Fish habitat in the balance: when does the remediation dredging scale tip from net-environmental benefit to serious harm to fish?

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Fisherss Act – Serious Harm to Fish

The death of fish or any permanent alteration to, or destruction of, fish habitat

“Fish” includes fish, shellfish and other aquatic species that are part of or support a commercial, recreational and Aboriginal fisheries

Background

Esquimalt Harbour
Victoria

Fish Habitat in the Balance

June 20, 2017

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HABITAT
PROJECT
MITIGATION
To
Avoid
and
Reduce
SERIOUS
HARM

No Fisheries Act authorization

Mitigation

No Fisheries Act authorization

Mitigation

Esquimalt Harbour Habitat

June 20, 2017

Pathways of Effects
Measures to Avoid Serious Harm

Dredging activity options to address pathway effects include:

- Dredging techniques
- Remove sediments and replace with similar substrate
- Cap, cover, backfill up to existing elevation

- Time dredging outside of sensitive fish window
- Silt curtains around dredging activities
- Model, manage and monitor water quality
- Marine mammal and fish observers
- EMP

Permanent vs. Temporary Habitat Loss

Permanent loss
- Permanent change in substrate type or elevation

Temporary Loss
- Pre-dredge substrates (grain size and gradation)
- Elevations restored – maintain substrates in photic zone
- Recolonization from surrounding habitats
- Removal of contaminants are expected to improve fish health and fish habitat

Pathways of Effects

Change in channel / shoreline
- Change in hydraulics
- Resuspension and entrainment of sediment
- Change in substrate
- Change in food supply
- Change in habitat structure
- Change in sediment concentrations
- Change in contaminant concentrations
- Change in aquatic macrophytes (vegetation)
- Change in food supply
- Change in nutrient concentrations

Questions?