

Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Action Plan 2021

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Executive Summary

1. The 2021 *Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites* annual action plan describes work to be undertaken in 2021 during the fifth and final year of the 2017 – 2021 Ramsar Management Strategy. This action plan incorporates the objectives outlined in the five-year management strategy and the recommendations made in the 2020 Ramsar Review. It was developed and reviewed in consultation with the Alderney Ramsar Steering Group and States Veterinary officers where dialogue remains ongoing.
2. To achieve the strategic aims set out by the five-year strategy, a series of objectives are set out for 2021 that encompass the long-term monitoring of Alderney's seabird population, the management of invasive species, rodent control, marine surveys, various outreach events and support for advisory and legislative activities. Some elements of work that were not completed in 2020 as a consequence of the COVID-19 pandemic have been rescheduled for 2021.
3. The seabird work will include a) monitoring productivity of puffins, gannets, fulmar, common terns and ringed plover; b) census of the breeding populations of puffins, gannets, fulmar, cormorants, shags, common terns, guillemots, razorbills, gulls and ringed plover; c) continuation of the TAG project, specifically the attempted recovery of geolocators deployed in 2017 and 2020; d) monitoring the impact of plastic marine debris on gannets; e) an investigation into the likely causes of ringed plover nest loss; f) an investigation of Manx shearwater presence on Burhou; g) monthly WeBS surveys; f) a programme of seabird ringing including gannet chicks on Ortac, gull chicks and storm petrels on Burhou, cormorant chicks on Little Burhou and, if feasible, auks and shags on Coqué Lihou.
4. The terrestrial work will include a) the on-going programme of rat control on Houmet de Pies, east Saye Bay, Fort Houmet Herbé and the south coast islets assisted by SoA and; b) Phase I habitat mapping of Burhou.
5. The marine work will include a) Phase 1 intertidal habitat mapping on Burhou; b) the assessment of green ormer and crab populations; c) the assessment of invasive species and climate change indicators; d) Seasearch surveys; e) a new programme of Baited Remote Underwater Video surveys following revised survey design; f) marine mammal work including a programme of grey seal surveys and the maintenance of a photographic ID catalogue and; g) support and lead for academic projects.
6. The natural history of the Ramsar site will be shared through various outreach projects including a) the live streaming of wildlife webcams from seabird colonies with reinstallation of 'PuffinCam' on Burhou and a new 'GannetCam' overlooking Les Etacs; b) an expanded programme of educational boat tours including free tours for all Year 6 students at St Anne's School and; c) a wider programme of public engagement events year round including rock-pooling, beach cleans and a world wetlands day competition.
7. Support and lead for advisory and legislative activities will include a) drafting the next five-year Ramsar management strategy (ARS4) on behalf of, and in collaboration with, the States of Alderney; b) supporting the development of a formalised scientific advisory group for scientific research under Ramsar; c) the formal implementation of the 'Puffin Friendly Zone' off Burhou; d) updating Ramsar signage and information boards; e) developing new signage for sensitive wildlife and; f) maintaining the network of other Channel Island Ramsar sites, including the development of the Channel Island Ramsar website.

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1. Introduction

In 2020, Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites enters the fifth year of the 2017 – 2021 Ramsar Management Strategy (ARS3; SoA/ AWT, 2016).

This document sets out work objectives for 2021. The work aims to fulfil the objectives set out by the five-year management strategy and includes recommendations made in the 2020 Annual Review of the Ramsar site (AWT, 2021).

2. Background

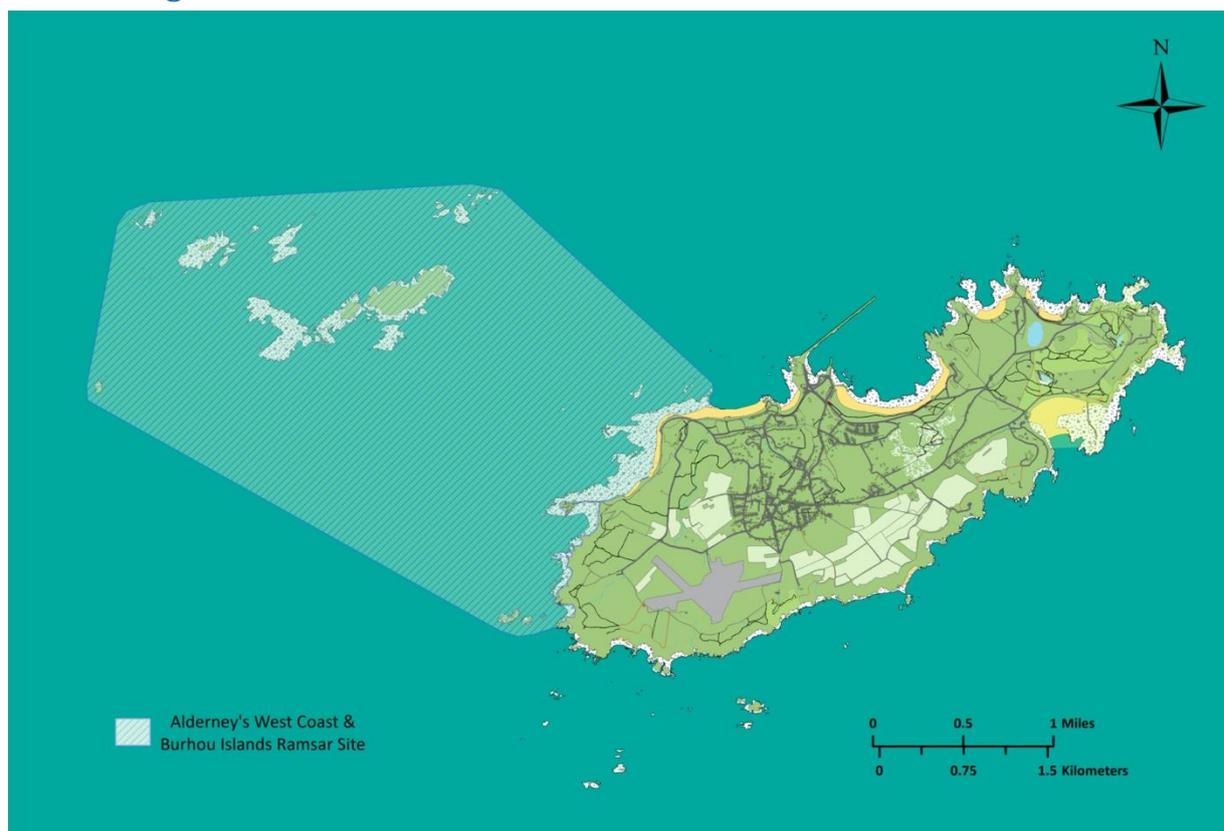


Figure 1 – Alderney West Coast and Burhou Islands Ramsar Site

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

In 2006, on behalf of the States of Alderney (SoA), the General Services Committee (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. 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.

Since 2007, the Ramsar site has been managed using Five-Year Management Strategies, with an annual Action Plan and Review or 'end of year' report, prepared by the AWT on behalf of the SoA (all available online at (<https://www.alderneywildlife.org/reserves/ramsar>)).

All Ramsar reports are developed and reviewed in consultation with the Alderney Ramsar Steering Group (ARSG). The ARSG was established in 2006 to offer technical advice to the AWT as well as assess proposals for work and the work done before their presentation to the SoA. Consultation with the ARSG ensures the management strategies undertaken follow scientifically robust methods vetted by experts in their field. The group comprises conservation scientists and communicators from the RSPB, BTO and States of Jersey. The ARSG meet annually to discuss the work and are involved in reviewing all five-year management strategies, annual action plans and annual review reports.

While the Ramsar site has a clearly defined boundary (Figure 1), the scope of its management plans have been extended to include specific habitats and species that occur elsewhere around Alderney's coast and inshore waters. This has occurred to ensure that monitoring and conservation measures are not necessarily restricted to the Ramsar site. The extended remit was approved by the GSC in April 2019 and the current and future documentation now refers to the 'Alderney's West Coast and Burhou Ramsar site and other sites' to reflect this change. This year the program of work enters the fifth and final year of the 2017-2021 Management Strategy (AWT/SoA, 2016).

All activities within Alderney's Ramsar site will be risk assessed and covered by the activity organisation's insurance and States of Alderney issued licences where applicable.

In early 2020, the SoA CEO's office outlined a process to create a new Terms of Reference (ToR) for parties involved in the Ramsar site. Since this initial consultation, no further updates have been received and this action plan has been prepared under the existing requirements of the Ramsar strategy. It is expected that the SoA may revisit its plans for managing the Ramsar site as part of updating the site's strategic plan for 2022 onwards. Further information from the CEO's office regarding this process is pending at the time of preparing this action plan.

3. Objectives

To meet the objectives of the 2017 – 2021 Ramsar Site Management Strategy, the following objectives are to be completed in 2021*.

**Please note that by approving this plan, the General Services Committee of the States of Alderney agrees to all proposed work therein 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 if any aspect of the work requires significant alteration from the parameters contained within this Action Plan, prior to altering the details of the Action Plan.*

3.1 Seabirds

- Monitor the seabirds and shorebirds breeding on Alderney, Burhou and other islets including the estimates of breeding sizes and productivity of a) Puffins (March – August); b) Gannets (February – November); c) Fulmar (May – September); d) Common Terns (May – August) and; e) Ringed Plover (April – July).
- Census the colonies of a) Gannets; and b) Lesser Black-backed gulls.
- Investigate the impact of anthropogenic materials on Northern Gannets including a) recording instances of entanglement and mortality; b) observations of material returned to the nest site and; c) opportunistic seabird necropsies (in collaboration with AAWS).
- Continue the ‘Track-a-Gannet’ (TAG) project including a) attempt to recover ring-mounted geolocators deployed on Ortac in 2017 and 2020 and; b) to present a synopsis of TAG data, informing the need for future deployment.
- Obtain counts of other breeding seabirds (not listed above) from around Alderney’s coast and the south coast islets.
- Investigate the presence of Manx shearwater on Burhou.
- Seabird ringing (undertaken by the Alderney Bird Observatory) including a) gannets; b) gulls; c) storm petrels; d) auks; e) shag;
- Monthly WeBS surveys.
- Reviewing contact with Groupe Ornithologique Nomand (GONm)

3.2 Terrestrial

- Rat control in collaboration with the SoA Public Works Department including maintenance of the bait stations on Burhou, Rousset, La Quoiré, Twin Sisters, Hanaine Bay islets, Houmet de Pies, the East side of the Saye Bay and Fort Houmet Herbé.
- Undertake Phase I habitat mapping on Burhou.

3.3 Marine

- Complete Phase I habitat mapping of Burhou’s intertidal waters.
- Continue Green Ormer population assessment.
- Continue invasive species assessments.
- Continue monitoring possible climate change indicators.
- Continue marine mammal monitoring.
- Continue BRUV surveys following recommendations for new survey design and deployment.
- Work with Marine Conservation Society ‘Seasearch’ divers to help complete sub-tidal marine surveys.

- Review baseline marine data to ensure work streams are relevant and up to date (winter).
- Remain in contact with Agence de la Biodiversité (resource dependent).
- Continue support for seawater quality testing.
- Support the local British Marine Life Rescue Divers Group (as required).
- Support and lead desk-based research projects (as required).

3.4 Outreach and Events

- Install and maintain seabird monitoring cameras including 'PuffinCam' and a new 'GannetCam' (approved by GSC and BSCC January 2021)
- Expand the programme of educational boat tours on 'Sula of Braye' (March – October).
- Provide free educational boat tours for Year 6 students at St Anne's School (funds obtained).
- Continue public engagement and community awareness for the Ramsar Site year-round.

3.5 Advisory and Legislative

- Draft the 2022 – 2026 five-year Ramsar management strategy for formal consultation.
- Support the SoA in the development of appropriate legislation and policies including the development of appropriate scientific advisory groups.
- Work with the Alderney Harbour Office and stakeholders to continue supporting the Puffin Friendly Zone (PFZ) off Burhou.
- Reinstall signage and raise awareness for the PFZ.
- Review educational Ramsar signage including replacement of signs around Alderney's Ramsar Site.
- Create new temporary signposting to alert public to sensitive wildlife including breeding birds in collaboration with the States Veterinary Officers.
- Maintain links and collaboration with other Channel Island Ramsar Sites.
- Continue the development of the Channel Island Ramsar Website.
- Support marine management activities and the community led Marine Management Forum (as required).

4. Further Details

4.1 Seabirds

Seabird monitoring will continue in accordance with the JNCC Seabird Monitoring Handbook (Walsh *et al.*, 1995), RSPB guidelines and the 2017 – 2021 Ramsar Management Strategy (ARS3; AWT & SoA, 2016) with adaptations as detailed and approved in the 2019 Ramsar Review (AWT, 2020), unless otherwise stated. Data will be shared with the JNCC's national Seabird Monitoring Program (SMP).

All activities involving the handling of wildlife 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.

4.1.1 Atlantic Puffins

The puffins will be monitored from March to August using a variety of survey methodology. Productivity, as well as the establishment of key dates in the puffin breeding timeline, will be assessed by remote observation of video recorded at the colony via 'PuffinCam'. Puffin population size will be assessed from early season raft counts (by boat-based surveys and 'PuffinCam'), and the on island apparently occupied burrow (AOB) survey. The AOB survey will also inform habitat use.

Instances of kleptoparasitism and predation will be also monitored from recorded video and by controlling the cameras remotely in real time.

4.1.1.1 Productivity

Productivity will be assessed by reviewing remotely recorded video obtained via 'PuffinCam', following the same protocol used in the past two years (AWT, 2020). The feasibility of training citizen scientists to help review the video footage will also be explored so that a greater duration of video, including night-time recording, may be investigated through the season.

4.1.1.2 Population Assessment

The size of Burhou's puffin population will be estimated using data from two surveys; early season raft counts and the 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 likely represents the best approximation of the total number of pairs present. Only the raft counts made early in the season can be used as later both members of the pair may be absent from the colony searching for food to feed their hatched chick and non-breeding birds arrive boosting the number of birds present. The raft counts can be recorded via 'PuffinCam', or during boat-based operations.

To avoid any disturbance to the breeding puffins the AOB survey will be undertaken in late July or early August, as soon as it can be established that the last puffling has likely fledged and the breeding season is over. Surveyors will check all burrows for recent signs of occupation in areas known to be occupied across the island, following the same methodology as in previous years. AOB counts for each area surveyed will be compared with previous estimates.

Chance encounters with storm petrels still nesting within any examined burrows will be recorded, and where possible the nest contents examined to note the presence of any young. If an appropriately

licensed handler is present, the adult may also be temporarily extracted to look for the presence of a ring.

4.1.2 Northern Gannets

Gannets will be monitored from March to November. Work scheduled for 2021 includes quantifying productivity, the continuation of the TAG project to collect data on migratory behaviour, and the ongoing investigation into the impact of anthropogenic materials. A census of Les Etacs and Ortac will also be completed in 2021, rescheduled from 2020 as a consequence of the COVID-19 pandemic.

4.1.2.1 Productivity

Gannet productivity on Les Etacs will be assessed 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. 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. In particular, sufficient observations should be made to identify non-layers so that the proportion of non-breeders can be established and retracted from the final productivity estimate.

In addition, a sample of 100 nests monitored in 2020 will be re-monitored again this year and continually year on year thereafter, 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.

The possibility of assessing gannet productivity on Ortac will also be investigated for the first time. The Ortac colony lies over three miles from mainland Alderney so observations will need to be carried out using the AWT's work boat, Sula of Braye, and on-board photography. Any productivity estimate, if it can be reliably attained, will have particular value. This is because it could be integrated with other data also obtained from Ortac such as chick ringing, adult colour ringing and the TAG project.

4.1.2.2 Population census

Unfortunately, the planned colony census was not undertaken in 2020 as a consequence of the ongoing COVID-19 pandemic. The completion of this census should be a priority in 2021.

4.1.2.3 The 'Track-a-Gannet' (TAG) project

The primary objective for the TAG project this year will be the recovery of the geolocators deployed on Ortac in 2017 and 2020. 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 gannet's 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. Geocator 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.

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.

Efforts to re-examine the existing tracks of Alderney's gannet movements obtained from GPS GSM tags will be sought to determine if these data can adequately define our gannet population's home range. The average range and time spent foraging should also be assessed and compared to similar data obtained from other colonies, particularly those obtained from Rouzic gannetry. This is because the foraging effort of Rouzic's gannets has been shown to be far greater than other gannetries and has had a negative demographic impact (Grémillet et al., 2020). If possible, the effect of the implementation of EU fishery policy in 2014 should also be investigated, for example by investigating if the home range has changed since its imposition.

The need for the future deployment of GSM GPS tags or geolocators will be reviewed in 2021 in consultation with the ARSG and States Veterinary Officers.

To help provide additional data on adult survival, re-sighting of gannets wearing colour rings on Ortac will also be sought during the operation to retrieve the geolocators. If time also allows, some adults may be caught and colour ringed too.

4.1.2.4 The impact of anthropogenic materials

The impact of anthropogenic materials on gannets will be monitored as in previous years. This includes the recording of instances of entanglement and observations of material returned to the nest site to maintain oversight of the problem.

Seabird necropsies will be undertaken opportunistically in collaboration with the Alderney Animal Welfare Society (AAWS).

4.1.3 Northern Fulmar monitoring

The number of sites occupied by breeding pairs of 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 loci 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

Estimates of common tern productivity and colony size will be completed following the same protocol as previous years.

Adequate protection from rat predation will be implemented where ever possible, noting that the terns are not especially site faithful and locations previously used to nest and currently protected with rat control measures may not be used every year. Importantly, as soon as the terns are observed occupying an unprotected site, new rat control measures will be imposed to minimise potential nest loss.

4.1.5 Ringed Plover monitoring

The number of nesting pairs and their productivity will be monitored on Alderney's beaches throughout the breeding season. A comprehensive investigation into the causes of nest loss will be undertaken. A review of these data will be presented to the GSC as part of the 2021 Ramsar Review, forming recommendations for protection as well as management under the next five-year Ramsar management strategy.

Permission to erect temporary signage warning the public of the presence of nesting ringed plover as well as other sensitive breeding birds will be sought from the States of Alderney (the land owners).

The signage will inform people of the birds' presence, encourage them to avoid the vicinity and keep their dogs under control. The signage will be removed once the birds have finished nesting.

4.1.6 Gull monitoring

A five-yearly census of the gulls nesting on Burhou will be completed in late May 2021 as per the schedule defined in ARS3, updating the population figures collected in 2016.

Boat based round-island seabird surveys will also be used to determine the number of breeding pairs on mainland Alderney and its other islets.

4.1.7 Round-island seabird surveys

Round island seabird surveys will be carried out to estimate the numbers of cormorant, shag, gulls, and auks nesting on Alderney's coastal cliffs and islets, Burhou, Little Burhou and the islets of Renonquet and the Nannels. The round island surveys will also be used to contribute data to land-based counts of the nesting fulmars, auks and terns. 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.

4.1.8 Manx Shearwater

Evidence of Manx shearwater breeding on Burhou will be sought using a sound recording device (a Wildlife Acoustic Inc. SM2) to detect their possible presence at night throughout May and June, following advice from RSPB representatives. In addition, an on-island survey during this period may also be instigated if suitably trained surveyors are available in the Bailiwick (resource and COVID-19 restriction dependent).

4.1.9 WeBS

Core-counts of all water fowl present in Clonque Bay and on Platte Saline will be carried out each month for the national BTO Wetland Bird Survey (WeBS), (<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 where time and personnel allow. All data will be submitted online in a timely manner.

4.1.10 Seabird Ringing

A traditional 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 Trust Ltd (ABO). All data, including ringing totals, recoveries and controls will be reported in full in the 2021 Ramsar Review.

As per the schedule outlined in ARS3, the seabird ringing campaign will include the capture by hand of pulli (chicks) gannets, cormorant, shag, great black-backed gull, herring gull, lesser black-backed gull and mist-net caught full-grown storm petrels. It may also include the capture by hand of pulli and full grown razorbill and guillemot. All seabird ringing trips will be carefully planned to balance the need for data acquisition against likely disturbance.

Note, during the cormorant chick ring trip to Little Burhou the ABO ringers will also provide the Ramsar Officer with a count of the apparently occupied nests. If no ringing trip can occur, then an alternative boat-based count will be scheduled for late April and used to assess the breeding population instead.

4.2 Terrestrial

4.2.1 Rat control

The programme of permanent rat control to protect nesting seabirds from predation will continue in collaboration with the SoA Public Works Department, resources and weather permitting. The bait stations to be maintained through 2021 are currently located on Burhou, the islets of Rousset and L'Etac de la Quoire, the Twin Sisters stacks, the Hanaine Bay islet, Houmet de Pies, Fort Houmet Herbé and the east side of Saye Bay. The maintenance of all permanent bait stations will be subject to review following periodic environmental risk assessments. Following an environmental risk assessment in January 2021, the permanent baiting previously undertaken on the shoreline adjacent to L'Etac de la Quoire, the Twin Sisters stacks and the Hanaine Bay islets will cease to eliminate possible harm to non-target species. The bait stations from these sites will be removed and will not be re-deployed unless evidence suggests rat occupation of the adjacent islets cannot be controlled by on-islet baiting alone.

As in 2020, a close watching brief will be maintained on any species sensitive to rat predation with particular attention paid to the whereabouts of the 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.

4.2.2 Burhou Phase I

Phase I mapping of Burhou will be completed to establish a new baseline for the islet. Recommendations for future practical habitat management can only be made upon the completion of this work. Habitat mapping should be completed after the puffin and storm petrel breeding season is over to avoid disturbance.

If invasive species such as sour fig (*Caprobrotus edulis*) are noticed on Burhou, immediate control measures will be undertaken to prevent further spread.

4.3 Marine

4.3.1 Rocky intertidal surveying

4.3.1.1 Phase I intertidal Burhou

Phase I intertidal habitat mapping will be carried out for Burhou's intertidal shore, as laid out in the schedule in ARS3. Surveying will follow JNCC Procedural Guideline 1-1 Intertidal Resource Mapping using Aerial Photographs (Davies *et al.*, 2001). On island work will be to be undertaken during low spring tides post the sensitive seabird breeding season and will likely occur during September or October 2021.

4.3.1.2 Green Ormer population assessment

Green ormers will be surveyed and tagged during dedicated surveys but also opportunistically during other survey work. The programme of Ormer tagging is undertaken in conjunction with La Société Guernesiaise. During each survey any Ormers found will be measured, quality assessed and fitted with a small plastic numbered tag for future identification.

4.3.1.3 Invasive species assessment

Invasive species assessments will be carried out throughout the year alongside other intertidal survey work. The presence, location and extent of invasive species will be assessed across the island's shoreline using 'Shore search' methodology.

4.3.1.4 Climate Change indicator assessment

The assessment of climate change indicators will be undertaken annually, following the same methodologies as reported in the Phase II habitat report in the 2020 Ramsar Review. Work includes the Natural History Museum Seaweed search and the repeated survey of Cor.Bif habitats as in the 2020 Clonque Bay Phase II report.

4.3.1.5 Crab surveying

Monthly crab surveys will continue throughout the year following States of Jersey survey methods. The survey form has been updated in 2021 to record effort.

4.3.2 Benthic ecology and topography

4.3.2.1 Seasearch

Liaise with and support the regional Seasearch group, Alderney's Seasearch snorkel group and local scuba divers in a programme sub-tidal marine life surveys (resource dependent). Ensure completed survey forms are submitted to the local Seasearch co-ordinator and the list of species encountered are input to the local record centre and nation biodiversity network.

4.3.2.2 BRUV

Baited Remote Underwater Video (BRUV) surveys will resume in 2021 following recommendations for survey design and future deployments developed for the site by an MSc student in 2020 (see 2020 Ramsar Review section 4.3.7). 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.

4.3.3 Pelagic surveying – Plankton

A new programme of inshore plankton surveying is being developed by The Wildlife Trusts as a collaboration with Southampton University and may be implemented during the year (resource dependent, methodology TBC).

4.3.4 Marine Mammal surveying

Marine mammal data are collected from dedicated surveys and from casual sightings. Records will be maintained for both cetaceans and pinnipeds, and submitted to the SeaWatch foundation and local records centre.

4.3.4.1 Effort based grey seal surveying

The surveying of grey seals across the Channel Islands and the adjacent French coastline is coordinated by Marie Francou of Groupe Mammalogique Nomand (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.

The surveying of grey seals is subject to weather and resource availability however due to the abnormally high numbers of grey seals noted before the breeding season in 2020, the continuation of the survey should be a priority for 2021.

4.3.4.2 Grey seal population dynamics

A population dynamics study will be completed in parallel with the effort based grey seal surveys following JNCC grey seal methods (August – November), (Davies *et al.*, 2001).

4.3.4.3 Grey Seal ID

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 ID catalogue. The ID catalogue can then be used to quantify re-sightings of individuals and generate population estimates.

4.3.4.4 Cetaceans

Opportunistic recording of cetaceans should continue in 2021 with photographic records obtained where possible. This includes those taken during boat-based activities, and from public sightings data.

4.3.4.5 British Marine Life Rescue Divers

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

4.3.5 Academic projects

Support and lead for academic projects will be continued in 2021, including development and support from interested universities as necessary.

4.4 Events and outreach

4.4.1 LIVE: Teaching Through Nature.

Live streaming of wildlife webcams will continue in 2021. 'PuffinCam' will be re-installed on Burhou and a new 'GannetCam' set up to overlook Les Etacs.

The video feeds will continue to be used to assist the seabird monitoring programme outlined in section 4.1. 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 'LIVE: Teaching Through Nature' website, will be updated to add the new 'GannetCam' alongside its existing educational content. 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 with the aim of reaching one million viewers for the 2021 season.

Collaboration will continue with VisitAlderney to maximise the value of the cameras for tourism and marketing purposes for the island.

The GDPR risk assessment for all cameras will be updated prior to installation in 2021.

4.4.1.1 PuffinCam

'PuffinCam' will be reinstalled on Burhou in 2021 using the same equipment and procedures as in previous years. To minimise disturbance to the seabird colony on Burhou, installation will be made before puffins make landfall in early April. The cameras will be uninstalled and removed at the end of the puffin breeding season.

Any trips required for maintenance will be coordinated by the ARSG and States Veterinary Officers.

4.4.1.2 GannetCam

Private funds and planning permission have been obtained to purchase and install a new camera 'Gannetcam' with its ancillary devices, including, batteries, solar equipment and a transmitter. Gannetcam will comprise a live streaming camera with a long reaching telephoto lens. It will be placed near the 'Guns', at the western end of Alderney, to overlook Les Etacs gannetry which lies approximately 350m offshore. Live streaming will begin and continue from the date of installation through to the departure of the last birds in October/ November. Images will be broadcast to Burhou and then diverted to mainland Alderney via the existing data link used for 'PuffinCam'. 'GannetCam' will be marketed alongside 'PuffinCam' online.

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

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. In 2021, the programme of boat work will be expanded to take advantage of its extensive winter refit.

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

Free educational boat tours will be offered to all year 6 students at St Anne's School. Funds have been obtained specifically to facilitate this objective. In time, it is hoped that all children growing up on Alderney should have accessed the Ramsar site from the water.

4.4.4 Community engagement and public awareness events

At least one public engagement event will be undertaken in the Ramsar site for World Wetlands day, Wildlife 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.

4.5 Advisory and Legislative

4.5.1 ARS4

This year the current five-year Ramsar management strategy (2017-2021), (ARS3) comes to a close and, as a consequence, the next five-year plan will need to be drafted, ready for 2022. This will be undertaken during this year, on behalf of the States of Alderney, in collaboration with the GSC and other stakeholders. The strategy will be made available for subsequent public consultation before ratification with the States of Alderney.

4.5.2 Scientific Advisory

All activities, as well as the annual action plan and report, are currently reviewed in consultation with Alderney's Ramsar Steering Group (ARSG) and States Veterinary Officers. The ARSG was established in 2006 to offer technical advice but also expert oversight of work proposals and outcomes on behalf of the States of Alderney.

This year the AWT will provide support to the SoA CEO's office and the GSC in the development of a new scientific advisory group for work under Ramsar and elsewhere. The group should be independent to the work involved and designed to ensure scientific oversight is appropriate and representative of the works undertaken. A new scientific advisory group should be formalised by the CEO's Office in 2021 prior to the commencement of the next five-year management strategy.

4.5.3 The Puffin Friendly Zone

Support for the Puffin Friendly Zone via the Alderney Harbour Office and stakeholders will continue in 2021. 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 possible inclusion of a 'sensitive wildlife and the seabird sanctuary' notification for placement on navigational charts will be investigated for Burhou.

4.5.4 Ramsar signage

Signage around Alderney's Ramsar site will be reviewed and maintained with updates made where appropriate.

4.5.5 Sensitive wildlife signage

Permission will be sought from the SoA (the landowners) for the deployment of temporary signage alerting the public to sensitive wildlife throughout Alderney (for example breeding waders on Platte Saline). The development and subsequent deployment of signage will be coordinated alongside the States Veterinary Officers.

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

4.5.6 Networking with other Channel Island Ramsar Sites

The maintenance of links and collaboration with other Channel Island Ramsar Sites will continue in 2021 including meeting annually.

Alderney will continue to lead the development of the Channel Island Ramsar Website.

4.5.7 Marine Management Forum

Support for the governmental/ community led Marine Management Forum and other marine management activities will continue with support for mechanisms of re-establishing the forum if necessary.

5. References

AWT., (2016), Alderney West Coast and Burhou Islands Ramsar Site Strategy, 2017-2021, Alderney Ramsar Strategy 3 (ARS3), Available at: http://www.alderneywildlife.org/sites/default/files/ramsar_management_strategy_2017-2021.pdf

AWT., (2019), Alderney's West Coast and Burhou Islands Ramsar Site Annual Action Plan 2019. Available at: https://www.alderneywildlife.org/sites/default/files/ramsar_annual_action_plan_2019_updated_13.06.2019_to_include_ringing_on_ortac_pdf.pdf

AWT., (2020), Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Review 2019. Available at: https://www.alderneywildlife.org/sites/default/files/ramsar_review_2019_-_for_publication_online.pdf

AWT., (2021), Alderney's West Coast and Burhou Islands Ramsar Site and Other Sites Annual Review 2020.

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C., and Vincent, M., (2001), Marine Monitoring, Available at: http://jncc.defra.gov.uk/PDF/MMHmh_0601.pdf

Grémillet, D., Péron, C., Lescroël, A., Fort, J., Patrick, S.C., Besnard, A. and Provost, P., (2020). No way home: collapse in Northern Gannet survival rates point to critical marine ecosystem perturbation. *Marine Biology*, 167:189.

Walsh, P.M., Halley, D.J., Harris, M.P., del Nevo, A., Sim, I.M.W. & Tasker, M.L., (1995). Seabird monitoring handbook for Britain and Ireland. JNCC / RSPB / ITE / Seabird Group, Peterborough. ISBN 1 873701 73 X.