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Long-term population trends of freshwater-dependent birds in Scotland and some related management issues

Background

- 58 species of birds in Scotland are primarily associated with freshwater habitats during at least part of the year:
- Ducks, geese and swans to bearded reedling;
- BoCC4 lists their conservation status in UK with 10 red, 30 amber, 16 green, 2 unlisted*;
- Red listed species are: White-fronted goose, pochard, common scoter, Slavonian grebe, white-tailed eagle, nonbreeding hen harrier, ringed plover, black-tailed godwit, red-necked phalarope, grey wagtail.

*Canada goose, mandarin duck

Special Protection Areas

- Loch Leven – 9 species
- Caithness & Sutherland Peatlands – 6 species
- River Spey & Insh Marshes – 4 species
- Caithness Lochs – 3 species

- Slavonian grebe – 60% of GB breeding population breeds in Scottish SPA sites (and black-throated diver)
- White-fronted goose – 42% of GB wintering population occurs in Scottish SPA sites

Red-necked phalarope

- Rare breeding species (mainly Shetland);
- Geolocator tag showed bird flew from Shetland to Canada to Central America to Peru and wintered off coast of Peru then returned to Shetland by the same route;
- Birds breeding in Sweden winter in Arabian Sea.

Kingfisher

- 330-450 pairs in Scotland;
- Distributed on most rivers across mainland Scotland south of the Great Glen;
- High concentrations breeding on Clyde rivers such as Cart and Kelvin with up to 1 pair/km;
- Apparently increasing (but cold winters may reduce numbers);
- An indicator of clean water.

Grey wagtail

- 6,000-17,500 pairs in Scotland;
- Distributed on most rivers across mainland Scotland and inner Hebrides;
- Has moved from green to amber to red listing;
- Red listing is based on declining breeding and declining winter numbers and reduction in breeding range; reasons unknown.

Dipper

- 10,000-15,000 pairs in Scotland;
- Distributed on most rivers across mainland Scotland, inner and outer Hebrides;
- Decreases in cold winters, but no long-term trend in numbers;
- Higher densities on streams with higher alkalinity (more stream invertebrates);
- Breeds early, before freshwater invertebrates emerge as adults;
- Winter communal roosts under bridges.

Goosander

- 2,000-3,000 pairs in Scotland (2 to 5% of European population);
- First colonized Scotland around 1860-1870, probably by migrants from Scandinavia, then spread – most rivers colonized by 1950s;
- Numbers probably stable since 1980s, but has spread into England and Wales;
- Nest in holes in riverside trees, laying 8-11 eggs in March-May; males leave females to incubate and rear ducklings;
- Some females from England and Wales migrate to Scotland to moult in July-August;

Goosander

- Little evidence of continental goosanders migrating to winter in Scotland but probably some do;
- For several years in 1980s over 2,000 goosanders wintered in inner Beaully Firth, feeding on sprats, but that sprat stock disappeared, as did goosanders;
- Scottish males gather in May then migrate to north Norway (Tana) to moult (flightless), returning in Oct-Dec; might reflect Scandinavian origin of population;
- Goosanders feed on wide variety of fish of 4-12 cm, including juvenile salmon;
- Aggregations of goosanders and cormorants occur at river estuaries in spring to intercept smolt run.

Greenland white-fronted goose

- 16,000 winter in Scotland (65% of world population) and numbers are declining – despite SPA designations;
- Main sites in Islay, Kintyre, Coll, Tiree, Solway, Caithness, Orkney, Loch Lomond;
- Evidence of much reduced breeding success (age ratio in winter and satellite tracking data);
- (Were) shot in Greenland and Iceland, but main threat seems to be Canada geese colonizing west Greenland breeding grounds;
- Major freshwater roost sites designated SPAs.

New species arriving: climate change

Little egret

Glossy ibis

Both spreading into Scottish wetlands;
Partly response to warmer conditions here
Partly response to drying of Mediterranean wetlands

Europe's rarest breeding bird

Pied-billed grebe:
hybridizing with little grebe at a site in Argyll

(Some) conclusions

- Things change, sometimes, but not always for the worse;
- On balance, our freshwater birds are doing fairly well, but there are conservation problems, including declines in breeding waders especially in upland wet habitats;
- Efforts to increase Slavonian grebe and black-throated diver numbers/breeding success have not been particularly successful despite Birds Directive protection;
- We can expect further pressures to manage goosander and cormorant impacts on salmon smolts, but lack clear scientific understanding;
- White-fronted goose declines may be difficult to mitigate;
- Declines in grey wagtail are not understood;
- There is scope for more research and management action.