Alderney's West Coast and Burhou Islands Ramsar Site (and Other Sites)

Annual Action Plan 2024

Prepared by:	Alex Purdie (Alderney Ramsar Administrator)
Contributors:	Dr Mel Broadhurst-Allen (AWT Marine Coordinator), Abigail de Castella (AWT Team Wilder Community Support Officer), Dr Tara Cox (AWT Senior Ecologist), John Horton (Alderney Bird Recorder, ABO Warden, CIBRS Chair), Kelly Huitson (AAWS Registered Veterinary Nurse), Matt Lewis (AWT Ecologist, Alderney Biodiversity Centre Manager)
Reviewed by:	Alderney Animal Welfare Society, Alderney Bird Observatory, Alderney Wildlife Trust, Channel Islands Bird Ringing Scheme
ARAG Scientific review by:	Dr Phil Atkinson (ARAG Chair), Paul Buckley (RSPB), Francis Binney (Jersey Marine Resources), David Chamberlain (States Veterinary Officer) Prof Charles Michele (Imperial College London)
Approved by GSC:	12/07/2024

Alderney Wildlife Trust, Alderney Ramsar Administrators
48 Victoria Street
Alderney
GY9 3TA
Bailiwick of Guernsey
Channel Islands

ramsar@alderneywildlife.org
http://www.ci-ramsar.com
www.alderneywildlife.org

Executive Summary

1. The Alderney's West Coast and Burhou Islands Ramsar Site (and Other Sites) Action Plan 2024 sets out the work for 2024. This document is a summary of this information and is not a full documentation of all the works intended to be carried out by the activity organisations which are the Alderney Animal Welfare Society (AAWS), Alderney Bird Observatory (ABO), Alderney Wildlife Trust (AWT) and the Channel Islands Bird Ringing Scheme (CIBRS).

2. All activity organisations contributing to the Alderney Ramsar work can access the budget based on recovery of costs only. In addition to this budget, the activity organisations commit resources. For example, the Site Administrators contribute approximately 2,500 hrs of staff time p.a. free of charge and commit capital investment (e.g. £45,000 in 2020/2021), to enable the Alderney Ramsar work. Therefore, the budget limitations do mean that the strategy will be restricted by the resources the Site Administrators and Activity Organisations can provide.

3. The Ramsar seabird monitoring programme is carried out by AWT. In 2024 it will include monitoring the populations of Atlantic puffin, northern gannet, northern fulmar, European shag, great cormorant (the ABO will also contribute data on cormorant nesting attempts), gull species, common tern, ringed plover, oystercatcher, guillemot, and razorbill.

4. Productivity will be monitored for northern gannet, northern fulmar, ringed plover, guillemot and Atlantic puffin. Kleptoparasitism and predation will also be monitored for Atlantic puffin. Studies on the impact of plastics and black-eye in gannets will continue. Gannet productivity will be monitored on Ortac for the first time. A drone census of northern gannet, and potentially of other seabirds in a 'round-island' drone census may be trialled. Tissue and blood samples will be taken from northern gannets for the States Veterinary Officers if there is an opportunity. The TaG project will be reviewed. Ringed plover cordons hold planning permission for 2024 and will continue to be deployed with camera traps used to assess causes of nest failure. A method to monitor Manx shearwater presence on Burhou will be investigated. Seabird strandings will be recorded. Live strandings will be reported to AAWS, and freshly dead strandings will be tested for HPAI where appropriate. WeBs surveys will continue in 2024, undertaken by the AWT.

5. The same seabird ringing programme is planned for 2024 as was planned in 2023. The ABO and CIBRS will visit Burhou to ring lesser black-backed gulls chicks and adult storm petrels, Little Burhou to ring great cormorant chicks, Coque Lihou to ring European shag chicks and razorbill chicks, and Ortac to ring gannet chicks. If resources allow, the AWT will put forward a proposal to the ABO to colour ring ringed plover.

6. Biosecurity monitoring will be continued by AWT on Burhou, and if resources allow, on Coque Lihou. If a rodent incursion is detected on either island toxic bait and traps will be deployed as soon as possible. AWT will coordinate any response with the States Public Works department. If common tern return to a colony, rat control may be deployed by AWT, coordinated with the States Public Works department.

7. The Bailiwick Bat Survey enters its 4th and final year in 2024, and detectors will again be deployed, coordinated by AWT on Alderney. If possible, they will be deployed on Burhou.

8. The AWT's marine programme on the Ramsar Site will include a range of surveys. Phase I intertidal surveys will be conducted on Clonque Bay and Les Etacs (the latter via Sula of Braye). Shoresearch walkover and, for the first time, quadrate surveys will be conducted with citizen scientists. Green ormer, crab and planktonscope citizen science surveys will continue. A programme of marine invasive and non-native species assessments will be launched, following the recommendations of a 2023 MSc project. Baited Recorded Underwater Video (BRUV) surveys will be conducted in Hanaine bay to record fish assemblage and a new programme of seawater quality testing will be launched (funded by a Sea-Changers grant). The fish intel programme will continue. The AWT will run public beach cleans at Clonque, Hanaine and Platte Saline. Coastal erosion surveys will continue for the second year at Clonque. Seasearch surveys will continue within the Ramsar site. Seasearch will be invited to join the stakeholder forum.

9. The AWT will continue to conduct grey seal surveys, combining these with seabird surveys where possible to reduce cost. The AAWS and AWT will continue to work with the States Public Works Department and BDMLR to coordinate responses to marine mammal strandings. Volunteers will be trained to respond to strandings.

10. Support and lead for academic projects from activity organisations will be continued in 2024, if resources allow and suitable projects can be found. Any projects which take place 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.

11. The education and outreach programme will include wildlife webcams, with a protocol to repair failed equipment included, and a review of the webcams, future uses for them, and new potential webcams. Boat tours will be run by AWT and Avante Boat Tours (with the ABO providing tour guides). Free boat tours for St Anne's School will be provided by the AWT. A wide range of public engagement events will be run by activity organisations. The AWT will run a number of citizen science surveys including marine surveys and the bailiwick bat survey. Finally, a five-step community engagement plan will be implemented to measure and improve engagement.

12. The next 5-year strategy will be developed in 2024. Two Alderney Ramsar Stakeholder forums will be hosted by the SoA. The ARAG will continue to provide expert advice and feedback. A new member without a scientific background will be invited to join the ARAG. Information signage around the Ramsar site will be updated. The Channel Islands Ramsar website will be maintained and Ramsar documents uploaded to the SoA website. There will be a Ramsar meeting at the next Inter-Islands Environment Meeting, and the Alderney Ramsar Administrator will continue to meet with the managers of the Jersey Ramsar Site. Repairs to the hut and path cutting on Burhou may also be conducted by the Burhou Warden, with support offered by the AWT.

Table of Contents

Contents

Table of Contents **2**

1. Introduction **5**

2. Background **6**

2.1 Designation **6**

2.2 Description of the Alderney West Coast and Burhou Islands Ramsar Site **6**

2.3 Management Strategies and Annual Review Process **7**

2.4 Funding **8**

Action Plan 2024 – Updates on 2023 Work Programme 9

3. Objectives **9**

4. Further Details 13

4.1 Seabird Monitoring **13**

4.2 Terrestrial **19**

4.3 Marine **20**

4.4 Events and outreach **25**

4.5 Advisory and Legislative **28**

References 31

Appendix 1: Seabird Monitoring Methodologies **33**

Appendix 2: Ramsar 2024 Oystercatcher census method submission **46**

Appendix 3. Puffin Equipment Repair During Closed Season Methodology **49**

1. Introduction

The document provides the work objectives to be carried out in 2024. 2024 is an unusual year because the five-year strategy is being produced. In 2023, the GSC approved that ARS3 be extended until the next five-year strategy is published (General Services Committee 2023). Objectives are therefore based on ARS3, previous action plans, and recommendations provided by the activity organisations, who carry out the work on the Alderney West Coast and Burhou Islands Ramsar Site, and recommendations from stakeholders. Activity organisations include Alderney Animal Welfare Society (AAWS), Alderney Bird Observatory (ABO), and Alderney Wildlife Trust (AWT). This document has been compiled by the Alderney Ramsar Administrator (previously named as Ramsar Secretariat, and renamed here for clarity and to align with the AWTs official role as Site Administrators, who is the acting Site Administrator on behalf of the General Services Committee (GSC) and AWT (who are the appointed site administrators by the States of Alderney (SoA)). The Ramsar programme is overseen by the SoA's Manager of Estates, Infrastructure and Environment.

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

2. Background

2.1 Designation

On 25th August 2005, the Alderney West Coast and Burhou Islands Ramsar Site, henceforth referred to as the "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 (Figure 1).

In 2006, on behalf of the SoA the GSC requested the support of the Alderney Wildlife Trust (AWT) in the preparation of a management strategy, as required under the commitments of the Ramsar Convention, and registered the AWT as the Alderney Ramsar administrators with the International Ramsar Secretariat in Geneva. AWT contracts a dedicated staff member, the Alderney Ramsar Administrator, to fulfil their duties for the administration of the Ramsar Site. This gives separation between the AWT's work as an activity organisation on the site and their administrative role. No salary is drawn from the SoA Ramsar Budget for this staff member.

2.2 Description of the Alderney West Coast and Burhou Islands Ramsar Site

The Alderney West Coast and the Burhou Islands 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, tide swept habitats, kelp forest and coastal grassland.

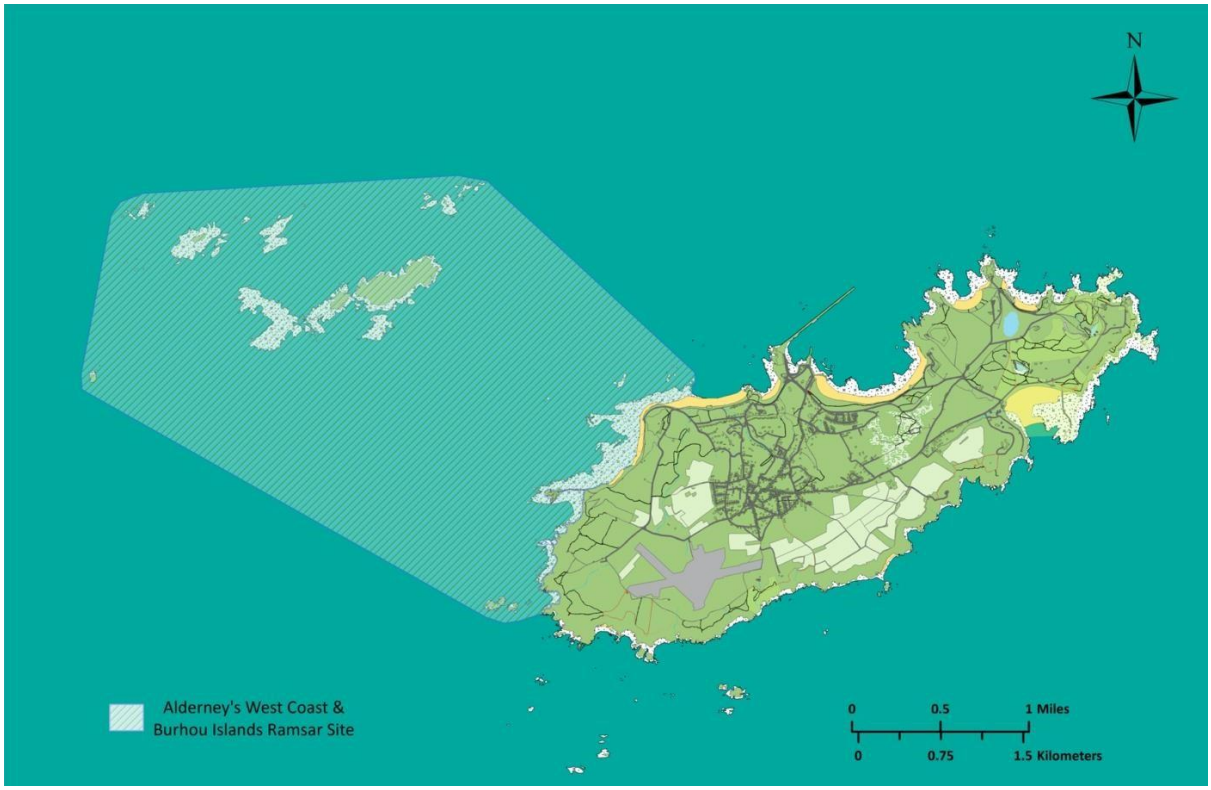

Figure 1. The Island of Alderney with the Alderney West Coast and Burhou Islands Ramsar Site highlighted. A scale bar is given in the bottom right, and a north arrow is given in the top right.

A high diversity of marine life is present within the Ramsar Site. This includes numerous species of marine algae, globally threatened marine species such as the pink sea fan, *Eunicella verrucosa*, and green ormer *Haliotis tuberculata*. A wide range of fish, including species that are of both ecological importance (e.g. Lesser sand eel *Ammodytes tobianus*) and commercial/cultural importance (e.g. European sea bass *Dicentrarchus labrax*) occupy the site, and there are also sizeable areas of habitat associated with various life stages of fin and shell fish, notably sandbars, kelp forest and intertidal rocky shore, with multiple numerous species using the site for spawning and as a nursery. The site forms a regionally important breeding area and year-round refuge for grey seal *Halichoerus grypus*, and bottlenose dolphin *Tursiops truncates* also frequent the area.

The Ramsar Site is highly important for birds. A range of breeding seabirds are present, including 2% of the global breeding population of Northern gannet *Morus bassanus* and a small (c.185 pairs) fragile population of Atlantic puffin *Fratercula arctica* at the edge of their breeding range. Other breeding species include European storm-petrel *Hydrobates pelagicus*, the majority of guillemot *Uria aalge* individuals that occur on Alderney, and the last consistent population of ringed plover *Charadrius hiaticula* within the Channel Islands.

2.3 Management Strategies and Annual Review Process

Since 2007, the Ramsar site has been managed using Five-Year Management Strategies, with annual Action Plan and Review documents, prepared by the AWT as site administrators on behalf of the SoA (all available online at https://alderney.gov.gg/article/198131/Ramsar-Site). The Alderney Ramsar Site strategy outlines the need to monitor seabird and other marine life population trends, threats to these and to continue the management of the populations where necessary. The objectives of the strategy are assessed annually through various research projects and conservation management techniques.

Activity Organisations (AWT, ABO, AAWS), conduct the work described in the Ramsar Strategy, and may draw funding to cover the costs of this work from the SoA's Ramsar budget. Activity Organisations submit reports and data from their annual work to the site administrators, who compile them into annual review and action plans, as well as draft five-year strategies. The compiled reports are reviewed by the Activity Organisations, and then they are reviewed and developed in consultation with the Alderney Ramsar Advisory Group (ARAG). The group is made from experts (including individuals who work for the Royal Society for the Protection of Birds (RSPB), British Trust for Ornithology (BTO), States of Guernsey and States of Jersey). Final reports and action plans are then presented to GSC by the administrators for their consideration.

The first scientific review body was established in 2006 as the Alderney Ramsar Steering Group. This was updated to ARAG in 2021 when GSC issued a Terms of Reference (ToR), to offer technical advice in regards the management of the site to the States of Alderney and the site administrators, and activity organisations. The ARAG are involved in reviewing all five-year management strategies, annual action plans and annual review reports. ARAG also assess proposals outside of the review process before their presentation to the SoA in the effort to create robust and vetted management strategies. The ARAG terms of reference were updated in 2022 following consultation with stakeholders and was again reviewed by GSC and Stakeholders in 2023.

While the Ramsar site has a clearly defined boundary (Figure 1.), the site's five-year and annual management plans and review documents may include specific habitats and species which may occur outside of this defined area but have a degree of interdependence with the site, such as mobile species

which travel into the Ramsar Site, e.g. ringed plover. This has 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 are clearly detailed within the report to ensure it is clear if a work item has occurred inside or outside of the defined Ramsar site. In April 2019, the GSC approved the updating of the current 2017-2021 Ramsar Management Strategy's title to include 'and other sites.' In 2023, the site administrators began the process of drafting the sixth Alderney West Coast and Burhou Islands Ramsar site Management Strategy (See section 4.5.1).

2.4 Funding

All activity organisations contributing to the Alderney Ramsar work can access the budget based on recovery of costs only. Examples of these costs include fuel for seabird surveys by AWT and seabird ringing trips by the ABO. In addition to this budget, the activity organisations commit funding. For example, the Site Administrators contribute approximately 2,500 hrs of staff time p.a. free of charge and commit capital investment (e.g. £45,000 in 2020/2021), to enable the Alderney Ramsar work. Therefore, the budget limitations do mean that the strategy will be restricted by the resources the Site Administrators and Activity Organisations can provide.

The next Ramsar Five-Year Strategy 2024-2029, (ARS4) will be drafted based on a budget in line with that currently allocated to Ramsar (£18,360 linked to RPI, although there has often been significant underspend). The Ramsar Site Administrators recognise current budget constraints upon the SoA, and recognise that this existing budget is subject to review during the development of ARS4 alongside the SoA and Activity Organisations, overseen by the SoA Treasury.

Action Plan 2024 – Updates on 2023 Work Programme

3. Objectives

To meet the objectives of the ARS3, and new recommendations following the 2023 Ramsar Review, the following objectives are to be completed in 2024*.

*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 section number on the left and page number on the right. Methods or intended proposals which have not been included in previous plans or submissions are highlighted in red.

4.1.1 **Atlantic Puffin Monitoring** **13**

4.1.1.1 Productivity monitoring through PuffinCam **13**

4.1.1.2 Population Assessment through raft count and AOB survey **13**

4.1.1.3 Kleptoparasitism, Avian Interactions and Predation monitoring through PuffinCam **14**

4.1.2 **Northern Gannet Monitoring** **14**

4.1.2.1 Overall Productivity Monitoring **14**

4.1.2.2 Repeat Productivity Monitoring **14**

4.1.2.3 Ortac Productivity Monitoring **14**

4.1.2.4 The 'Track-a-Gannet' (TAG) project – Review and Potentially Retrieve Geolocators **15**

4.1.2.5 Monitor the impact of anthropogenic materials **15**

4.1.2.6 Gannet Census - using aircraft and drone surveys **16**

4.1.2.7 Gannet Blood Sampling **16**

4.1.2.9 Gannet Tissue Sampling **16**

4.1.3 **Northern Fulmar monitoring** **16**

4.1.3.1 Productivity and Population Monitoring **16**

4.1.4 **Common Tern monitoring** **16**

4.1.4.1 Productivity and Population Monitoring **16**

4.1.4.2 Protection against disturbance and predation **17**

4.1.5 **Ringed Plover monitoring** **17**

4.1.5.1 Productivity and Population Monitoring **17**

4.1.5.2 Beach Cordons and Signage **17**

4.1.5.3 Develop a Colour Ringing Scheme 17
4.1.6 **Other seabird monitoring** 17
4.1.6.1 Round Island Surveys 17
4.1.6.2 Round Island Surveys Using Drones 18
4.1.6.3 Gull Census on Burhou 18
4.1.6.4 Guillemot and Razorbill Population and Productivity Monitoring 18
4.1.6.5 WeBS Core Counts 18
4.1.6.6 Eurasian Oystercatcher Trial Census 18
4.1.6.6 Manx Shearwater Monitoring 18
4.1.7 **Seabird Ringing** 18
4.1.6.5 Seabird Ringing Programme 19
4.1.8 **Seabird Strandings** 19
4.1.8.1 Recovery of live stranded seabirds by AAWS 19
4.1.8.2 Testing of suitable dead stranded seabirds by AAWS 19
4.2.1 **Rat control** 19
4.2.1.1 Biosecurity monitoring on Burhou and Coque Lihou. 20
4.2.1.2 Protections against predation for common tern (if they return to a nesting site) 20
4.2.1.3 Monitoring predation on razorbill and guillemot sites 20
4.2.2 **Bailiwick Bat Survey** 20
4.2.2.1 Presence of bats, small mammals, and insects on Burhou 20
4.3.1 **Phase I intertidal Survey** 20
4.3.1.1 Phase 1 Intertidal Survey of Clonque and Les Etacs 20
4.3.2 **Shoresearch** 21
4.3.2.1 Shoresearch Quadrate Surveys 21
4.3.2.2 Shoresearch Walkover Surveys 21
4.3.3 **Climate change driver assessment** 21
4.3.3.1 Coastal Erosion Surveys 21
4.3.4 **Green Ormer surveys** 21
4.3.4.1 Green Ormer Tagging and Abundance Surveys 21
4.3.5 **Crab surveying** 21
4.3.5.1 Intertidal Crab Abundance and Population Dynamic Surveys 21
4.3.5.2 Intertidal Crab Photo Bank 21
4.3.6 **Marine Invasive and Non-Native Species Assessments** 22
4.3.6.1 Marine IINS Monitoring 22
4.3.6.2 Marine IINS Outreach and Education 22

4.3.6.3 Management of Marine IINS 22
4.3.7 **Seasearch** 23
4.3.7.1 Promote Seasearch snorkels and dives within the Ramsar Site 23
4.3.7.2 Invite Seasearch Representatives onto the Alderney Ramsar Stakeholder Forum 23
4.3.8 **BRUV** 23
4.3.8.1 BRUV Surveys in Hanaine Bay 23
4.3.9 **Plankton** 23
4.3.9.1 Planktoscope Surveys in Clonque Bay 23
4.3.10 **Fish-Intel** 23
4.3.10.1 Support for Fish-Intel Project 23
4.3.11 **Seawater Quality Testing** 24
4.3.11.1 Test Physical Parameters of Seawater 24
4.3.12 **Marine Mammal surveying** 24
4.3.12.1 Effort-based Grey Seal surveying 24
4.3.12.2 Grey Seal Identification 24
4.3.12.3 Cetaceans 25
4.3.13 **Marine Mammal Strandings** 25
4.3.13.1 Support BDMLR response to marine mammal strandings 25
4.3.13.2 Review Marine Mammal Stranding Action Plan 25
4.3.13.3 Train Volunteers to Respond to Marine Mammal Strandings 25
4.3.14 **Academic projects** 25
4.3.14 Support Academic Projects 25
4.3.15 Marine Conservation Society Beach Cleans 25
4.3.15.1 Beach Cleans at Clonque, Hanaine and Platte Saline 25
4.4.1 **Wildlife Webcams.** 25
4.4.1.1 Live Streaming Wildlife Webcams 26
4.4.1.2 New Potential Webcams 26
4.4.1.3 Review Webcams Community Impact 26
4.4.1.4 Activate PuffinCam 26
4.4.1.5 Investigate Further Uses for PuffinCam 26
4.4.1.6 Activate GannetCam 26
4.4.2 **Boat tours** 27
4.4.2.1 Boat Tours on Sula of Braye 27
4.4.2.2 Free educational boat tours for Year 6 students at St Anne's School 27
4.4.3 **Community engagement and public awareness events** 27

4.4.3.1 Public Engagement Events 27
4.4.3.2 Citizen Science 27
4.5.1 **ARS4** 28
4.5.1.1 Deliver ARS4 28
4.5.2 **Scientific Advisory** 28
4.5.2.1 ARAG Review of Ramsar Work 28
4.5.2.2 Invite a Lay-person onto ARAG 28
4.5.3 **The Puffin Friendly Zone** 28
4.5.3.1 Support and Advertise the Puffin Friendly Zone 28
4.5.4 **Ramsar signage** 29
4.5.4.1 Present Updates of Ramsar Information Boards to Stakeholders 29
4.5.5 **Sensitive wildlife signage** 29
4.5.4.1 Erect Temporary Sensitive Wildlife Signage 29
4.5.6 Networking with other Channel Island Ramsar Sites 29
4.5.6.1 **Attend the IIEM** 29
4.5.6.2 Meet With Managers of Channel Island Ramsar Sites 29
4.5.6.3 Maintain Links with International Community 29
4.5.7 **Websites** 29
4.5.7.1 Maintain Channel Island Ramsar Website 29
4.5.7.2 Upload Alderney Ramsar Documentation to SoA Website 29
4.5.8 **RIS Update** 30
4.5.8.1 Upload RIS Sheet 30
4.5.9 **Ramsar Stakeholder Forum** 30
4.5.9.1 Support Two Ramsar Stakeholder Forums in 2024 30
4.5.10 **Burhou Maintenance** 30
4.5.10.1 Repairs to Burhou Wardens Hut 30
4.5.10.2 Path Cutting 30

4. Further Details

4.1 Seabird Monitoring

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 (ARS3; (Wieckowski and Ferrar 2016) with adaptations as detailed and approved in the 2023 Ramsar Action Plan (Purdie 2023), unless otherwise stated. Data will be shared with the national Seabird Monitoring Program (SMP). This monitoring will enable us to measure baselines for these populations, in line with the aims of the Ramsar convention. This has become more important given the devastating impact that high-pathogenicity avian influenza has had on Alderney's Northern Gannet population and more widely on the UK's breeding seabirds in 2021 and 2022 (Tremlett et al. 2024).

All activities involving 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 2024.

Seabird monitoring methodologies (not including seabird ringing) are appended in detail in Appendix 1.

4.1.1 Atlantic Puffin Monitoring

Contributors – Alderney Wildlife Trust

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 recorded remotely via 'PuffinCam', following the same protocol used in the since 2019 (Clifford et al. 2020). This will enable estimates of productivity to be comparable between years. 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 and Ferrar 2016). Only the raft counts made early in the season can be used as, later on, 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 AOB survey will be reviewed following the completion of the validation against early season observations in 2022 (Purdie 2023). To avoid any disturbance to the breeding puffins, the 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 all burrows for recent signs of occupation in areas known to be occupied across the island, following the same methodology as in previous years e.g. Appendix 1. & (Bush et al. 2021, 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 2024, which will enable a greater volume of video data to be analysed in a timely manner.

4.1.2 Northern Gannet Monitoring

Contributors – Alderney Wildlife Trust

Northern gannets will be monitored from their arrival until their departure with productivity monitoring, impact of anthropogenic material surveys, and potentially 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

In addition, a sample of 100 nests monitored since 2020 will be observed again to investigate a) if some apparently occupied nests/ breeding pairs are consistently successful or not at raising chicks; b) if the breeding pairs from these nest sites consistently begin to nest at the same time of year, and c) if the incidence of non-breeding occurs more often at some nest sites than others. There is value in continuing this study after HPAI, to assess, over a few years, any changes as a result of the disease outbreak and resultant decline in the population and changeover in breeding individuals as a result of non-breeding and young birds now occupying sites.

4.1.2.3 Ortac Productivity Monitoring

Any productivity estimate from Ortac, if it can be reliably attained, will have particular value. This is because it could be integrated with other data already obtained from Ortac such as chick ringing, adult colour-ringing and the TAG project.

A sample of apparently occupied nests (AON) from at least Ortac will be monitored through regular (e.g. monthly) boat-based photo surveys coinciding with existing seal surveys. This will follow the comparison of AON and chick counts as detailed in Walsh et al. (1995), with additional photo surveys improving the accuracy of any productivity estimates.

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

There is a need for up-to-data information on the movements of Alderney's northern gannets to understand the potential impact of international windfarm developments on the colonies. The foraging ranges of northern gannets vary year-on-year, and the effect the HPAI outbreak of 2022 will have on their movements is unknown.

The need for further geolocator surveys should be reviewed in 2024. This can help inform on-going marine spatial planning in the English Channel. It could also reveal aspects of their foraging behaviour that could be causing declines in productivity and investigate any relationship between prior infection with HPAI and movement ecology. Funding for such work might be sought from external developers who need data on Alderney's populations to respond to development obligations under the EU Environmental Impact Directive 2014 (The European Parliament And The Council Of The European Union 2014).

Aside from this, if resources allow, and sufficiently trained and licenced staff are available, the objective for the TAG project in 2024 will be the recovery of the geolocators deployed on Ortac in 2017 and 2020. This is resource dependent and requires licenced ringers to be available. The data obtained from the geolocators recovered in 2019 and 2020 provided a glimpse of how Alderney's gannets spend their time in the non-breeding season but the recovery of more data will be required to better assess our gannets movements in the winter.

The loci of the birds fitted with geolocators on Ortac in 2017 and 2020 has been kept on record so that the potential sighting and re-capture of these birds to retrieve their geolocators can be undertaken more easily and with minimal disturbance to the colony. Geolocator retrieval will be undertaken by a small team with an appropriately licensed ringer and will follow procedures set out in previous years to minimise the impact on the birds, this includes recording colour rings as well as recovery of geolocators.

If sufficient geolocators can be recovered, their data and the migratory behaviour revealed, will be compared with what has been established from conventional ringing so far as well as other geolocation studies from gannetries elsewhere in the species' range (e.g. (Lane et al. 2020, Peschko et al. 2021, Pollock et al. 2021). To seek the support of the CIBRS to undertake these recoveries during a scheduled visit (See Section 4.1.7), if they think they have members who have experience in the safe handling of adult Gannets. If they are not able to assist seek advice from BTO as the UK ringing authority as to suitable candidates to assist in this effort should resources allow. Geolocator recovery would require SoA issued licence under the Protection of Wild Birds (Alderney) Ordinance, 2005.

4.1.2.5 Monitor the impact of anthropogenic materials

The impact of anthropogenic materials on northern gannets will be monitored as in previous years to assess whether the upward trend in plastic returns continues. This includes the recording of instances of entanglement and observations of material brought to the nest site.

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 2024 following the methodology used in previous years (Purdie et al. 2022). In addition to this, if resources allow, a drone census will be conducted alongside this by appropriately licenced and experienced operators, with methods reviewed by ARAG. 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 Blood Sampling

Contributors – Alderney Animal Welfare Society, Alderney Bird Observatory

To test for the presence of HPAI antibodies in Alderneys northern gannets, blood samples will be taken during ringing trips (See Section 4.1.7) by AAWS RVN's or States Veterinary Officers. These samples will be sent to the States of Guernsey Veterinary Officers who will forward for analysis in the UK.

This project is being led and funded by the States of Guernsey Veterinary Officers. It will enable us to track the level of immunity to HPAI present within Alderney's colonies, which can in turn inform management.

4.1.2.9 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

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

Contributors – Alderney Wildlife Trust

4.1.4.1 Productivity and Population Monitoring

If a new or existing common tern colony is occupied in 2024, estimates of common tern productivity and colony size will be monitored from vantage points on shore with additional data provided by the

ABO from any ringing undertaken (See section 4.1.7). The collection of these data will be requested prior to the ringing trip occurring.

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 Foreman of Public Works will be asked to erect temporary signage warning the people of the presence of the tern colony as in previous years, with the permission of relevant landowners, whenever the birds choose to occupy sites accessible to the public (see section 4.5.5).

4.1.5 Ringed Plover monitoring

Contributors – Alderney Wildlife Trust

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 up until 2025, so the permission does not need to be renewed for 2024.

Permission to erect other temporary signage warning the public of other sensitive breeding birds may also be sought from the States of Alderney 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.

4.1.5.3 Develop a Colour Ringing Scheme

A request will be made that the CIBRS consider the colour ringing of nesting adult ringed plover and their chicks to aid monitoring and improve understanding of their demography. A request will be made that the ABO carry out this work. If a project is agreed, any final proposal for the project will be passed to GSC for consideration with ARAG advice appended.

4.1.6 Other seabird monitoring

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, the use of drone surveys alongside these round island boat surveys will be reviewed and trialled (with sufficiently experienced and licensed operators, and methodology reviewed by ARAG). If successful, in the long term, drones may substitute some boat surveysreducing cost and potentially improving accuracy of counts, and allowing for distribution to be more precisely mapped (although these surveys will likely not be replaced by drone in certain conditions, or if they fall alongside other boat-based surveys (e.g. seal surveys in which you cannot use drones).

4.1.6.3 Gull Census on Burhou

The populations of lesser black-back, great black-back and herring gulls will be censused on Burhou following the same methodology as in previous years (Walsh et al. 1995, Purdie et al. 2022), 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 and razorbill 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.

4.1.6.5 Wetland Bird Survey Core Counts

Core counts of all waterbirds present in Clonque Bay, Hanaine bay and on Platte Saline will be carried out each month for the national Wetland Bird Survey (WeBS), BTO, RSPB, JNCC, (https://www.bto.org/our-science/projects/wetland-bird-survey/taking-part/core-counts). Counts will be carried 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

A comprehensive census of Eurasian oystercatcher breeding on the mainland between Hanaine Stack and Fort Tourgis will be conducted in 2024, potentially as the start of a three-year cycle. See Appendix 2 for more information.

4.1.6.6 Manx Shearwater Monitoring

A review of potential methods to test for the presence of breeding Manx shearwater on sites around Alderney, particularly Burhou, will be undertaken. Tape playback e.g. (Walsh et al. 1995) is a likely method, and the review will investigate how this, or another method such as passive acoustic monitoring could be deployed whilst not causing significant disturbance to nesting seabirds. Any proposal would be sent through the Ramsar Review process as described in the background of this report (section 2.3).

4.1.7 Seabird Ringing

Contributors – Alderney Bird Observatory

4.1.6.5 Seabird Ringing Programme

A programme of seabird ringing using conventional metal rings supplied by the Channel Island Bird Ringing Scheme (CIBRS) will be carried out by Alderney Bird Observatory (ABO). All data, including ringing totals, recoveries and controls will be reported in a timely manner for the annual review.

As per the schedule outlined in ARS3, the seabird ringing campaign will include the ringing of chicks (pulli) from the following species; Northern gannets (a sample of these will also be colour-ringed using orange colour rings with a three letter alpha-numeric code, on the right tarsus, under an EURING registered scheme), 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. This will require access to Burhou for a few days during July. It may also include the capture by hand of full-grown and young razorbill and guillemot. Other species chanced upon incidentally such as peregrine falcon, northern fulmar, Eurasian oystercatcher and rock pipits may also be ringed during seabird ringing operations at the discretion of the ringer in charge. All seabird ringing trips will be carefully planned to balance the need for data acquisition against likely disturbance.

CIBRS/ABO ringers will provide a count of the apparently occupied great cormorant nests on Little Burhou recorded during their annual ringing trip. They will record nest data including, when feasible, the number of nests present and the brood or clutch sizes so that estimates of productivity can be made and compared between years. A boat-based count scheduled by the AWT will also be undertaken in case a ringing trip cannot occur for any reason with ABO & CIBRS representatives offered the opportunity to take part.

BTO guidance for ringing methodologies will be followed, alongside site specific methodologies for ringing of Storm Petrels on Burhou. The CIBRS and ABO have been asked to clarify these methodologies but have declined to comment.

4.1.8 Seabird Strandings

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 Rat control

Contributors – Alderney Wildlife Trust

4.2.1.1 Biosecurity monitoring on Burhou and Coque Lihou.

Rat presence will be monitored on Burhou. If resource allows, they will also be monitored on Coque Lihou, L'Etac de la Quoire, the Twin Sisters stacks and the Hanaine Bay stack. Stocks of toxic bait will be maintained should an incursion be detected on Burhou or Coque Lihou. The bio-security plans for Burhou and Coque Lihou will be developed to help ensure any incursion by rodents is treated effectively and in a timely manner. This will include eradication and public outreach plans. A method to monitor for the presence of rats during the seabird breeding season should be investigated, for example, there may be potential for using audio recording equipment or camera traps to monitor for rodent presence and relay this information to the mainland via the PuffinCam's internet link.

4.2.1.2 Protections against predation for common tern (if they return to a nesting site)

As in 2023, 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 Monitoring predation on razorbill and guillemot sites

Remote cameras will be deployed on known guillemot and/or razorbill nesting sites to investigate the potential impact of rats and/or other predators on their breeding performance. Locations of any/all cameras will be shared with the CIBRS/ABO ringers in advance of any seabird ringing activity where the bird ringers may come into contact with any deployed cameras.

4.2.2 Bailiwick Bat Survey

Contributors – Alderney Wildlife Trust

4.2.2.1 Presence of bats, small mammals, and insects on Burhou

Presence of bats, some other small mammals, and some insect species on Burhou will continue to be monitored by the deployment of acoustic bat detectors as part of the Bailiwick Bat Survey. To limit disturbance on nesting seabirds, only the second survey period will be completed. This will require landing on Burhou twice between August to the end of October, approximately four days apart (to deploy and retrieve the detector respectively). This survey has been done previously. The detectors can be set up in ca. 5 minutes, so any additional time on island for this survey will be minimal.

4.3 Marine

The marine survey programme is designed to establish baselines and track any changes over time in populations and habitats in the Ramsar site. This is in line with the aims of the Ramsar convention, through implementing a range of marine habitat and species surveys, detailed below. It also features a number of citizen science activities, with the aim of encouraging members of the public to participate in the surveys.

4.3.1 Phase I intertidal Survey

Contributors – Alderney Wildlife Trust

4.3.1.1 Phase 1 Intertidal Survey of Clonque and Les Etacs

Phase I intertidal habitat biotope mapping surveys will be carried out for the intertidal zone of Clonque Bay and Les Etacs. Surveying will follow JNCC Procedural Guideline 1-1 Intertidal Resource Mapping using Aerial Photographs (Davies et al., 2001). Work will be to be undertaken during low spring tides and will likely occur from April/May – October 2024.

4.3.2 Shoresearch

Contributors – Alderney Wildlife Trust

4.3.2.1 Shoresearch Quadrat Surveys

Shoresearch quadrat surveys will be conducted in 2024 to collect intertidal (rocky-shore) species richness data for the Ramsar Site's intertidal habitats. This may also include recording the presence and density of marine invasive non-native species and/or climate change indicators.

4.3.2.2 Shoresearch Walkover Surveys

Shoresearch walkover surveys will be continued as an outreach and educational tool for members of the public.

4.3.3 Climate change driver assessment

Contributors – Alderney Wildlife Trust

4.3.3.1 Coastal Erosion Surveys

AWT will to continue to undertake coastal erosion monitoring assessment at selected monitoring stations within Clonque Bay for 2024, following the methods used in 2023 (Purdie et al. Unpublished).

4.3.4 Green Ormer surveys

Contributors – Alderney Wildlife Trust

4.3.4.1 Green Ormer Tagging and Abundance Surveys

Green ormers will be surveyed and tagged during dedicated surveys. Repeatable, quantitative, surveys in designated survey areas are used to maintain the quality and usefulness of data collected. During each survey, any ormers found will be measured, quality assessed and, if large enough, fitted with a small plastic numbered tag for future identification.

If resources allow, a review into the results of this mark recapture study will be drafted.

4.3.5 Crab surveying

Contributors – Alderney Wildlife Trust

4.3.5.1 Intertidal Crab Abundance and Population Dynamic Surveys

Crab abundance and population dynamic surveys will be conducted throughout the year, following States of Jersey methodology. This survey was updated in 2022 to include repeated transects at the same locations to increase quality and usefulness of data collected.

4.3.5.2 Intertidal Crab Photo Bank

Photos will be taken of crabs to monitor potential diseases. Citizen science volunteers will be invited to take part in these surveys.

4.3.6 Marine Invasive and Non-Native Species Assessments

Contributors – Alderney Wildlife Trust

Several aspects of AWTs wider marine invasive non-native species (INNS) plan are relevant to the Alderney Ramsar Site.

4.3.6.1 Marine INNS Monitoring

For 2024, several field-based surveys will be initiated, resource dependant, to help record marine INNS presence, density and habitat alteration impacts of across Alderney, including:

- The presence of 'established' and 'potentially new' marine INNS will be recorded through current AWT marine citizen science projects with volunteers: Shoresearch and Seasearch, across Alderney.
- Following the presence of the marine INNS: Pacific oyster (*Magallana gigas*) found at intertidal bays: Corblets, Braye and Longis, a new citizen science project will be developed to record this marine INNS' presence, abundance, size, and habitat preference, following methods described in Natural England, 2009.
- Following the presence of the marine INNS: devils tongue seaweed (*Grateloupia turututu*), a new field-based survey will be designed to assess this marine INNS growth, community/habitat alteration and relationship with climate change variables (sea surface temperature, storm events etc.).
- Adhoc sightings of marine INNS recorded by AWT staff/volunteers/public will be recorded via iRecord/public sightings book.

Any of these which take place within the Ramsar Site in 2024 will be reported to the 2024 Annual Review.

4.3.6.2 Marine INNS Outreach and Education

For 2024, a series of engagement activities are recommended, resource dependant, to create awareness of marine INNS and how to reduce the spread on Alderney, including:

- Production of marine INNS identification posters (e.g. marine species ID key features/what to spot/who to contact) for potential and established species within the harbour area (for all marine users).
- Marine INNS identification workshops for marine users, appropriate stakeholders and the public.
- Ongoing engagement activities with States of Alderney, Guernsey, Jersey Government departments and other appropriate stakeholders (e.g. Guernsey Nature Commission) related to marine INNS management options and new marine INNS recorded across the Channel Islands and/or further afield (e.g. UK and France).
- Potential to offer marine users/vessel owners an 'AWT marine INNS check' procedure for marine INNS attached to their vessels at the end of the 2024 boating season.
- To develop appropriate social media/PR information to the public on the impact of marine INNS, how to record and reduce the risk of spread (e.g. circulate 'check, clean and dry' procedure).

4.3.6.3 Management of Marine INNS

For 2024, the AWT should consider pro-active marine INNS management options which could include species eradication (e.g. Pacific oyster) and use (harpoon weed (*Asparagopsis armata*) for cattle feed). Such management options should be implemented pro-actively but based on sound evidence, stakeholder and public engagement, guidance and required licences/permissions. This should include appropriate environmental management plans/summaries for the removal/marine INNS waste (e.g. oyster shell remains). The methods for control planned to take place within the Ramsar Site will be submitted to the Ramsar process as described in Section 1 of this report.

4.3.7 Seasearch

Contributors – Alderney Wildlife Trust, Seasearch volunteers

4.3.7.1 Promote Seasearch snorkels and dives within the Ramsar Site

Liaise with and support the local Seasearch group, the Alderney's Seasearch snorkel group and other local/regional scuba divers/snorkellers in a programme of sub-tidal marine life survey (resource dependent). Ensure completed survey forms are submitted to the local Seasearch co-ordinator. These surveys are then independently verified by Seasearch (UK national staff) and added to national biodiversity network. Records are then passed onto the local record centre(s). Advocate for further Seasearch dives within the Ramsar site and training for residents of Alderney to increase data collection.

4.3.7.2 Invite Seasearch Representatives onto the Alderney Ramsar Stakeholder Forum

Invite representatives of Seasearch to the Alderney Ramsar Stakeholder forum, because they are an organisation which is responsible for voluntary work undertaken on the Ramsar Site, and they can bring valuable expertise on marine surveying.

4.3.8 BRUV

Contributors – Alderney Wildlife Trust

4.3.8.1 BRUV Surveys in Hanaine Bay

Baited Remote Underwater Video (BRUV) surveys of Hanaine bay will continue in 2024, with the aim of three surveys to be conducted within the bay. Video data will be analysed to record species presence. Data will be maintained by the AWT and submitted to the local records centre to inform species presence and abundance. Additional surveys may be completed where possible.

4.3.9 Inshore Plankton

Contributors – Alderney Wildlife Trust

4.3.9.1 Planktoscope Surveys in Clonque Bay

Two Planktoscope surveys will be completed in Cloque bay in 2024, with data submitted to Ecotaxa (https://ecotaxa.obs-vlfr.fr/).

4.3.10 Fish-Intel Project

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

4.3.10.1 Support for Fish-Intel Project

Continue to support the Fish-Intel project in 2024. The Fish-Intel project is a three-year project which started in 2022 and has seen a Channel Island wide network of acoustic monitoring of commercially important fish species and cetaceans.

On Alderney this includes two survey sites where acoustic receivers, which monitor tagged fish, deployed together with F-pods, which monitor the acoustic communications of cetaceans. These are located off Hanaine bay and Longis bay. A new design of acoustic receiver has been deployed in Hanaine Bay by Jersey Marine Resources.

This project is run by Jersey's Marine Resources team and Plymouth University, and AWT will offer support if required.

4.3.11 Seawater Quality Testing

Contributors – Alderney Wildlife Trust

4.3.11.1 Test Physical Parameters of Seawater

AWT will begin a new programme of seawater physical parameters testing, with citizen science at the forefront and data made publicly available. The survey and equipment for it is available because of a grant from Sea-Changers to AWT, and will measure sea surface temperature (SST), pH, salinity, dissolved oxygen (O2) and turbidity (suspended particulate matter) at selected inshore bays of Alderney. These parameters can help identify the natural baseline parameters of Alderney's seawater and monitor wide-scale issues such as climate change (SST increases) and ocean acidification (pH fluctuations).

If funding can be sourced (ca. £3,500), a full programme of water quality tests including biological monitoring may be implemented.

4.3.12 Marine Mammal surveying

Contributors – Alderney Wildlife Trust

Marine mammal species information is collected from dedicated surveys and from casual sightings. Records will be maintained for both cetaceans and pinnipeds, and submitted to the Alderney Biodiversity Centre.

4.3.12.1 Effort-based Grey Seal surveying

The surveying of grey seals across the Channel Islands and the adjacent French coastline is coordinated by the Groupe Mammalogique Normand (GMN) and undertaken locally by the AWT. Surveys are undertaken on dates agreed by the network and occur during the lowest spring tides of each phase of the grey seal reproductive cycle. Findings are collated regionally to inform population trends. Pending a review of methodology, a new survey programme may be introduced following the outcome of an MSc project (Purdie et al. Unpublished). Conduct a terrestrial census of grey seals on Burhou between October-December.

4.3.12.2 Grey Seal Identification

All individuals seen during the surveys will be photographed whenever possible to obtain high resolution images. Images of individuals with distinguishing fur patterns and other features will be collated and added to a local Identification (ID) catalogue. The ID catalogue can then be used to quantify re-sightings of individuals and generate population estimates.

4.3.12.3 Cetaceans

Opportunistic recording of cetaceans should continue in 2024 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, will be deployed in 2022 as part of the Fish Intel project (see section 4.3.3.2).

4.3.13 Marine Mammal Strandings

Contributors – Alderney Animal Welfare Society, Alderney Wildlife Trust

4.3.13.1 Support BDMLR response to marine mammal strandings

Support will continue to be given to local British Divers Marine Life Rescue (BDMLR) if a marine mammal stranding occurs in 2024. The management of marine mammals on our shores (those subject to human disturbance) will be coordinated through AAWS and BDMLR trained staff.

4.3.13.2 Review Marine Mammal Stranding Action Plan

Annually review the action plan in place between the Harbour office, AWT and AAWS in dealing with both live and deceased stranding of marine mammals.

4.3.13.3 Train Volunteers to Respond to Marine Mammal Strandings

Encourage a wider pool of volunteer contacts with basic training in monitoring and reducing disturbances in cases of marine mammal strandings.

4.3.14 Academic projects

Contributors – Alderney Wildlife Trust

4.3.14 Support Academic Projects

Support and lead for academic projects will be continued in 2024, if resources allow and suitable projects can be found. Any projects which take place 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.

4.3.15 Marine Conservation Society Beach Cleans

Contributors – Alderney Wildlife Trust

4.3.16.1 Beach Cleans at Clonque, Hanaine and Platte Saline

Beach cleans will be conducted at Clonque Bay, Hanaine Bay, and Platte Saline, with records of waste reported to the Marine Conservation Society.

4.4 Events and 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 2023. 'PuffinCam' and 'GannetCam' will be re-installed.

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 livestream will be available through the Facebook page (or potentially the AWT Staff facebook page), and the AWT Website. The AWT will also maintain a live stream from the cameras at its wildlife 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

A new webcam, SealCam, may be implemented if resources can be secured for this. This could be useful for both ecological (monitoring the seal population which have begun breeding on Burhou), and outreach. This will require no new infrastructure on Burhou, but will require the purchasing of a new camera, replacing one of the existing Puffincams. In addition, there will be some additional time and hosting costs, all of which will have to be provided by the AWT.

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 Activate of PuffinCam

'PuffinCam' will be reactivated on Burhou in 2024 using the same equipment and procedures as in 2023. To minimise disturbance to the seabird colony on Burhou, it will be activated before Puffins make landfall in early April or before if possible. The camera is 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 2025 closed season.

4.4.1.5 Investigate Further Uses for PuffinCam

The use of the camera for other work, e.g. resighting of colour ringed gulls by the Alderney Bird Observatory, would also be possible when not required for Atlantic puffin observations, and this can be arranged on request.

It is important that the PuffinCam and the relay equipment remains operational through the season. Any trips required for maintenance within the closed season be coordinated by the ARAG and follow the methodology detailed in Appendix 3, with the Harbour office and SoA notified.

4.4.1.6 Activate GannetCam

'GannetCam' will be activated again in 2024. 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' (hereafter "Sula") 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 sites 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

Free educational boat tours will be offered to students at St Anne's School. Furthermore, as some may be unable to access this provision via the school all residents under the age of 16 will be offered a free educational boat tour ticket, in collaboration with St Annes School and the Youth Club. In time, it is hoped that all children growing up on Alderney should have accessed the Ramsar site from the water. Feedback will be gathered regarding outcomes and impact from these tours to highlight the benefits of running free tours.

4.4.3 Community engagement and public awareness events

Contributors – Alderney Wildlife Trust

4.4.3.1 Public Engagement Events

At least one public engagement event will be undertaken in the Ramsar site for World Wetlands day, Wildlife Week, National Marine Week, Alderney Week and the Wildlife Festival, 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 work involved in this programme.

4.4.3.2 Citizen Science

In 2024 AWT will continue to promote opportunities for local people to get involved in citizen science on the Ramsar site, in particular, through public intertidal surveys, PlanktoScope surveys, coastal erosion surveys and water parameters surveys.

A five-step Community Engagement plan will be implemented:

1. Develop a survey to be completed with users of and within the Ramsar site.
1. Create an evaluation form that will capture feedback and evaluation of those that have completed a tour? Digital access and hard copy. QR code.
2. Where possible, utilise Team Wilder projects to gain further in-depth insight. 2024 will utilise Memory Lane: Tales from Burhou.

3. Explore a possible collaboration with the Landmark Trust to capture the experiences of Fort Clonque visitors.
4. Incorporate a community engagement aspect within signage by embedding a QR code to enable us to develop other engagement tools. For example; local literature, history, sound and imagery.

In 2024, AWT will invite residents and visitors to build a legacy of memories. These insights will be reviewed in relation to Ramsar, providing valuable information and community-based needs to future Ramsar development.

4.5 Advisory and Legislative

4.5.1 ARS4

4.5.1.1 Deliver ARS4

In 2023, the GSC agreed a development plan for the next five-year Alderney Ramsar Strategy 2024-2029. This included a stakeholder and public consultation plan. In late 2023 an outline plan was given to stakeholders for their consideration, and feedback was received via a form and in the Alderney Ramsar Stakeholder forum (See section 4.5.1). This feedback will be presented alongside the first draft of ARS4 when it is presented to GSC. Until ARS4 is agreed by GSC, GSC have resolved to extend the action plan for 2023 so that Ramsar works may continue uninhibited. ARS4 will be developed in line with the development plan alongside stakeholders, ARAG and the SoA.

Amendment requested by GSC: 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.

4.5.2 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.

4.5.2.2 Invite a Lay-person onto ARAG

In the Alderney Ramsar Stakeholder forum it was suggested that the ARAG membership be expanded to include a lay person, potentially with experience in community engagement. Furthermore, a standard methodology reporting form which activity organisations can fill out to submit standardised proposals to the ARAG will be developed for ARS4.

4.5.3 The Puffin Friendly Zone

4.5.3.1 Support and Advertise the Puffin Friendly Zone

Support for the Puffin Friendly Zone via the Alderney Harbour Office and stakeholders will continue in 2024. The advertisement of the zone to water users will be developed through signage and media engagement as well as through publication with pilotage information for Alderney.
The administrator will continue to support the addition of the PFZ to admiralty charts and other charts used by marine users.

4.5.4 Ramsar signage

4.5.4.1 Present Updates of Ramsar Information Boards to Stakeholders

A draft update for the Ramsar sign was produced in 2023 (Purdie et al. Unpublished). Three final drafts will be put forward to stakeholders and GSC in 2024. Potentially expand signage to include an additional sign that could be positioned nearer Fort Clonque, close to the Zig Zag walking route. This would better connect the other three signs along the coastal path looking out onto the Ramsar site.

4.5.5 Sensitive wildlife signage

Contributors – Alderney Wildlife Trust

4.5.4.1 Erect Temporary Sensitive Wildlife Signage

As in 2023, temporary signage alerting the public to sensitive wildlife throughout Alderney (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 my inadvertently cause harm to wildlife. Installation will be subject to a documented assessment of the risks/ benefits.

4.5.6 Networking with other Channel Island Ramsar Sites

4.5.6.1 Attend the IIEM

The maintenance of links and collaboration with other Channel Island Ramsar Sites will continue in 2024. The Ramsar Administrator and activity organisations (resource dependant) will attend the Inter-Islands meeting in 2024, at which a pan-Channel Island Ramsar meeting will be held.

4.5.6.2 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.

4.5.6.3 Maintain Links with International Community

International links developed in 2022 during the HPAI outbreak will be maintained to ensure the best possible practice is followed when responding to HPAI, and to help develop new survey techniques and identify training opportunities.

4.5.7 Websites

4.5.7.1 Maintain Channel Island Ramsar Website

The Alderney Ramsar Administrator will continue to maintain the Channel Island Ramsar Website.

4.5.7.2 Upload Alderney Ramsar Documentation to SoA Website

Work with the SoA to upload Alderney Ramsar documentation to their website.

4.5.8 RIS Update

4.5.8.1 Upload RIS Sheet

The Alderney Ramsar Administrator will continue to work with the JNCC to update the Alderney Ramsar Information Sheets (RIS) in 2024.

4.5.9 Ramsar Stakeholder Forum

4.5.9.1 Support Two Ramsar Stakeholder Forums in 2024

Two Alderney Ramsar Stakeholder Forums will be hosted in 2024 with the Harbour Master chairing. A representative from Seasearch will be invited to join the stakeholder group.

4.5.10 Burhou Maintenance

4.5.10.1 Repairs to Burhou Warden's Hut

The Warden's Hut on Burhou, which houses the sensitive webcam equipment, is in need of repairs. The AWT have offered to support the Burhou Warden in repairs for this.

4.5.10.2 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.

References

Bush, J., J. Hart, and M. Broadhurst-Allen. 2021. Alderney's West Coast and Burhou Islands Ramsar site and Other Sites Annual Review 2020. Page 84. Alderney Wildlife Trust, Alderney.

Clifford, D., J. Bush, M. Broadhurst-Allen, and J. Hart. 2020. Alderney's West Coast and Burhou Islands Ramsar site and Other Sites Annual Review 2019. Page 127. Alderney Wildlife Trust, Alderney.

General Services Committee. 2023. GSC Minutes September 2023: 4.3 Alderney Ramsar Strategy 2024-2029 – Development Plan. Page 4 of 10. States of Alderney, Island Hall.

Lane, J. V., R. Jeavons, Z. Deakin, R. B. Sherley, C. J. Pollock, R. J. Wanless, and K. C. Hamer. 2020. Vulnerability of northern gannets to offshore wind farms; seasonal and sex-specific collision risk and demographic consequences. Marine Environmental Research 162:105196.

Peschko, V., B. Mendel, M. Mercker, J. Dierschke, and S. Garthe. 2021. Northern gannets (Morus bassanus) are strongly affected by operating offshore wind farms during the breeding season. Journal of Environmental Management 279:111509.

Pollock, C. J., J. V. Lane, L. Buckingham, S. Garthe, R. Jeavons, R. W. Furness, and K. C. Hamer. 2021. Risks to different populations and age classes of gannets from impacts of offshore wind farms in the southern North Sea. Marine Environmental Research 171:105457.

Purdie, A. 2023. Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Action Plan 2023. Pages 1–24. Alderney Wildlife Trust, Alderney.

Purdie, A., M. Broadhurst-Allen, D. Whitelegg, M. Lewis, T. Cox, J. Horton, and A. de Castella. Unpublished. Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2023. Alderney Wildlife Trust, Alderney.

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

Purdie, A., J. Bush, J. Hart, M. Broadhurst-Allen, D. Whitelegg, and J. Horton. 2022. Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2021. Pages 1–99. Alderney Wildlife Trust, Alderney.

The European Parliament And The Council Of The European Union. 2014. Council Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

Tremlett, C. J., N. Morley, and L. J. Wilson. 2024. UK seabird colony counts in 2023 following the 2021-22 outbreak of Highly Pathogenic Avian Influenza. Sandy.

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.

Wanders, K., · Almalki, O. Heggoy, T. Lislevand, C. Mcguigan, G. Eichhorn, G. Gabrielsen, V. Azarov, · Khasyanova, and T. Székely. 2023. Incubation behaviour of the Common Ringed Plover Charadrius hiaticula at different latitudes. Journal of Ornithology 164.

Wieckowski, F., and A. Ferrar. 2016. Alderney West Coast and Burhou Islands Ramsar Site Management Strategy 2017-2021. Page 24. Alderney Wildlife Trust, Alderney.

Appendix 1: Seabird Monitoring Methodologies

Reference	*Heading*	*Details*
1.1	**Method Title**	**Post season Apparently Occupied Burrow Survey**
	Target(s)	Atlantic puffin
	Aim(s)	Census
	Brief description	A post-season count of the number of Atlantic puffin apparently occupied burrows (AOB) on Burhou. This is conducted after the puffin breeding season to limit disturbance by looking for indicators of occupation around the entrance to the burrow.
	Methodology	1.Known puffin burrow areas 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 remove cameras and boat obs. At minimum 8 hours observation. 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 by the entrance, the presence of a strong smell of ammonia, and the lack of rabbit droppings. 6.Burrows showing more than two signs are tallied as “confident” AOBs, burrows with just one sign are tallied as “potential” AOBs. 7.Any burrow which has been reviewed has a pasta shell placed at the entrance, to avoid double counting. 8.Burrows which are identified as certain within the productivity plots are marked with a flag, and the areas are photographed from the viewpoint of the PuffinCam. Repeat this for uncertain burrows if time allows. 9. Submit “confident” AOB count to Seabird Monitoring Programme (SMP) database. 10. Report in Ramsar Report, giving upper (“potential”) and lower (“confident”) AOB estimates.

Reference	*Heading*	*Details*
	Additional detail	In 2024 additional steps conducted: 1. Active burrows within productivity plots (ca. four 10 m2 plots) (see Atlantic puffin productivity methodology) are recorded via PuffinCam during the early season. 2.Compare the number of AOBs recorded during the early season (monitored within the small productivity plots) to assess accuracy of the count across the island.
1.2	**Method Title**	Raft Counts
	Target(s)	Atlantic puffin
	Aim(s)	Census & late season potential recruitment count
	Brief description	Early season raft counts within the Puffin Friendly Zone through April and May when puffins are likley to be incubating eggs to give an estimate of the number of pairs.
	Methodology	1. Counts of Atlantic puffin rafting within the 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.
	Additional detail	In 2023, late season raft counts were only conducted via boat due to a fault in PuffinCam.
1.3	**Method Title**	Mapped burrows with remote camera observation
	Target(s)	Atlantic puffin
	Aim(s)	Productivity
	Brief description	PuffinCam (Pan-Tilt-Zoom) remote camera moves between several plots through the day, AOBs are identified in the early season, and monitored through the season to track signs chicks are present (fish returns).

Reference	*Heading*	*Details*
	Methodology	1. Select plots and set PuffinCam to track between these 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, a burrow which has two fish returns on separate days during the late season is marked as successful. 4. Also record any predation or kleptoparasitism events and link to a burrow if possible.
	Additional detail	Be vigilant that some burrows have multiple entrances and record these.
1.4	**Method Title**	Nest site mapping
	Target(s)	Northern fulmar
	Aim(s)	Productivity and partial census
	Brief description	Perch are mapped from vantage points (see Purdie *et al.* 2023), and consistently occupied nests are identified and observed through the breeding season to estimate productivity.
	Methodology	1. From vantage points (Purdie *et al.* 2023) 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.
	Additional detail	Additional northern fulmar AONs are recorded during round island seabird censuses.
1.5	**Method Title**	Aerial census
	Target(s)	Northern gannet
	Aim(s)	Full colony census of Les Etacs and Ortac
	Brief description	Count of AOTs from aerial photographs.

Reference	*Heading*	*Details*
	Methodology	1.Aerial photographs are taken in June or July 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 or not nest material is visible/present – as long as a site is suitable for breeding it is counted. 4.Birds occupying 'club' sites are not counted. Where non-breeders and immatures 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)
	Additional detail	It is advised that apparently occupied nests (AONs) are identified where possible as well as mapping all AOTs
1.6	**Method Title**	Randomly selected mapped AONs
	Target(s)	Northern gannet
	Aim(s)	Productivity
	Brief description	Nest sites are mapped at random and observed weekly from mid-March through to October to determine the proportion which fledged a chick.
	Methodology	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.

Reference	*Heading*	*Details*
	Additional detail	
1.7	**Method Title**	Annually repeated mapped AONs
	Target(s)	Northern gannet
	Aim(s)	Productivity
	Brief description	Nest sites are mapped at random and observed weekly from mid-March through to October to determine the proportion which fledged a chick.
	Methodology	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. 4. Laying date, non-layers and the stage of failure (e.g. egg, chick) are identified.
	Additional detail	For AON map see 2022 Ramsar Report (Purdie *et al*. 2023).
1.8	**Method Title**	Anthropogenic Material Survey
	Target(s)	Northern Gannet
	Aim(s)	Measure anthropogenic material within nest returns, and record entanglements
	Brief description	Record nest material brought back to Les Etacs by northern gannets during the early nesting season, and record entanglement through the season.

Reference	*Heading*	*Details*
	Methodology	***Material returns*** During peak nesting season for the gannets (ideally early March to mid-April), all nest material brought back to the colony is recorded and categorised as either anthropogenic if it is clearly man-made (e.g. plastic rope, netting, or other material), or natural (e.g. seaweeds). The colony is observed from the viewpoint at The Guns Low, from which about 70% of the occupied part of the colony is visible, where Gannets can be seen arriving from both northerly and southerly directions (Purdie et al., 2023). Observations are made for one hour at ten points during mornings within the peak nesting season and are conducted by one observer using sufficient optical magnification to discern the identity of nesting material (generally 8x magnification binoculars are sufficient, but occasionally a 25x telescope will be used to discern small pieces of material). 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)). ***Entanglements*** Throughout the gannet nesting season (early March – early October), telescopes (x25) are used to search Les Etacs every seven days for entangled birds. The colony is observed from The Guns North vantage point, from which about 70% of the occupied part of the colony is visible. Observations are made for approximately 15 minutes, which was enough time to slowly scan the whole colony. 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. 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)).
	Additional detail	
1.9	**Method Title**	Population size
	Target(s)	Guillemot, razorbill
	Aim(s)	Population size of guillemot, razorbill
	Brief description	Population size of guillemot and razorbill
	Methodology	Conduct onshore observations to estimate counts of guillemots and razorbills at all potential sites. Counts undertaken between 10th May and 3rd June (the earliest date of chick departure) are designated ‘in-season’ for guillemots, whereas all counts between 1st June and 1st July are designated ‘in-season’ for razorbill (as they nested later than guillemots).

Reference	*Heading*	*Details*
	Additional detail	
2	**Method Title**	Productivity
	Target(s)	Guillemot, razorbill
	Aim(s)	Productivity of guillemot, razorbill
	Brief description	Success of observable guillemot and razorbill AOSs is recorded through vantage point observations and camera trap observations.
	Methodology	Count the number of nests or nesting attempts following intensive monitoring at a sample of potential nesting sites. Monitor breeding activity every few days (e.g. fish returns, attendance) via onshore observations with a telescope alongside population counts. Where trail cameras were deployed overlooking nesting areas, images were also used to count nesting attempts and record their outcome. Any signs of previous nesting activity, such as broken eggshells found at new loci during the post-season site visits, were also added to the counts posthumously. 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.
	Additional detail	North-Stack High is observed differently because a large sample of guillemot AOS are clearly visible from the shore.
2.1	**Method Title**	Round Island Census
	Target(s)	European shag, great cormorant, herring gull, lesser black-backed gull, great black-backed gull, common tern, northern fulmar
	Aim(s)	Census of breeding birds.
	Brief description	Boat-based survey counting AONs and AOTs of birds around the Ramsar site and Alderney.
	Methodology	1. Circa three counts conducted in the year 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.
	Additional detail	
2.2	**Method Title**	Nest observation
	Target(s)	Ringed plover

Reference	*Heading*	*Details*
	Aim(s)	Population size and productivity
	Brief description	Monitor number and success of ringed plover nests.
	Methodology	Nests on Platte Saline, Clonque and Saye are located as soon as possible once laying had 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. Located nests are then checked regularly by vantage-point observation (using a telescope) at least three 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 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 egg shells caused by avian predation). Egg and chick survival is calculated using the Mayfield method.
	Additional detail	**Suggested amendments for 2024:** - Better identify causes of nest failure at the egg stage by putting located nests under 24-hour observation using trail cameras. Specifically, placing Ltl AcornT 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 would only be placed in areas with sufficient cover that the camera would not itself draw the attention of people or intelligent predators (e.g. crows) to the nest. While placing cameras does necessitate approaching the nest, and so potentially causing disturbance to a breeding bird, cameras would be pre-set and total time at the nest would be minimal. Furthermore, Wanders et al., (2023) have found that incubation tends to resume within ten minutes of a disturbance event, meaning that disruption would be minimal but would give potentially valuable data for planning evidence-based conservation actions to help the ringed plover population.
2.3	**Method Title**	Nest cordons
	Target(s)	Ringed plover
	Aim(s)	Improve ringed plover clutch survival

Reference	*Heading*	*Details*
	Brief description	Installation of rope cordons to protect ringed plover nests
	Methodology	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. 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. 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. Public information signs are displayed alongside the cordons. Once a nest at Saye is identified, place another rope cordon around this nest as well.
	Additional detail	**Suggested amendments for 2024:** **-** The site at Saye has now been occupied for two years, in similar locations. Rather than wait for breeding to begin to be sure of a nest, we suggest deploying the cordon as in 2023 at the same time as the Platte Saline cordons. - Anecdotal evidence over the last two years shows that some dogs do not pay attention to the lower rope line, and similar conservation projects in the UK only use the top line of rope, while achieving success (D. Whitelegg, pers. comm.). We therefore suggest only using the upper line in 2024 to lower deployment and maintenance time.
2.4	**Method Title**	Disturbance monitoring and causes of nest failure.
	Target(s)	Ringed plover
	Aim(s)	Improve ringed plover clutch survival
	Brief description	Monitoring of disturbance and potential causes of nest failure to ringed plover nests using vantage point observations.

Reference	*Heading*	*Details*
	Methodology	Use vantage-point observations to record disturbance in half-hour intervals throughout the nesting season, with each nest observed for two high-tide and two low-tide periods where possible. Observations may include ringed plover responses to humans, dogs, or natural predators (e.g. crows, kestrels), the estimated distance at which this response was triggered, and the duration of any defensive response (e.g. flushing from a nest, chicks 'freezing').
	Additional detail	**Suggested amendments for 2024:** - Where it is possible to deploy trail cameras on incubating nests, do so and review footage rather than conducting additional observations. In cases where this is not possible (e.g. camera would attract attention to nest), conduct observations for one hour per nest per week in the early morning (within three hours of dawn) when avian predators are most active. For hatched nests, follow this procedure to better understand potential causes of nest loss at the chick stage. The increase in observation period is to allow for increased potential to record causes of nest failure.
2.5	**Method Title**	WeBS - Wetland Bird Survey
	Target(s)	Waterbirds
	Aim(s)	Standardised count of waterbirds using bays.
	Brief description	Monthly count of birds using bays within the Ramsar site
	Methodology	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, Clonque and Platte Saline are monitored within the Ramsar Site. All birds using (e.g. not simply transiting through) the bays are recorded.
	Additional detail	Data is submitted to the BTO and is avaliable through (https://www.bto.org/our-science/projects/wetland-bird-survey/data/submit-data-request)
2.6	**Method Title**	Gull Transect Census

Reference	*Heading*	*Details*
	Target(s)	Gulls
	Aim(s)	Census of breeding gulls and other birds (which are not burrow nesting) on Burhou.
	Brief description	Transect counts of nesting gulls on Burhou.
	Methodology	SMP methodologies will be followed. Extracted from the Seabird Monitoring Handbook: (Walsh et al. 1995) “ 2. The counting unit is again the active nest (equivalent to an AON), defined slightly differently than in Method 2: 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). 3. Follow the pattern of laying by counting complete nests and clutches in sample areas (preferably randomly-selected: General methods) every few days and make the count of the complete colony when laying is completed. Alternatively, from casual observations you may be able to delay the count until the first chicks hatch. If this is not possible, delay the count until the last week of May, which is generally suitable for most species and regions. 4. 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. 5. Observers should zigzag across the strips so as to cover all the area. 6. Count and note contents of every complete (active) nest. 7. 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. 8. 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 900 to the route taken during the original count. 9. Repeat the above procedure for each transect.

Reference	*Heading*	*Details*
		10. 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) 11. Total population is the sum of active nests in each area.
	Additional detail	

Appendix 2: Ramsar 2024 Oystercatcher census method submission

Background and justification

Eurasian oystercatcher (*Haematopus ostralegus*) are distinctive and vociferous wading birds. Despite being commonly encountered wading birds, they are listed as Vulnerable on the IUCN Red List for Europe (BirdLife International, 2021) due to a rapid population decline. In the UK, these declines amount to a 22% fall in the breeding population over 25 years (Harris et al., 2021), the reason for which is unknown. Monitoring how, and where relevant why, changes to breeding populations are occurring is therefore fundamental in planning appropriate conservation action for the species.

In Alderney, oystercatchers are frequently encountered across the year but have not had a substantial history of in depth monitoring. Historic counts from the Wetland Bird Survey (WeBS) suggest that there has been a decline in the population recorded in breeding months of the year in Clonque Bay, which has the most complete history of monitoring, amounting to a 6% decline since 2017 (AWT, unpublished data). This trend is, however based on a single set of vantage point observations each month, meaning the trend is very sensitive to conditions on the day affecting the observed count. Having a more in depth understanding of how the breeding population of oystercatcher is changing would therefore be beneficial in understanding whether any action is needed for the species.

In 2021 and 2022, a more in-depth approach was achieved, with breeding pairs and productivity estimated using nest recording methods as nine and twelve breeding pairs in the Ramsar site respectively (Purdie et al. 2022, 2023). This approach allows for data to be collected on how the breeding population is changing, but is very time consuming, and given the relative abundance of (and hence degree of immediate concern about) oystercatcher, it may be excessive.

We therefore suggest that a less intensive census method be incorporated into the Ramsar work plan for 2024. Initially, we suggest a trial year focussing only on Clonque Bay which provides suitable habitat and is commonly used by oystercatcher. The methods we suggest below further allow for a productivity index to be produced, allowing for both the breeding population and its approximate productivity to be monitored over time. Should the census be successful, we suggest a repeat cycle of every three years to allow for regular standardized monitoring of how the population is changing, with the capacity to increase monitoring frequency (e.g. annually), extent (i.e. incorporating other areas of the island) or intensity (e.g. move to nest recording) if a concerning change is detected.

Method

We suggest following the O'Brien & Smith (1992) method for surveying lowland breeding waders. This is one of the census methods suggested by the BTO's Wader Hub, and is described at https://www.bto.org/sites/default/files/wader-hub-breeding-wader-census-guidance-2023-08-16.pdf, with some more detail on Oystercatcher-specific elements in Gilbert et al. (1998).

In brief, the method involves three visits to a site between early April and late June during either the three hours after dawn or the three hours before dusk, and involves walking to within 100 m of every point in the site along a set route with binoculars. This method therefore minimizes disturbance as there is no need to approach any nest or get close to adult birds, with the observer able to scan ahead with binoculars before advancing. Any evidence of breeding or pair attachment of waders is recorded on field maps (e.g. visible eggs, young, displaying or repeatedly alarm calling adults, distraction displays, or territorial disputes). This is then summed per visit to give an estimate of the number of breeding pairs. Approximate breeding success as a productivity index can then be

calculated based on the number of pairs still showing evidence of breeding on the last visit (indicating chick presence), divided by the maximum number of pairs estimated on any of the visits.

We suggest implementing this method in Clonque bay at low tide. Walking the site at low tide will allow for sufficient distance to minimize disturbance to breeding birds while still enabling breeding behaviours to be recorded. Our suggested route is shown in Figure 1. For even spacing of visits in line with mean lay (19/05), hatch (13/06), and fledge (18/07) dates for the UK, we suggest visits on the week commencing 15/04/2024 (courtship), the week commencing 20/05/2024 (nests present), and the week commencing 24/06/2024 (chicks present).

Figure 1: Proposed census route for oystercatcher in Clonque bay (solid red line), allowing surveying within 100 m of all points until the cliffs (dotted red line) while still being above the low tide mark (solid blue line). Background image: 2022 orthorectified aerial image from Digimap, Guernsey. A scale bar and north arrow are shown.

Additional conditions: weather should be dry and not windy (Gilbert et al. recommend wind below Beaufort Force 3).

Time estimate: one to two hours per visit including travel time to site, summing to four to eight hours in the field, with an additional two hours for data entry and analysis.

Cost estimate: none, only equipment required are binoculars and a field map to annotate.

References

BirdLife International. 2021. *Haematopus ostralegus (Europe assessment)*. *The IUCN Red List of Threatened Species* 2021: e.T22693613A200211681. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T22693613A200211681.en. Accessed on 30 January 2024

Gilbert, G., Gibbons, D.W., & Evans, J. (1998) *Bird Monitoring Methods: A Manual of Techniques for UK Key Species.* The Royal Society for the protection of Birds, Sandy, Bedfordshire, England.

Harris, S.J., Massimino, D., Balmer, D.E., Kelly, L., Noble, D.G., Pearce-Higgins, J.W., Woodcock, P., Wotton, S. & Gillings, S. (2022) *The Breeding Bird Survey 2021*. BTO Research Report 745. British Trust for Ornithology, Thetford.

O'Brien, M. & Smith, K. W. (1992) *Changes in the status of waders breeding on wet lowland grasslands in England and Wales between 1982 and 1989*, Bird Study, 39:3, 165-176, DOI: 10.1080/00063659209477115

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

Purdie, A., J. Bush, J. Hart, M. Broadhurst-Allen, D. Whitelegg, and J. Horton. 2022. Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Ramsar Review 2021. Pages 1–99.

Appendix 3. Puffin Equipment Repair During Closed Season Methodology

The puffin cam is essential for the ecological monitoring required to assess productivity, kleptoparasitism/predation, and population size of Burhou's Puffin population, and it has enabled a dramatic reduction in the traditional level of disturbance required to carry out monitoring in the breeding season which historically required multiple visits during the season.

Should the PuffinCam equipment on Burhou fail, it will be necessary to land on the island to repair or replace the broken equipment. This can be done with very little disturbance following the method detailed below.

The trip will be coordinated by the ARAG, with the Harbour Office, SoA and Activity Organisations notified.

Several precautions will be taken to minimise disturbance on the Breeding seabirds, the procedure is as follows:

1. A team of two will be landed on the south side of Burhou (away from the Puffin and Gull breeding area) by tender from Sula of Braye, which will then sit away from the Puffin Friendly Zone.
2. The team will walk directly to the warden's hut (shed) carrying replacement equipment with them. This will include spares to minimise the need for a revisit in case of failure during the visit.
3. The fault will be troubleshooted from the hut, out of view of the seabirds.
4. If any repairs need to be undertaken outside of the hut, the team will not walk across the Puffin or Gull breeding areas. The camera equipment is not located within a breeding area.
5. When complete, the team will radio for pickup, and walk directly from the hut to the pickup point on the south of Burhou.

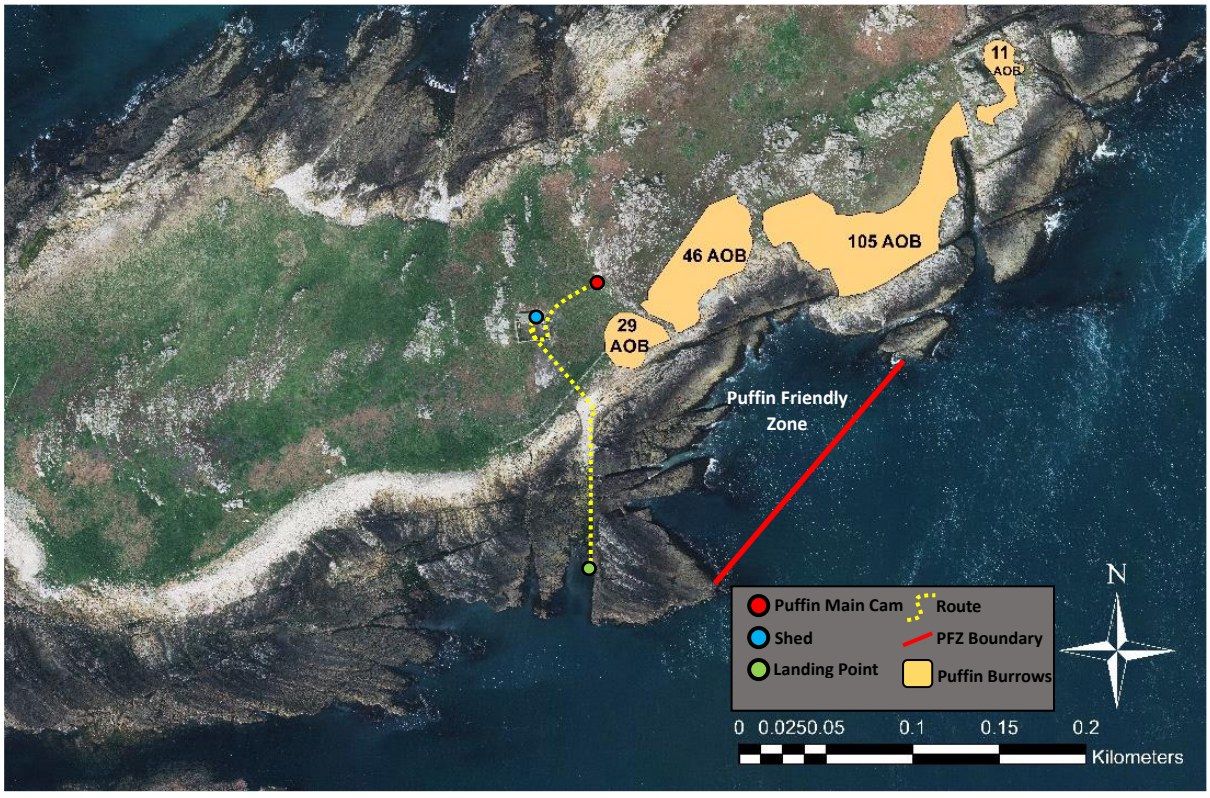

Figure 1. The breeding areas of the puffins, the landing point, shed and PuffinCam, as well as the intended route a team would take if required to replace parts directly attached to the camera.

Appendix 4. Trail Camera Monitoring of Ringed Plover Nest Sites

Better identify causes of nest failure at the egg stage by putting located nests under 24-hour observation using trail cameras. 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 would only be placed in areas with sufficient cover that the camera would not itself draw the attention of people or intelligent predators (e.g. crows) to the nest. While placing cameras does necessitate approaching the nest, and so potentially causing disturbance to a breeding bird, cameras would be pre-set and total time at the nest would be minimal. Furthermore, *Wanders et al. (2023)* found that incubation tends to resume within ten minutes of a disturbance event, meaning that disruption would be minimal but would give potentially valuable data for planning evidence-based conservation actions to help the ringed plover population.

References

Wanders, K., · Almalki, O. Heggoy, T. Lislevand, C. Mcguigan, G. Eichhorn, G. Gabrielsen, V. Azarov, · Khasyanova, and T. Székely. 2023. Incubation behaviour of the Common Ringed Plover Charadrius hiaticula at different latitudes. Journal of Ornithology 164.

Appendix 5. Document History

Version	Date	Contributors (**bold**), Reviewers (standard font) in order of receipt	Notes
1	06/02/24	**Alex Purdie, Kelly Huitson, Dr Tara Cox, Matt Lewis, Dr Mel Broadhurst-Allen, Abigail de Castella, John Horton**	Initial review compiled by A Purdie, sent to Activity Organisations for feedback.
2	23/02/24	Kelly Huitson, Kathy Kissock, Dr Mel Broadhurst-Allen, Dr Tara Cox, Matt Lewis, Roland Gauvain, Abigail de Castella, ABO/CIBRS (specific persons not named in feedback).	Feedback from activity organisations received by Ramsar Administrator (A. Purdie) and compiled. Sent to ARAG for review.
3	09/04/2024	Prof Charles Michele, Paul Buckley, Francis Binney, David Chamberlain, Dr Phil Atkinson	All ARAG feedback received and incorporated.
4	11/04/2024	Alex Purdie	Final version submitted to GSC.
4	12/07/2024	Theo Leijser (States of Alderney Chief Clerk), Lin Maurice (GSC Chair), Bill Abel (GSC), Ian Carter (GSC), Steve Roberts (GSC).	Presented to GSC by Chief Clerk Alderney Ramsar Administrator present to answer questions. GSC approved recommendations, with an addition from GSC made to section 4.5.1.1.