

# Cleaner fish welfare

Cleaner fish are added to sea-cages in salmon farms to eat parasitic sea lice off the salmon. Common species include lumpfish (AKA lumpsucker) and wrasse species.

## Who is the lumpfish?

- Lumpfish have a sucker under their belly which they use to attach to structures to rest<sup>1</sup>.
- Lumpfish are poor swimmers due to their small fins and lack of swim bladder<sup>1</sup>.
- Males can live up to 9 years and females up to 14 years and grow up to 60 cm<sup>1</sup>.
- Males look after the eggs for up to 8 weeks<sup>1</sup>.

## Who is the wrasse?

- The main species of wrasse used are ballan wrasse, goldsinny wrasse, rock cook wrasse, corkwing wrasse, cuckoo wrasse<sup>1</sup>.
- Ballan wrasse can live up to 29 years<sup>1</sup> and grow up to 65 cm.
- Ballan wrasse are born female, some become male after 5-6 years<sup>1</sup>.
- Some corkwing males resemble females in order to "trick" dominant males into letting them access females to fertilise eggs<sup>1</sup>.

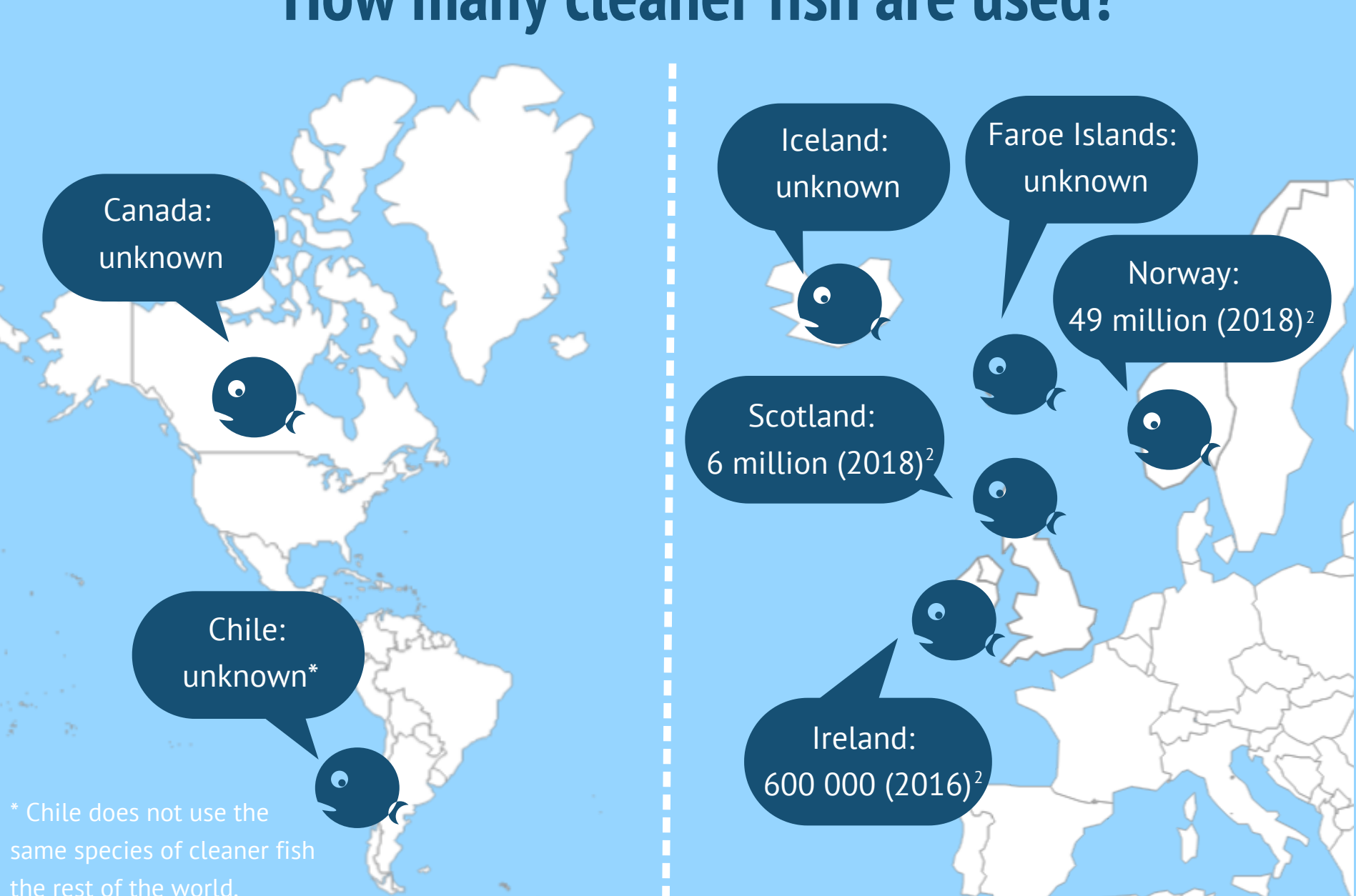
## Where do all the cleaner fish come from?

The majority of lump suckers are farmed but brood stock comes from wild populations. Wrasse are mainly wild caught. Some wrasse are farmed but this also relies on wild caught brood stock.

## Cleaner fish, an environmentally friendly solution to sea lice ... or is it?

- The continuous demand for wild caught cleaner fish and wild caught brood stock puts pressure on wild populations<sup>2</sup>. Too little is known about these populations to know the full impact the fisheries have on the wild cleaner fish populations.
- Farmed or wild caught cleaner fish can escape and mix with genetically different populations. This can put wild populations at risk<sup>3</sup>.
- Cleaner fish are carnivorous and need supplementary feed. This feed contains fish meal and fish oil obtained from wild caught fish. This puts further pressure on wild fish populations already exploited to feed fish like salmon.

## How many cleaner fish are used?

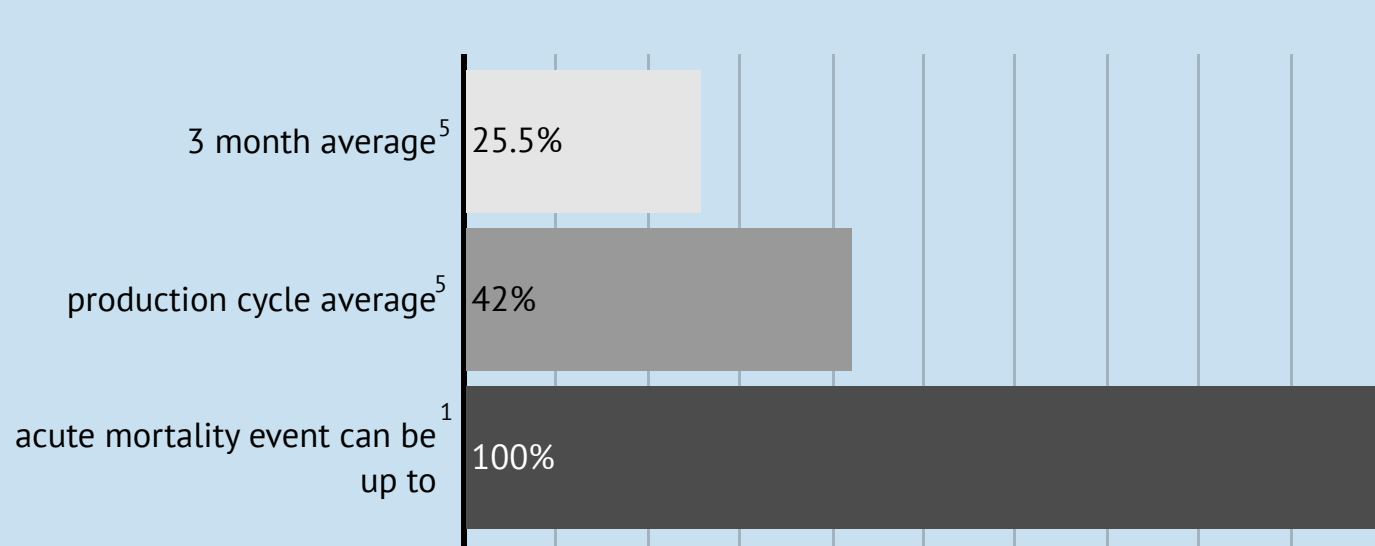


## Cleaner fish have poor welfare in salmon cages

A salmon farmer has stated that: "[using cleaner fish is] in a way a trade-off, because when we use cleaner fish we expose salmon to much less stress, so we get better welfare for salmon, but it is maybe a little bit at the cost of cleaner fish"<sup>4</sup>.

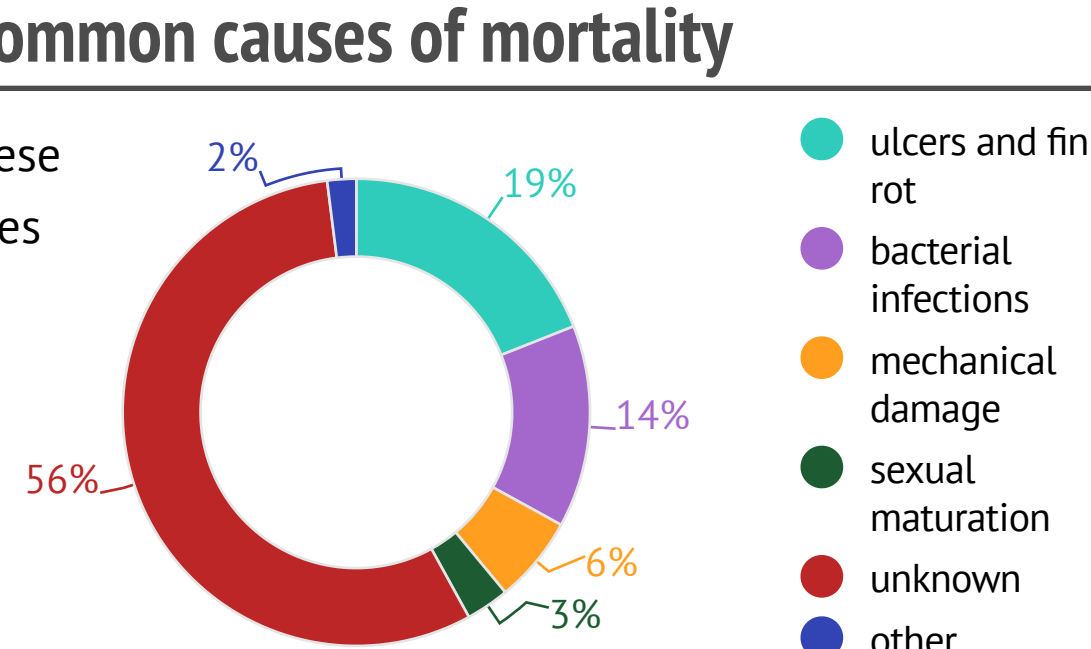
- Wrasse are highly stressed by handling, resulting in high mortality shortly after they are introduced into salmon sea cages<sup>1</sup>.
- If cleaner fish aren't provided supplementary feed, they experience hunger, can die of starvation<sup>1</sup>. They can also eat the fins and eyes of salmon causing salmon pain and injuries<sup>1</sup>.
- Cleaner fish can experience fear due to aggression and predation by salmon and be aggressive to each other<sup>1</sup>.
- Health problems include fungal and bacteria infections, swim bladder problems for wrasse, cataracts for lumpfish and fin damage<sup>1</sup>. Cleaner fish experience pain and suffering as a result of poor health.
- Lumpfish is one of the favourite hosts of *Caligus elongatus*, one of the two species of sea lice that cause the salmon industry so many problems<sup>1</sup>, meaning lumpfish can become infected with sea lice just like salmon.
- Cleaner fish prefer water with slow currents but salmon cages are in high current waters. Cleaner fish need shelter like artificial kelp to hide and rest. Without shelter, cleaner fish can become exhausted.

## Cleaner fish mortality is high in salmon cages



### Common causes of mortality

A study found these as the main causes of mortality<sup>6</sup>:



Other commonly reported causes of cleaner fish mortality include<sup>1-5</sup>:

- sea lice treatment
- poor water quality
- predation
- bad weather
- injuries
- dead salmon catches
- handling
- deformities
- not adapting to farming conditions

## Pointless suffering?

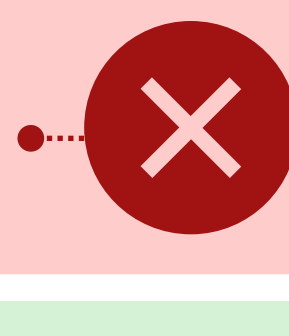
The research hasn't clearly answer the questions whether cleaner fish are effective against sea lice.

- Cleaner fish have been found to **delay but not remove** the need for sea lice treatments<sup>7</sup>.
- Only one study** has been done at a large commercial scale<sup>2</sup>.
- The effect of cleaner fish ranges from a **28% increase to a 100% decrease** in sea lice numbers<sup>2</sup>.
- Studies have found that only **15% - 36%** of cleaner fish in sea cages **consume sea lice**<sup>1</sup>.
- Cleaner fish don't always eat sea lice off salmon but also **eat organisms attached to the net**<sup>2</sup>.

## Call for action

### Discontinue use of cleaner fish

Companies should phase out the use of cleaner fish. Until this goal is achieved, companies should have a cleaner fish welfare policy in place.



### Research and development

Companies should invest into the research and development of welfare and environmentally friendly sea lice prevention and control methods.

References:  
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 2. Overton, K. et al. (2020) Sea lice removal by cleaner fish in salmon aquaculture: a review of the evidence base. Aquaculture Environment Interactions, 12, pp.31-44.  
 3. Ruess, E.K. et al. (2019) Assessment of the risk to Norwegian biodiversity from import of wrasses and other cleaner fish for use in aquaculture. VKM Report.  
 4. Bolliger P. (2020) Biological control of salmon lice: a critical analysis of knowledge production and development in the Norwegian cleaner fish industry. Norwegian University of Life Sciences.  
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 6. Norwegian Veterinary Institute (2014). Cleaning fish health-mapping of mortality and causes of mortality.  
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