BYCATCH PREVENTION TECHNIQUES

SDG214, 2021
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Fisheries bycatch is considered a major threat to 67% of marine megafauna species (Žydelis et al., 2009)

INTRODUCTION

Bycatch means the accidental capture of a non-target species in fisheries.
Still, in the year 2021 bycatch is a major threat to marine mammals and other long-lived species with low productivity rate[1].
The continuous rate of new technology has led to new methods to meet the bycatch problem.

AIM

Review methods that exist to prevent bycatch as well as to show some examples of its applicability

chemical compounds

chemical deterrents 'may be cost-effective for mass production'[2]

'relatively simple to integrate into current fishing practices'[2]

more research is required to discover chemicals that repulse a wider range of potential bycatch[3]

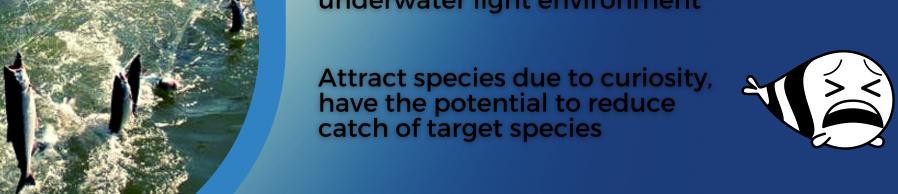some scents could deter some species of bycatch but attract others[3]

The **release of chemicals** into the ocean to deter bycatch.

Example: Chemicals can keep sharks away from fishing nets

visuals and sounds

Visual or sound deterrent devices attached to the net
Example: Visual warning panels attached to alert the species of the presence of the net.

have shown effect on reducing bycatch of seabirds, sea turtles, pinnipeds, cetaceans.

Easy to deploy, cost-effective and detectable across a range of underwater light environment[4]

Attract species due to curiosity, have the potential to reduce catch of target species

mechanic methods

effective with dolphins, sea turtles and marine birds

Can produce an impact on the sea floor

can be stressful for the non-target species that are fished[8]

Physical barriers to discard unwanted species or attract target species.
Example: Turtle excluder device represents an escape method for turtles which are in a net.

reduces bycatch more than target catch[5]

supports economically viable fisheries: can open more areas to fishing[6]

30-50% bycatch reduction[5]

not ideal for broadly distributed or rare species[5]

vessels need to buy the required technology

changing fishing practices

Changing when, where or how we fish
Example: time/area closures weather report for species: gives a probability of distribution in near-real-time

CONCLUSION

None of these measures can guarantee zero bycatch.
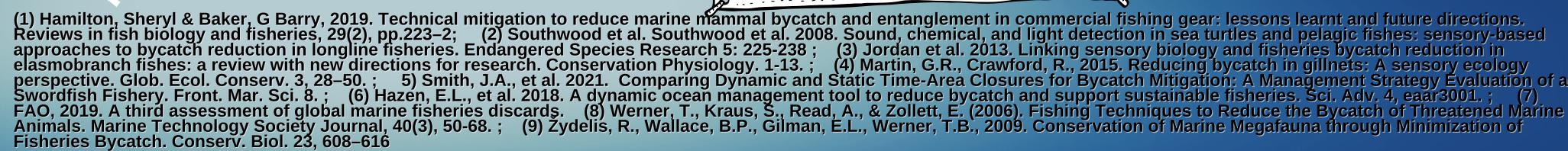
For the best results, more measures should be combined.[7]

Most methods are species-specific:

Better ecological understanding can give tailored management plans and methods.

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