



Sustainable Inshore Fisheries Trust

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Wrasse (“cleaner fish”) and the Scottish aquaculture industry

Ballan Wrasse. Credit: OneKind.

LICE CONTROL BY THE AQUACULTURE INDUSTRY

As concerns have grown about the use of Emamectin Benzoate and other anti-parasitic chemical treatments by salmon farms in Scottish waters, industry has increasingly turned to the use of “cleaner fish” as a substitute for these chemicals. Five wrasse species are trapped live in creels for this purpose, but there is **increasing evidence that this fishery is in turn unsustainable.**

“The Committee strongly recommends that the Scottish Government consider the need for regulation of cleaner fish fishing to preserve wild stocks and avoid negative knock on impact in local ecosystems.”

REC report, November 2018, Recommendation 28.

WRASSE – A KEYSTONE SPECIES FOR INSHORE WATERS

Wrasse are a family (*Labridae*) of sea fish species which inhabit rocky reefs and kelp beds in Scotland’s coastal waters. They feed upon crustacea and molluscs and **play a vital role in the wild in controlling parasites** which predate upon other fish (including commercial species) or on habitat-forming flora such as kelp. In addition to their important ecological function, wrasse are also of high socio-economic importance, particularly to recreational divers and sea anglers, given their striking appearance.

Available wrasse landings data suggest that local populations frequently collapse following the commencement of commercial fisheries. For example, the landings at ports such as Shieldaig, Portnalong, Oban, North Harris and Lochmaddy all experienced **short term rapid growth in landings followed by rapid and substantive reductions. Such patterns are consistent with over-exploitation of local fish stocks.**

The data are also consistent with the observed practice of Scottish wrasse fishermen, who alter their grounds from one year to the next. This is understood to be a response to local stocks being reduced below a level where they can be economically exploited, and the resulting need to move to new fishing grounds. Observations by recreational and professional divers, sea anglers and initial scientific analysis of local wrasse population declines following the commencement of wrasse fishing reinforces this analysis.

VULNERABILITY TO OVER-EXPLOITATION

Wrasse are also unusually vulnerable to **over-exploitation and localised depletion**, on account of their unique life cycle. In particular:

1 Limited home range

Observations of wrasse in European seas have indicated high 'site-fidelity', suggesting that localised over-exploitation leads to localised depletion. In effect, because of their limited range, **when wrasse are removed from an area, other individuals do not readily recolonise it.**

2 Longevity

Some wrasse species - including ballan wrasse, a key target species for the Scottish wrasse fishery - are slow growing and may have a lifespan of more than 20 years. **The removal of mature specimens can adversely affect the reproductive potential of localised populations.**

3 Sex ratio

The reproductive biology of wrasse is unusual; several species are nest-guarding, with territorial males protecting the eggs as they develop. The loss of adult males from a population may therefore adversely impact on stock recruitment. Furthermore, some wrasse are protogynous hermaphrodites (i.e. smaller individuals are female that become male when at a sufficiently large size). As a result, **size-based exploitation poses a risk to the sex ratio and presents a further risk to reproductive success.**

INADEQUATE GOVERNANCE ARRANGEMENTS

A system of voluntary measures was developed by Marine Scotland after consultation with the salmon farming industry. **Community groups, inshore fishery representatives and environmental NGOs were excluded from the consultations which drew up the measures.** As the measures are voluntary there are no sanctions on fishermen who fail to follow their requirements.



4 Shortage of stock data

No substantive wrasse stock assessments have been conducted in Scotland, so there is no information as to whether the stocks are at risk of collapse. As a result, the **voluntary measures cannot ensure that the fishery abides by the Precautionary Principle or meets the Maximum Sustainable Yield (MSY) standard** required by the Common Fisheries Policy. Furthermore, the **catch and landings data that are recorded are fragmentary**, as there is **no requirement on fishermen under the voluntary measures to collect or submit data on the species of wrasse caught, nor the details of the catch that are returned to the sea**. However in 2017 the Scottish Salmon Producers' Organisation acknowledged that approximately half of the wrasse its members use were wild caught. Analysis by the Open Seas Trust estimates that this equates to approximately 480,000 wrasse. With a conservatively estimated weight for each wrasse this equates to some 217 tonnes of wrasse per annum. This does not tally with landings reported by the Marine Management Organisation or by Marine Scotland.

5 The fishing season is in the breeding season

Under the voluntary measures, the **Scottish wrasse fishing season runs from 1st May to 30th November, which suits the salmon farming industry. This coincides with the wrasse breeding season, though, against all norms of good fisheries management.**

6 Minimum and maximum landing sizes are inadequate

Given wrasse species' vulnerability to size related exploitation, highly specific minimum and maximum conservation reference sizes are vital to maintain balanced stocks and reproductive potential. The minimum and maximum sizes in the voluntary measures are simplistic and depend upon whether wrasse belong to 'small' or 'large' species, in contrast to **the detailed Landing Size regulations enforced in English wrasse fisheries.**

ROLE OF THE AQUACULTURE INDUSTRY

Under the voluntary measures, **responsibility for maintaining data on fishing vessels engaged in the wrasse fishery (Measure 5.2) has been given to the salmon farming industry's trade body, the Scottish Salmon Producers Organisation. Responsibility for 'auditing' the fishery lies with private salmon farming companies themselves (Measure 6.3), which cannot be acceptable.**

The aquaculture industry is encouraging the unsustainable expansion of the fishery: SIFT has seen correspondence from within the Scottish aquaculture industry to members of the Scottish fishing industry, specifically encouraging fishermen to consider targeting wrasse and highlighting that fishermen can earn up to £190,000 per annum from wrasse.

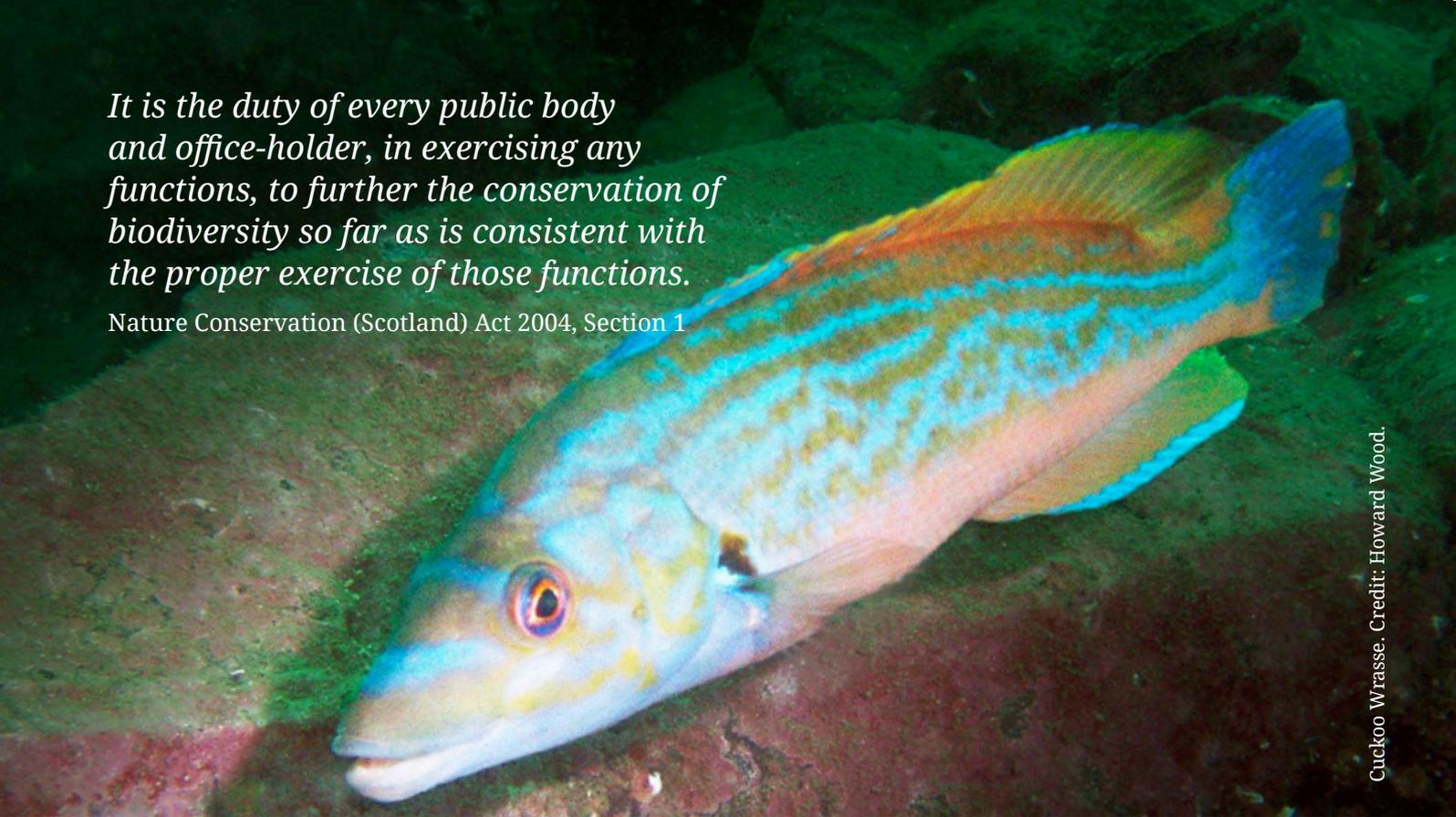
And demand is growing for Scottish wrasse, despite the absence of baseline information about stocks. Analysis of growing salmon farm demand for cleaner fish (both wrasse and lumpfish) projects that by 2020 up to 10 million cleaner fish per year will be needed by the salmon farming industry in Scotland. Data from Norway indicate that 36% of cleaner fish used in aquaculture are wrasse. If this represents a model for the data-poor Scottish fishery, then demand for wild wrasse can be expected to increase substantially.

Efforts by the salmon farming industry to breed wrasse for supply to salmon farms have yet to result in production levels which come close to meeting current, let alone future, demand. For example, in 2015 75,000 wrasse were produced (c. 3 tonnes) and in 2016 118,000 were produced (c. 4 tonnes). The Scottish Government reports that **production tonnage of wrasse in 2017 fell back again to 58,000 wrasse (i.e. less than 1% of the predicted demand by 2020).**

We believe Marine Scotland and the Scottish Government are failing in their duties under the Nature Conservation (Scotland) Act 2004 by not using statutory powers to act and prevent damage to the wrasse population.

It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions.

Nature Conservation (Scotland) Act 2004, Section 1



Cuckoo Wrasse. Credit: Howard Wood.

RECOMMENDATIONS

1 SIFT is not opposed to the use of cleaner fish in aquaculture, but this would require **either** the responsible use of farmed wrasse and lumpfish, or a genuinely sustainable and properly regulated fishery based on sound science.

In advance of these changes, **a moratorium on the wild fishery for all wrasse species, under the Inshore Fishing (Scotland) Act 1984, is essential.**

2 In addition to evidence from proper scientific stock assessments that a catch would not damage local populations, any wild wrasse fishery would have to be properly regulated. The Devon and Severn Inshore Fisheries and Conservation Authority has set a good example here: when it was concerned about wrasse catches in its area (for the Scottish salmon farming industry), it brought in effectively monitored and enforced mandatory measures to collect accurate data, and implement quotas, spatial management and temporal restrictions. **Scotland can and should follow a similar approach under the same 1984 legislation.**

The Sustainable Inshore Fisheries Trust (SIFT) is a Scottish charity that aims to promote the sustainable management of Scotland's inshore waters so they bring the maximum sustainable social and economic benefits to all of Scotland's coastal communities.

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