

## Pole-mounted top nets and birds at finfish farms

### 1. Pole-mounted top nets

The finfish farming sector in Scotland is increasingly seeking to adopt “pole-mounted” top nets (Figure 1) for marine cages, in place of the more familiar “hamster wheel” system, to improve fish welfare. Flexible poles are attached to the floatation collar and typically extend c.5m above the hand rails. The poles support a “side net/skirt” above and around the cage circumference, plus a “ceiling net” across the top of the cage. Details such as mesh sizes<sup>1</sup>, net colours, and angle and tensioning of supporting poles may vary (e.g. recent configurations for side/ceiling net mesh sizes include 50mm/50mm, 75mm/200mm and 150mm/200mm).



*Figure 1 Example of a pole-mounted top net system*

### 2. Potential threats to marine birds - gannets

Reports of an emerging threat to marine birds come from two instances, in different regions of Scotland at sites operated by different companies, where significant numbers of gannets have become entrapped under and/or entangled within ceiling nets after plunge diving into cages from above. In neither instance does Scottish Natural Heritage, acting under its operating name NatureScot, have full details of overall numbers of birds involved or their fates. However, one case involved tens of birds at a time and both persisted for periods of over a week. There is currently no requirement for such incidents to be reported to Local Planning Authorities (LPAs) or other statutory bodies and consequently there may potentially have been additional similar instances that we are unaware of.

In both known cases, the ceiling net mesh size was 200mm or greater, and as such sufficiently wide for gannets to dive through into the cages. Entrapped birds may be released alive but

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<sup>1</sup> Throughout this document, mesh size refers to the dimensions of the sides of the mesh square as deployed on site. Net suppliers and manufacturers refer to this as the “half-mesh” dimension.

suffer sub-lethal effects associated with stress from handling or loss of feeding opportunities while confined. In addition to individual welfare considerations, such effects could impact longer term survival or ability to rear young and hence ultimately impact gannet populations. The practicalities of safely releasing large numbers of birds over prolonged periods are also uncertain.

Smaller mesh sizes, particularly of 100mm or less, might reduce risk to gannets, but this is yet to be established. We also lack information on how mesh size may interact with other features of these systems (e.g. lower tensioning and finer mesh filament, angling of the nets, reduced opportunity for perching, and net colours) to determine overall risk to gannets and other birds. One operator has reported practical issues, and associated safety concerns, when using smaller (50mm) mesh ceiling nets with pole-mounted supports and recent applications suggest an industry preference for 200mm mesh ceiling nets.

## 2.1 Implications with respect to Special Protection Areas (SPAs)

Under the Habitats Regulations, LPAs have a legal duty as the Competent Authority to consider the likely impact of any planning proposals, whether within or outwith an SPA, on the site's qualifying interests<sup>2</sup>. In Scotland, there are eight breeding colony SPAs and two marine proposed SPAs for which gannets are a protected feature (Figure 2). Breeding gannets have a mean foraging range of 120.4km ( $\pm 50.0$ km) and a mean maximum foraging range of 315.2km ( $\pm 194.2$ km) (Woodward *et al.*, 2019). Consequently, **there is potential connectivity between gannets from SPA colonies and all marine waters across Scotland suitable for finfish aquaculture.**

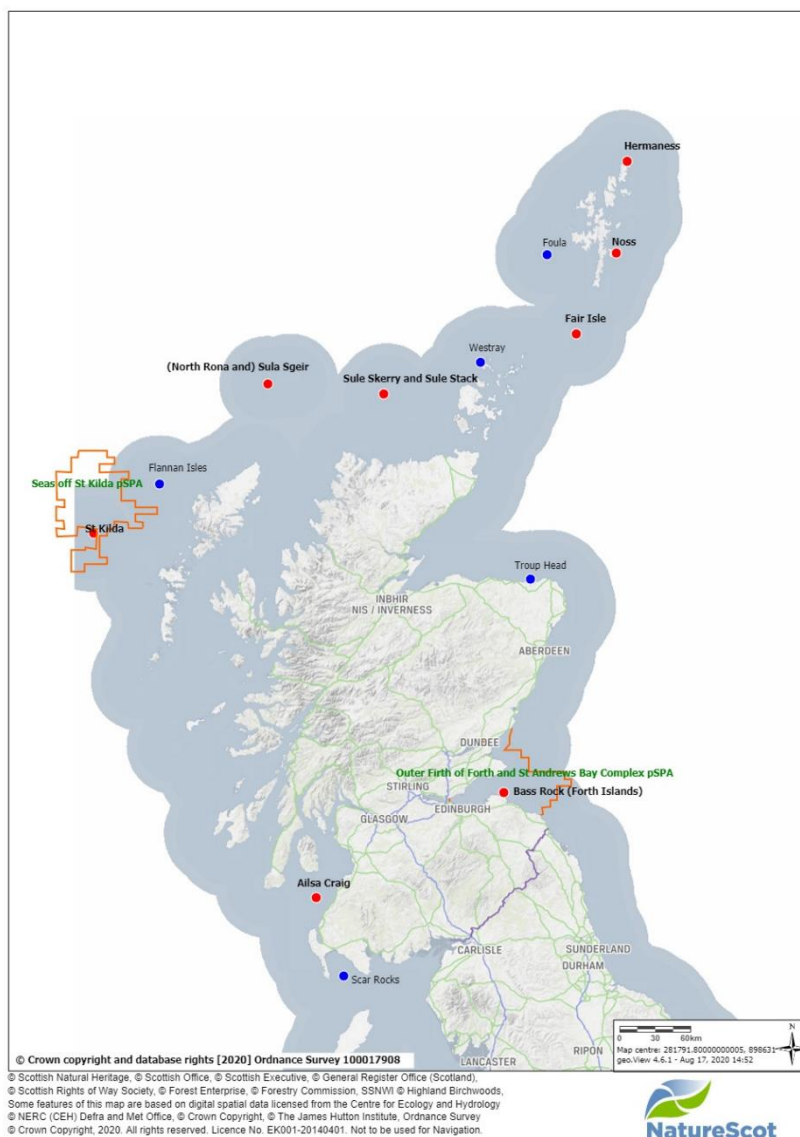
On the basis of best available current evidence, **NatureScot consider that Likely Significant Effect (LSE) should be concluded with respect to gannet qualifying features of SPAs for all marine finfish farms involving deployment of pole-mounted top net systems with ceiling net mesh sizes of 200mm or greater.** Risk of LSE for gannets is likely to be lower for smaller ceiling mesh sizes, particularly under 100mm, but cannot be ruled out, particularly in areas known to be regularly used by foraging gannets. NatureScot will provide advice in these instances, considering also other marine bird species (see Section 3).

Where LSE is concluded, Appropriate Assessment is required<sup>2</sup>. Potential for Adverse Effect on Site Integrity (AESI) may generally be low with respect to short-duration one-off incidents. However, prolonged or repeated entanglement/entrapment of gannets at a single site, or incidents across multiple sites, could result in AESI. LPAs should therefore ensure that a suitably precautionary approach to permitting this style of top nets is adopted to minimise this risk and ensure compliance with the Habitats Regulations.

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<sup>2</sup> Guidance is summarised at <https://www.nature.scot/natura-sites-and-habitats-regulations-how-consider-proposals-affecting-sacs-and-spas-scotland>

Based on the currently available information, NatureScot advise a presumption against use of pole-mounted top net systems with ceiling net mesh sizes of 200mm or greater in areas likely to be regularly used by foraging SPA gannets<sup>3</sup>. We further advise that any permissions for pole-mounted top net systems, irrespective of mesh sizes, should include consent conditions enabling timely enforcement of mitigating adaptive management if required (see Section 3).



*Figure 2 Gannet colonies in Scotland. SPA colonies - red dots and bold text; other substantial colonies - blue dots and plain text; marine pSPAs -orange boundary lines and green text. Colonies with fewer than 50 nests are not shown. Full details are in Murray et al (2015).*

Until we have further evidence on this issue (see Section 3), NatureScot will provide advice on request with respect to all cases involving proposed use of pole-mounted top nets systems,

<sup>3</sup> As indicated by tracking studies systematic surveys of at-sea distributions and other relevant data sources.

including Prior Notifications of proposed changes to existing top net systems under Permitted Development Rights<sup>4</sup>. Where a fishfarm is located in proximity to SPAs with cormorant, shag, gull or skua features, our advice will also consider these species. Please ensure that the information listed at Annex A is provided with advice requests.

### 3. Monitoring, Reporting and Enforcement Considerations

Improved understanding of the nature and extent of bird interactions with pole-mounted top net systems at marine fishfarms will assist NatureScot when advising on future applications for use of these top net systems in Scotland and provide greater certainty to the industry and LPAs around consenting. Development of a robust evidence base requires systematic monitoring and reporting of entanglement / entrapment data at sites adopting these systems.

Prompt notification of potentially significant emerging incidents is also required, alongside powers to enforce rapid amendments to related planning permissions, to enable Natura compliant adaptive management and avoidance of AESI.

**NatureScot therefore advise that any permissions for use of pole-mounted top net systems should be subject to review, underpinned by systematic monitoring and by requirements for immediate notification in event of emergence of patterns of entanglement or entrapment of marine birds that might ultimately result in AESI.**

Specifically, we advise that Planning Consents should require the following:

- operators to maintain daily records of wildlife entanglement / entrapment using a standardised proforma<sup>5</sup> and to submit regular (typically six-monthly) returns to the LPA, copied to NatureScot;
- immediate notification by operators to both the LPA and NatureScot in event of any significant entrapment or entanglement of gannets, and any other SPA interests identified as relevant to a particular fishfarm (e.g. involving three or more birds of any named species on any one day and/or a total of ten or more birds in the space of any seven day period and/or or repeat incidents involving one or more birds on four or more consecutive days); and,
- Adaptive management approaches should be agreed between the planning authority and the applicant in consultation with NatureScot.

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<sup>4</sup> The PDRs include a provision stating that “where changes to the equipment in use are proposed the planning authority should have regards to visual impacts and potential increases to net area (**and therefore entanglement risks**) and exercise discretion in determining whether to consult with Scottish Natural Heritage.”

<sup>5</sup> NatureScot will provide this on request

## 4. Next steps

NatureScot will continue to engage proactively with LPAs and the finfish industry with the following objectives:

- to raise awareness of this issue and implications with respect to compliance with the Habitats Regulations;
- to ensure that we consistently provide proportionate advice, based on best available evidence, to LPAs with respect to their role as Competent Authorities. At present, as detailed at Section 3, this advice will be case-specific where required, but we aim to develop more detailed Standing Advice once we have sufficient information to do so;
- to encourage systematic monitoring and reporting to enhance the evidence base and assist in assessing the scale and significance of this issue and the specific circumstances under which it may arise; and,
- to assist the aquaculture industry to develop best operational practice to minimise entanglement / entrapment risks to marine birds and other wildlife.

It is anticipated that understanding of this emerging issue will improve over time as more evidence becomes available. This Interim Technical Briefing Note will be reviewed and updated as appropriate.

## 5. References

Murray, S., Harris, M.P. & Wanless, S. (2015). The status of the Gannet in Scotland in 2013–14. *Scottish Birds*: 35(1), pp3-18.

Woodward, I., Thaxter, C.B., Owen, E and Cook, A.S.C.P. (2019). Desk-based revision of seabird foraging ranges used for HRA screening. Report of work carried out by the British Trust for Ornithology on behalf of NIRAS and The Crown Estate. BTO Research Report No. 724.

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## **Annex A: Information Requirements if Seeking Advice from NatureScot**

The following information should be provided when seeking advice from NatureScot on cases involving proposed use of pole-mounted top nets. If not included in the original application or notification, please obtain these details before seeking advice:

- Fishfarm location, including grid reference.
- Number and dimensions of cages
- Type of case (e.g. full planning application for new fishfarm; full planning application for amendments to existing fishfarm; Prior Notification of intended change under Permitted Development Rights)
- Current top net configuration (for cases relating to existing fishfarms)
- Details of proposed pole-mounted top net system including: numbers of pole supports per cage; supporting pole lengths and height above hand rails; side net/skirt mesh size(s); ceiling net mesh size; and, net colours.

Any available existing data on bird entanglement at the relevant site and/or at sites in adjacent waters should also be included in advice requests (see Section 3).

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## Document Control

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