmental conditions, marine habitat type, species presence and their relative abundance (using a SACFOR scale), during recreational scuba dives/snorkels. Location(s): Seasearch surveys are carried out within shallow, inshore sublittoral environments throughout Alderney's territorial waters, including the Ramsar Site.

Survey time range:

In general, from early summer (May) – autumn (October). Surveys are dependent upon weather/tide conditions and seawater visibility.

Parameters measured:

- General survey metadata (e.g. date/time/location).
- General dive/snorkel/environmental conditions.
- Subtidal habitat type(s)/selected area description.
- Subtidal species presence and abundance (using a SACFOR scale).

Data archiving:

Seasearch volunteers submit their survey records to their local Seasearch coordinator and/or the AWT (which are the local coordinators for Alderney). Information for this survey is held within the Alderney Biodiversity Centre. The results are submitted to Seasearch and the JNCC Marine Recorder by the AWT, which are then subsequently added to the national biodiversity network (once survey results are verified etc.,).

Additional Information

N/A

References

Seasearch. 2024. [Online:] Seasearch. [Available at:] https://www.seasearch.org.uk/ [Accessed: 19/12/2024].

Method / Action title
Marine mammal stranding response - training and response during strandings
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.3.13.1
Aims(s) and intended outcome(s)

Qualified British Divers Marine Life Rescue (BDMLR) Marine Life Medics KK and KH will keep their training up to date, and assist more to complete their initial and refresher training as required.
Liaising with the BDMLR Channel Islands Coordinator Donna Gicquel de Gruchy during active strandings and the organisation of suitable new training courses.
Maintain the volunteer roster to assist with monitoring live strandings, and coordinating any appropriate intervention, relocation or rehabilitation of live stranded animals.
Successfully assess, treat, rehabilitate or relocate any marine mammals who strand and require intervention, as well as providing timely and appropriate euthanasia if required

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

After a call out from member of public or AWT regarding a current live stranding of marine mammals AAW will endeavour to send one of their BDMLR Medics to the scene to assess and discuss with the Area coordinator and veterinary surgeon on duty. Once advice or assessment has been completed the animal will either be monitored, treated, relocated for treatment or euthanased. At this stage a volunteer roster will be coordinated to ensure the animal is left undisturbed but changes to the environment or animal can be noted. Volunteers and Medics will use provided information and logging sheets to record details of changes during a stranding, and Medics will regularly (at least once daily) discuss with area coordinator and/or veterinary surgeon the continuation or change of current actions and animal status. If at any stage the animal either in the natural habitat or in rehabilitation facilities is deemed of significantly poor welfare and unsuitable for release the decision may be made to euthanise. Social media and advertisement of an active stranding should be minimised for as long as possible to reduce traffic and disturbance activities, though very local signage can be useful to deter foot traffic and assist with volunteers monitoring an animal safely.
This method applies to grey seals as described, and the likely outcomes of a cetacean stranding include reflotation or humane euthanasia.

Additional Information

The AAW will support and assist those who wish to become Marine Life Medics through the BDMLR either by arranging courses, notifying interested parties of training available, encouraging refresher courses to be completed in a timely fashion and providing appropriate engagement activities in the community.

References

The AAW will support and assist those who wish to become Marine Life Medics through the BDMLR either by arranging courses, notifying interested parties of training available, encouraging refresher courses to be completed in a timely fashion and providing appropriate engagement activities in the community.

Method / Action title
Marine mammal stranding response – public training course
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.3.13.1
Aims(s) and intended outcome(s)
BDMLR training would give greater resource pool should future strandings occur, with high levels of community engagement and education, where moving forward the Medic numbers would be sufficient to intervene should an animal need relocation or treatment. This would ensure a better prognosis for live strandings particularly of grey seals and cetaceans and prevent unnecessary suffering or deaths.
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected** - **The location(s)** - **Date and time range(s)** - **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.** - **The protocol and timeline for analysis of data.** - **Data archiving and public access protocols.**
Grey seals originating in Burhou have previously beached at Clonque in October 2023 and been seen in various bays around the island including Clonque, Braye, Saye, Corbletts and Longis. The training should be completed in summer 2025 to prepare the Medics for seal pupping season from October 2025. Cetaceans including porpoises and various dolphin species have increased in frequency of sightings in the local area including several shallow bays.
Additional Information
The training is £150 per person, and requires a minimum of 13 attendees, AAW are willing to self fund at least three of their staff, the funding is to ensure the course can be fully funded to secure booking dates. Attendees may then be sourced from Alderney volunteers as well as the Bailiwick who would assist in the event of a stranding
References

Arneill, Gavin E., Emma Jane Critchley, Saskia Wischnewski, Mark J. Jessopp, and John L. Quinn. https://bdmlr.org.uk/marine-life-medic-mmm-training-course

Method / Action title
Shoresearch walkover survey
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) **Alderney-Ramsar-Action-Plan-2024.pdf**
4.3.2.2.
Aims(s) and intended outcome(s)
To record intertidal rocky-shore species presence within selected intertidal habitats/areas on Alderney (including those within the Ramsar Site), with interested members of the public, through citizen science.
- **Method(s) including:** - **The species, habitat(s), feature(s), etc, studied/affected** - **The location(s)** - **Date and time range(s)** - **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.** - **The protocol and timeline for analysis of data.** - **Data archiving and public access protocols.**
Method: The Shoresearch walkover survey method follows the survey technique developed by the Royal Society of Wildlife Trusts (RSWT). This method first comprises of selecting an intertidal habitat/area within a rocky-shore bay. The boundary of the selected intertidal habitat/area is recorded by GPS. Interested members of the public then help identify and record all intertidal species (e.g. species presence) within the selected area.

Location(s):

Shoresearch walkover surveys are carried out on accessible intertidal rocky-shore bays across Alderney, such as Braye Bay and Longis Bay. Within the Ramsar Site, Clonque Bay is a key site for this survey.

Survey time range:

In general, three-four times a year, per selected rocky-shore bay.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Intertidal habitat/selected area description and spatial location.
- Intertidal species presence.

Data archiving:

Information for this survey is held within the Alderney Biodiversity Centre. The results are submitted to the RSWT Shoresearch national database.

Additional Information

N/A

References

The Wildlife Trusts. 2024. [Online:] Shoresearch. [Available at:] https://surveys.wildlifetrusts.org/ [Accessed: 1912/2024].

Method / Action title

BRUV surveys within Hanaine Bay

Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024)

Alderney-Ramsar-Action-Plan-2024.pdf

4.3.8.1.

Aims(s) and intended outcome(s)

To record fish species presence and relative abundance using Baited Remote Underwater Video (BRUV) survey techniques within Alderney's shallow subtidal environments, including sites within the Ramsar Site.

- **Method(s) including:**
- **The species, habitat(s), feature(s), etc, studied/affected**
- **The location(s)**
- **Date and time range(s)**
- **The study or action design, including (where relevant) what will be measured, whether samples are taken, any control variables measured, treatments, requirement to handle wildlife, data collection method, etc.**
- **The protocol and timeline for analysis of data.**
- **Data archiving and public access protocols.**

Method:

The survey method comprises of deploying a BRUV within several inshore subtidal environments/bays across Alderney, to record fish species presence and abundance, following guidance from Clarke (2023) and Storer (2000). A BRUV is an apparatus which comprises of a video recording element which points at a bait box in which fish interact with (Clarke, 2023a; Clarke, 2023b). The AWT built a BRUV using a GoPro Hero 8 camera mounted on an arm with a mesh box for the bait, with the camera angled to record species attracted to the bait.

Inshore, shallow subtidal marine environments/bays are first selected for study using Chart Datum and aerial photography of Alderney's territorial waters with ARCGIS software. A grid, with 50 x 50 m^2 numbered squares is then generated via the ARCGIS 'generate grid from area' application over the selected site's geographical area. Approximately four - six squares within the grid are randomly selected, using an online random number generator. The coordinates of the centroid of each of the randomly selected squares are used as the deployment locations for the BRUV.

Prior to each deployment, the BRUV will be baited with approximately 1kg of oily fish and the camera battery charged. The BRUV will be deployed from a tender/kayak as

close to the selected square's centroid location as possible, with coordinates recorded in-situ with a GPS unit. All deployments will be undertaken during a rising high neap tide, with the camera facing into the open water. The BRUV will be left in-situ for approximately two hours.

After the BRUV has been collected, the recorded videos from the camera will then be assessed. For each deployment, species data will be assessed from five minutes after the BRUV has settled on the seabed. This allows for disturbances left by the tender/kayak to reduce and to let the sediment which may have plumed from the placement of the BRUV to settle. After this interval, every fish species (or other marine species) which enters the video frame will be recorded. The Max-N value will be calculated: the exact number of individuals which can be seen at any one time of a video. Each fish will also be identified in terms of age and sex, based on size, colour and any other physical characteristics.

Once all species are recorded, each species will be assigned to a functional group, calculated from literature. A functional group encompasses species with similar life history traits and respond to environmental fluctuations in a similar way within a given habitat.

Location(s):

Hanaine Bay and Longis Bay.

Survey timeframe:

Annually, during the survey month of September.

Parameters measured:

- General survey metadata (e.g. date/time/weather conditions).
- Fish species presence/absence, abundance and life stage.
- Associated intertidal habitat/localised area description.

Timeline/data analysis:

Data analysis and subsequent report writing will be undertaken between November (2025) – February (2026).

Data archiving: Information for this survey is held within the Alderney Biodiversity Centre.
Additional Information
References
Clarke, M. 2023a. *BRUV project for AWT*. Alderney: Alderney Wildlife Trust. **Clarke, M. 2023b. Investigating the presence of invasive non-native species in Alderney's inter-tidal and biosecurity measures to adopt. Exeter: University of Exeter.** **Storer, L. 2000. *Evaluating BRUV methods for key, small-scale biodiversity projects within data-deficient sites*. MSc Project. York: University of York.**

Responding to callouts and collection and treatment of injured or stranded animals within the Ramsar site
Action Plan Objective Number from 2024 plan (see page 9-12, Action Plan 2024) Alderney-Ramsar-Action-Plan-2024.pdf
4.1.8.1 4.1.8.2 4.3.13.1
Aim(s) and intended outcome(s)
To receive call outs from members of the public or AWT and give appropriate advice, information, triage and either advise the animal to be brought to the clinic, or collect animals which require medical intervention where moving or handling may endanger either the animal or the handler. To care for any wildlife found in such a manner as to ensure its eventual rehabilitation and release, where possible to the area it was found or an appropriate alternative
Methodology

All mammals, birds and marine life species covered within and outside the Ramsar site across Alderney. Calls during daytime via the clinic landline number, and during OOH to be fielded via the 24/7 on call phone manned by RVNs.
Details to be taken by the caller of location and condition of the animal, if possible with the use of photographs and/or "what 3 words". If safe to do so, and required then the animal to be brought to the clinic, otherwise AAW staff to collect the animal where safe to do so, or to monitor until capture is possible without endangering either the animal or the handler.
Animals in the clinic to have detailed records of weight, injury or illnesses and triage assessment completed, before diagnosis made by the veterinary surgeon and treatment provided and regular reassessments at least daily. Ongoing medication and treatment always must consider the long term welfare of the animal including post-release as the priority.

1. Any unsuccessful treatments or decline in condition to be discussed with the veterinary surgeon, and records to be kept on file for a minimum of six years

Additional information

Only species and cases originating or located within the Ramsar site will be reported within the Ramsar reports, other detailed reports of island-wide wildlife cases will be maintained at the clinic in the same manner.

References

Walsh, P., A. de Nevo, D. J. Halley, I. W. M. Sim, and M. P. Harris. 1995. Seabird monitoring handbook for Britain. Joint Nature Conservation Committee, Peterborough.

Appendix 3. Funding Summaries

Appendix 5. Document History

Version	Date	Contributors (**bold**), Reviewers (standard font)	Notes
1	27/11/2024	**A Purdie.**	Basic formatting and introduction sections. Request submitted for submissions from activity organisations (AAWS, ABO, AWT, CIBRS)
2	10/01/2025	**M Broadhurst-Allen, A D Castella, T Cox, K Huitson, K Kissock, N McDevitt, M Lewis**	Feedback received from activity organisations (AAWS, AWT)
3	10/02/2025	**A Purdie,** P Atkinson, F Binney, M Broadhurst-Allen, P Buckley, A D Castella, D Chamberlain, T Cox, K Huitson, K Kissock, N McDevitt, M Lewis, A Rose.	Compiled version reviewed by activity orgaisations (AAWS, AWT), ARAG and SoA Harbour Master.
4	03/03/2025	**A Purdie.**	Compiled by A Purdie for GSC
5	14/03/2025	General Services Committee	Approved by GSC