

Workshop 3 :Implications of depredation for fishers, fisheries management and fish conservation

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This workshop focused on the implications of depredation for fishers, as well as for fisheries management and conservation. The most significant implication for fishers are the economic losses associated with the loss of their catch, but other consequences such as time loss and stress were also discussed. In fisheries where depredation occurs widely, managers are potentially faced with the need to incorporate losses due to depredation in their stock assessments. Improved data collection methods that describe and quantify the extent of depredation are key to developing effective management strategies to address the issue. It is also important that the species that is depredating is clearly identified, since there is little point coming up with management strategies for killer whales if it is in fact sharks that are doing the damage.

IMPLICITATIONS OF DEPREDAATION FOR FISHERS:

Lost or damaged fish

When depredating, both killer and sperm whales may take the entire fish off the line, or leave the heads on the line. Killer whales may also leave rake marks on fish, thereby reducing their economic value. Economic losses associated with lost or damaged fish are the biggest problem that depredation presents to fishermen. The type of damage to fish can vary from year to year (within the same species of predator doing the damage).

Damage to fishing gear

In some areas, whales take both fish and gear, whereas in others the hooks are straightened or only the heads remain on the hook. For many fishers, the loss of fishing gear is considered to be a negligible cost relative to the loss of fish. Some fishermen reported seeing depredating whales with lures hanging out of their mouth, so these are obviously not a significant deterrent.

Frightening target species

For some species, such as tuna, predators such as pilot and false killer whales will cause them to react, which can lead to gear damage. Killer whales do not appear to frighten black cod, but do cause Chinook salmon to react. However when fish are not being caught, it is difficult to determine whether the fish are simply not present, are being affected by the presence of predators, or are being captured by the depredators before the gear is brought on board.

Lost time and increased costs

Depredation results in a general increase in fixed costs associated with fishing less efficiently (bait, fuel, wages, insurance etc.). If fishing is being done during restricted periods of time, there may be costs associated with losing gear due to increased risk taking. If gear needs to be dropped in order to avoid feeding the whales, this also extends the time needed to fish and therefore increases costs.

Stress

Losing fish to depredating whales is demoralizing for the crew, particularly because it is difficult to 'outsmart the whales'. They feel pressure to make decisions without having enough information or knowledge to solve the problem. If the fishing period is extended this also adds pressure to the family lives of crew members.

Negative publicity

Fishermen are concerned that there may be negative publicity around depredation, and they do not want to be perceived as threatening populations of whales. Entanglement or accidental hooking that may lead to mortality of depredating whales is also a concern. There needs to be more education on acceptable practices to deter whales. There was acknowledgement that there needs to be more communication between researchers, managers and regulators, but this presents a bit of a conundrum because this may invite a mandate to fix the problem at a time when there are not yet clear solutions. However there may be a time when fishing companies or their products could be eco-labelled to show that the fish were caught using best fishing practices.

Safety concerns

Depending on the situation, there may be issues related to safety, particularly if it is necessary to change fishing seasons to avoid times when whales may be present. An entangled whale may also pose a risk to the crew as they attempt to disentangle the whale. As whales become more habituated to boats, they may put the crew or themselves at risk.

IMPLICATIONS OF DEPREDATION FOR FISHERIES MANAGEMENT AND FISH CONSERVATION

There were several key questions that may influence how fisheries affected by depredation are managed.

- 1) Are the depredators taking natural prey or are they switching?
- 2) How well understood are the population dynamics of the depredated species?
- 3) Can the depredation be quantified easily (ie are heads being left or are the hooks simply empty?)

If the whales are depredating species that they normally prey on, then to some extent the depredation may be a component of natural mortality. Knowledge of the natural diet of depredating whales is helpful in this regard. If the whales are taking species that they normally wouldn't prey on, this additional mortality needs to be incorporated in population models to avoid the risk of overfishing.

Knowledge of what changes may be occurring in both the depredator and the prey populations is also important. For example, are whale numbers increasing and /or are fish populations declining, and is this driving the whales to depredate?

Establishing methods for quantifying depredation is a challenge for managers, and is the focus another workshop at this symposium. It may be done in a number of ways. For example, the SEASWAP program in Alaska involves fishermen reporting depredation events through both an observer program and through log book data. The observer program is probably the best way to collect data but the program isn't always feasible. An alternative method that is being tested may be for cameras to be placed on board. The costs associated with such programs may be paid by the fishermen, or shared across the fishery.

Better data collection is key to understanding the locations and extent of depredation, and fishermen need to be convinced that the data that they help to collect are valuable. It may even be worthwhile for fishermen to be given cameras so that they can document individual depredating whales. Areas where depredation are not occurring also provide meaningful data in establishing baseline levels. Collection of data also has positive public relations benefits by being able to show that fishing practices are "in good order".