

# The “Choke” Species Challenge: Experience and Strategies From Across the “Pond”

IIFET 2016 Scotland *Challenging New Frontiers in the Global Seafood Sector:  
A Northern Enlightenment*

## Industry and Policy Day

Discard-Free Fishing and Market Opportunities for Responsibly Caught Fish

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*Oregon State University*



# U.S. Fisheries Management

## *The Sustainable Fisheries Act*

- U.S. Federal law— Maximize National Benefits
  - “Benefits” defined to include a multiplicity of complex economic, social, and environmental objectives
- Regional Councils Develop the Management Plans
  - Regulated Open Access
  - Rights (Privileges)
    - Marketable permits
    - IFQ’s
    - Coops

# MSY, Quotas, and Choke Species

- The Act structured around the concept of **MSY and “Optimal” Yield**
- Increasing focus on stock catch quotas for:
  - Individual fishermen
  - Fleets
  - Sectors (e.g., Commercial, recreational, onshore, offshore, tribal, gear-type, etc)
- Accounting for every fish
  - Fish tickets, observers, e-monitoring, dockside monitoring, enforcement, logbooks, etc.
- Rebuilding “overfished” stocks
  - Significant focus on reducing bycatch and discard
  - Full retention not usually mandated
- **“Choke” constraining stocks a major challenge**

# Tools for Addressing Constraining “Choke” Species

## *“Regulated Open Access Fisheries”*

SECTOR	Government	Fleets/Private Organizations	Individual vessels
<b>ACTION</b>			
Time based rules	Dark Brown	Light Orange	Light Orange
Space based rules	Dark Brown	Light Orange	Light Orange
Catch based rules	Dark Brown	Light Orange	Light Orange
Effort based rules	Dark Brown	Light Orange	Light Orange
Property rights incentives	Light Orange	Light Orange	Light Orange
Gear technology	Dark Orange	Light Orange	Light Orange
Information technology	Light Orange	Light Orange	Light Orange
Behavioral (dis)incentives	Dark Brown	Dark Orange	Light Orange

# Tools for Addressing Constraining “Choke” Species

## *“Rights Based Fisheries”*

SECTOR	Government	Fleets/Private Organizations	Individual vessels
<b>ACTION</b>			
Time based rules			
Space based rules			
Catch based rules			
Effort based rules			
Property rights incentives			
Gear technology			
Information technology			
Behavioral (dis)incentives			

## Example #1

# Managing Choke Species under Rights Based Management *The U.S. West Coast Pacific Whiting (Hake) Fishery*

- Largest volume fishery in North America south of Alaska (about 250,000 MT)
- Midwater Trawling
- **Managed under Rights based regimes**
  - COOPS – Catcher Processor sector
  - COOPS – Mothership sectors
  - IFQs — Shorebased Sectors



# Proportion of Whiting to Choke Species Need for More Flexible Rights

Agenda Item G.2.b

Supplemental Public Comment PowerPoint

June 2016

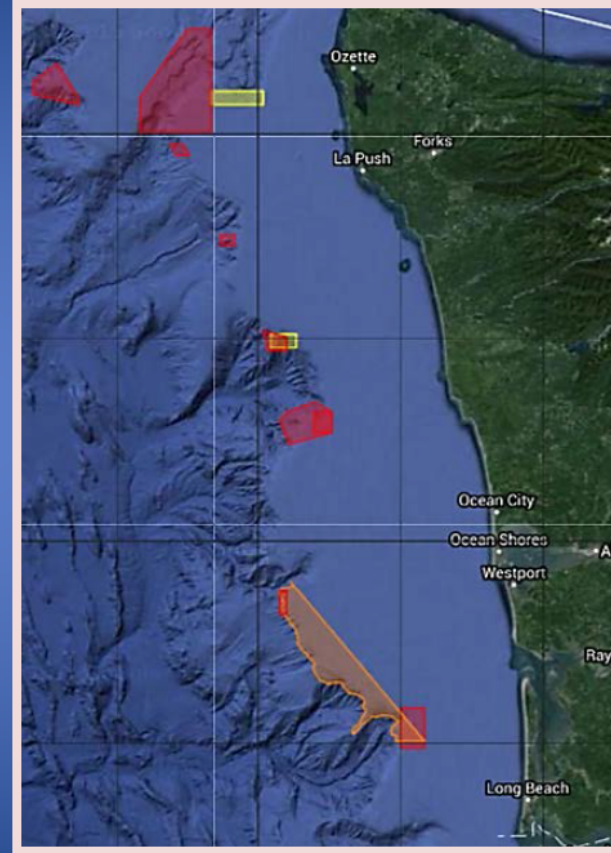
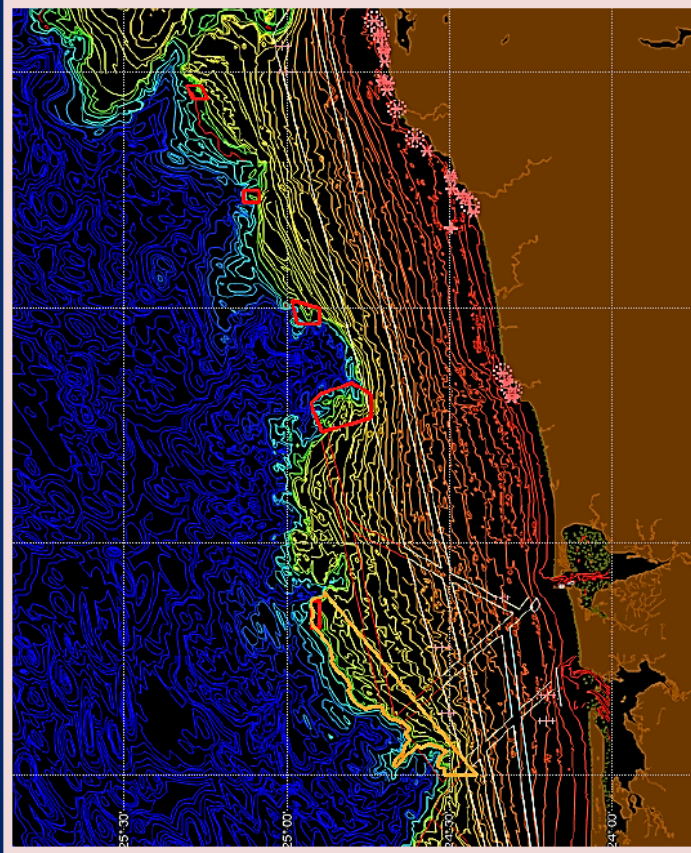
## Different Pro-rata “Base Rates” for Two Whiting Coops

<b>Annual Base Rates 2016</b>	<b>POP</b>	<b>DKB</b>	<b>Canary</b>	<b>Widow</b>
Mothership Coop	0.10	0.09	0.08	1.66
Shorebased Coop	0.17	0.25	0.09	3.52
WMC Base Rates as % of SWC Base Rates	59%	36%	89%	47%

More restrictive POP & DKB Base Rates and the inability to access additional quota in the IFQ market constrains the fishing strategy of Catcher Vessels in the MS sector

# Voluntary Area Closures

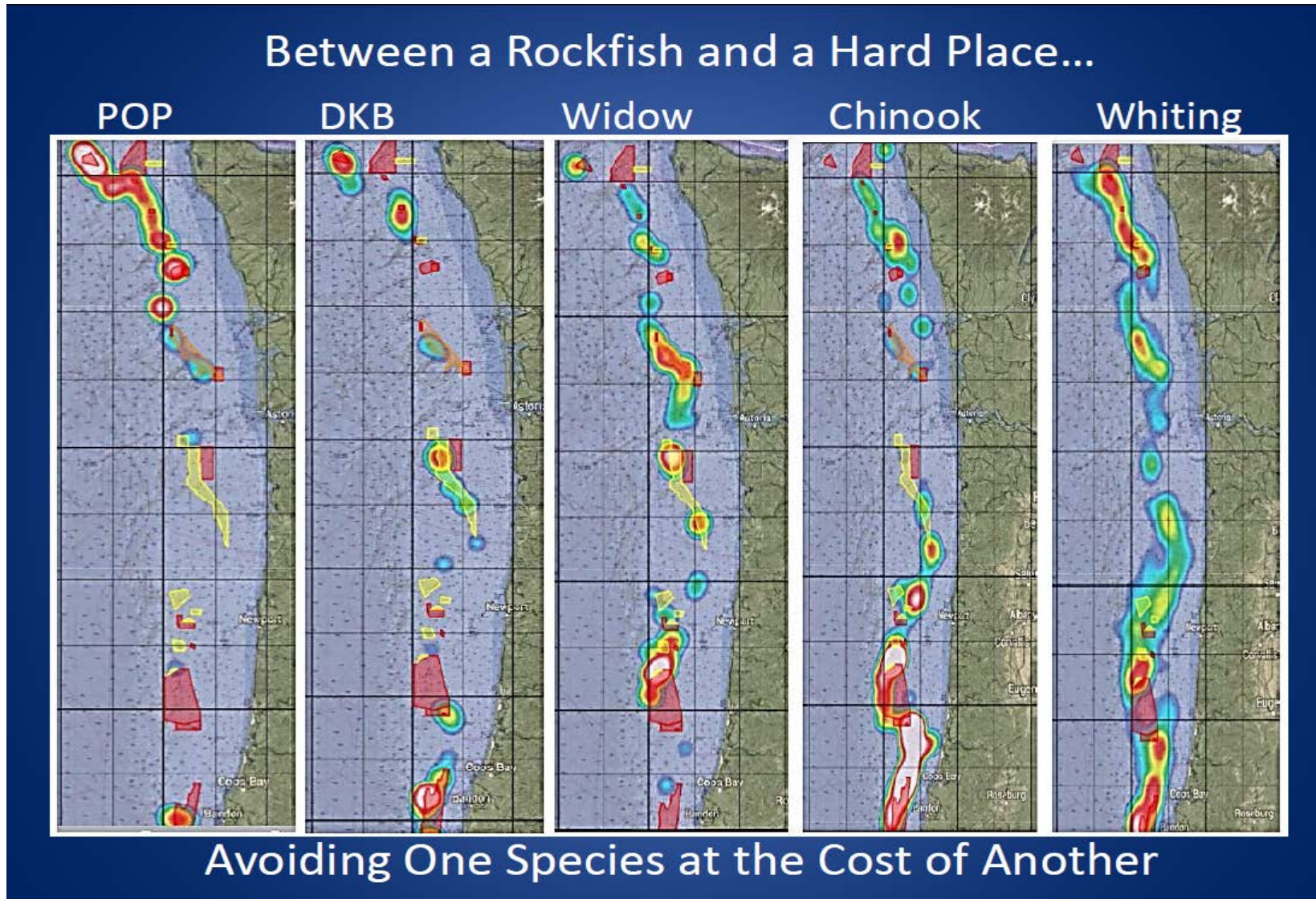
## Six New WMC Closure Areas off WA in 2016



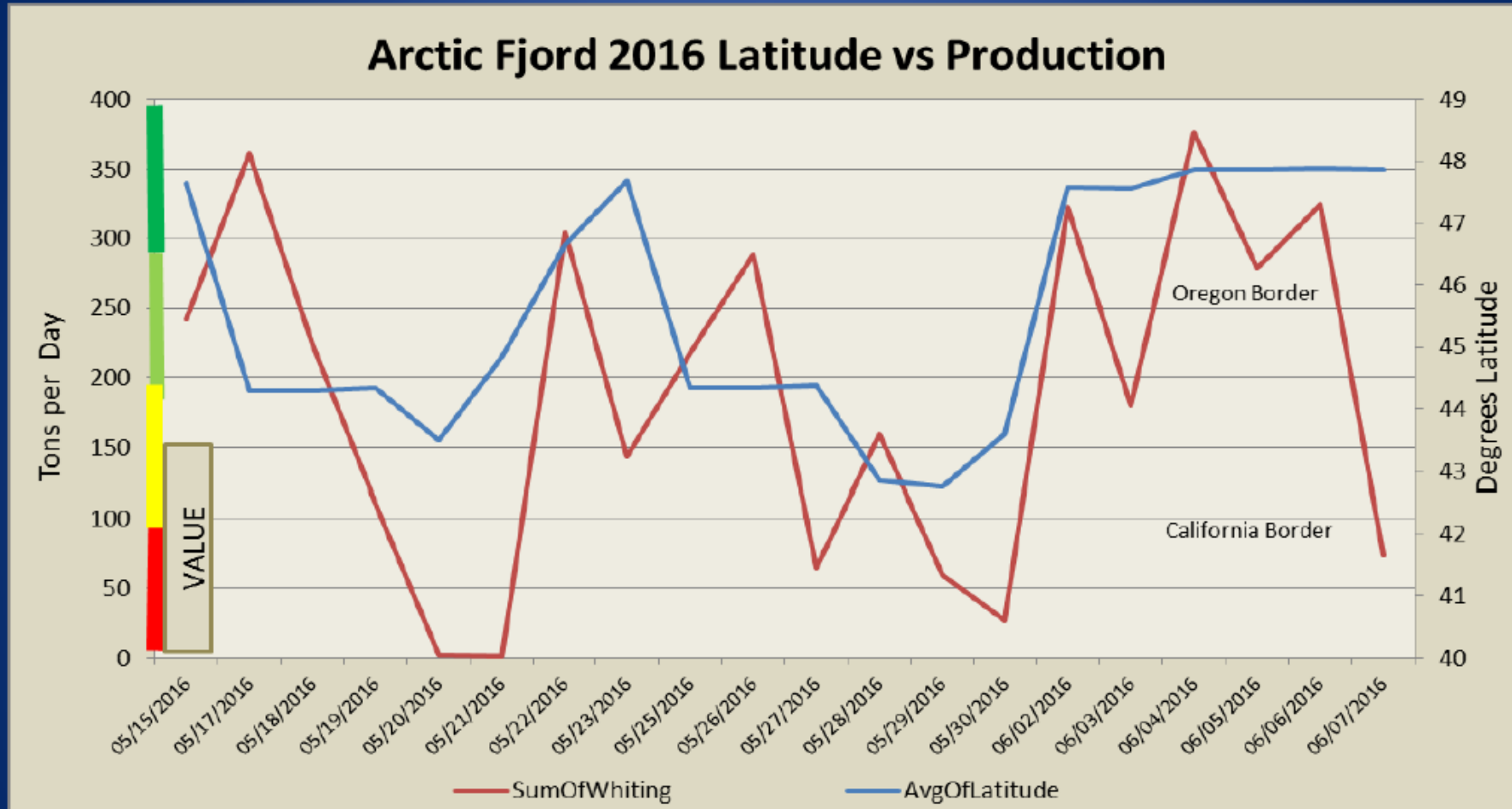
The WMC has done everything it can with the limited POP & DKB available



# Tradeoffs between Whiting and Choke Species



# Costs of Relocating to Avoid Bycatch



- Cost of Travel – Time – Fuel
- Lost Daily Production in Absolute Tonnage
- Lower Recovery per Ton Means Lower Value per Ton

# Example #2--A Regulated Open Access Fishery

## *West Coast Pacific Troll Salmon Fishery*

- Small vessel troll fishery – about 700 active vessels
- 100 “undistinguishable” chinook salmon stocks
- Hatchery and “Wild” Fish
- 13 Stocks “Threatened and Endangered Species Listed”



# Example #2--A Regulated Open Access Fishery

## *West Coast Pacific Troll Salmon Fishery*

- Management Based on Fifty Year Old Tools
- Command and Control Management by Federal and State Managers
  - Estimate “escapement” for every stock based on last years data and longer term trends
  - Develop time and area and catch rules every year
- Periodic “salmon disasters” and closures due to “weak stocks”
- \$290 million in “disaster” relief
- Can we improve management and address the choke species problem using in-season tools – even rights based management tools?

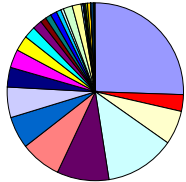


# Project CROOS Science and At Sea Data Collection

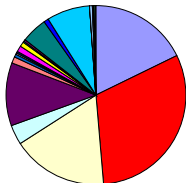


# Catch-Effort-Stock

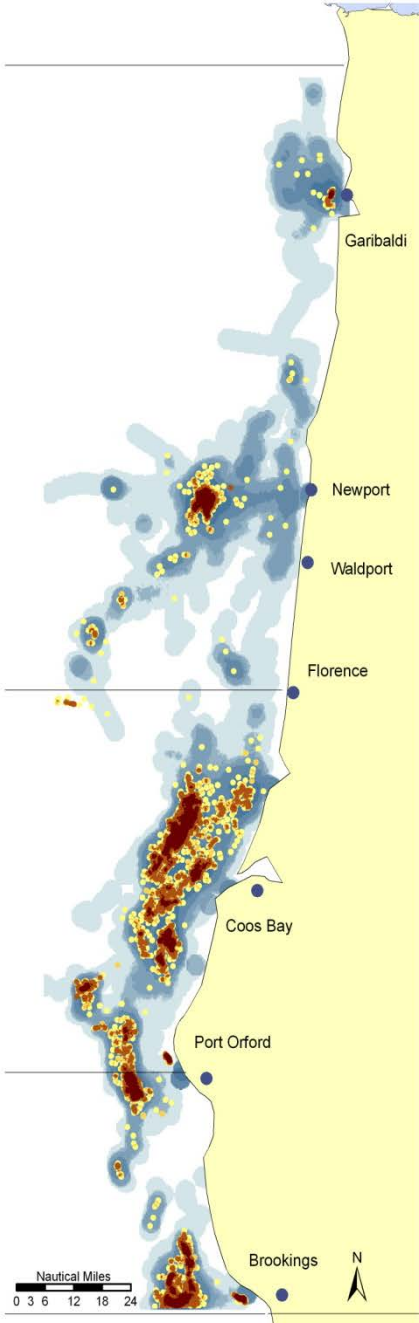
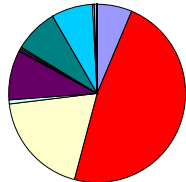
**Northern Oregon Coast**  
June - July 27, n = 388



**Southern Oregon Coast**  
June - October, n = 2447



**Klamath Management Zone**  
July - October, n = 672



position Key

- Central Valley fa/fsp
- Klamath R.
- Rogue R.
- U Columbia R. su/fa
- Mid OR Coast
- Mid Columbia R. tule
- L Columbia R. fa
- S Puget Sound
- L Columbia R. sp
- Deschutes R. fa
- CA Coast
- N OR Coast
- N CA / S OR Coast

Map Key  
Fish harvest density

- low
- high

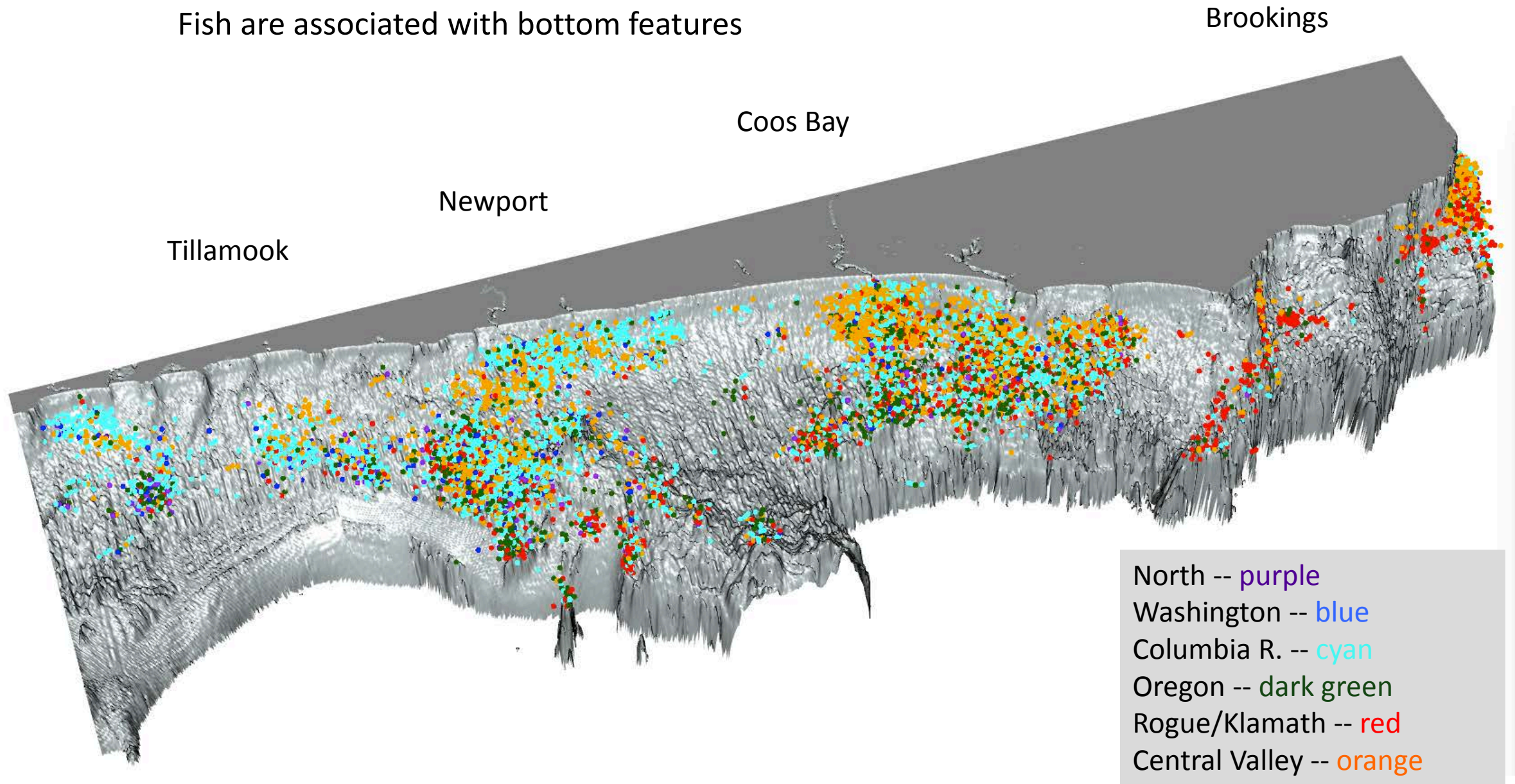
Vessel effort

- low
- high

Project CROOS: All 2010 – 2012 samples combined.

Stock groups show distinct north-south distributions.

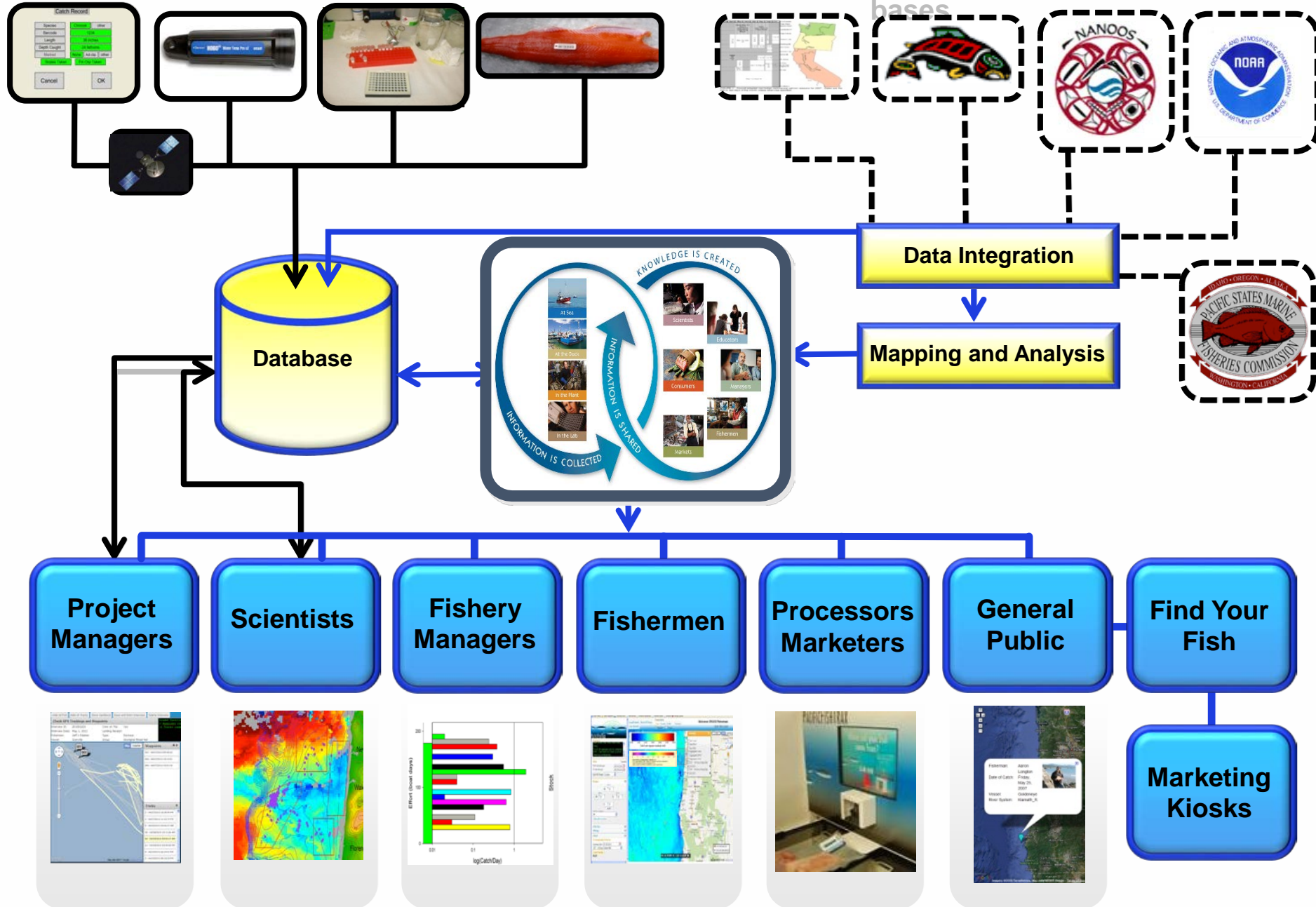
Fish are associated with bottom features



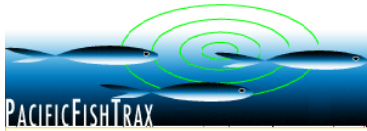
# Fishery and project data

# Data Inputs

# Other linked data bases







**Summary**  
249 fish encounters found.  
249 fish encounters found.  
Creating overlay. This may take a moment...  
86 data points used in effort overlay.

**Date** All  
From (mm/dd/yyyy): 01/01/2006  
To (mm/dd/yyyy): 04/26/2011  
Specific Range: All

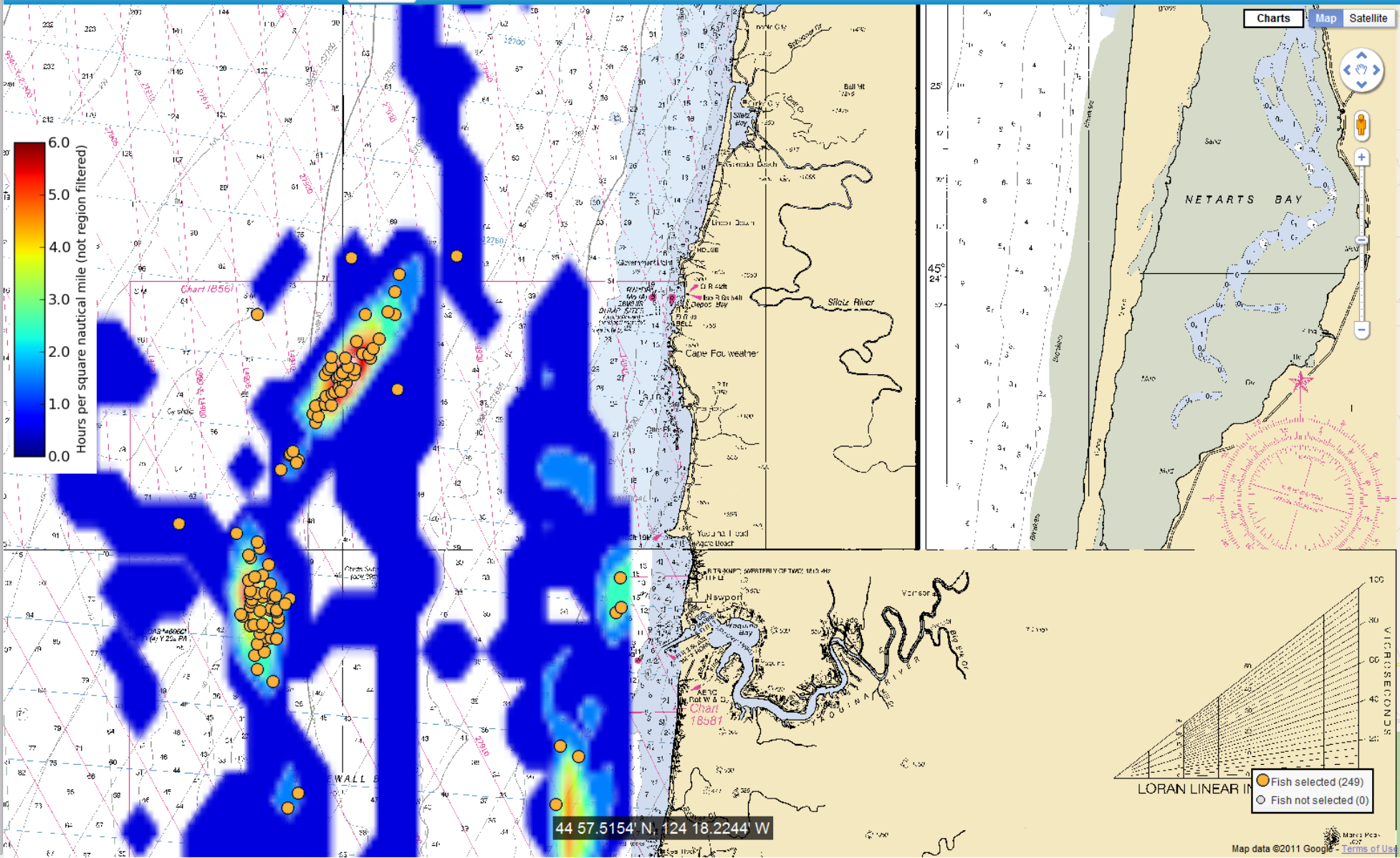
**Region** All  
North: 90 0  
West: 180 0 East: 0 0  
South: 0 0  
Select a Region: All  
[Show Box on Map](#)

**Fish Size** All  
Range (inches):  
Preset Ranges: All

**Biology** All  
All  
Eggs  
Milt  
Unknown  
[Update Fish](#)

**Stock** All  
California Coast  
Central BC Coast  
Central Valley fa  
Central Valley fa Fsp  
Central Valley sp  
Central Valley wi  
Deschutes R fa  
Deschutes fa  
E Vancouver Is  
Hood Canal  
[Update Fish](#)

Display Mode: Map | Graphs | Table | My Effort  
Map Overlay:  Markers  Tracks Show/Hide  
Welcome Jeff Feldner  
[Home](#) | [Help](#) | [Logout](#)





# Using Your Smart Phone to Find CROOS Salmon



Hey! How did you enjoy your fish?

- a) I loved it!
- b) It was ok.
- c) It wasn't very good



## FISH TRAX MARKETPLACE

Electronic Fishery Information System

[Find Your Fish](#)
[Find A Dealer](#)
[Find A Retailer](#)
[Community](#)
[Contact](#)
[Sign-in](#)





LET'S CONNECT!





seafood lovers
retailers
dealers

Imagine knowing the name of the fisherman who caught the fish on your plate.

Imagine knowing the story of his or her boat, crew, and business. Imagine further being able to let that fisherman know how and if you liked the seafood product that he or she caught!

**Now you can.**

[Find Your Fish](#)

Imagine having the power to show your guests not only where the fish they are ordering—or buying to enjoy later at home—came from, but also the name of the fisherman who caught it. Imagine the trust you could build with the diners at your restaurant or the shoppers at your market if you could show them (as well as tell them) the unique story of the fisherman, the boat, crew, and business.

**Now you can.**

[Learn More](#)

Imagine being able to learn not only which restaurant or seafood market carries the fish you bought from the fishermen you trust, but learning where that fish was sold—and what the customer (or “seafood lover”) thought about it! Imagine what it would be like to get first-hand comments from the restaurant patron or home cook, and knowing who is buying your fish and where!

**Now you can.**

[Learn More](#)

# Key Lessons

- Quota systems lead to major “choke” species issues and large costs
- There are many tools to address choke species across gov, fleets, individual vessels
- Regulated open access U.S. fisheries tends to rely on command and control, inflexible, and “coarser” government tools
- Rights based fisheries tends to rely on more flexible incentive tools designed by industry
- Real time electronic reporting, monitoring, and data sharing are critical
- No matter gove/industry’s best efforts –hard not to leave “fish on the table”
  - Do we need more flexibility in quota management to address choke species?
  - Is MSY management too constraining and economically inefficient?