

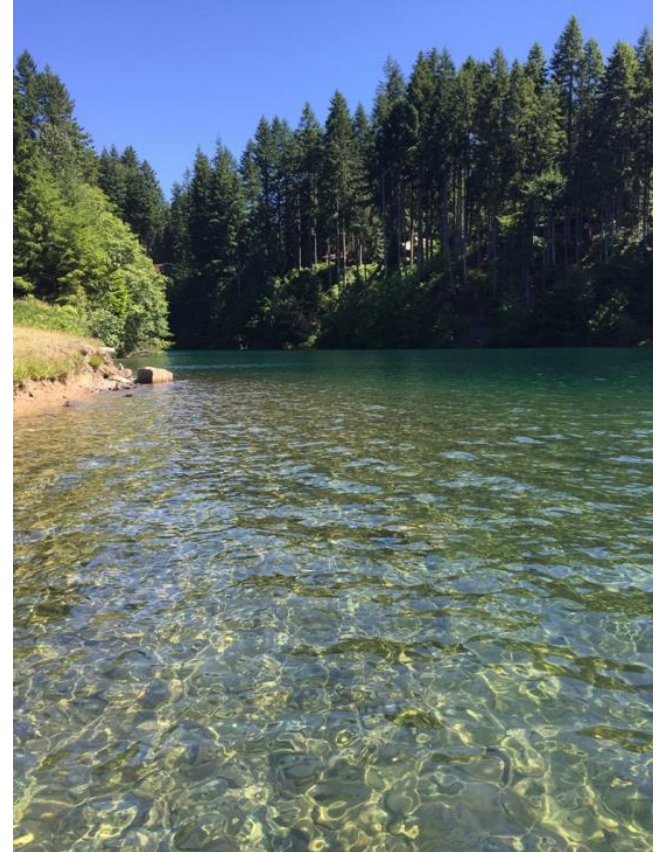
Natural Resources Update

Public Utility Board Study Session

March 27, 2019

Purpose

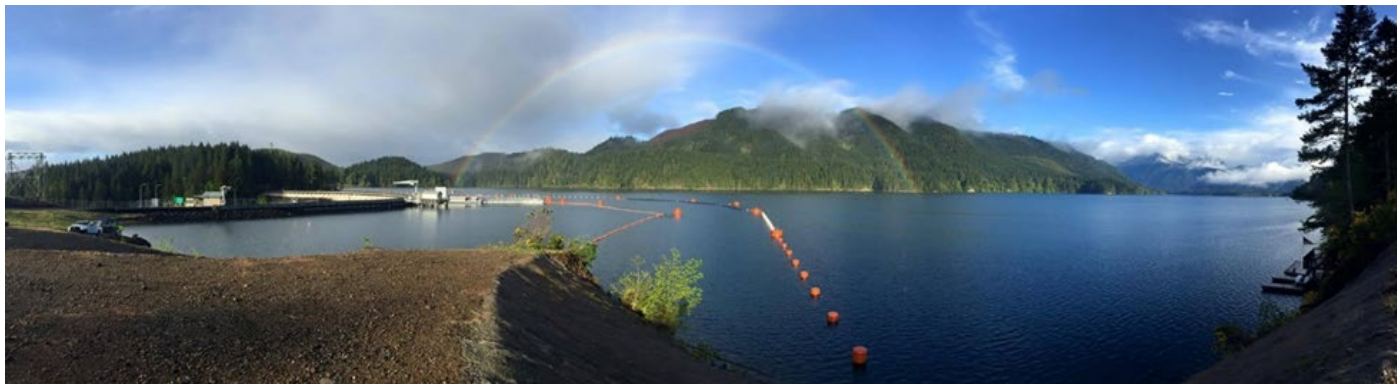
- NR Mission and Responsibilities
- Program Trends & Status
- Future Challenges
- Orca Recovery





Natural Resources - Mission

Mitigate and enhance the environment, create recreational opportunities, manage our lands, and manage our waste in cooperation with our regulators and stakeholders due to impacts from our facilities and operations.

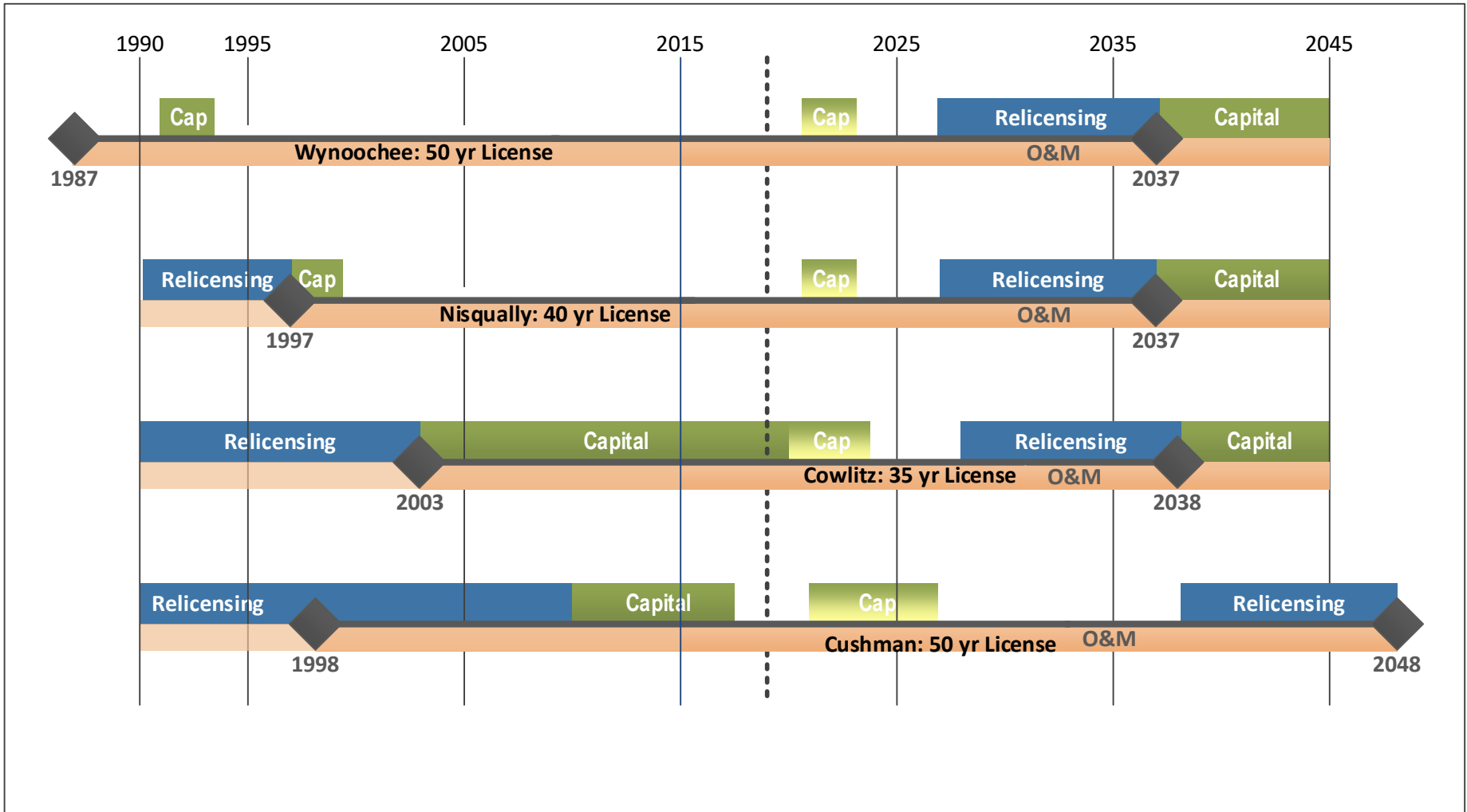


Natural Resources - Responsibilities

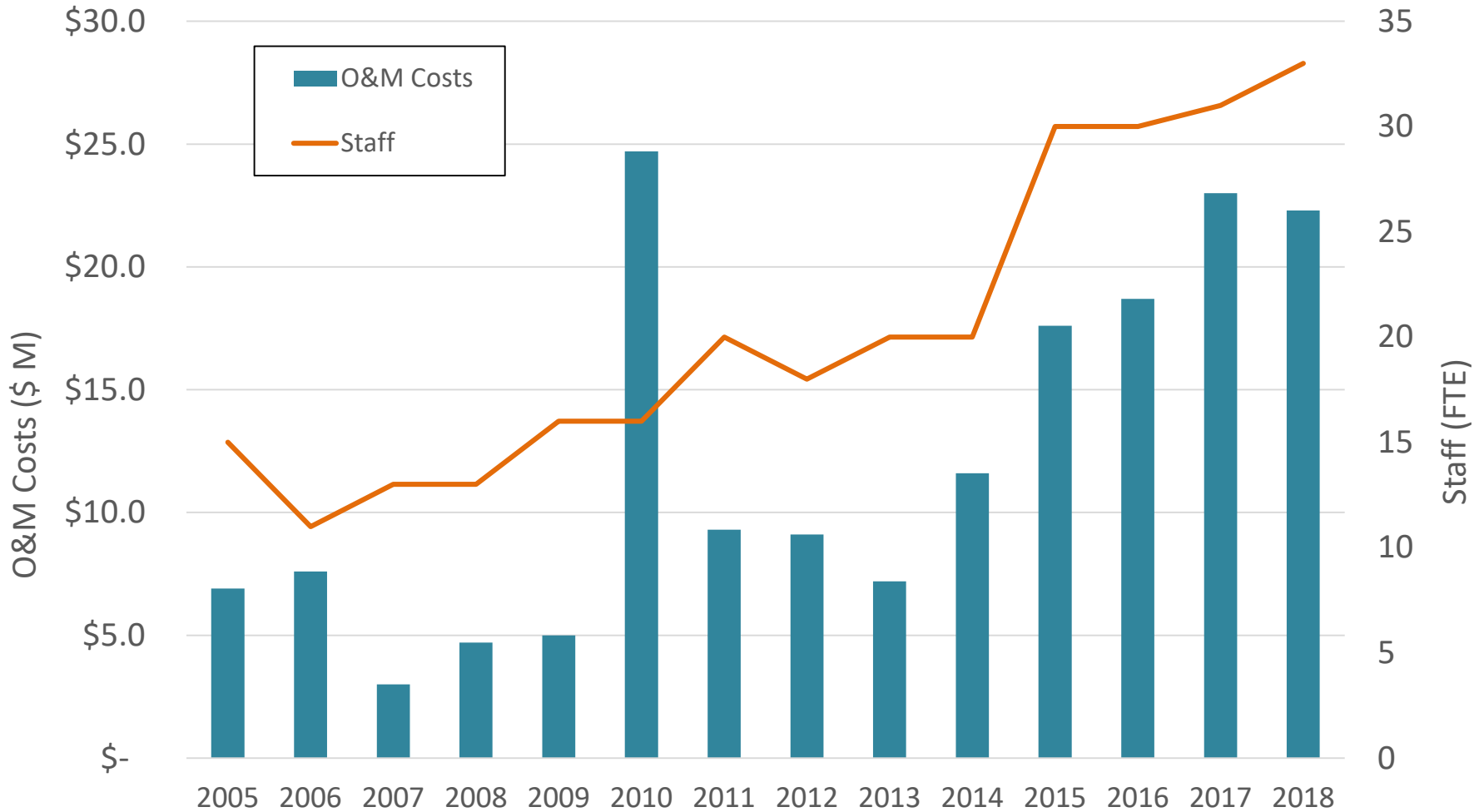


- **Federal Energy Regulatory Commission (FERC) License Management**
 - Fisheries & Aquatic Habitat
 - Wildlife and Lands Management
 - Cultural Resources
 - Recreation
- **Environmental Compliance (TPU)**
 - Hazardous Waste
 - Spill Response
 - Environmental Permits
 - Environmental Protection Training

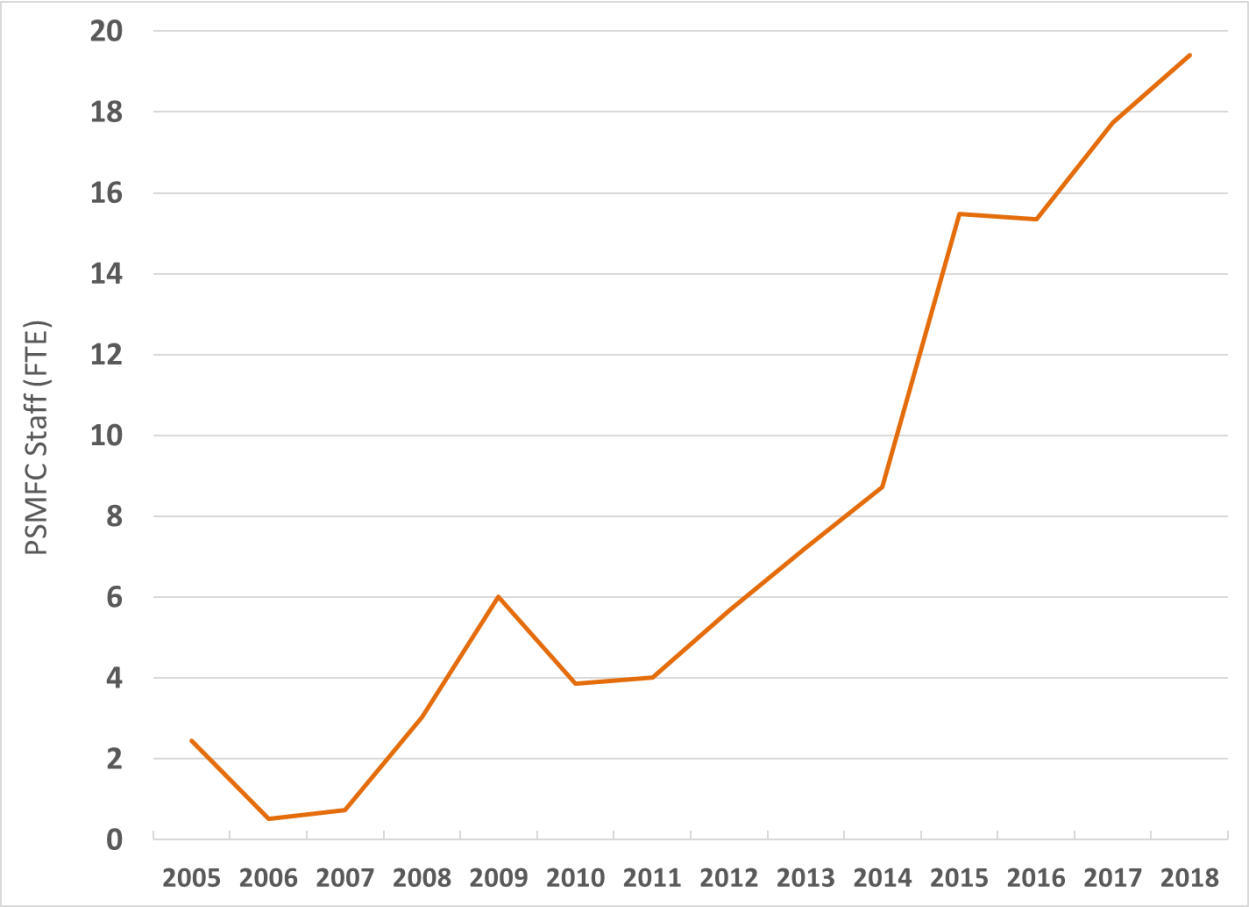
FERC License Compliance



Natural Resources O&M Costs and FTE



Pacific States Marine Fisheries Council Contracted FTEs to Natural Resources

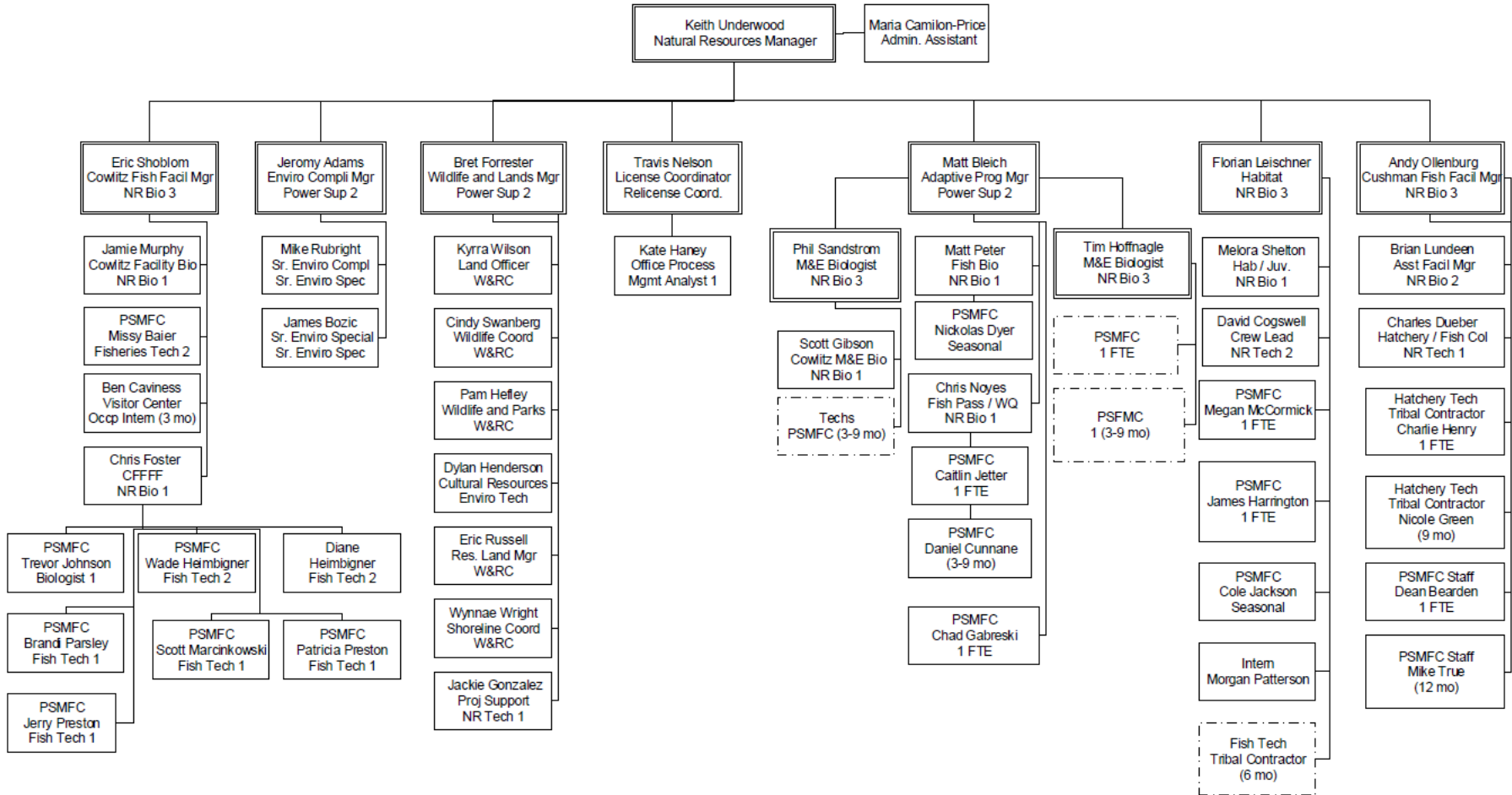


Who We Are

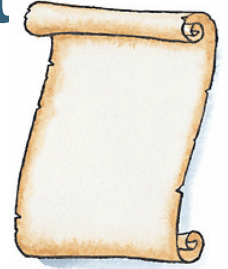
Tacoma Power

Natural Resources 2018 Organization Chart

Rvsd 08/2018



A FERC License – A Living Document



Articles

- **Clear Requirements**
 - River Flow and Lake Elevations – fish habitat and recreational uses
 - Fish Mitigation – fish facilities and programs
 - Wildlife Mitigation – elk forage fields, bird houses, tree thinning
 - Land Management – shoreline permits, utility easements
 - Water Quality – total dissolved gas production
 - Recreation – parks, boat launches, trails, etc.

- **General Obligations Requiring Plans**
 - Plans approved by Regulators and FERC
 - Plans become part of License
 - Most Plans are updated periodically and change



FERC License Management

Negotiate with regulators and FERC

- What is required?
- What is the best method to achieve objective (cost vs. benefit)?
- How do we decide achievement of requirement?
- Who does what, when and how?

Implementation

- Project management approach

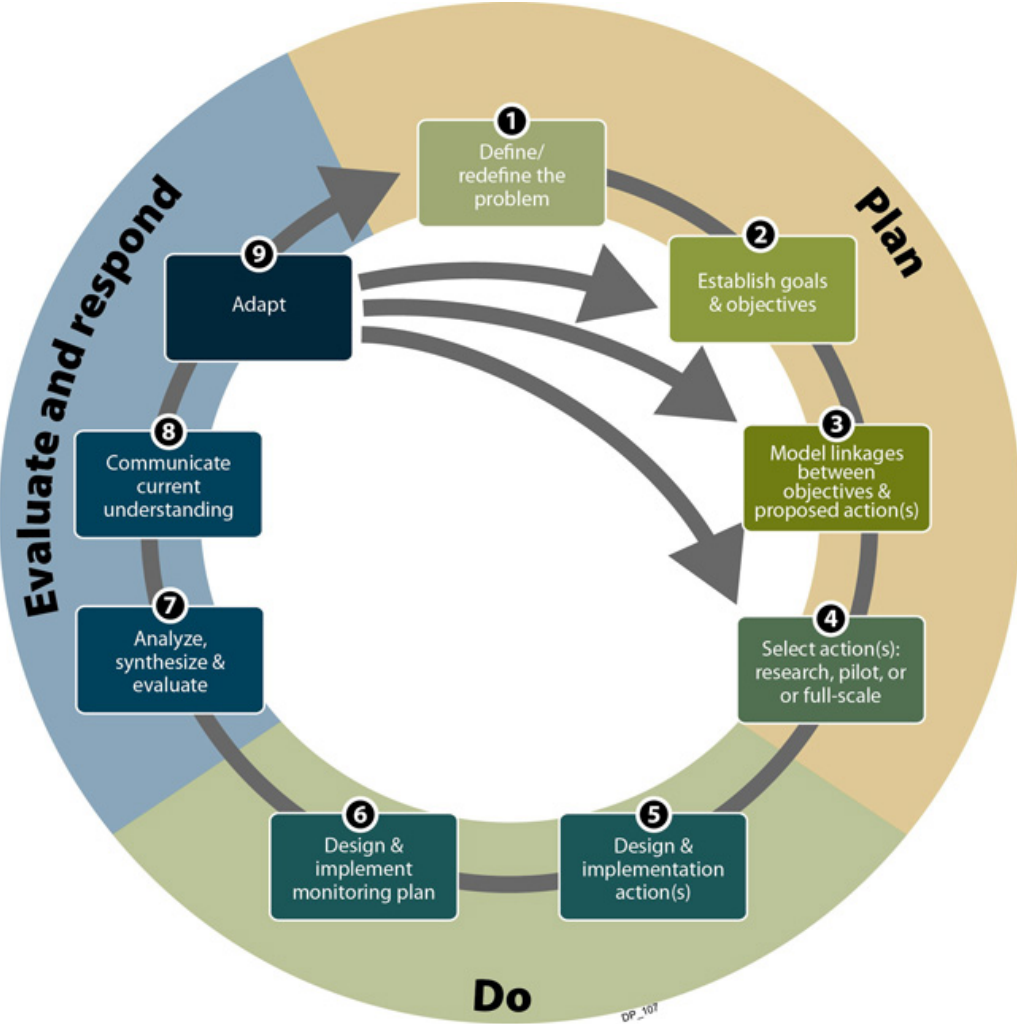
Measure outcomes

- Does the project meet intent or achieve requirement?
- Was the problem resolved?

Next steps

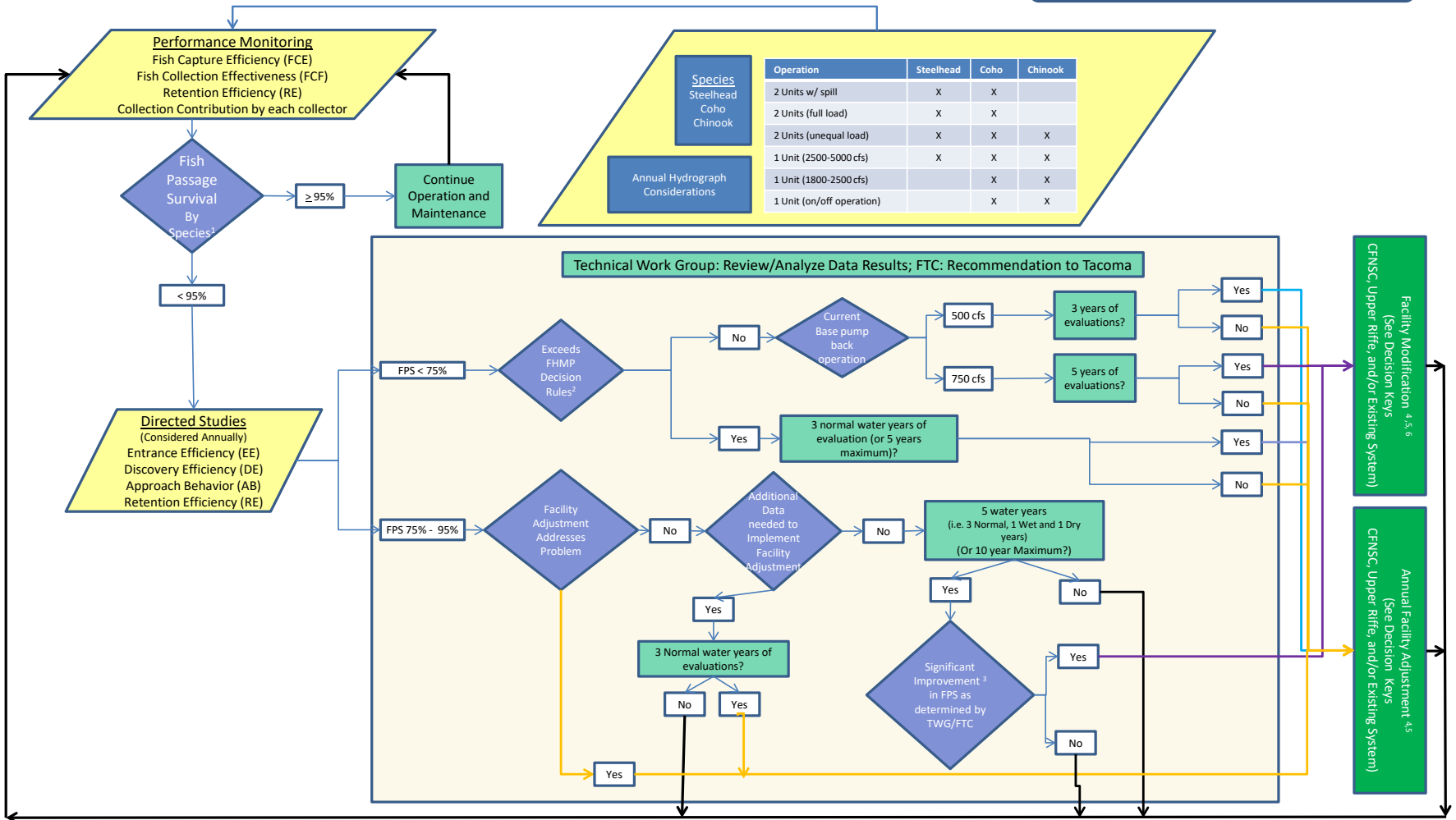
- Back to negotiation

Adaptive Management



Process Flow Chart

Process Flow Chart⁷



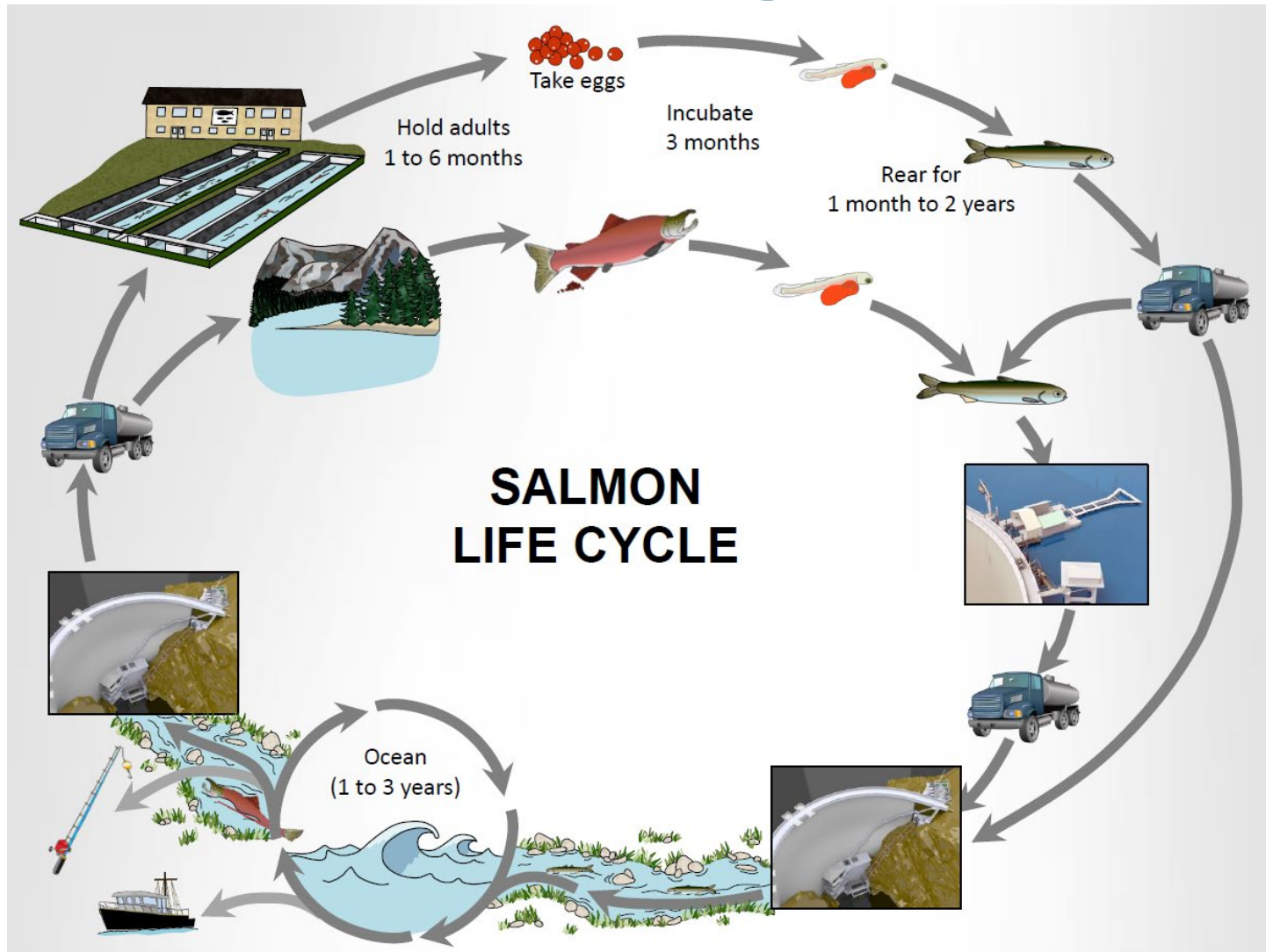
Cushman FERC License Commitments

- **Fisheries**
 - New fish facilities
 - Production/collection
 - Upstream/downstream passage
 - Habitat restoration
 - Monitoring and evaluation
 - Stocking
- **Recreation**
 - Improve camping and other recreational sites operated by the USFS
 - Water access facilities (e.g., boat launches)
 - Shoreline management/permitting
- **Cultural resource protection**
- **Wildlife and wildlife areas**
 - Responsible for protecting 2,700 acres of wildlife lands
- **Water quality**
- **Reporting requirements**
- **Water management**
 - Minimum instream flows
 - Lake Cushman levels during recreation season
 - Mainstem Skokomish River flood reduction
- **Economic**
 - Transfer of lands and annual payment to Skokomish Tribe

Cushman Hydro Project Overview



Cushman Fisheries Program



Cushman FERC License

Fish Passage Requirement

Facility/Structure	Requirement
Fish Hatcheries North Fork Skokomish Hatchery (2016) Saltwater Park Sockeye Hatchery (2016)	Production Requirements & Hatchery Genetic Management Plan
Juvenile Fish Passage Facilities Floating Surface Collector (2015)	95% survival or 75% minimum under special conditions within 10 years of operation or second collector may be required
Adult Fish Passage & Collection Facilities Little Falls improvements (2014) Cushman #2 Adult Fish Collection (2013) Cushman #2 Penstock Tailrace Delay	Not Yet Determined 90% retention of trapped adults Not Yet Determined

() = Year Commissioned

Cushman FERC License

Fish Production Requirements

SPECIES	LIFE STAGE AT RELEASE	SUBTOTAL	TOTAL	POTENTIAL ADULT RETURNS
Spring Chinook	Fingerling	300,000	375,000	1,388
	Yearling	75,000		
Sockeye	Fed Fry (May)	200,000	2,000,000	22,200
	Fed Fry (June)	1,000,000		
	Fed Fry (Sept.)	800,000		
Winter Steelhead	Smolts	15,000	15,225	675
	Adults	225		
Coho	Smolts		10,000-35,000	500-1,750

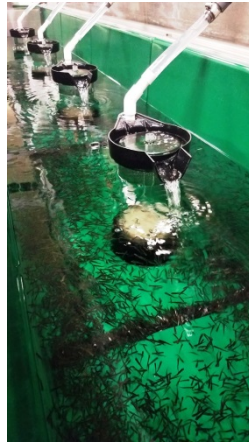
Cushman Fish Hatcheries



North Fork Skokomish Salmon Hatchery



Saltwater Park Sockeye Hatchery



Fish Production

North Fork and Saltwater Park Hatcheries

George Adams Hatchery

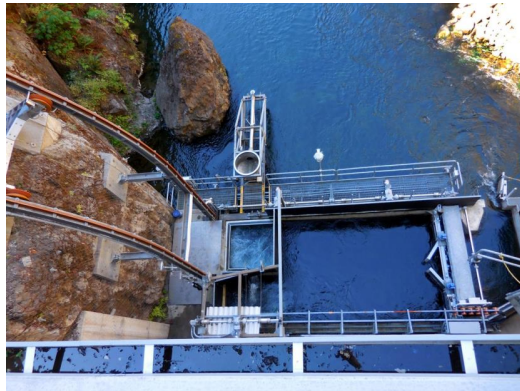
Rainbow Trout and Kokanee stocking

Fish Trap and Haul

Adult Collector at
Cushman No. 2 Dam



Juvenile Fish Collector
at Cushman No. 1 Dam



Transport fish
around dams for
release



Cushman Hatchery Production

Spring Chinook



- Introduction program
- Egg source – Marble Mount in the Skagit
- First year returning to Cushman No.2 Dam trap
 - 113 adults returned to trap
 - Collected 100,000 eggs
- Released below Cushman No. 2 Dam
- Orca whales could benefit
 - Only spring Chinook population in Hood Canal

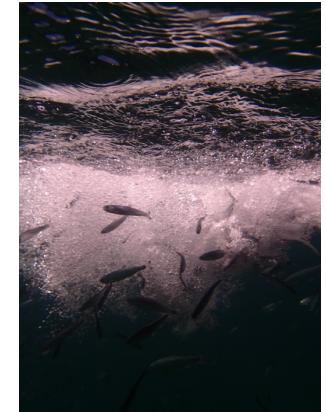
Planned Release	
Goals	Number
License	375,000
Interim	375,000

Year	Actual Release	
	Number	% of Goal
2016	411,042	110%
2017	357,309	95%
2018	401,851	107%

Cushman Hatchery Production

Sockeye

- Introduction program
- Egg source – Baker Hatchery in the Skagit
 - Up to 500,000 egg purchase agreement with PSE
 - Two years left on agreement
 - Obtained 520,000 eggs this year
- Orca whales could benefit
 - Only sockeye population in Hood Canal



Planned Release	
Goals	Number
License	2,000,000
Interim	500,000

Year	Actual Release	
	Number	% of Goal
2016	-	0%
2017	203,379	41%
2018	426,002	85%



Cushman Hatchery Production

Coho



- Supplementation and research program
- Collect eggs from
 - Cushman No. 2 Dam trap
 - George Adams Hatchery
- Coho releases
 - Lake Cushman for fish collection research
 - Below Cushman No. 2 Dam for supplementation

Planned Release	
Goals	Number
License	10,000-35,000
Interim	10,000

Year	Actual Release	
	Number	% of Goal
2016	5,723	57%
2017	9,744	97%
2018	9,972	100%



Cushman Hatchery Production

Steelhead

- Supplementation program
- Egg source
 - Pump eggs from redds in the North Fork Skokomish
- Captive brood program
 - Long Live the Kings grows 225 juveniles to 4 year old adults
 - 2020 - first year of adult releases



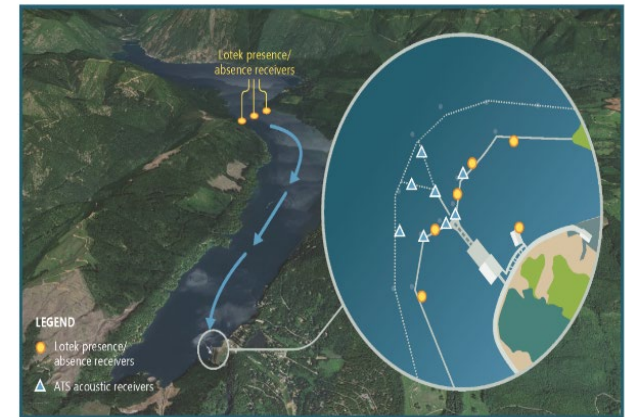
Planned Release	
Goals	Number
License	15,225
Interim	15,225

Year	Actual Release	
	Number	% of Goal
2016	-	0%
2017	8,543	56%
2018	6,351	42%

Cushman Juvenile Fish Collection (250 cfs)

Collection Efficiency

- Goal 95% collection and survival to Cushman No. 2 Dam release
- 75% minimum survival standard
- Coho used to test since 2015
 - Coho collection survival ranged from 18% to 48%
- 2018 - first year of sockeye 35% survival
- Collection numbers may be related to light
 - Adding lights to entrance to test this year
- By 2028 need to consider building larger collector (500 cfs) if not meeting goals (\$50-\$60 million)



Cushman Adult Fish Collection

- Able to collect adults, but not consistently
- Adults able to migrate out of trap
- Adding impediments to out-migration in April

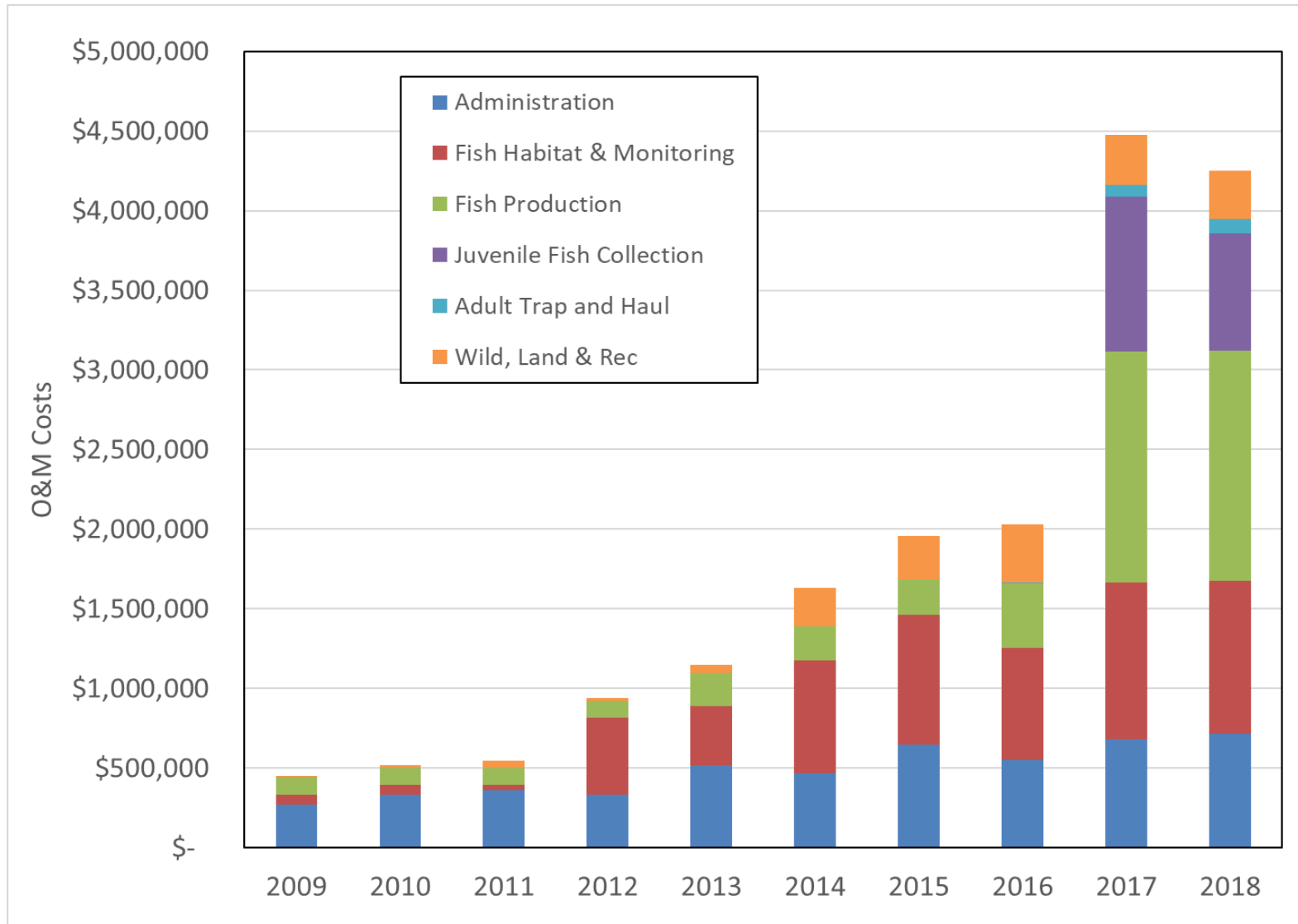


**Fish Tram &
Sorting Facility**

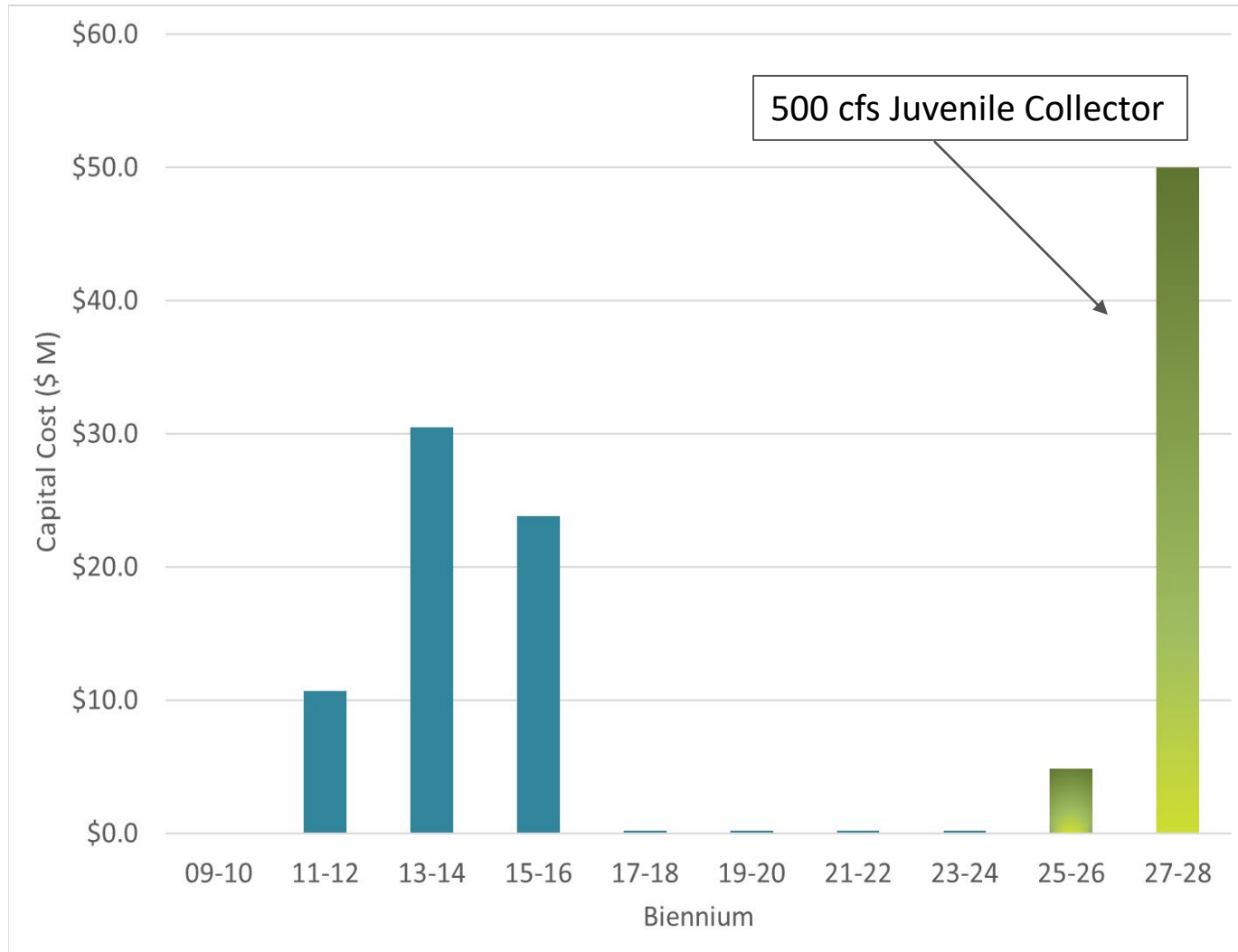


Adult Trap

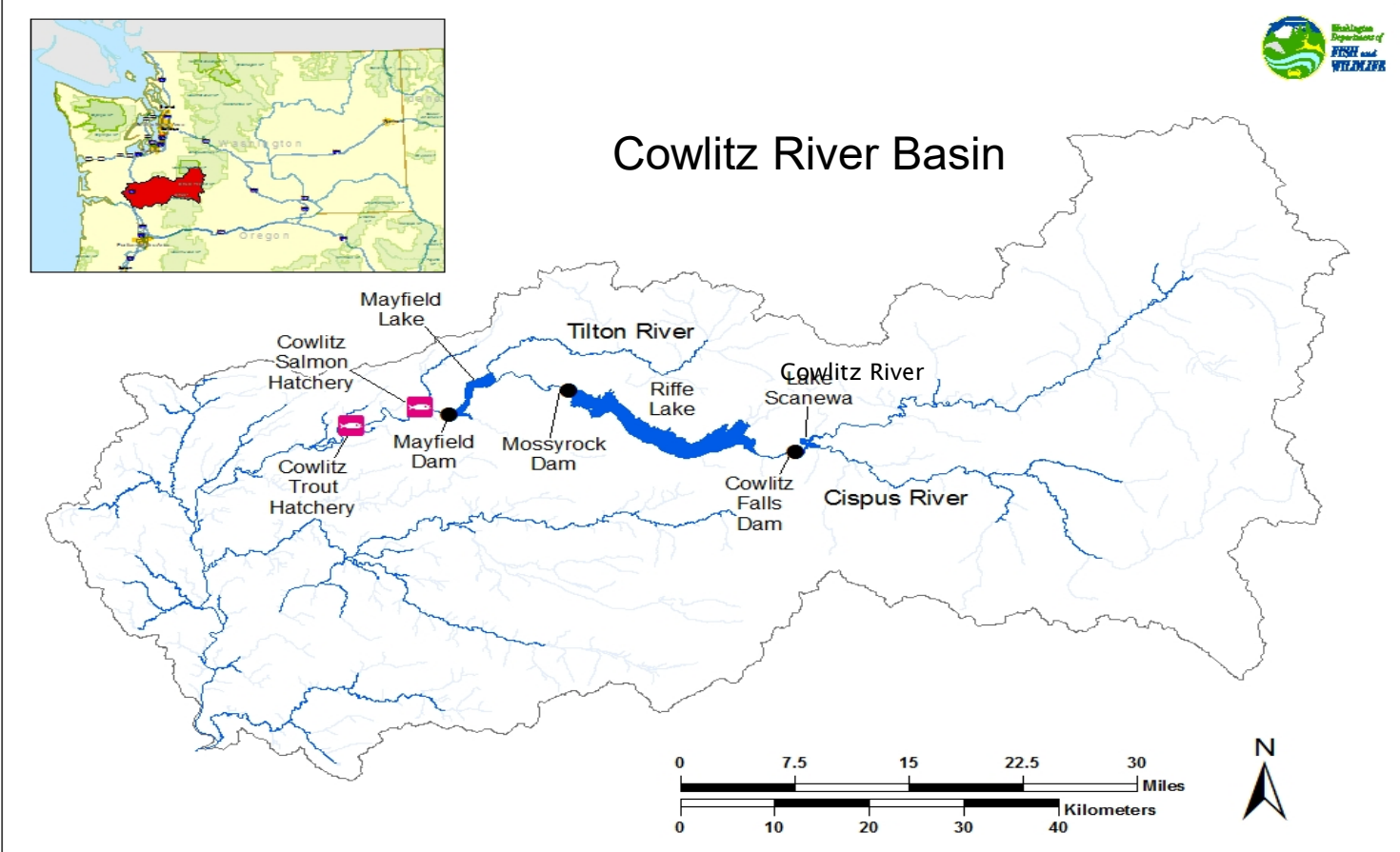
Cushman O&M Costs Related to Natural Resource



Cushman Capital Costs



Cowlitz River Project Overview

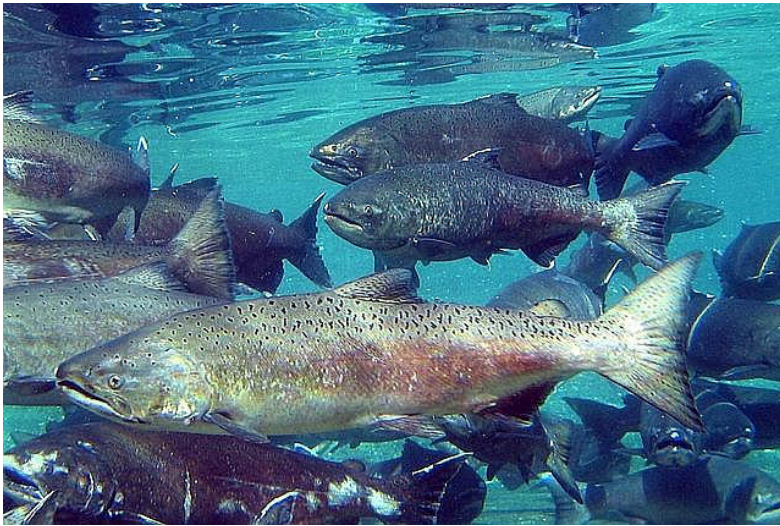


Cowlitz FERC License Commitments

- **Fisheries:** *Restoration and recovery of natural-origin salmon runs*
 - Production/collection
 - Build new or remodel current fish facilities
 - Upstream/downstream passage
 - Habitat restoration
 - Monitoring and evaluation
 - Stocking
- **Recreation**
 - Parks
 - Water access facilities
 - Shoreline management
- **Cultural resource protection**
- **Wildlife and wildlife areas**
 - Responsible for protecting 14,000 acres of wildlife lands
 - Peterman Hill Trail
- **Water quality**
- **Reporting requirements**
- **Mitigating economic impacts**
 - Lewis County “in-lieu-of” tax

Cowlitz FERC License Fish Mandate

Recover fish species in Cowlitz River while providing harvest opportunity



Cowlitz FERC License Fish Mandate

Recovery of Chinook, Coho, and Steelhead
Requires

“Reversal of Domestication”



Cowlitz FERC License Fish Mandate

Hatchery Science Review Group's Rules

- 30% or greater wild fish spawn in hatchery
- 30% or less hatchery fish spawn in wild

Hatchery



Wild



Recovery





Cowlitz Fish Facilities - Hatcheries

Cowlitz Salmon Hatchery



Cowlitz Trout Hatchery



Cowlitz Hatcheries

- We are committed to **restoration** of salmon and steelhead populations on the Cowlitz River
- Hatcheries are operated by a contractor – WDFW
- Annual Production Plan
- License requirement is up to 650,000 lbs.



Stock	# of Fish
Fall Chinook	3,500,000
Spring Chinook	1,800,000
Coho	2,178,000
Winter Steelhead	647,000
Summer Steelhead	650,000
Cutthroat Trout	100,500
Total	8,875,500

Cowlitz Hatcheries - Fish Production

- Mix of steelhead and salmon stocks
- Under guidance from stakeholders and Fisheries Technical Committee
- Angling community focused on this measure urge no less than 650,000 lbs
- Trout Hatchery primary reason for not meeting goals
 - Master Plan completed 2018
 - Avian predation - Loomacres
 - 2019-2020 - ponds and ozone plant refurbishment
 - Increase coordination with WDFW

Year Released	Actual (lbs)	% of Goal
2011	641,634	99%
2012	554,350	85%
2013	651,469	100%
2014	697,078	107%
2015	583,197	90%
2016	529,314	81%
2017	636,473	98%
2018	654,865	101%

Cowlitz Hatchery Improvements

Fisheries and Hatchery Management Plan

- In development and due February 2020
- Public- and regulator-driven process
- Taking multiple years due to retirements and focus of plan

Satellite facility plan

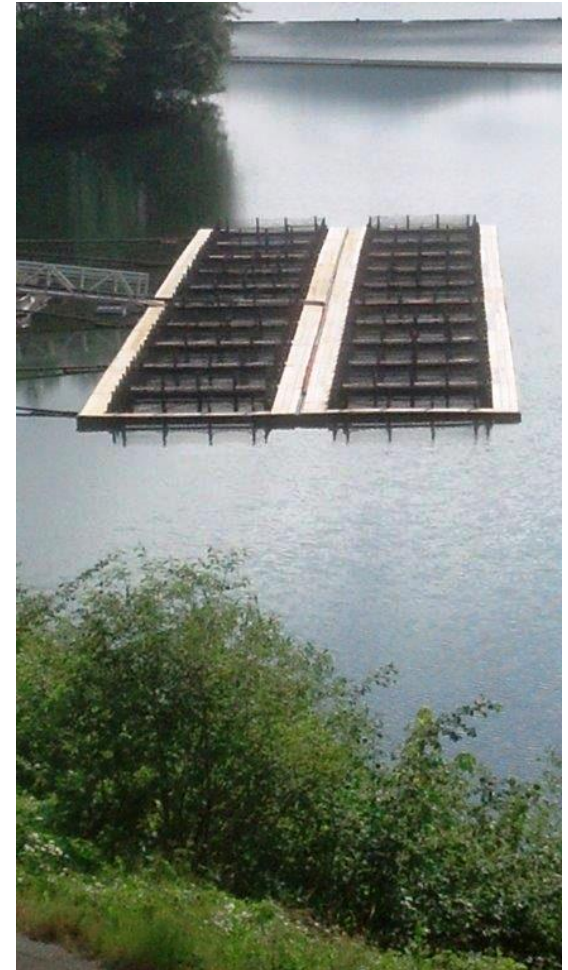
- Three facilities specified in License
- Vague requirements
- Does not count against the 650,000 lbs of fish production

Fish release sites

- New release sites to segregate hatchery and wild fish
- Improve harvest opportunity

Orca whale initiative

- Increase coho by 2 million fish
- 500,000 more spring Chinook
- WDFW and stakeholders secure additional funding



Cowlitz Fish Facilities - Juvenile Fish Collection

Cowlitz Falls North Shore Collector



Mayfield Juvenile Fish Collector



Cowlitz Juvenile Fish Collection

Cowlitz Falls Fish Facilities

- 95% to 75% collection requirement
- Fish collection efficiency has already tripled for spring Chinook
 - Was 10% to 30%; now 70%
- North Shore Collector completed in 2017
 - Won the ENR Regional Best Projects 2018 Award for Water/Environmental
- Remodeled fish sorting facility and offices - complete by end of 2019



Cowlitz Juvenile Fish Collection

Mayfield

- 95% collection requirement
 - Collecting at 65%
- Conducted feasibility study
- 2019 - first improvement is alter dewatering system
 - Fish stalling out
- Conducting study to remove dips in conveyance pipe
 - Fish stalling for days to weeks



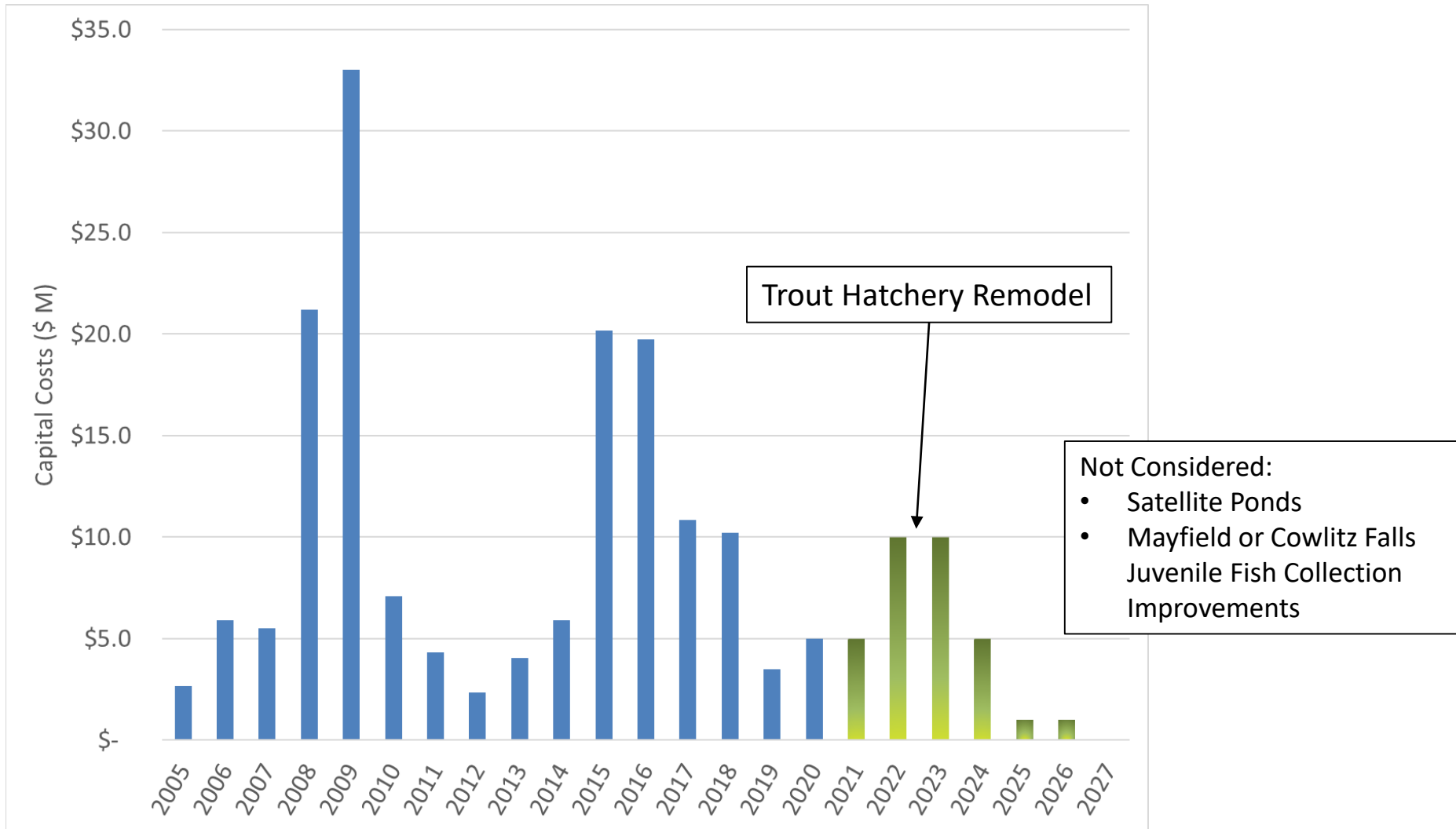
Cowlitz Angling Success

Fishing opportunities

- Low number of fish returning
- Fish loss at Trout Hatchery
- Poor ocean conditions
- Removed a steelhead stock that returned in the fall/winter
- Spring Chinook 2019 forecast – fishing closed in Cowlitz and lower Columbia
- Angling community likely to be animated this year



Cowlitz Capital Costs Related to Natural Resources



Cowlitz Restoration and Recovery Program

- Tacoma Power established the \$17 million Cowlitz Restoration and Recovery (CRR) Fund as part of our FERC license.
- The goal is to support activities that protect and promote recovery of endangered salmon species in the upper Cowlitz River basin.
- Up to \$3 million in grant funding is available for habitat and hatchery-associated projects in 2019.
- The fund will be spent down entirely before our federal license expires in 2037. Future grant-round schedules and amounts may vary.

Questions?



Thank you for your support



Website Relaunch

March 2019



Current website

- Research findings
 - Sources: Google Analytics, Market Development surveys, anecdotal feedback, and E Source’s web benchmarking study
 - More than half access on mobile devices
 - High bounce rate – not finding what they need
 - High traffic to “Contact Us” – increased transaction cost
 - Ranked in bottom of 3rd quartile in E Source study
- Technology status
 - Outdated, proprietary content management system
 - Limits searchability
 - Custom solutions



Summary of research findings

- More than half of customers use mobile devices to access the site
- Can't find what they want fast enough or at all
- Multiple homepages and branding are confusing
- Many customers call or come in if they need to contact us, even though they would prefer to find the info online
- Majority of customers visit the website for billing and payment info
- Amount of content on pages is overwhelming
- Make outage info easier to find and report online
- Content is outdated
- Would prefer a simple, clean layout without so much empty space
- Icons and navigation are confusing



MyTPU.org future state

- Transition to off-the-shelf, mobile-responsive content management system
- Revise navigation and design for better user experience
- Update priority content
- Move to cloud-based hosting
- Updated design
 - Clean, cohesive look – subtle use of brand colors
 - ADA compliant colors and fonts
 - Optimized for mobile
 - Photos of real people/places, not cartoons



Stakeholder involvement

Cross-functional project team

- Steering committee
- Advisory committee
- Content Work Groups (SMEs):
 - Conservation - power & water
 - Billing/payment, customer service, bill assistance, MyAccount
 - Water quality & supply
 - Publications, About Us, Newsroom
 - Tacoma Rail
 - Parks, generation, natural resources
 - Permitting
 - Rates – water & power
 - Business Customers



Communications plan highlights

Key dates

- This week (3/25-3/29) – updates, admin training, starting internal communications
- Next week (4/1-4/5) – customer outreach begins, continue admin training, provide exploration opportunities to employees, host high-impact user group training
- **Launch date – Wednesday, April 10**
- **Ongoing customer outreach, feedback gathering, metrics tracking, and maintenance**



Communications plan highlights

Key channels

- INTERNAL: Newslines, CSR newsletter, Unet, Ubits, campus posters, open houses, high-impact user group demos
- EXTERNAL: Current website, MyAccount, social media, email, U*, lobby screen, bill insert, bill message, PUB evening session presentation on 4/24



Communications plan highlights

Key messages

- Still secure – no changes to billing/MyAccount
- Fewer clicks to find information
- Enhanced search function
- Mobile/tablet responsive
- Fast access to outage/safety information
- “Self-help” section
- Living asset – can and will change





Thank you

