

# Siting and Waste Control Regulations for Marine Fishfarms in British Columbia



# Topics for Today

- 
- Siting
  - Waste Regulations
  - Operational Compliance
    - Fish Escapes
    - Fish Health
    - Codes of Practice
  - Enforcement
  - R&D
- 



# BC Agencies Involved

- Land & Water British Columbia Inc – LWBC
- Ministry of Agriculture, Food & Fisheries – MAFF
- Ministry of Water, Land & Air Protection – WLAP

# Agency Roles

## Land & Water British Columbia Inc

- one window for new site applications
- grants legal tenures on Crown land

## Ministry of Agriculture, Food & Fisheries

- lead agency for aquaculture development
- grants operating licences

## Ministry of Water, Land & Air Protection

- lead agency for environmental protection
- responsible for standards & protocols



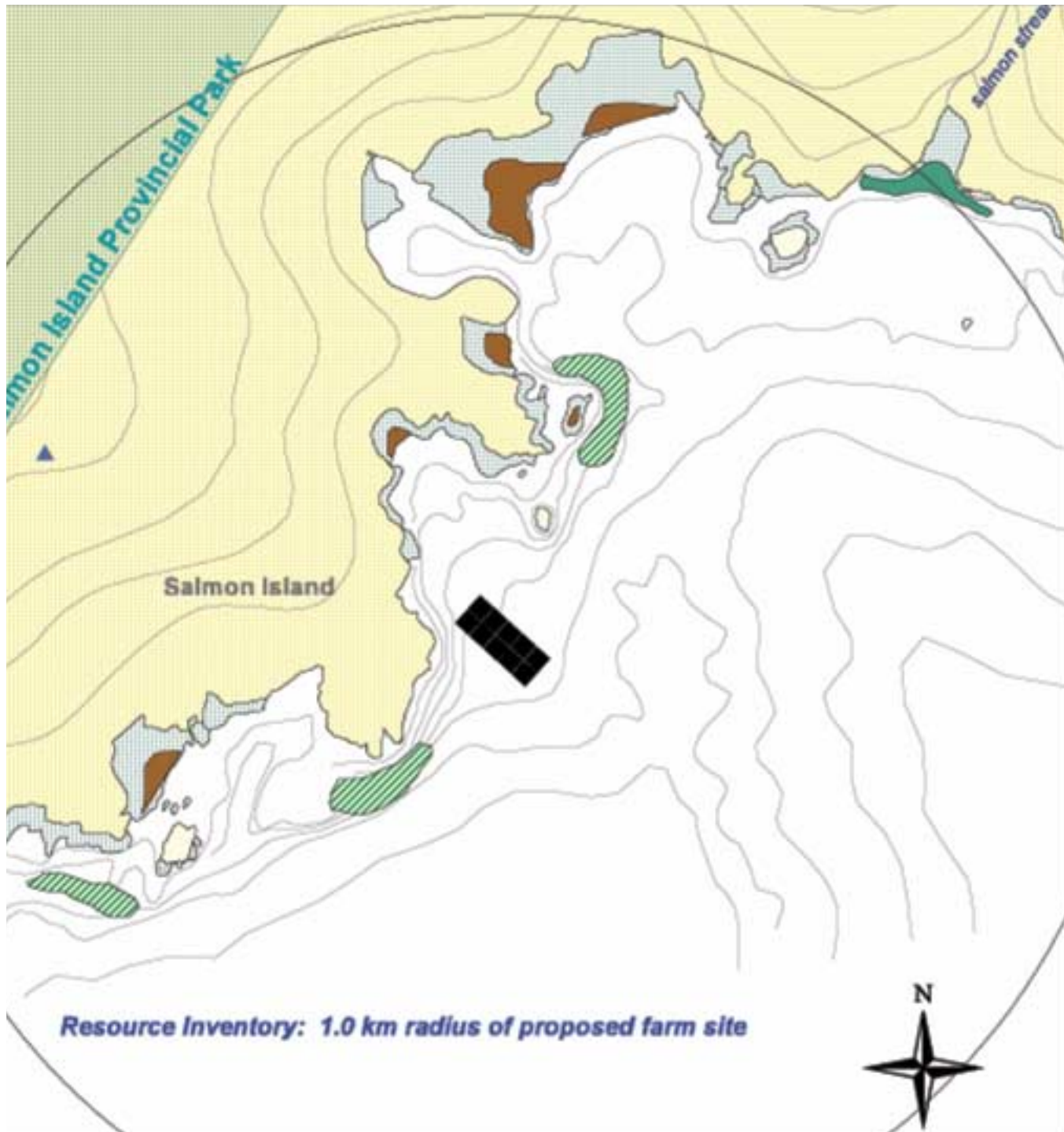
# Key Document



"Guide to Information Requirements for  
Marine Finfish Aquaculture Applications"

Available from MAFF or on web at:  
[www.agf.gov.bc/fisheries/index.htm](http://www.agf.gov.bc/fisheries/index.htm)





**FIGURE 4.2:**  
**Salmon Island Site**  
**Local Resource M**

***Great Salmon Compan***

Digitized from CHS Chart 3415  
 NAD 83

Map Coordinates as UTM

Scale 1:10,000

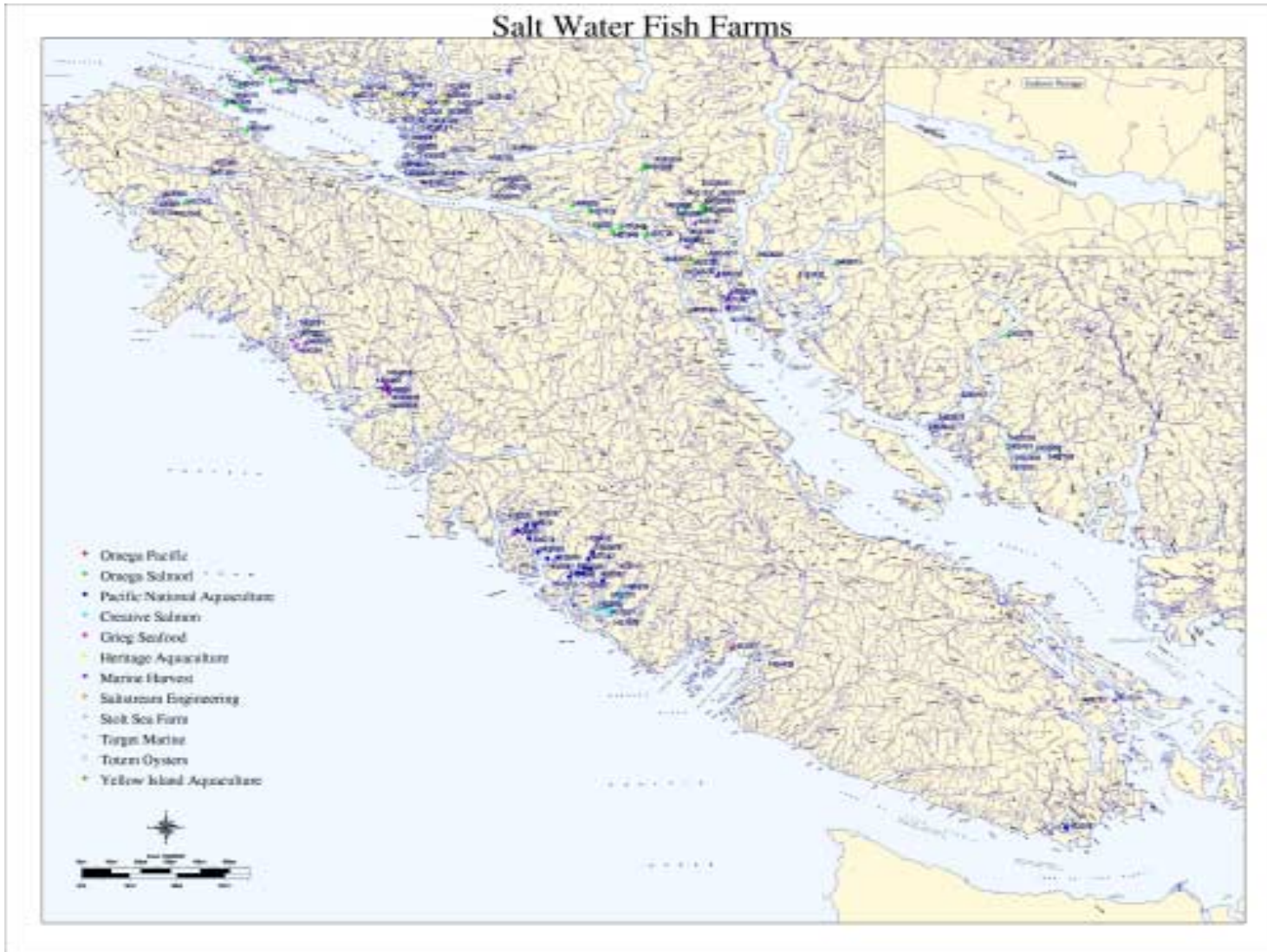
Data from CRIM Sources and  
 Field Verification Surveys

100 0 100 200 Meters

**LEGEND:**

-  Provincial Park
-  Manila/Cockle Clam Beaches
-  Zostera (Eelgrass) Bed
-  Nereocystis (kelp) Bed
-  Eagle Nesting Site
-  Proposed Netcage System
-  Depth (metres)
-  Streams
-  Elevations (50-metre contours)
-  Adjacent Upland
-  Littoral Zone

## Salt Water Fish Farms



# Finfish Aquaculture Waste Control Regulation (2002)

## ■ Registration

- ocean currents, baseline sampling, future footprints

## ■ Environmental Standards

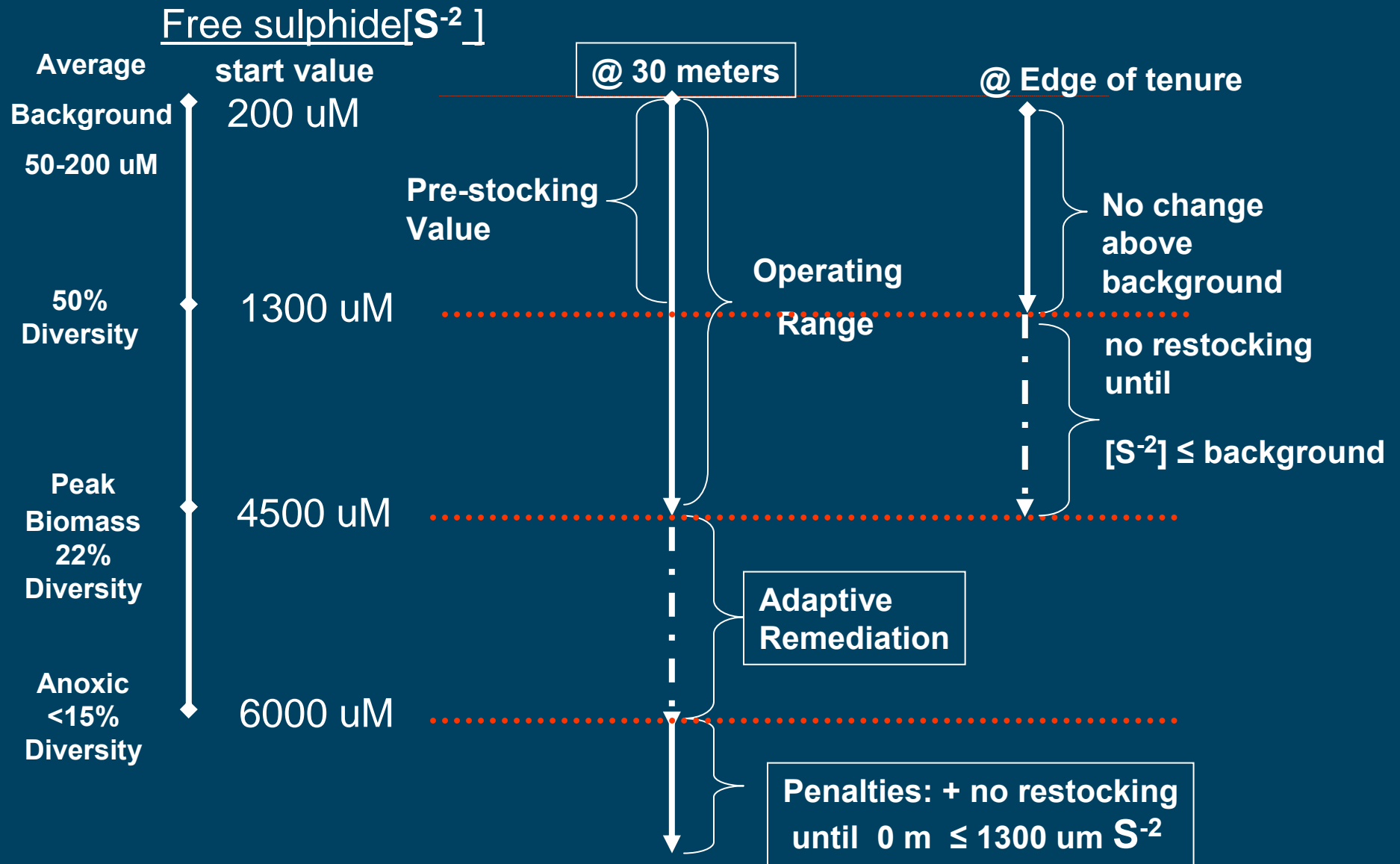
- chemical & biological

## ■ Monitoring & Reporting Requirements

- materials used, feed usage, fish kills
- results of self-monitoring programs
- remediation measures as required

## ■ Treatment for Domestic Sewage Discharges

# Operational Standards




# Finfish Aquaculture Waste Control Regulation (cont'd)


## Best Management Practices (BMPs)

- To meet waste standards
- To reduce waste discharges
- To improve waste management practices
- To improve spill prevention and handling of fish mortalities
- To prevent or minimize effects on wildlife



# Examples of BMPs


- Management of potentially harmful materials
    - disinfectants, pesticides, anti-foulants, etc
  - Spill prevention plans
  - Mort disposal methods
  - Management of bloodwater
  - Disposal of net-cleaning wastes
  - Fish kill contingency plans
- 



# Finfish Aquaculture Waste Control Regulation (cont'd)




## Enforcement Strategy and Penalties

- Written warnings
  - Violation tickets
  - Administrative penalties
  - Formal prosecutions
  - Recommend tenure/licence suspension or cancellation
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# Annual Inspections & Audits

- Annual on-site inspections of fishfarm sites
  - Audits of environmental programs
  - Annual reports of findings available to the public
  - Follow-up on remedial actions to ensure improvements implemented
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# Basis for Regulation

- Intensive field monitoring by industry and MWLAP
  - Physical & chemical data (or video surveys) collected by industry for 94 farm sites, and by MWLAP for 32 sites
  - Biological data collected at select sites by industry and MWLAP
  - Independent scientific review
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# Funding for Research

- \$5 million provincial seed funding
    - Aquaculture & Environment Trust Fund
    - Chair in Aquaculture at University of British Columbia
  - BC Aquaculture R&D Committee (BCARDC)
    - Establishes & coordinates research priorities
    - Fishers and First Nations representation
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# Data Integrated into GIS for Presentation - Oblique View

