



Oregon's Coastal Plan: A Walk on the Wild (and Hatchery) Side

Lessons in:

- Conservation science
- Fish management
- Social/political engagement

AFS Hatchery/Wild
Symposium
Ed Bowles
ODFW

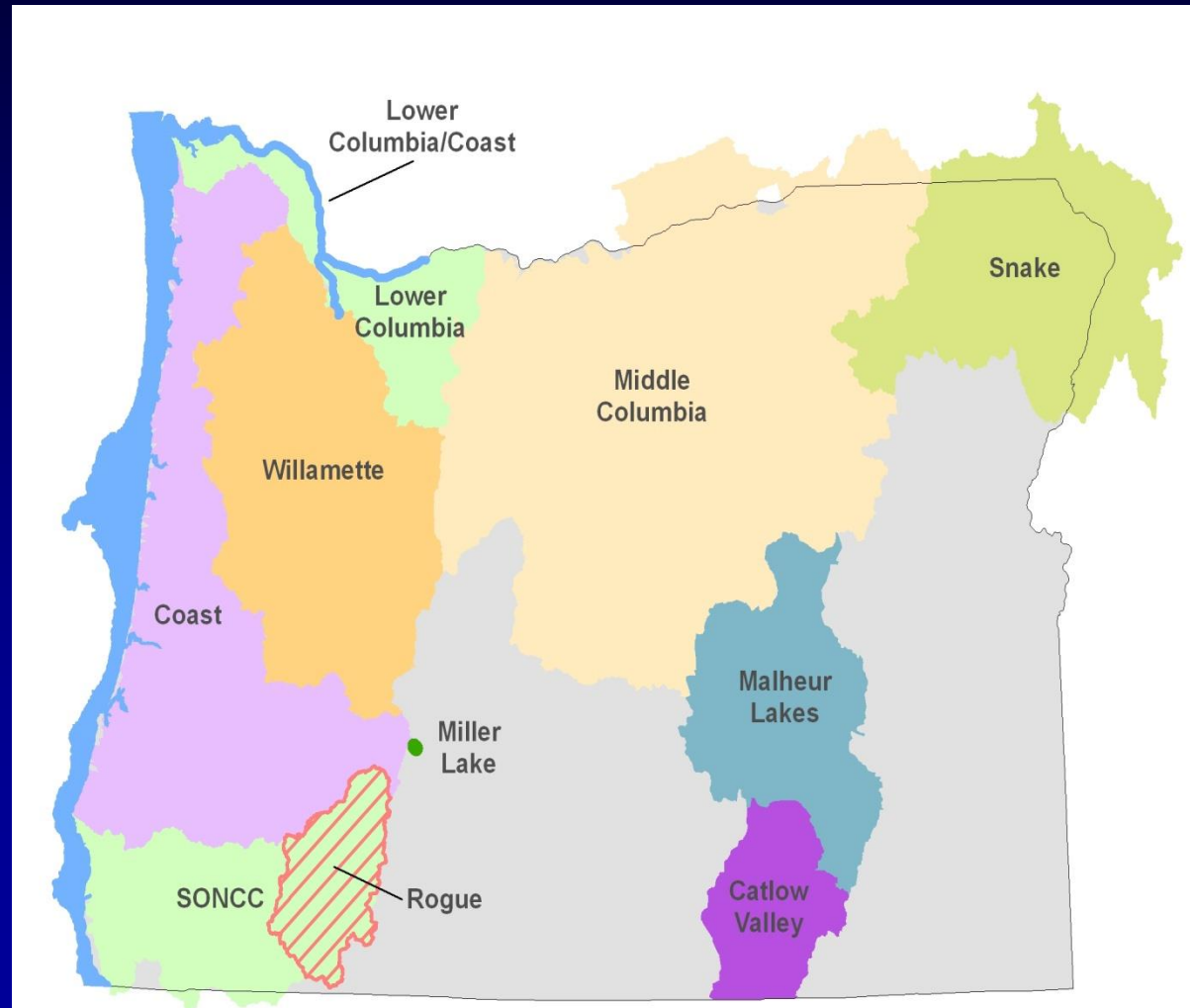
Native Fish Conservation Policy Goals

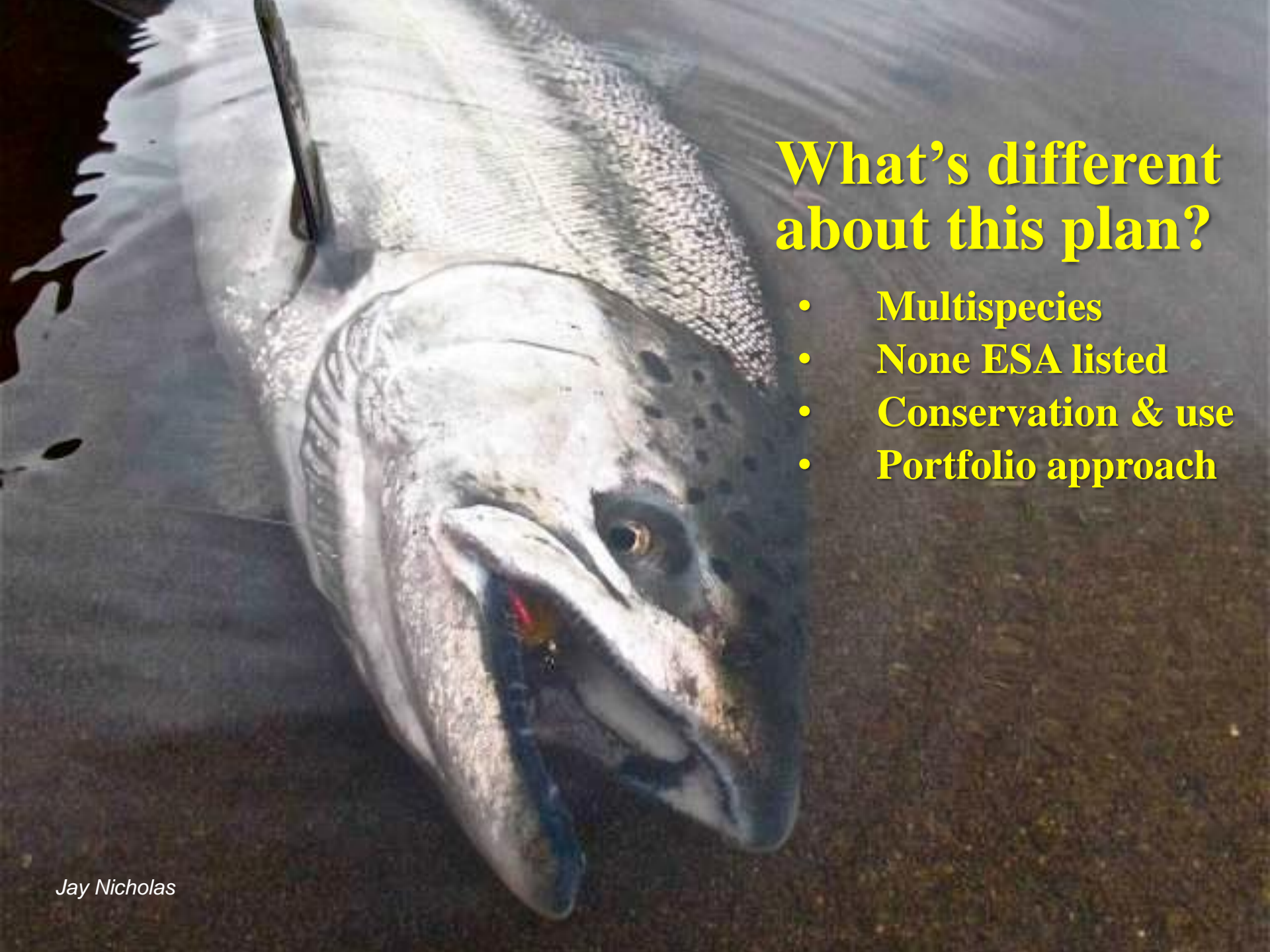
- **Prevent serious depletion of native species ... so that natural production of native fish is sustainable.**
- **Maintain and restore naturally produced native fish species ... to provide substantial ecological, economic and cultural benefits...**
- **Foster and sustain opportunities for sport, commercial and tribal fishers consistent with conservation...**

Conservation and Recovery Plans Completed or in progress

**Plans for 22 of 28
anadromous
salmonid species
completed by 2015**

**Shifting from
planning to
implementation**

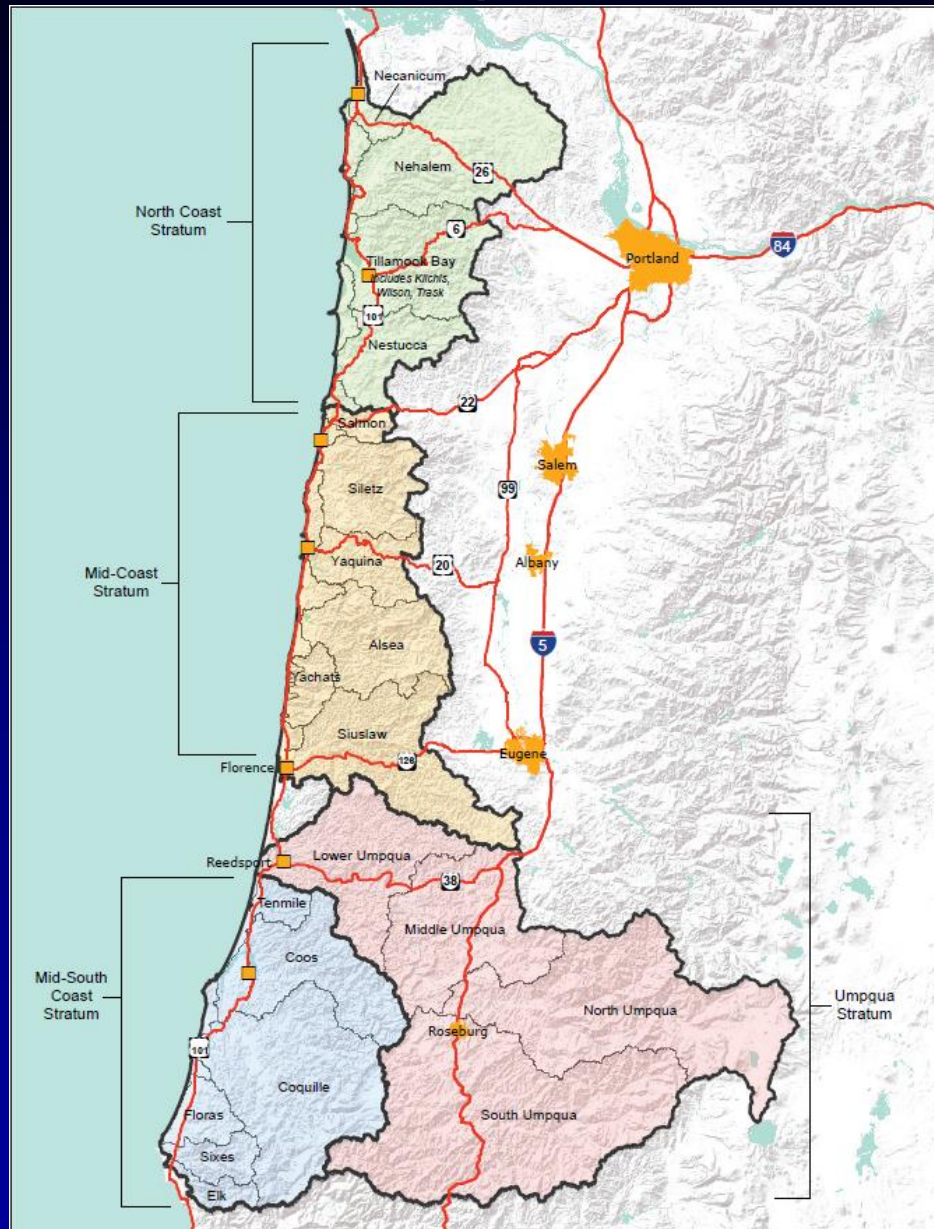




What's different about this plan?

- **Multispecies**
- **None ESA listed**
- **Conservation & use**
- **Portfolio approach**

Planning Area and Species



- **Chinook**
- **Spring Chinook**
- **Winter Steelhead**
- **Summer Steelhead**
- **Chum**
- **Coastal Cutthroat**
- **Coho**

Public Involvement

- Nearly 2-yr process
- Professional facilitation
- Stakeholder Teams
- Town Hall meetings
- Legislative hearings
- Commission meetings



Common Ground and Tensions

(necessary for progress)



- **Love fish**
- **Support fishing**
- **Want good habitat**
- **Want vibrant economies**

- **Legislative fix**
 - **Hatchery in every garage**
- vs
- **Hatchery/harvest litigation**
 - **ESA listings**

Let's get planning!

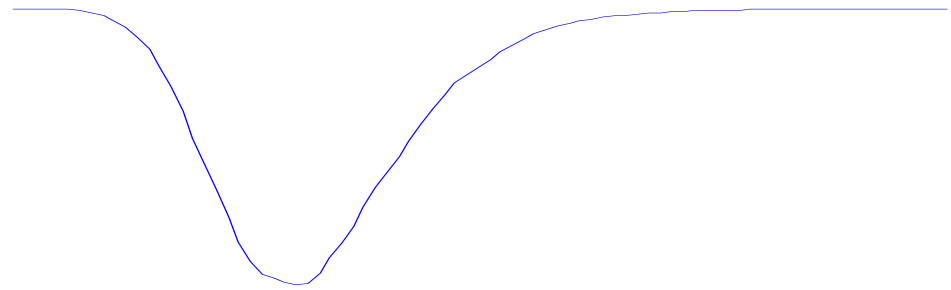
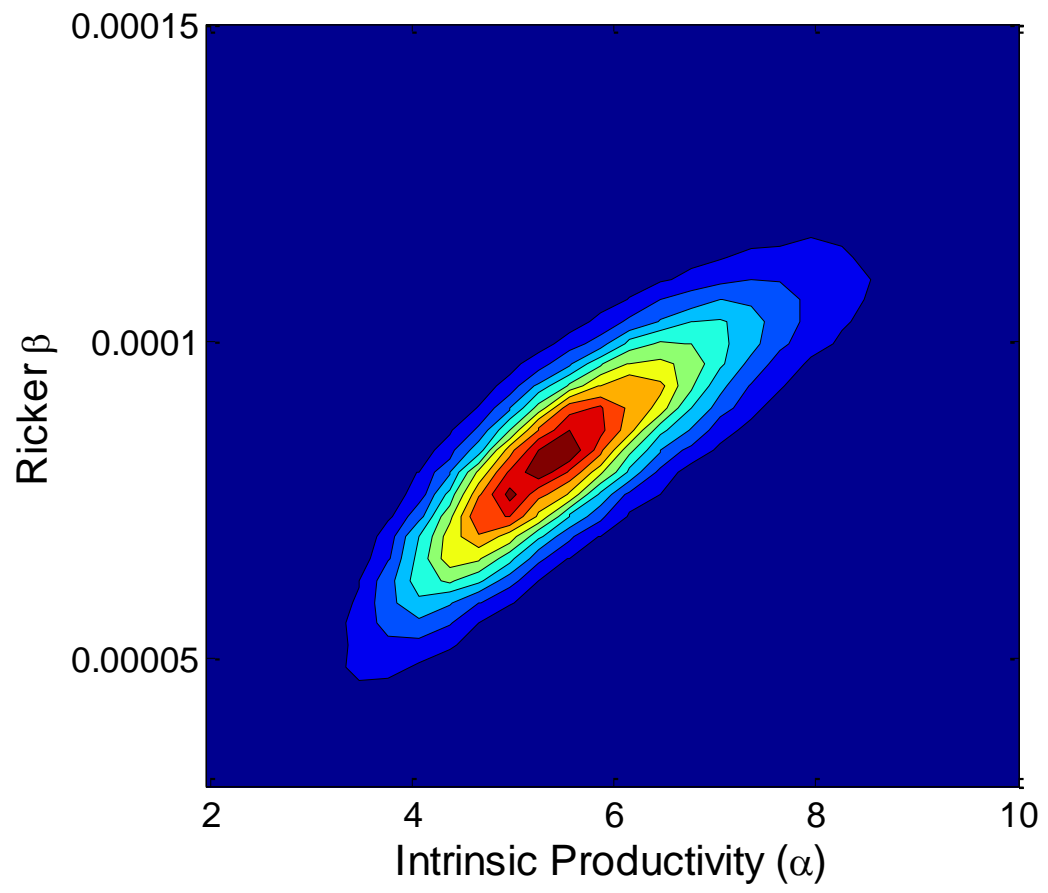
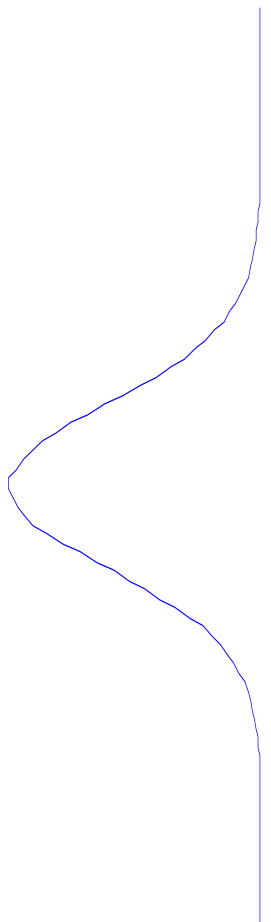
**Start with
best
available
science**

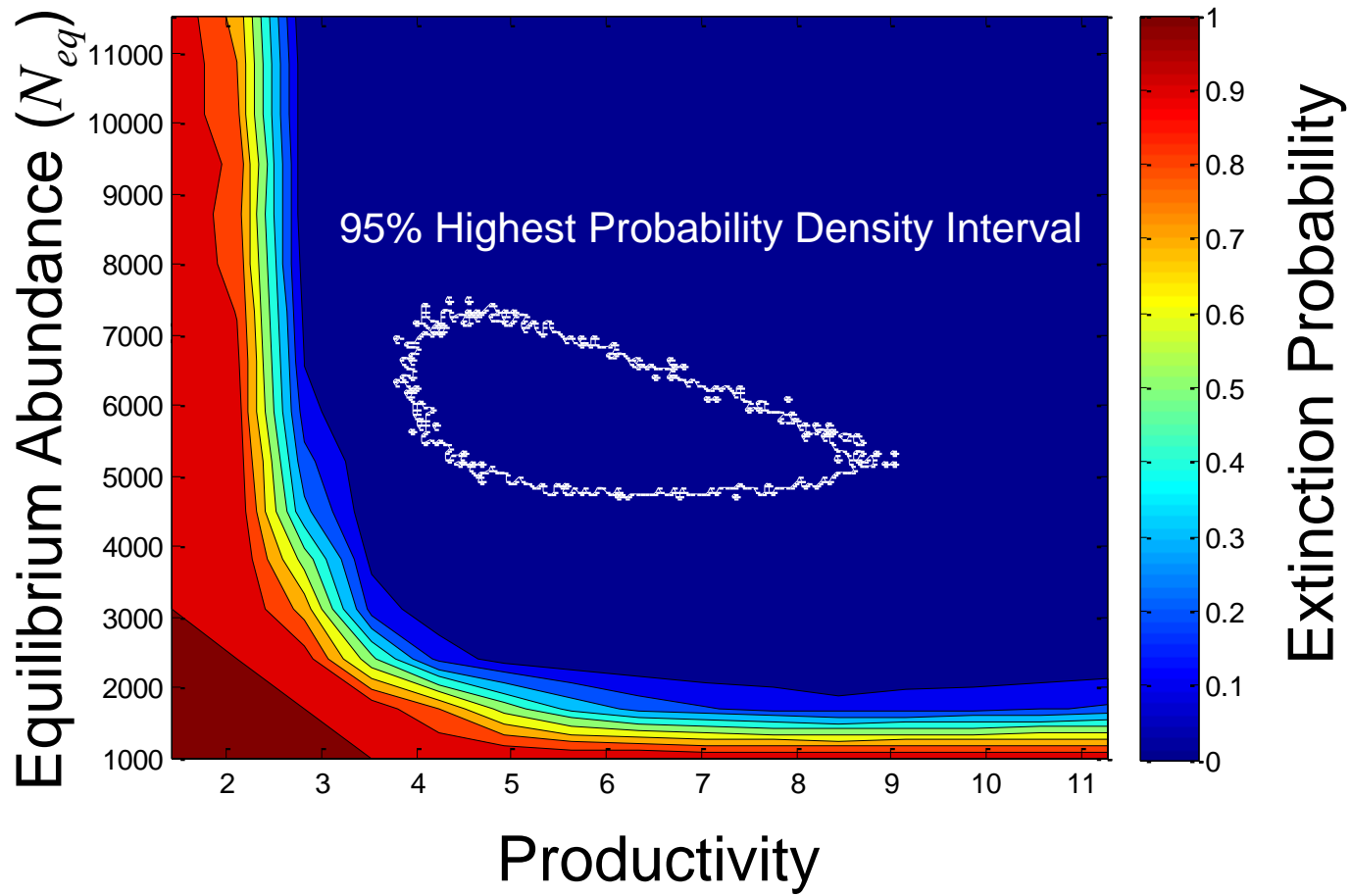


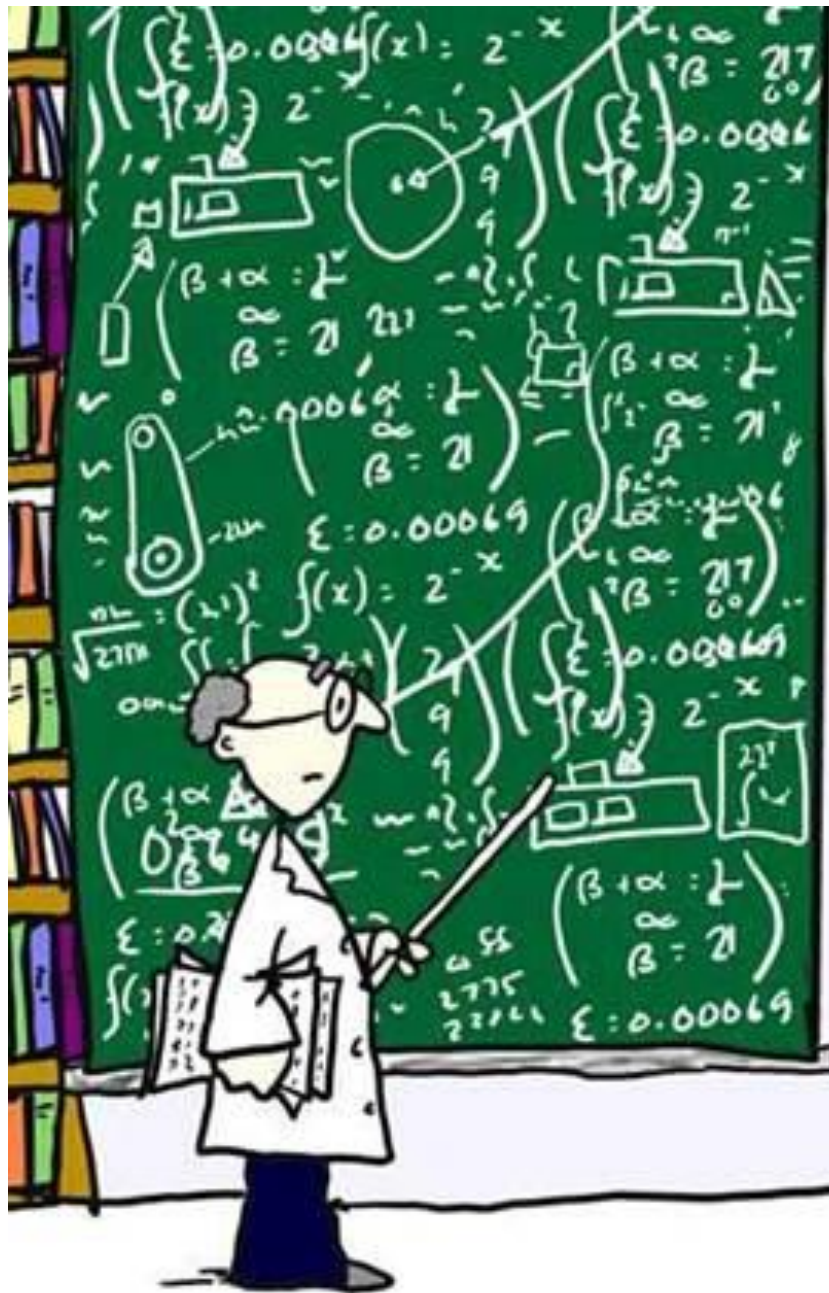
Bayes' theorem of conditional probability can improve PVA

$$p(\boldsymbol{\theta} | x) = \frac{p(x | \boldsymbol{\theta}) p(\boldsymbol{\theta})}{p(x)} = \frac{\overbrace{p(\{S, R\} | \alpha, \beta, \sigma)}^{\text{likelihood}} \overbrace{p(\alpha, \beta, \sigma)}^{\text{prior}}}{\underbrace{\iiint p(\{S, R\} | \alpha, \beta, \sigma) p(\alpha, \beta, \sigma) d(\alpha, \beta, \sigma)}_{\text{evidence}}}$$

The diagram illustrates the components of Bayes' theorem. The numerator consists of two terms: the likelihood, which is a function of data and parameters, and the prior, which is a function of parameters. The denominator is the evidence, which is the integral of the likelihood and prior over all parameter space.





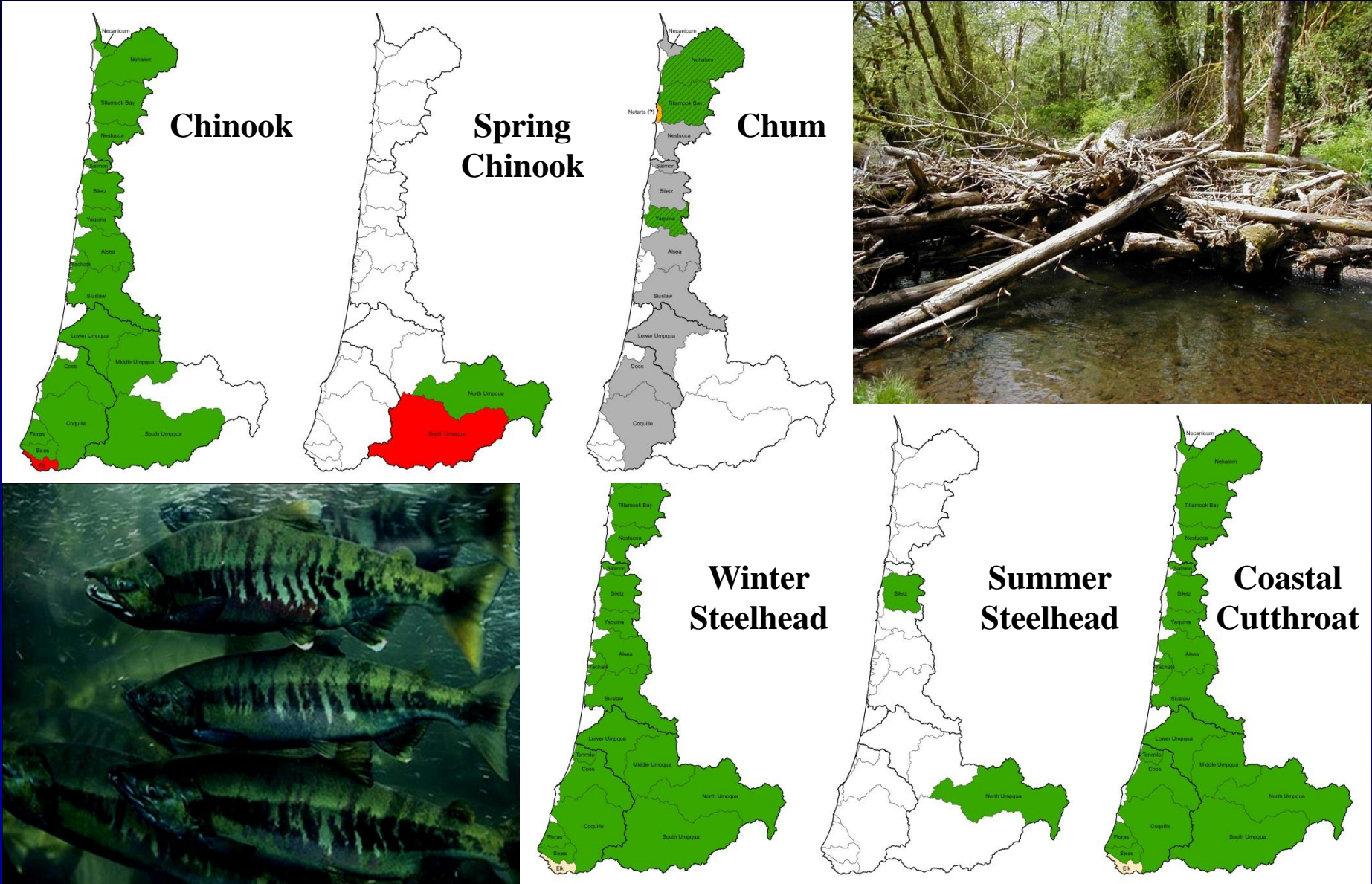


NUH-UH, SOME GUY
ON TWITTER JUST
SAID YOU'RE WRONG.



MACLEOD

Species and Status



Status and Limiting Factors

- **Current Status** – **remarkably good (except for chum and a few populations), though caution is warranted**
- **Desired Status** – **improve to ensure conservation and support fishing**
- **Limiting Factors**
 - **Hatchery: Yes (a few locations)**
 - **Harvest: Chinook, Spring Chinook**
 - **Other Species: Predation (pinnipeds, birds, non-native fish)**
 - **Habitat: Yes!**

Hatchery Actions

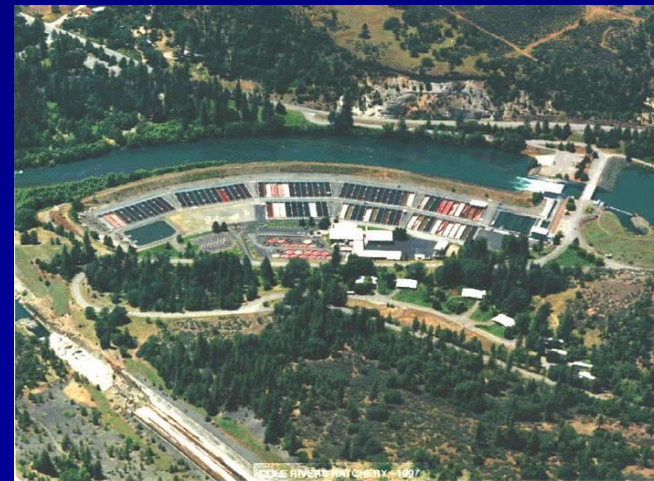
Improved Conservation

- Consolidate some programs (5)
- Reduce some hatchery releases (3)
- Reduce hatchery fish on spawning grounds
- Designate wild fish emphasis areas

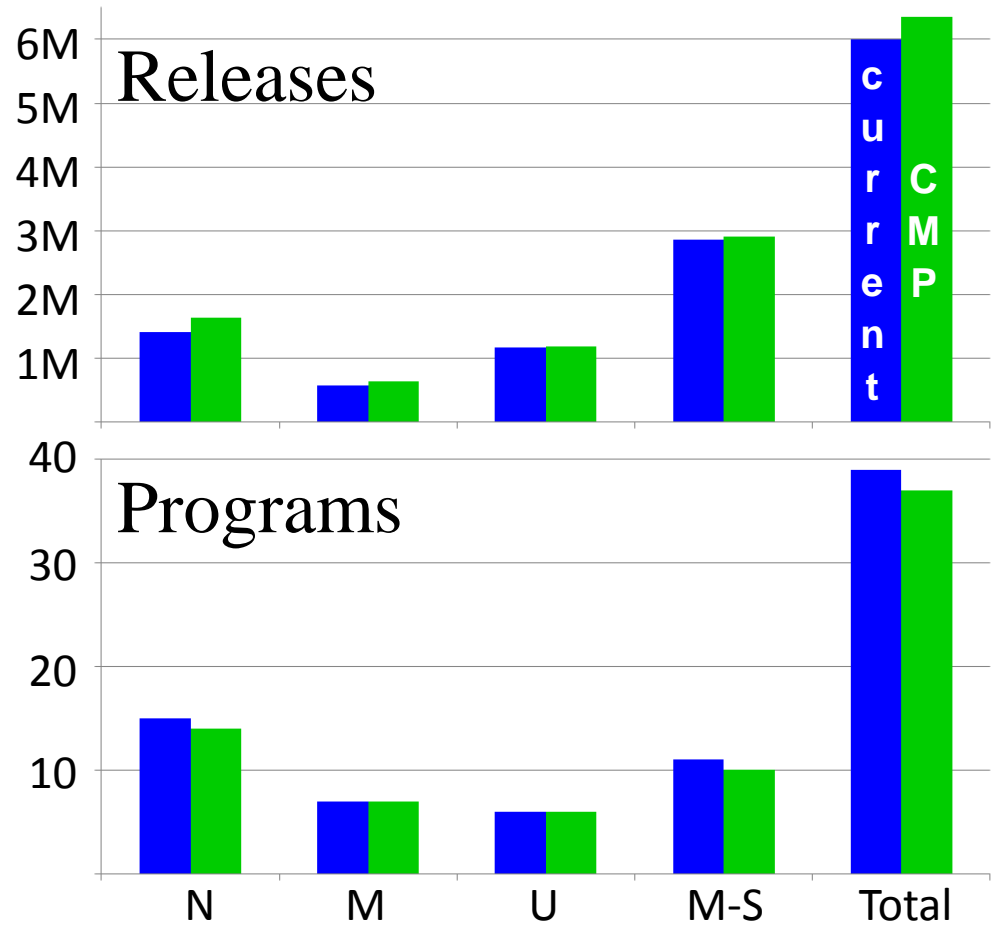
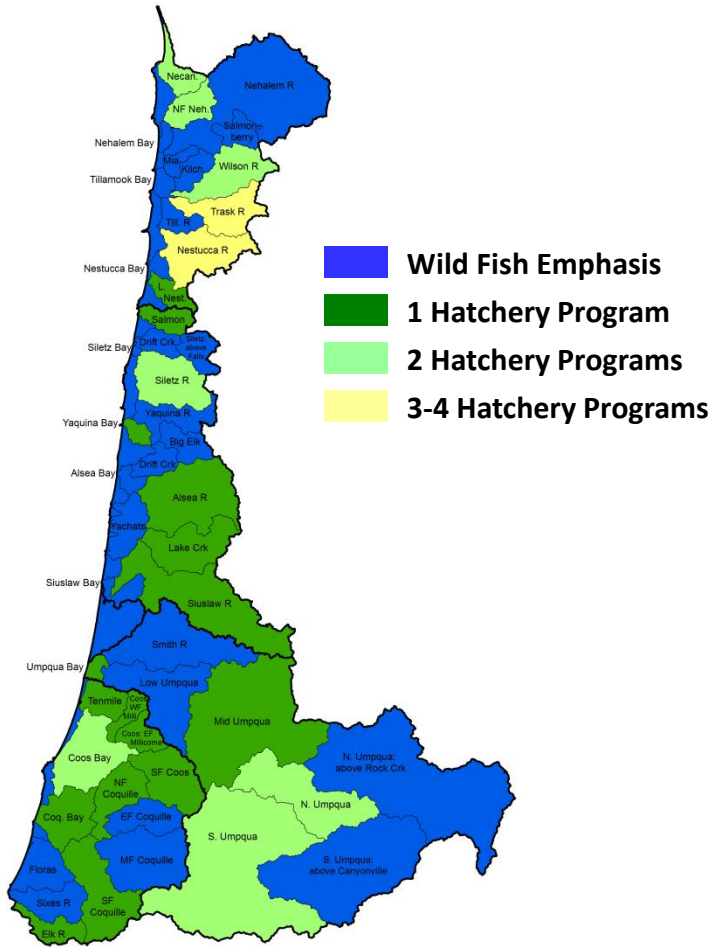


Improved Opportunity

- Increase some hatchery releases (11)
- Add some new hatchery programs (3 ChS)
- Recognize hatchery emphasis areas



Hatchery Portfolio



Harvest Actions

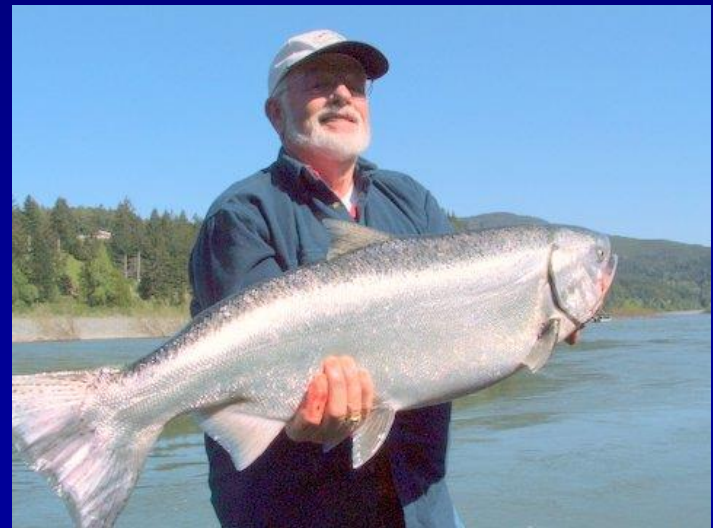
Improved Conservation

- **Sliding-scale harvest (wild)**
- **Protective periods (early run Chinook)**
- **Critical thresholds**



Improved Opportunity

- **Sliding-scale harvest**
- **Stable wild coho fisheries**
- **New wild StW harvest (3)**
- **New ChS fisheries (3)**



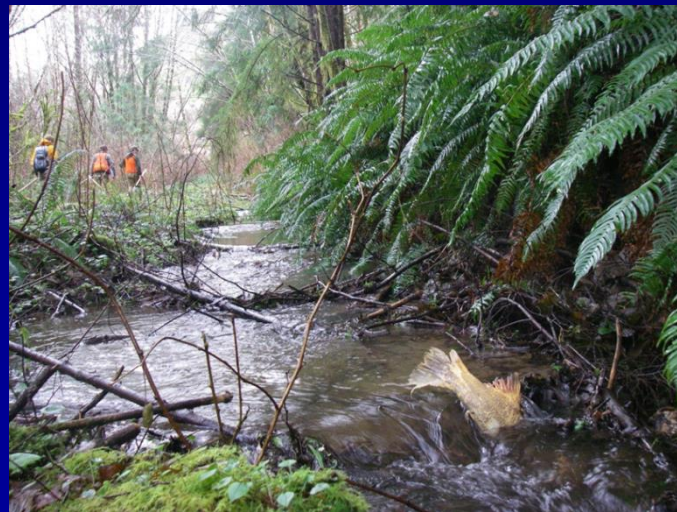
Predators



Habitat

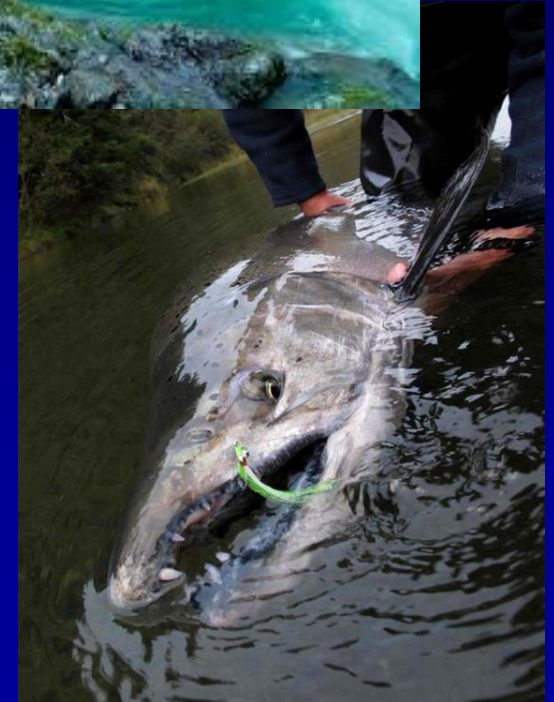


RM&E



Example Focus Area: Elk River Chinook

- Status: red to green
- Reduce H:W spawners
 - Reduce H prod
 - Improve homing
 - Increase H harvest;
reduce W harvest
- Improve estuary habitat
- Improve upland habitat
- Increased RM&E
- Stakeholder partnerships



Passionate Participants

ODFW anti-hatchery bias

- Close fisheries
- Shut down communities
- Economic collapse



ODFW conservation/use mandate

- Blend of wild & hatchery emphasis areas
- Hatchery/harvest reform
- Better conservation, better fishing



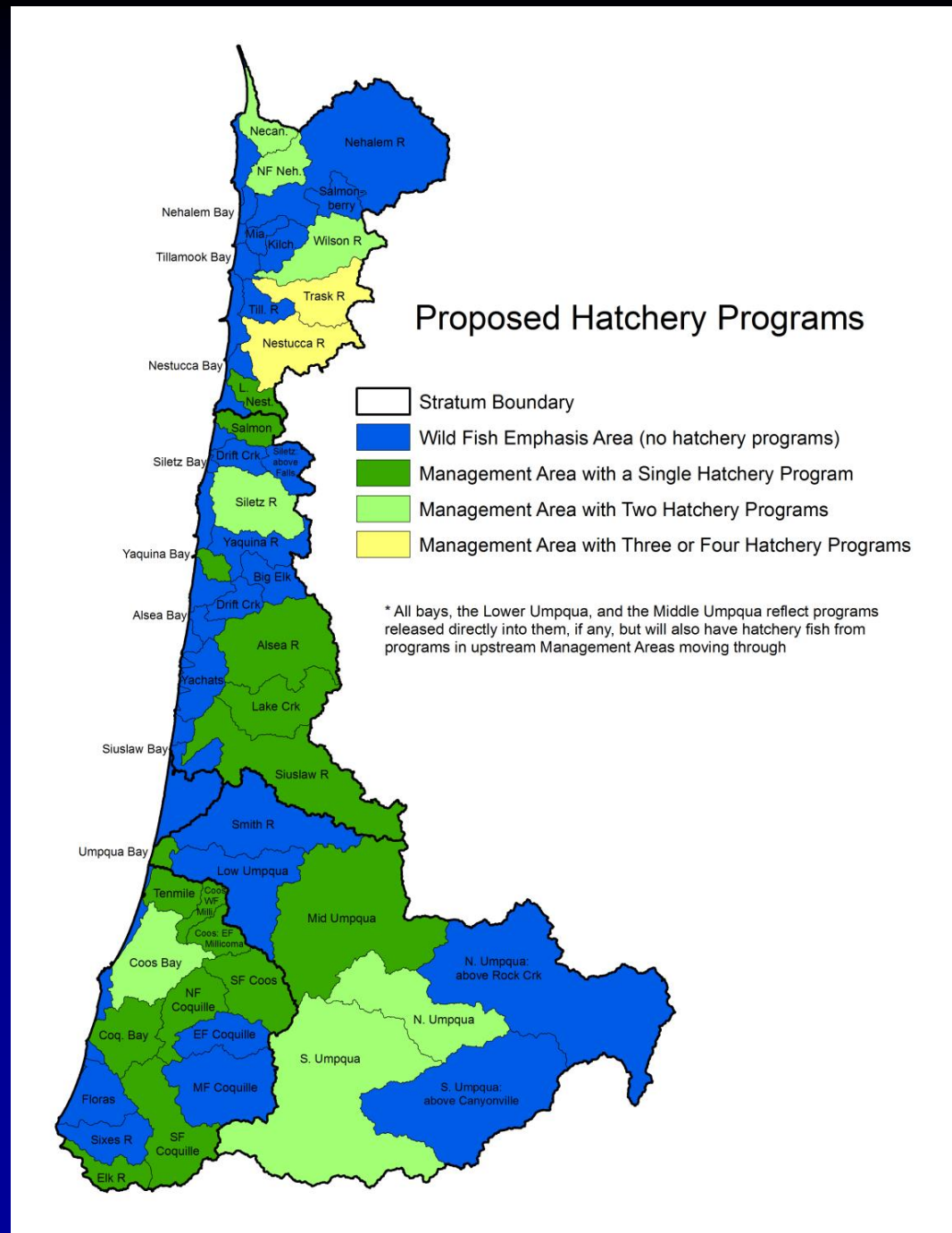
ODFW anti-wild bias

- Hatcheries everywhere
- Genetic/ecological collapse
- Wild fish armageddon



Outcomes...

- **Portfolio of hatchery and wild fish emphasis areas**
- **Largest codified “wild fish only” area in lower 48**
- **Sliding scale harvest**
- **Habitat emphasis**
- **\$3.5M Monitoring**
- **Hatchery BMPs**
- **OHRC**
- **Public/political support**





Questions?

http://www.dfw.state.or.us/fish/CRP/coastal_multispecies.asp