

Shifting Gears in Pacific Fisheries

Piper-Lynn Brady

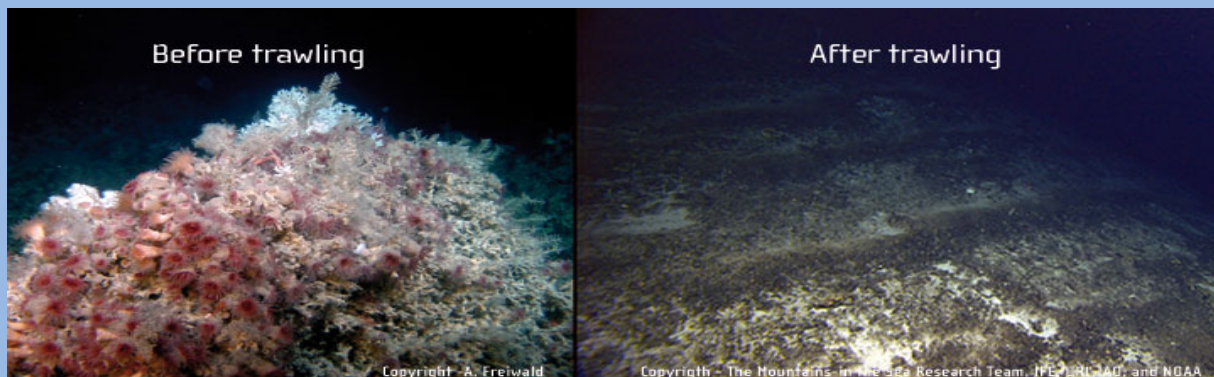
BIOL420

Executive Summary

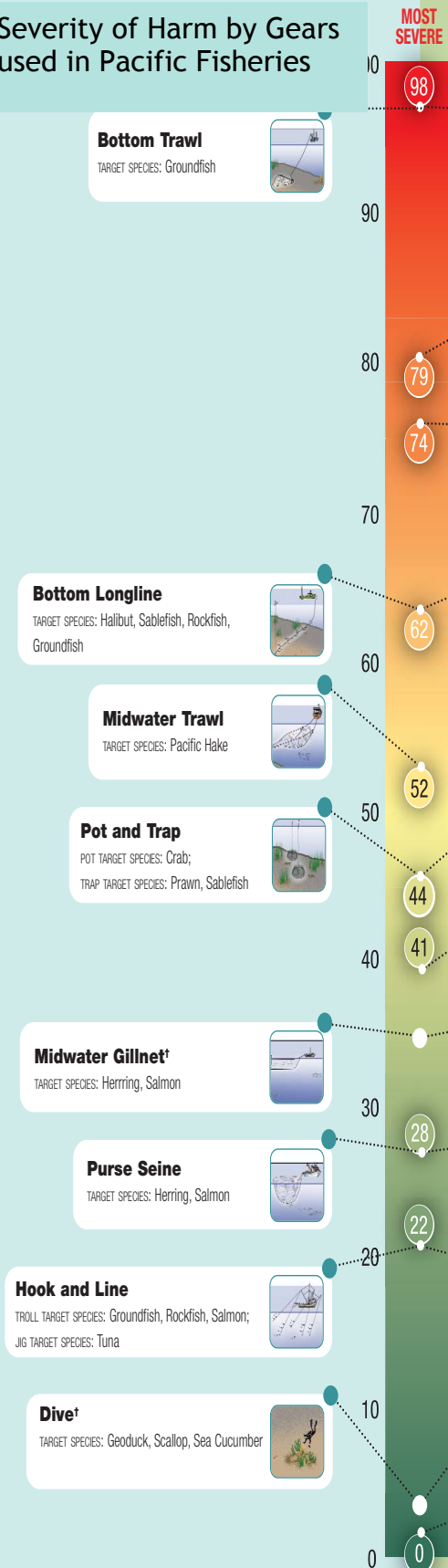
The Pacific Ocean hosts many fisheries using a variety of gear methods, each with varying degrees of damaging environmental impact. Fishing gear effects the health of our oceans by non-selectively catching fish, which have a high change of mortality, and destruction of bottom habitats such as unique and sensitive corals. Currently, the most frequently used gear types in Canada are also the most harmful and damaging to the oceans habitats and fish populations on which we rely. It is necessary to minimize the risk from fishing methods to ensure healthy oceans and productive oceans

Introduction

As fish populations are continually depleted and fishing companies strive to achieve economic efficiencies, vessels must go farther offshore to exploit new areas and adopt fishing methods and gear with continuously increasing capacity. Increased catch efficiency is often correlated with more destructive and less selective gear types. Habitat destruction and bycatch are the two greatest environmental problems associated with gear type. Bycatch is an issue for fisheries management as it adds poorly known fish mortality causing difficulties for stock assessments, especially since non-commercial discards do not require mandatory reporting in Canada. Habitat damage disrupts bottom water life including reductions in the biomass and diversity of benthic organisms. Comprehensive studies on gear types show significant differences between the impacts on the marine environment by gear used, and indicate that the gears we use most extensively in Canada have the most severe impact. Interestingly enough, the fisheries using gear that catches the largest volumes of fish are not the most valuable, these are much lower impact gear fisheries.



Severity of Harm by Gears used in Pacific Fisheries



Approaches & Results

Bottom contact gear is the biggest threat to sensitive organisms such as corals and sponges. Bottom trawling is by far the most damaging gear, with dangerously high discard rates of unintentional catch and severe habitat damage. The most sensitive habitats are destroyed from the first trawling incidents, and it is improbable that any large tracts of sensitive habitat remain along the west coast of Vancouver Island. There is currently no restriction on depth or further expansion of trawl fisheries. Bottom longline fisheries show minimum discard rates overall, however some fisheries, such as the Pacific halibut have nearly half of the catch as discards. Bottom longlines in the Pacific also catch seabirds, the species of greatest concern being the black-footed albatross.

Higher quota allocations to more damaging gear types are a problem for Canada's oceans. Frequently the more damaging gear types receive higher percent of quota allocations, with far less to less impactful gear methods. For example, in 2006-2007 British Columbia groundfish fisheries, over half of all groundfish quota was allocated to the trawl sector which is the most severely damaging. The rest was split between the bottom longline, hook and line and trap fleets. In fisheries with critically declining populations, gear methods with the lowest rates of unnecessary mortality are the best and obvious choice. Safeguarding our oceans to preserve unique habitat such as glass sponge and corals, and maintaining healthy fish populations to sustain fisheries industries necessitates a change in how we are fishing off our coasts.

Recommendations:

- Create a network of MPAs and fisheries closures to safeguard habitat against harmful fishing tactics, especially sensitive habitats such as in the Strait of Georgia.
- Create a policy that sets limits of bycatch for frequently caught species including non-commercial and species at risk.

Photo Credit Fuller et al (2008).

† See Box 3.

LEAST SEVERE

CPAWS BC. *Glass Sponge Reefs*. (n.d.) Retrieved from <http://cpawsbc.org/campaigns/glass-sponge-reefs>
 Fuller, S., Pisco, C., Ford, J., Tsai, C.F., Morgan, L., Hangaard, D., and Chuenpagdee, R. (2008). Addressing the ecological impacts of Canadian fishing gear. Canadian Cataloguing in Publication Data. Delta, B.C., Canada.
 Suzuki, David. (2007). Dragging our assets: Toward an ecosystem approach to bottom trawling in Canada. Retrieved November 27, 2013 from http://www.davidsuzuki.org/publications/downloads/2007/DSF_DraggingAssets.pdf