



**NOAA
FISHERIES**

**Northwest
Fisheries
Science Center**

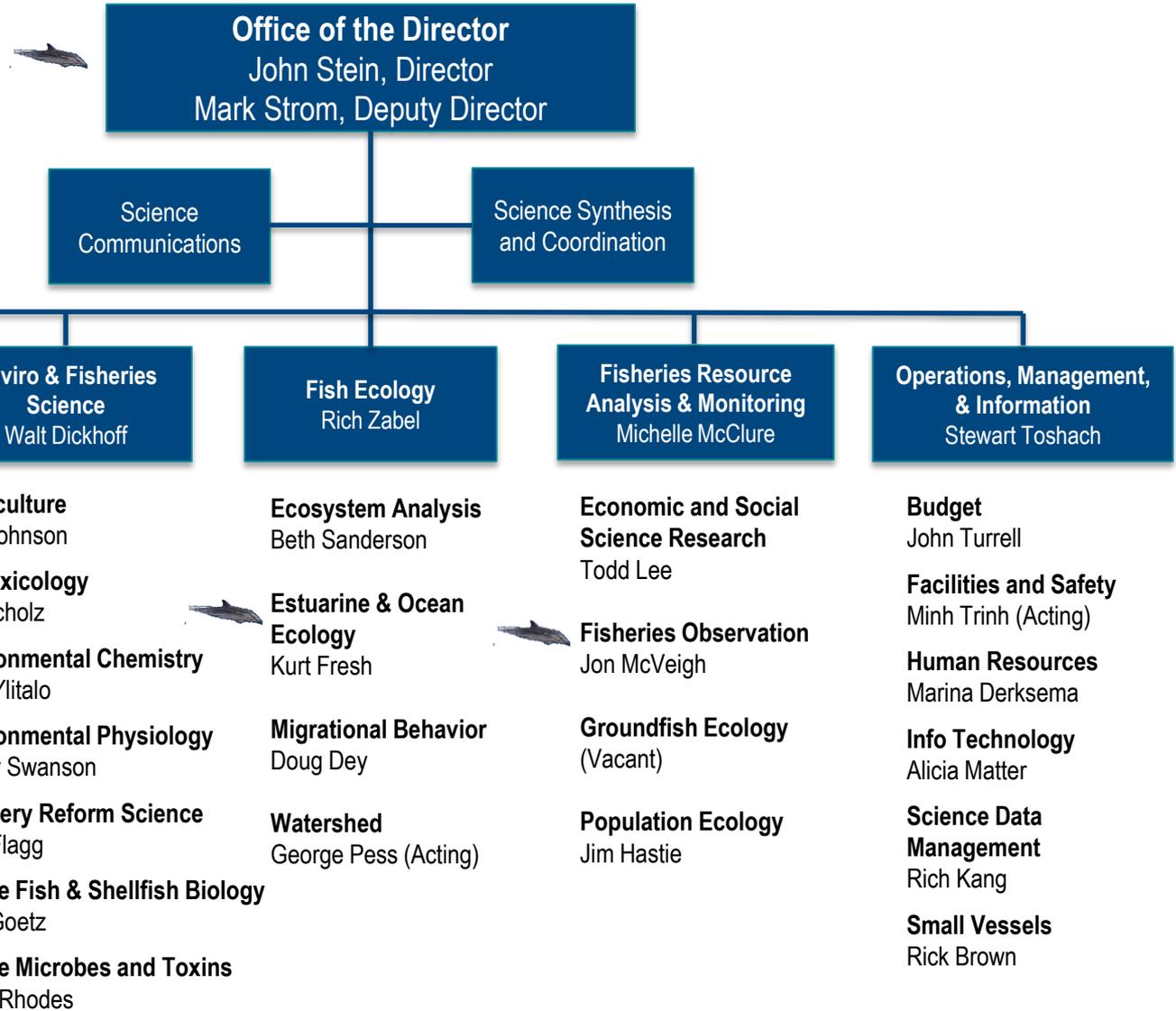
Marine mammal science at the Northwest Fisheries Science Center

Program Review, July 27, 2015

Northwest Fisheries Science Center



Northwest Fisheries Science Center



Priorities

- Strategic
 - Ecosystem interactions
 - Integrated ecosystem assessment
 - Predator/prey interactions
 - Effects of contaminants, sound, disturbance
- Responsive, reactive
 - Support for biological opinions
 - Fisheries observation and bycatch estimation
 - Status reviews and response to petitions

Funding sources

- NMFS
 - Southern Resident killer whale
 - Protected Species
 - Salmon interactions
 - Advanced tech
 - Cooperative research
 - Science & Technology
 - Education
- External
 - Navy
 - Office of Naval Research
 - Pacific Salmon Commission
 - NASA

Understand and address pinniped/salmonid interactions

Science activities

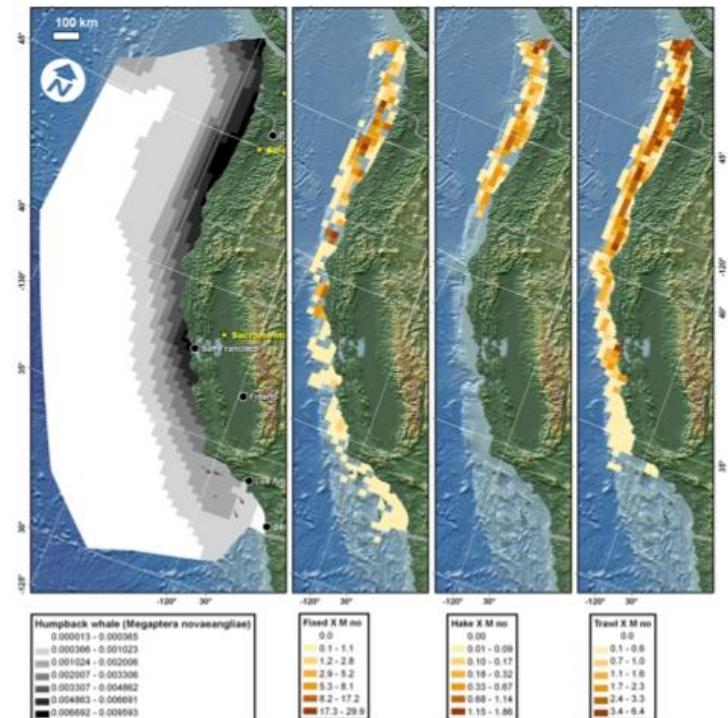
- Life-cycle modeling to evaluate population-level effects
- Estimate predation rates
 - On Chinook salmon in the Columbia River estuary
 - On Puget Sound steelhead
- Ecosystem modeling of predator/prey dynamics



Cetaceans and turtles

Science activities

- Southern resident killer whales
- Fisheries observer program
- Take estimation and reporting
- End-to-end ecosystem modeling to evaluate indirect effects
 - Gulf of CA, CA current
- Harbor porpoise surveys in Puget Sound
- Biochemical, chemical and genetic analysis
- Forensics support for law enforcement
- Participation on IWC science committees
- Participation on status review teams



Strengths

- Excellent staff, with a diverse set of expertise
- Interdisciplinary approach
- Good relationship with the West Coast Region
- Strong ties with salmon programs
- Unique expertise

Challenges

- Some of our strengths – e.g. chemistry, physiology – do not fit neatly into traditional NMFS funding priorities
- Funding flat or declining as costs increase
 - Staff reductions
 - Greater reliance on outside funding
- Tensions between mandates
- Maintaining expertise in very fast moving fields

Opportunities

- Increased agency focus on ecosystem issues
- Interactions with salmon recovery activities
- Utilization of new technologies
- New funding sources