Progress Update:
Puget Sound Rockfish Conservation Plan Implementation

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Presentation Outline

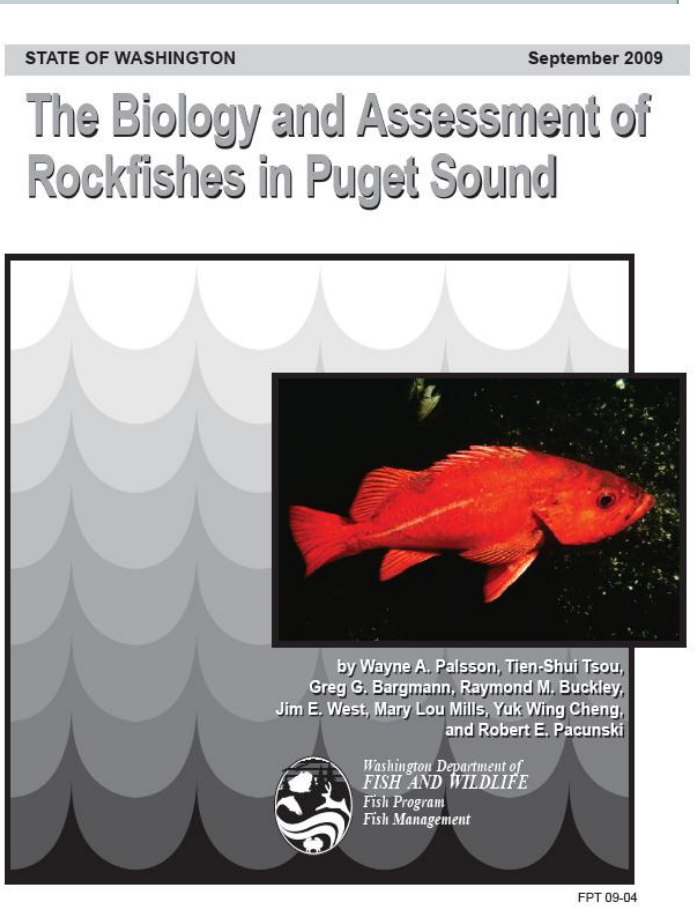
- Background
  - The Puget Sound Groundfish Management Plan + Policy
  - 2009 Rockfish assessment
  - 2011 Puget Sound Rockfish Conservation Plan
  - 2010 ESA listing of canary, yelloweye, and bocaccio
- Priority actions identified
  - Reduce fishing mortality (directed and bycatch)
  - Removal of "legacy" derelict fishing nets
  - Adaptive management/surveys and Research
  - Outreach and education
- Implementation progress to date and next steps

Policies, Plans, and Reports

- POL-C3003 (1996) recognized that many Puget Sound groundfish stocks were depressed/critical
- Groundfish Management Plan (1998) builds on Commission policy to manage fish conservatively
  - Monitoring plans and stock assessments should lead to Conservation Plans designed to ensure long-term viability
- Rockfish biology and assessment report (2009)
  - Shared biology: long lived, slow growing, late maturing, high habitat fidelity, periodic recruitment
  - Recent status declines for many stocks (~22% "healthy")
  - Habitat declines likely to result in worse future outlook

Rockfish Biology and Assessment Report

- Recommendations to improve conservation and management of rockfishes in Puget Sound:
  - Improve knowledge of ecosystem role and habitat requirements
  - Better understand stressors
  - Evaluate utility of marine reserves
  - Reduce bycatch, account for all catch
  - Conduct comprehensive surveys and estimate life history parameters
  - Better define stocks using genetics
  - Create models to reconstruct/analyze abundance and population structure

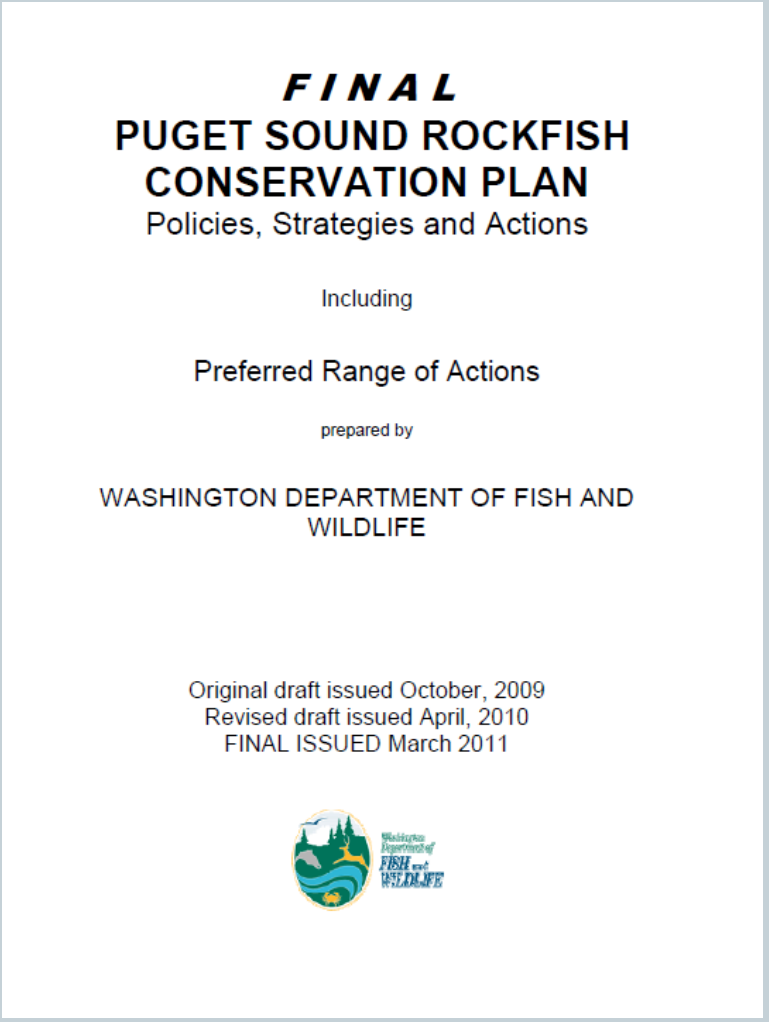


ESA Listing of Three Species

- 2007 – five Puget Sound rockfish species petitioned for listing
  - Canary, yelloweye, bocaccio, redstripe, and greenstriped
- 2010 – NOAA Biological Review Team status review completed. NOAA lists Puget Sound/Georgia Basin DPS of three species
  - Canary and yelloweye rockfish as Threatened
  - Bocaccio as Endangered
- 2010 – WDFW closes commercial fisheries with high encounter likelihood immediately by e-reg

Puget Sound Rockfish Conservation Plan

- Published in 2011 and incorporates ESA listings
- Species-group plan as called for by Groundfish Management Plan
- Sought comprehensive approach to assessment and conservation using sound scientific data



FINAL

PUGET SOUND ROCKFISH CONSERVATION PLAN

Policies, Strategies and Actions

Including

Preferred Range of Actions

prepared by

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

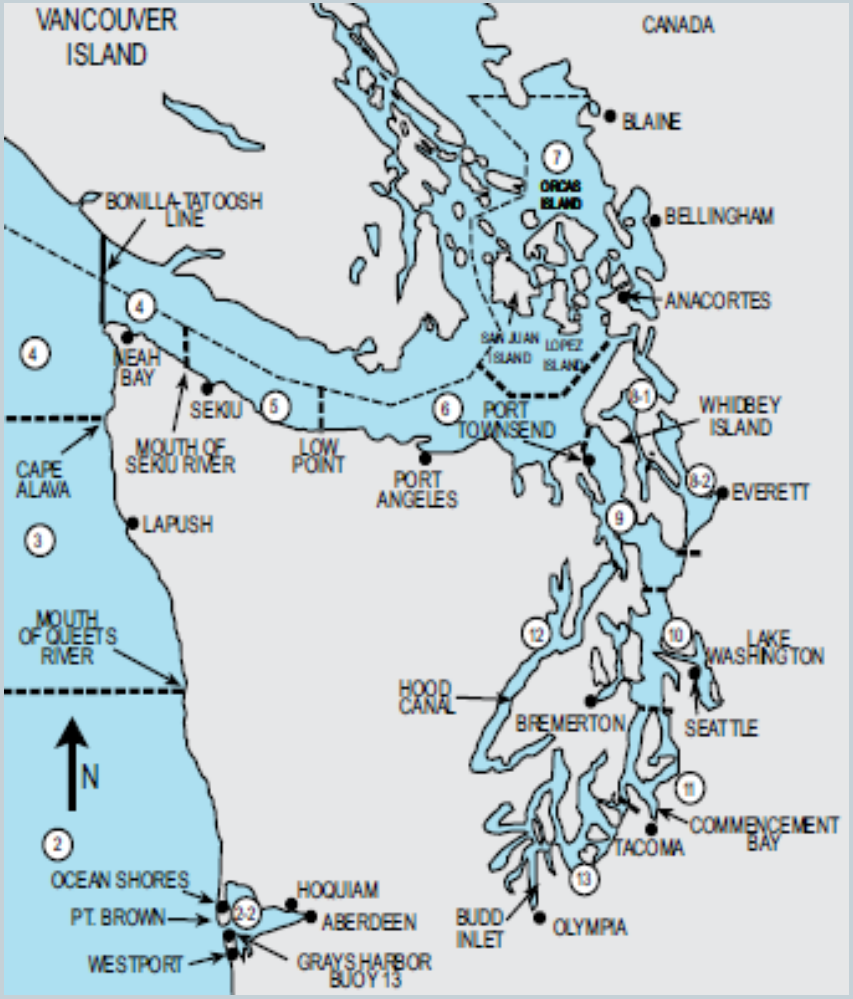
Original draft issued October, 2009
Revised draft issued April, 2010
FINAL ISSUED March 2011

Management Circa 2010/11

- Conservation plan in place
- Data gaps and priority actions clearly defined
- Three species listed under ESA
- Funding and staff time focused on several actions:
  - Reducing fishery mortality
  - Removing derelict gear, and preventing re-accumulation
  - Determining distribution, abundance, and habitat associations on a Sound-wide basis
  - Evaluating effects of fishery changes, and bycatch estimation
  - Educating and engaging the public
  - Developing a federal recovery plan for the ESA-listed species

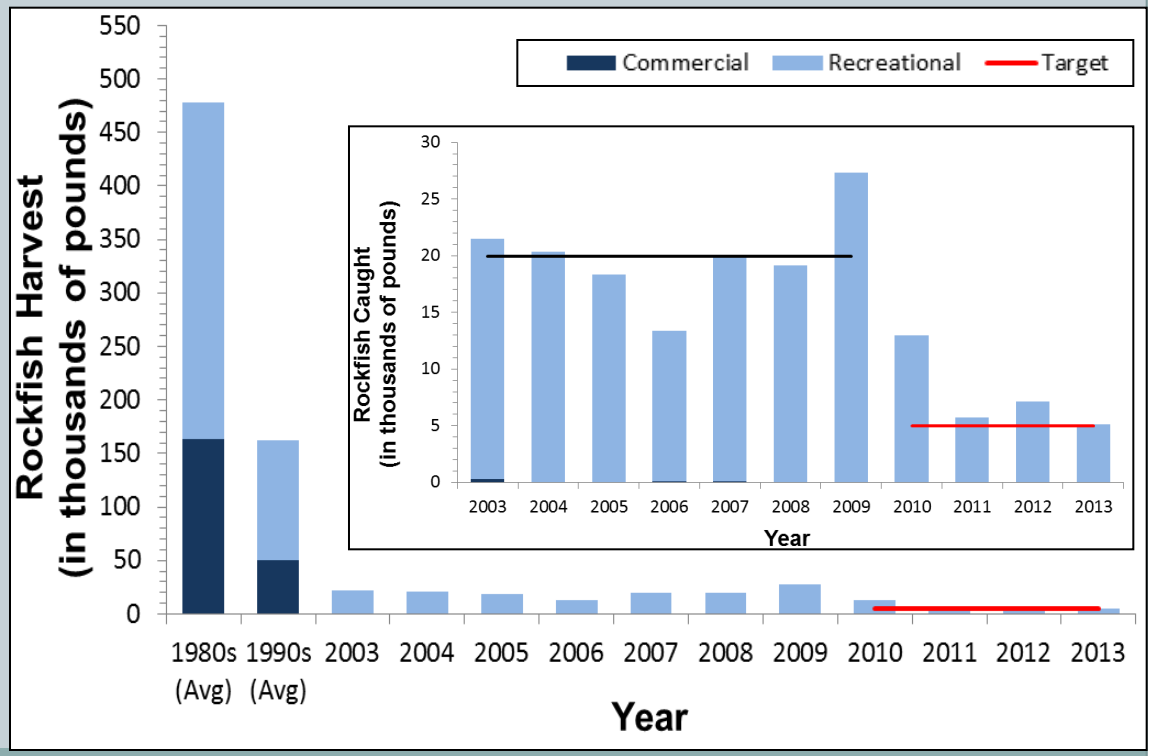
Reduce Fishery Mortality

- 2010 – Closed all targeted commercial fisheries
  - Those with chance of bycatch too: otter, beam, and pelagic trawl; dogfish set net; set line
- 2010 – Recreational retention prohibited in MAs 6-13
  - As of 2004 limit = first legal rockfish caught, May-Sept.
  - Groundfish fishing >120' deep also prohibited



Reduce Fishery Mortality

- GMAP measure established to track effects of rule changes on rockfish mortality
  - Target < 5000 lbs of rockfish mortality annually
- Recent changes mean retention is illegal, but bycatch mortality leads to limited impact
  - Average is 7,759 lbs since 2010
  - 5,143 lbs in 2013

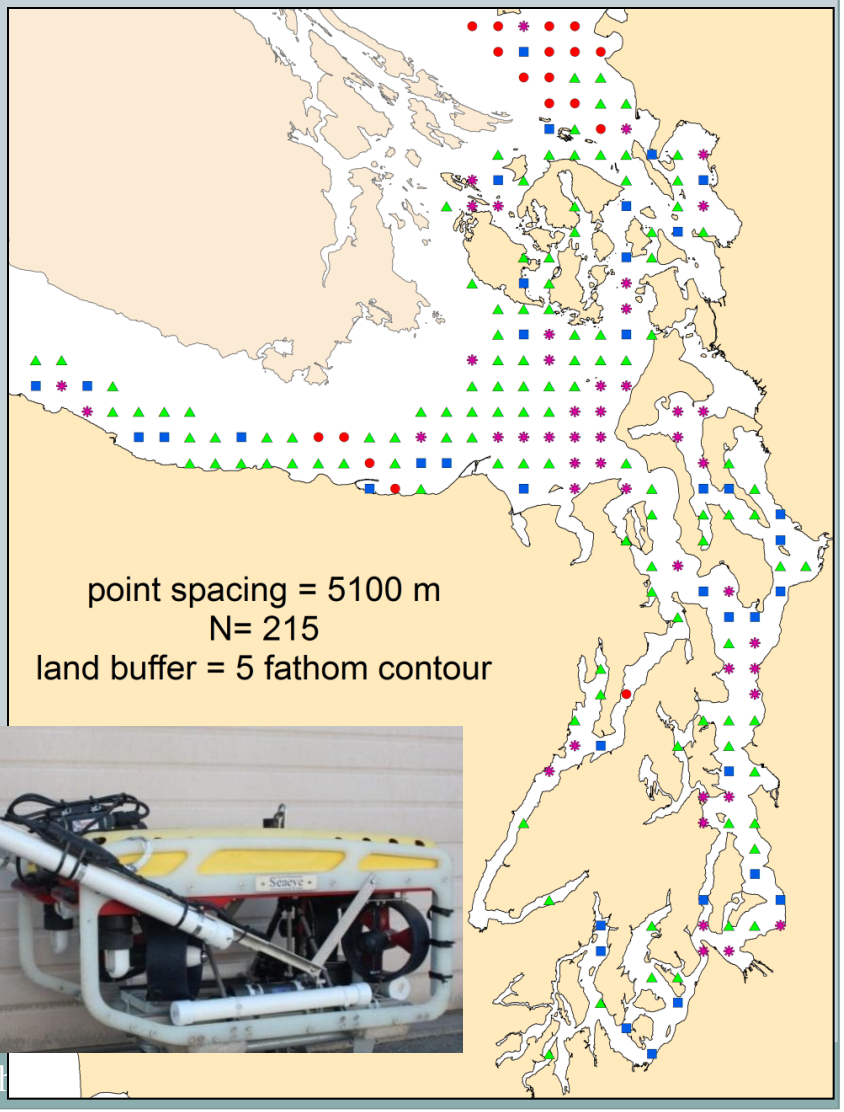


Addressing Derelict Nets

- Partnership with Northwest Straits Foundation and Natural resource Consultants
- 4,668 total nets removed, mostly gill nets
  - Restored estimated 668 acres of habitat
- Implemented ESB5661 through WACs that require reporting of lost nets in 24 hrs
  - Since 2012, rapid report, response, and retrieval program
  - Additional funding added in 2014 through Section 6 (ESA)
- Extensive outreach to State and Tribal fishers, etc.
- $3.5M from legislature in 2014 to “finish” removals

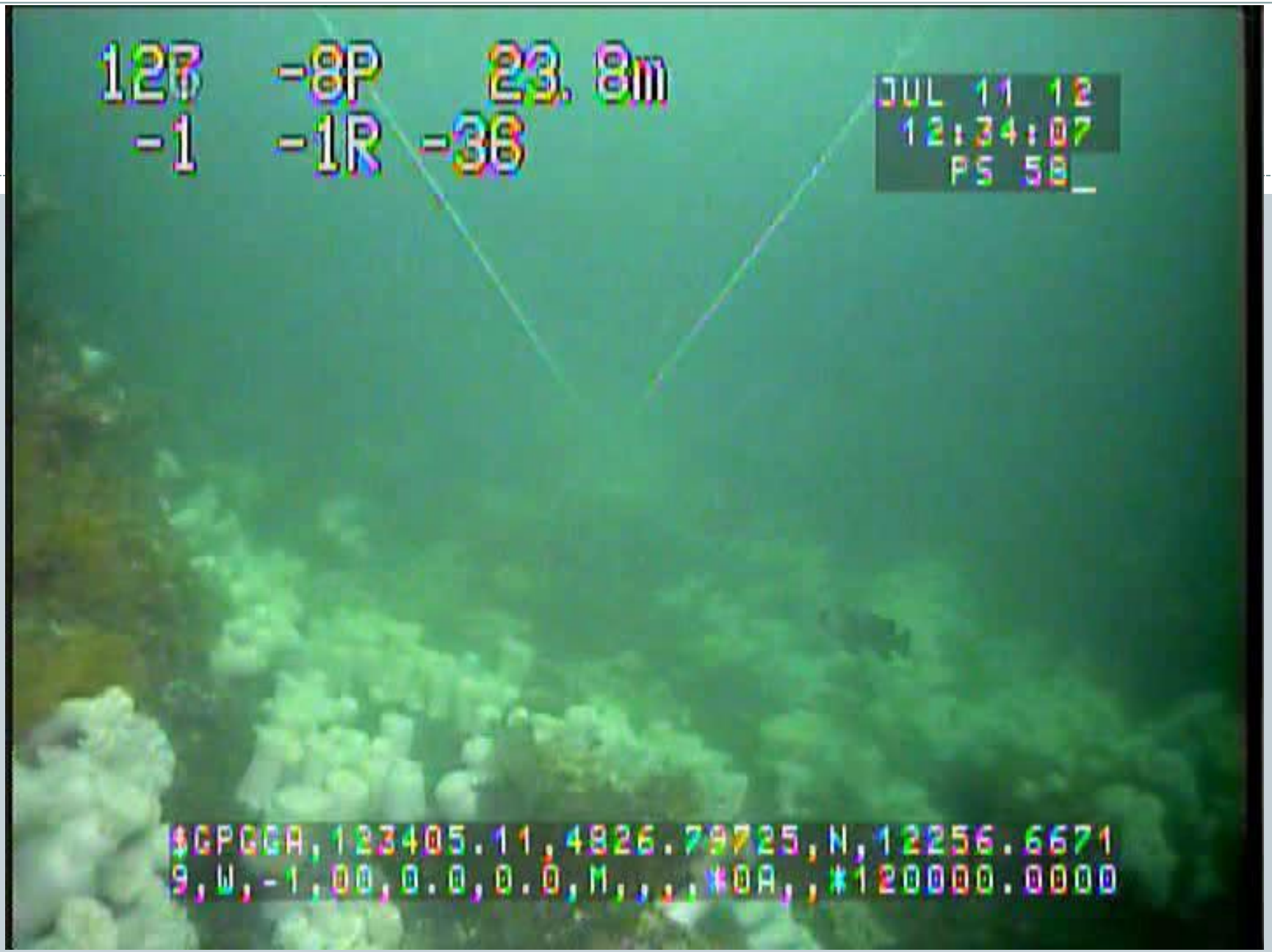
Sound-wide Abundance Survey

- Objective: estimate distribution, abundance, and habitat associations
- Design from stereology
  - Survey grid of fixed spacing with random starting point
  - No habitat stratification
- Surveyed from April 2012 – April 2013
  - 1-hr video transects with SeaEye Falcon ROV



Sound-wide Abundance Survey

- **Multispecies focus**, rockfish/flatfish emphasis
  - Also consider other fish, crab, cucumbers, etc.
- For the first time ever, allows:
  - Generation of species occurrence maps from systematic data
  - Abundance estimates **with** error estimates for entire Sound
  - Statistical evaluation of biodiversity patterns
  - Assessment of species-specific habitat associations
    - On both “macro” and “micro” scale
- Will inform the design of future ROV survey work
- May be combined with trawl and other data in future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Sound-wide Abundance Survey

- Sampled 197 stations
  - Initial video review complete ; 10% secondary review underway (random) for QA/QC
- Depth Ranged from 8-245 m
  - >50% of sites dominated by mud, only 15% by hard substrate
  - Highly diverse biocover: algae, tube worms, sponges, sea pens
- 55 “species” identified and counted
  - Fewer species on mud, more individuals of a few species on rock
- Substantial marine debris identified and catalogued
- Encounter rate for ESA-listed species was very low

Sound-wide Abundance Survey

- Not stratified by habitat
  - Rockfish occurred on 36 (18%) "soft" substrate transects
    - Every spp. except Pacific Ocean perch
- Goal was 25% CV
- Maps pending, as are estimates for non-rockfish spp.

Species	Abundance	CV
Bocaccio	--	--
Canary	42,949	74%
Copper	122,237	51%
Greenstriped	105,052	61%
Pacific Ocean perch	10,960	100%
Puget Sound	4,963,424	56%
Quillback	3,618,442	24%
Redstripe	2,014,905	100%
Rockfish uniden.	2,043,822	32%
Splitnose	47,147	72%
Thornyhead uniden.	40,900	100%
Yelloweye	80,109	45%

MCA 4B Fishery Evaluation

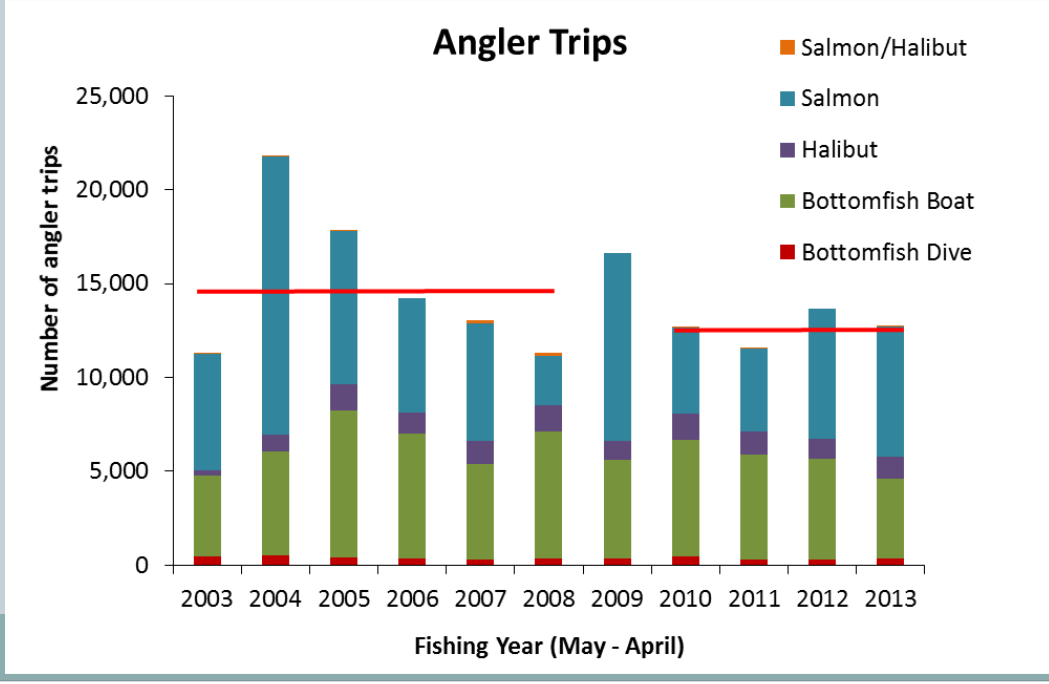
- Objectives:
  - Evaluate the effectiveness of new recreational fishing rules in reducing rockfish mortality
  - Evaluate rockfish release information collected from dockside angler interviews.
- Approaches:
  - Using estimates generated by dockside sampling program
  - Conduct a test fishery
- Project period: Jul 2011 – Sept 2012

MCA 4B Fishery Evaluation

- New rules:

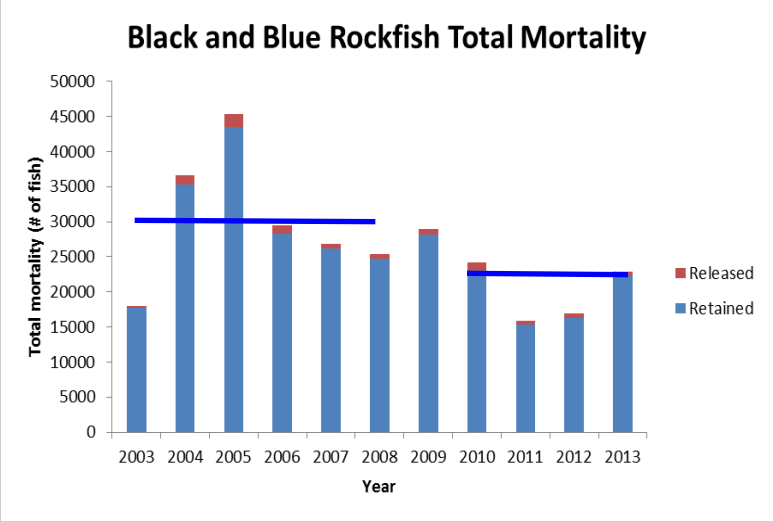
Fishing Year	Aggregate Bag	Rockfish Bag	Other
Before 2010	15	10	
2010-2011	15	6 Black/Blue	120' depth restriction
2011-2012	10	6 Black/Blue	120' depth restriction

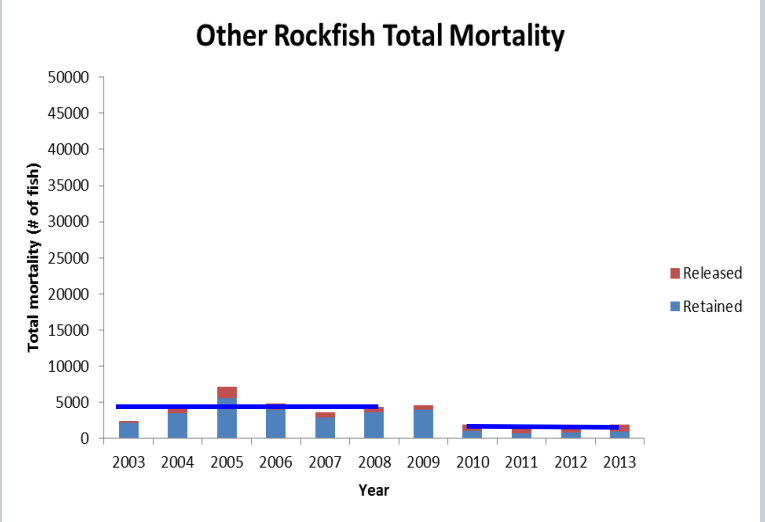
- Fishing efforts:



MCA 4B Fishery Evaluation

- Findings:
  - The new regulations are successful in reducing rockfish fish mortality associated with fishing.

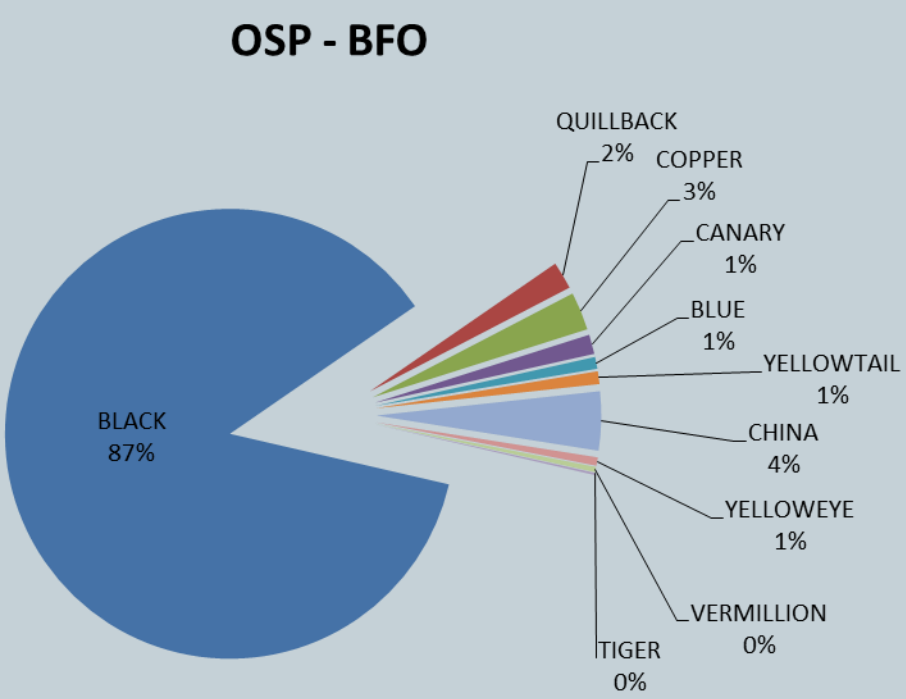


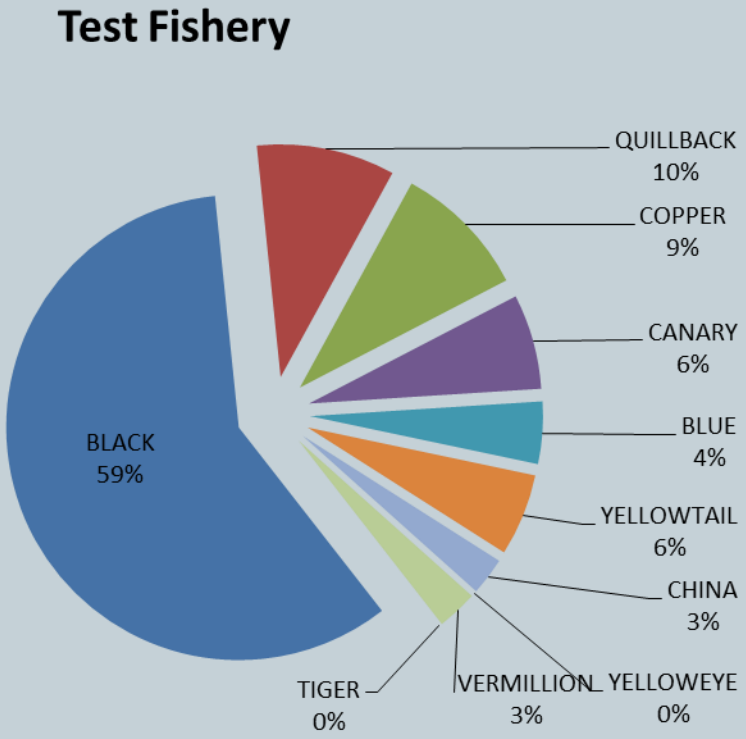


- Anticipate 25% reduction from 2003-2008 average total mortality. Actual = 34%.
- Anticipate 60-80% reduction from 2003-2008 average total mortality. Actual = 61%.

MCA 4B Fishery Evaluation

- Findings:
  - Rockfish species composition collected from dockside angler interview is different from the test-fishery results





MCA 4B Fishery Evaluation

- Conclusions:
  - The regulations were effective in reducing fishing mortality.
  - Identifying rockfish and retaining release information are challenging to anglers.

Education/Outreach Efforts

- Advocacy program for descending devices
  - WDFW
    - Created “Protect Washington’s Rockfish” brochure and posters
    - Updated Department web pages
    - Presented information/demonstration on use of devices at coastal charter offices and fishing groups, Puyallup Sportsman Show, and in Neah Bay and La Push for lingcod and halibut openers
  - Puget Sound Anglers
    - Developed “Save Our Fisheries” hand-outs
    - Purchased and distributed hundreds of free descending devices
    - Presented information and demonstrations on use of devices at Puyallup Sportsman’s Show and Seattle Boat Show

Education/Outreach Efforts

- 2013 – Renovated Department's webpage to include:
  - Comprehensive bottomfish ID guide
  - Info on rockfish recovery efforts
  - Staff and project profile pages to keep public "in the loop"
- Attended Discover Science Days Nov. 9-11, 2013 at Seattle Aquarium and brought ROV
- Presented to 7 locals clubs and/or organizations about rockfish conservation
- Created volunteer logbook for recreational anglers

ESA-listed Rockfish Recovery Team

- Federally convened team of rockfish and population demography experts tasked with developing a formal recovery plan for ESA-listed rockfish
  - Members include State government, Federal government, and academics
  - Dr. Lowry and Mr. Robert Pacunski represent WDFW
- Meetings began in spring of 2013 and will occur monthly through Sept. 2014
  - Several sections of plan ready for peer review
- Plan relies heavily on WDFW data and incorporates many recommendations from Conservation Plan

Other Projects

- Acoustic tagging of canary rockfish in San Juans
- Genetic sampling of listed species Sound-wide
- Tagging of, and collection of gut contents from, rockfish during Sound-wide trawl surveys
- Targeted ROV inspections of locations labeled by NOAA as “critical rockfish habitat”
- Collaborating with Northwest Straits Foundation to monitor removal of derelict fishing nets, and maintain reporting hotline

Conclusions

- Long-term decline of many Puget Sound rockfish species documented
- Conservation Plan clearly organizes actions to address major threats
  - Substantial progress has been, and is being, made
- Plan implementation improving management
- Positive signs in abundance for some species
- Restoration is a long-term, complex task involving many partners

Ongoing Work and Next Steps

- Continued abundance and distribution surveys using ROV and trawl
- Expanded scuba surveys for young-of-the-year fish
- Establish volunteer angler logbook program
  - Including hands-on identification training
- Continued outreach and education efforts
  - Distribute species ID guides and descending devices
- Site-specific surveys to evaluate Federally designated critical habitat for ESA-listed rockfish species
- Complete Federal recovery plan

Questions?