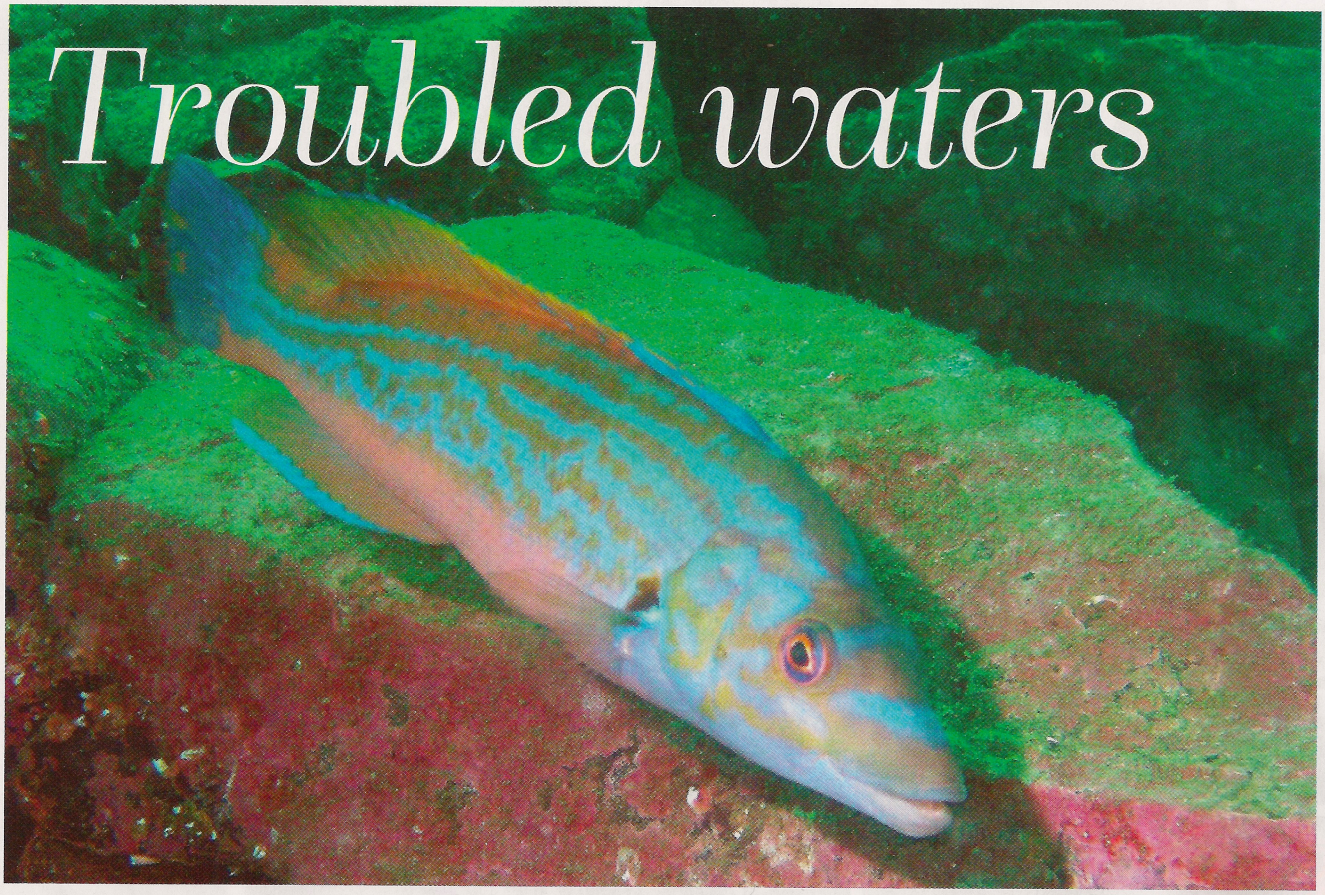
Troubled waters



HOWARD WOOD

Using wrasse as 'cleaner fish' in Scottish fish farms is landing the aquatic ecosystem in a precarious position, says **Charles Millar**

Above: A cuckoo wrasse is one of the five species of wrasse found in Scottish waters.

Whether it's beaver dams flooding Perthshire farmland, or resurgent pine martens helping push capercaillie to the brink of extinction in the Highlands, the law of unintended consequences can play havoc with the environment. Nowhere is this better demonstrated than the case of the wrasse, an iridescent and charismatic fish native to Scotland.

These beautiful fish feed on naturally occurring crustaceans, so it was only a matter of time before someone connected the dots and used them to control sea lice in fish farms, where uncontrolled infestations cause lesions on, and even kill, captive salmon. The use of wrasse as 'cleaner fish' presented an appealing 'natural' alternative to the use of insecticides to rid farmed salmon of sea lice, so has been enthusiastically adopted by the salmon farming industry.

However, nothing in life is that simple. Indeed, the harm being done by the current method of using wrasse in Scottish fish farms is so detrimental to our ecosystem that some ecologists question if we might be better off continuing to pour thousands of kilos of insecticide into our fragile sea lochs.

The basic problem is one of supply and demand. With salmon farming expanding fast, so is the demand for wrasse, resulting in them being trapped in vast numbers on our Atlantic seaboard before being sold to salmon farms. It's a lucrative business: one Scottish aquaculture company wrote to creelers pointing out that wrasse fishers can earn up to £190,000 a year. Everyone wants fishermen to make a good living, but this is Klondyke stuff.

There wouldn't be a problem if we could breed wrasse in large numbers, but unfortunately producing wrasse in captivity is difficult and expensive. Despite optimistic claims that the demand from fish farms will soon be met by captive-bred wrasse rather than wild-caught ones, only 58,000 wrasse were produced in Scotland in 2017, while our salmon-farming industry requires literally millions of cleaner fish each year. Unless things change fast, by the time hatcheries produce enough wrasse to satisfy demand, Scotland's wild wrasse population may have been wiped out.

We now have a situation where wrasse stocks are fished in an area until there are none left to catch, and the wrasse fishermen move on. This might be less problematic if wrasse quickly recolonised the over-fished area, but this doesn't happen.

Wrasse have unique life cycles which make them unusually vulnerable to over-fishing. They hibernate in winter, make nests which they guard to protect their eggs, are slow growing (some live for over 20 years) and often change gender as they mature, so removing large individuals profoundly upsets and threatens reproductive success. Being territorial, they have extremely limited