

Overview of Columbia River Fisheries

Fish and Wildlife Commission Workshop
May 31, 2012



Outline

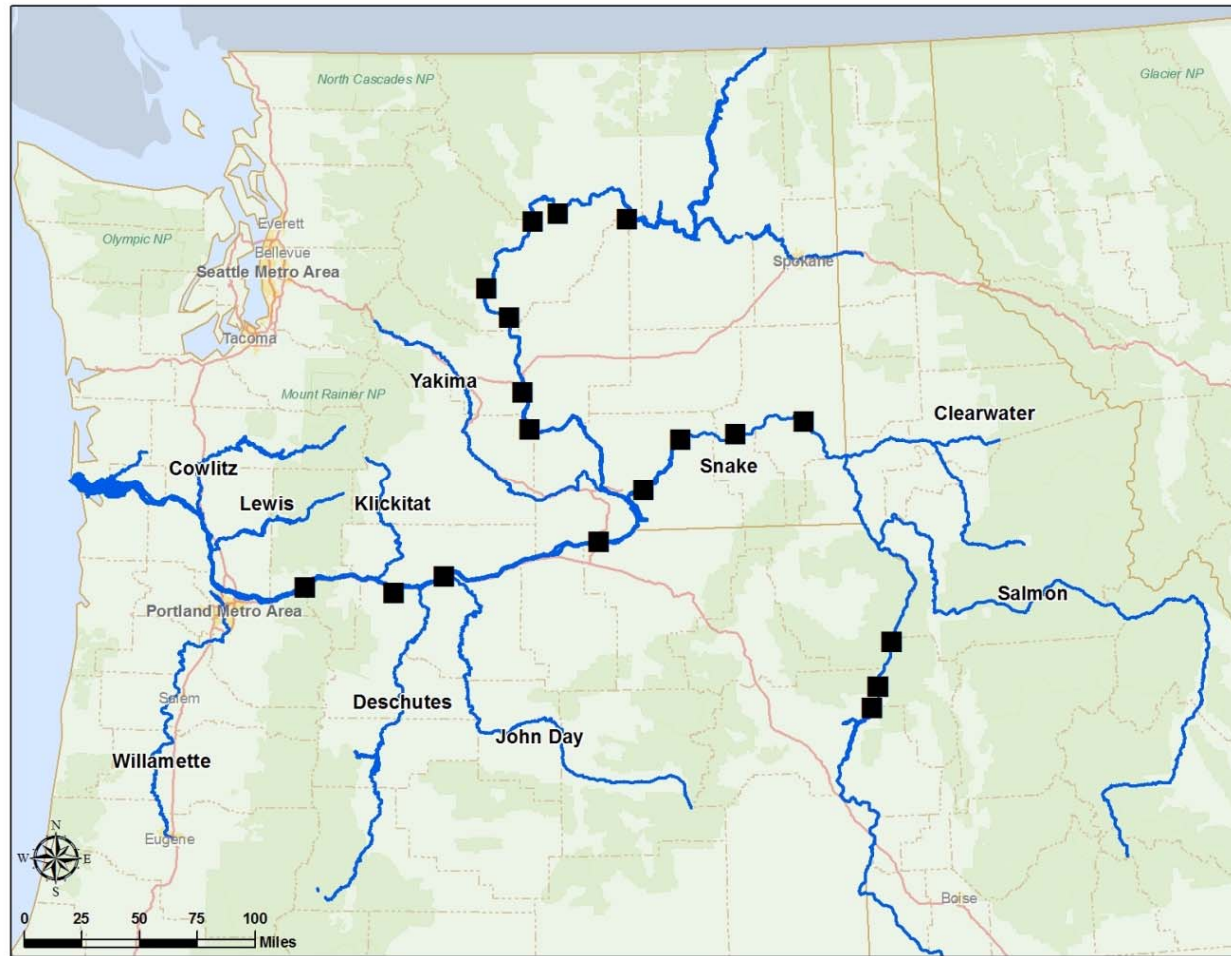
- Historical perspective
- Rules of the road
- Fishery implementation
- Fisheries
 - Forecasting abundance/run reconstruction
 - Tools for managing harvest
 - Spring, summer, fall season fisheries
 - Buoy 10 to Lower Granite Dam/Chief Joe Dam



Overview Themes

- Conservation and recovery is our fundamental objective
 - Harvest, Hydro, Habitat, Harvest
 - All-H context for fisheries
- Very complex regulatory environment
- Diverse range of fishing opportunity/fisheries
 - All fisheries share in achieving conservation objectives
- Passage of CRSSE has provided significant new sport fishing opportunities

Columbia River Basin

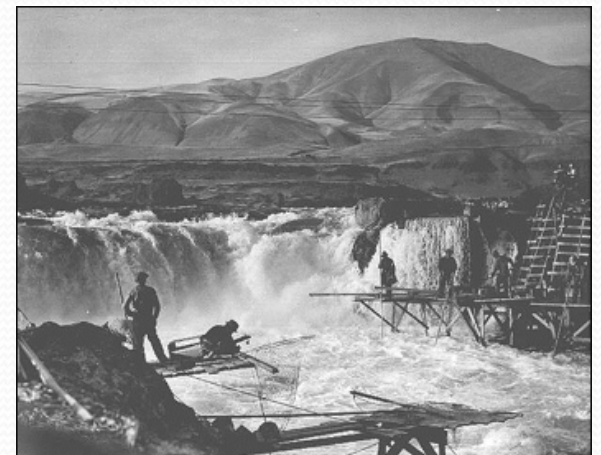


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Commission Presentation
Special Workshop May 31, 2012

Historical Perspective

- Salmon migrated 1,200 miles into Canada and 600 miles into Idaho
- Indian tribes harvested salmon prior to European arrival
- Largest fishery occurred at Celilo Falls
- Essential to Native American culture and subsistence



Historical Perspective

- Commercial fishing became significant in about 1861
 - Salmon canneries began in lower river in 1866
 - Annual harvest ranged from 25-45 million lbs until 1938
- Commercial landings averaged over 600,000 Chinook during 1938-1950



Historical Perspective

- Grand Coulee Dam – 1941
 - 500 miles of habitat lost
- Brownlee Dam (Snake River) – 1958
 - 250 miles of habitat lost
- 1933-1968
 - Four federal dams on lower Columbia
 - Five PUD dams on upper Columbia
- 1961-1975
 - Four federal dams on mainstem Snake River



Major Fishery Events

- 1855 Treaties signed between the United States and Columbia River Indian tribes
- 1918 U.S. Congress ratified the compact and agreement between Oregon and Washington covering concurrent jurisdiction of Columbia River fisheries
- 1937 Mitchell Act passed to provide mitigation funds to compensate for fish lost as a result of dam construction
- 1943 Columbia season reductions begin
- 1960 Ocean fishery expansion
- 1968 U.S. v. Oregon judgment
- 1973 ESA passes congress
- 1991-05 ESA listing of 13 Columbia River ESUs
- 2008 U.S. v. Oregon 10 year agreement for all species



Rules of the Road

- *U.S. v Oregon*
- Federal Endangered Species Act (ESA)
 - Biological Opinions (FCRPS)
 - Recovery plans
- Commission policies
 - Spring Chinook non-Indian allocation
 - Summer Chinook non-Indian allocation
 - North of Falcon
 - Hatchery and Fishery reform

Who Manages Columbia Basin Fisheries?

- States and individual tribes share co-management in the tributaries
- States and treaty tribes share management in mainstem Columbia River
- Authorities
 - Tribal treaties reserved rights to fish in perpetuity
 - State laws require conservation of the public's fish
 - *United States v Oregon* clarifies treaty Indian and non-Indian sharing of harvestable fish and hatchery production
 - ESA provides for federal oversight



U.S. v. OREGON

- 1968 Federal court ruled equitable harvest for Columbia River Tribes
- Columbia River Fish Management Plan adopted (CRFMP) as court order in 1988
 - Conservation-based plan aimed at rebuilding weak salmon and steelhead runs
 - Rebuild upriver runs and fairly share harvest
 - Provide for spawning escapement first
 - Protect weak stocks
- Currently operating under the 2008-2017 Management Agreement



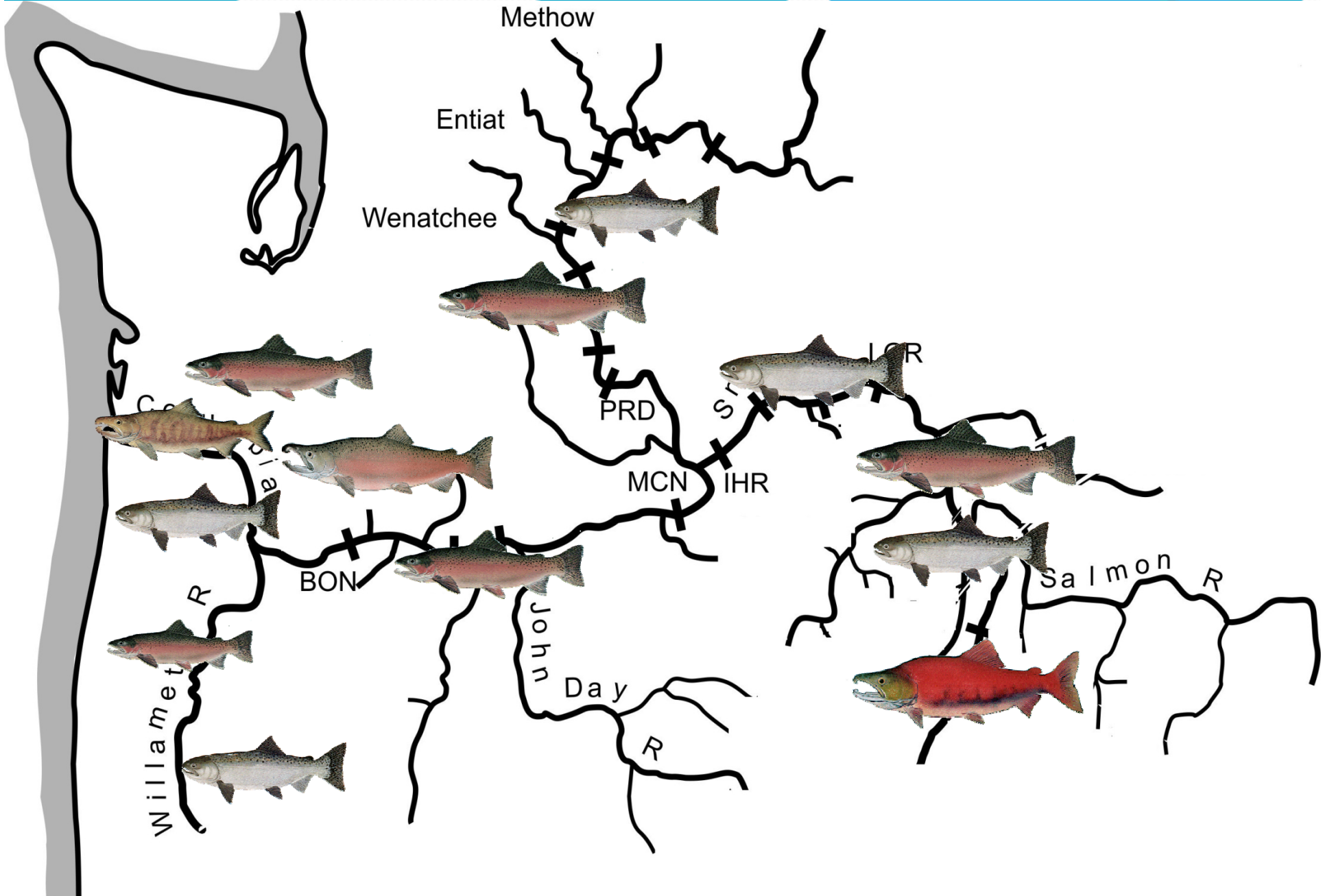
U.S. v. OREGON Parties

- Washington Department of Fish and Wildlife (WDFW)
- Oregon Department of Fish and Wildlife (ODFW)
- Idaho Department of Fish and Game (IDFG)
- U.S. Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- Yakama Nation (YN)
- Confederated Tribes of Warm Springs Reservation (CTWS)
- Confederated Tribes of Umatilla Reservation (CTUIR)
- Nez Perce Tribe (NPT)
- Shoshone-Bannock Tribes (SBT)
- Bureau of Indian Affairs (BIA)
- Department of Justice



Endangered Species Act (ESA)

- First Columbia River listing in 1992
- ESA-listed fish in every major tributary
 - Chinook (5 ESUs) (1 Endangered)
 - Steelhead (5 DPSs)
 - Sockeye (Endangered)
 - Coho
 - Chum
 - Green Sturgeon
 - Bull Trout
 - Eulachon





ESA Management

- Federal Columbia River Power System (FCRPS) Biop
 - Includes funding of hydro, habitat, hatchery, harvest, and predation actions
 - Includes fish status monitoring and adaptive management triggers for additional actions
 - *U.S. v Oregon* Management Agreement interdependent
- Recovery Plans
 - Locally developed - most completed
 - Integral part of all-H process
 - Includes harvest
- All fisheries require permit from NMFS (Section 7,10,4d)



Commission Policies

- Spring Chinook allocation C3617
 - 2009-2013
- Summer Chinook allocation C3618
 - 2011-2013
- North of Falcon C3608
 - 2011-2012
- Columbia River smelt (Eulachon) C3612
- Sturgeon Management C3001
 - 2011-2013
- Hatchery and Fishery reform C3619



Fisheries Implementation

- Commission/Director provide policy guidance
- WDFW is a member in decision-making bodies
- Public meetings
 - Input and advice from constituents
 - Columbia River Advisor Groups

Key Salmon Harvest Management Forums

- Pacific Salmon Treaty/Commission
- Pacific Fishery Management Council (PFMC)
 - North of Falcon
- *U.S. v Oregon*
 - Technical Advisory Committee (TAC)
- Columbia River Compact

U.S. v Oregon Management Agreement – 2008-2017

- 2008-2017 Management Agreement
 - Provides harvest guidelines for all salmonids
 - Abundance-based harvest schedules
 - Treaty Indian and non-Indian sharing
 - Incorporates ESA guidelines
 - All guidelines are consistent with recovery
 - Includes hatchery production and marking strategies



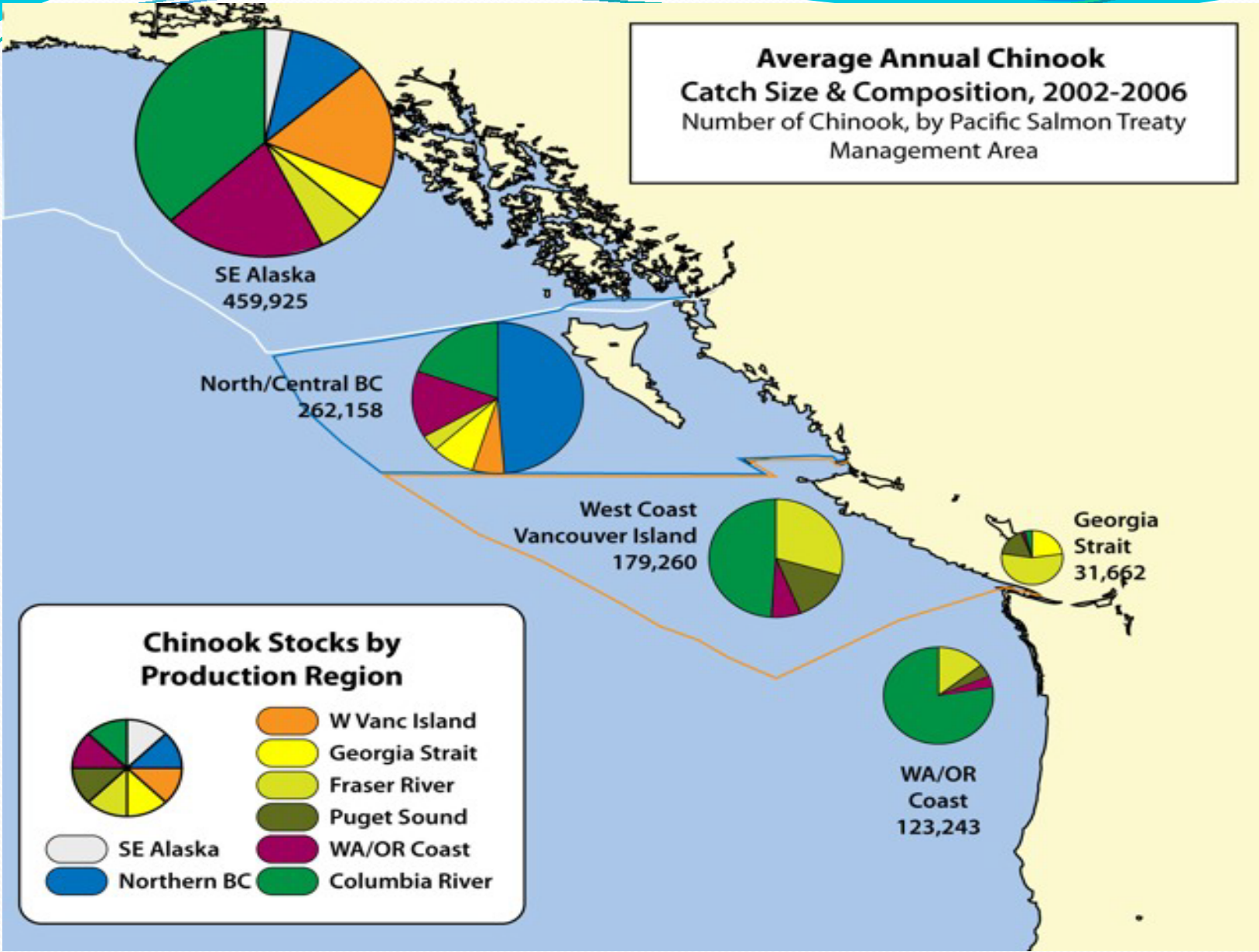
U.S. v Oregon TAC

- Includes all parties to *U.S. v Oregon*
 - State, federal and treaty-tribe agencies
- Review fisheries, provide updates to runs
- Technical review of all data pertinent to management of fisheries
 - Run forecasts and updates
 - Run reconstruction
 - ESA accounting

Pacific Fishery Management Council (PFMC)

- Columbia River stocks key contributor to ocean fisheries
- Magnuson Fishery Conservation and Management Act of 1976 established PFMC
- Manages the conservation and ocean harvest of fish from the U.S.-Canada border south to Mexico
- Fishery levels driven by ESA and weak stock limits

**Average Annual Chinook
Catch Size & Composition, 2002-2006**
Number of Chinook, by Pacific Salmon Treaty
Management Area





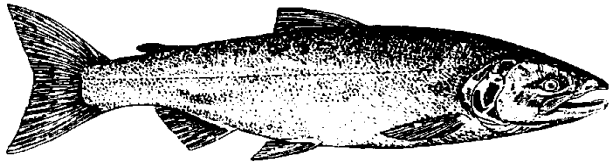
North of Falcon (NOF)

- State, federal and tribal fishery managers meet to plan salmon fisheries with public input
 - Alternative fishing seasons are analyzed that meet conservation and allocation objectives
- Planning of freshwater fisheries concurrent with ocean season setting
 - Provides assurance that Columbia River fisheries are reconciled with ocean fisheries
- Escapement goals, ESA requirements, and harvest sharing objectives achieved



Pacific Salmon Commission

- 1985 salmon treaty between the U.S. and Canada for management of Pacific salmon
- Several technical committees including a Chinook Technical Committee (CTC)
- New agreement in 2008 for Chinook
 - Appropriates finances for treaty implementation
 - 5-year review in 2014
 - Expires in 2018



Chinook Management Processes





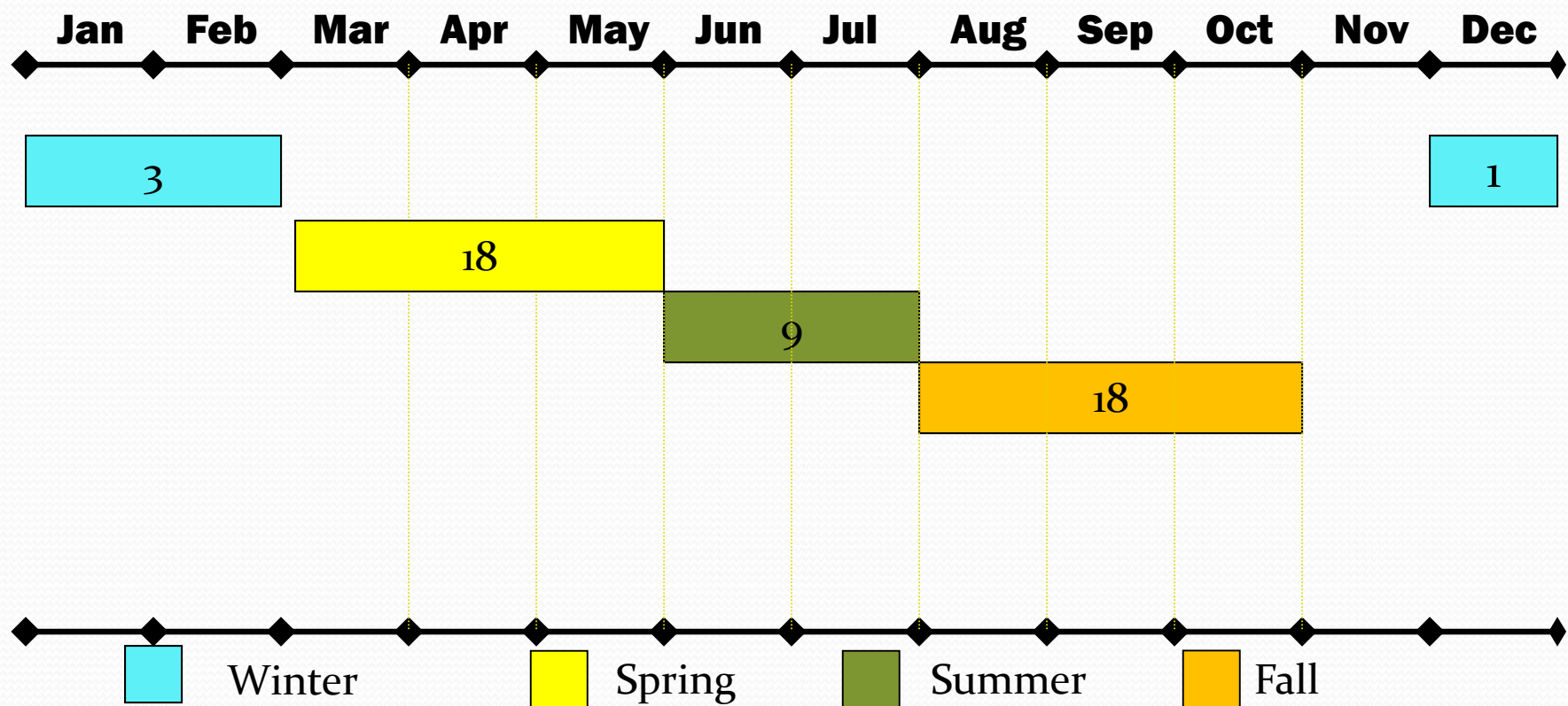
Columbia River Compact

- Compact and agreement between Oregon and Washington ratified by Congress 1918
- Laws adopted by mutual consent
- Fishery decision-making authority
 - Provides concurrent jurisdiction of Columbia fisheries
 - Compact comprised of Washington and Oregon Commissions that have delegated to Directors or designees of WDFW and ODFW
 - Public hearings held to adopt or modify seasons and regulations

Compact Designees from WDFW and ODFW



Average Compact/Joint State Hearings



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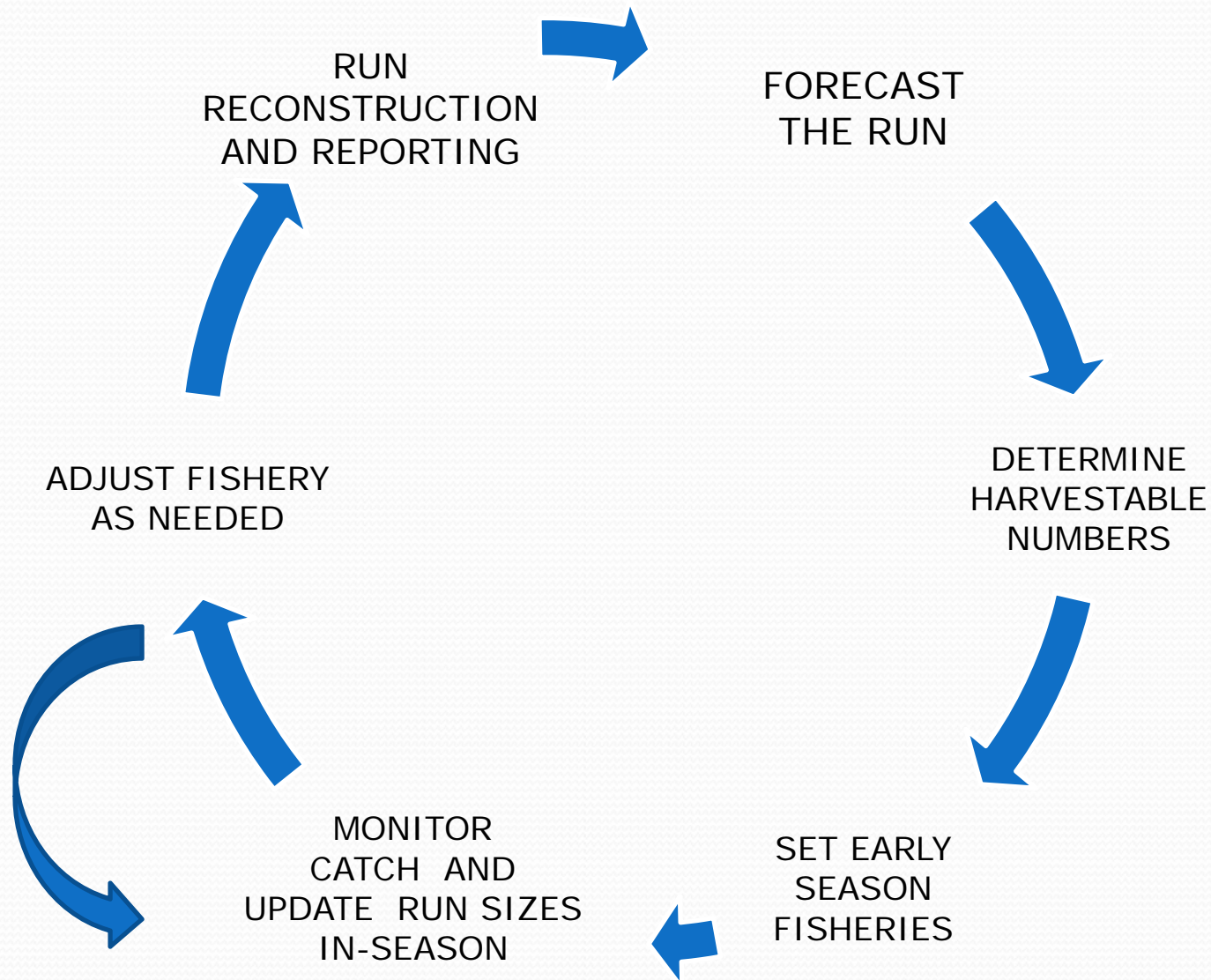
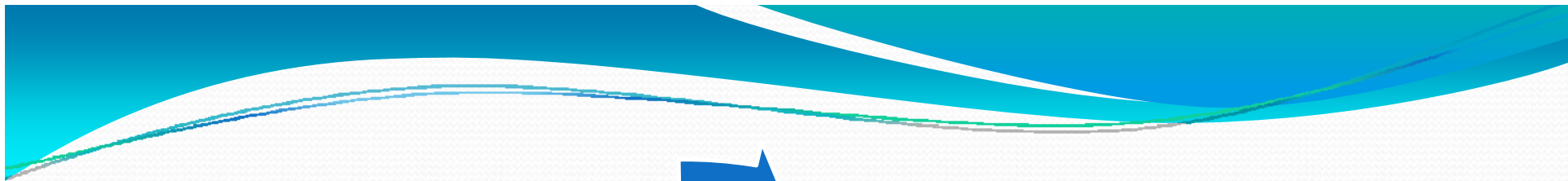
Fishery Management

- Annual management cycle
- Forecasting abundances
 - Preseason
 - In-season
 - Run reconstruction
- Tools for managing fisheries
 - Catch quotas
 - Selectivity
 - On-board monitoring



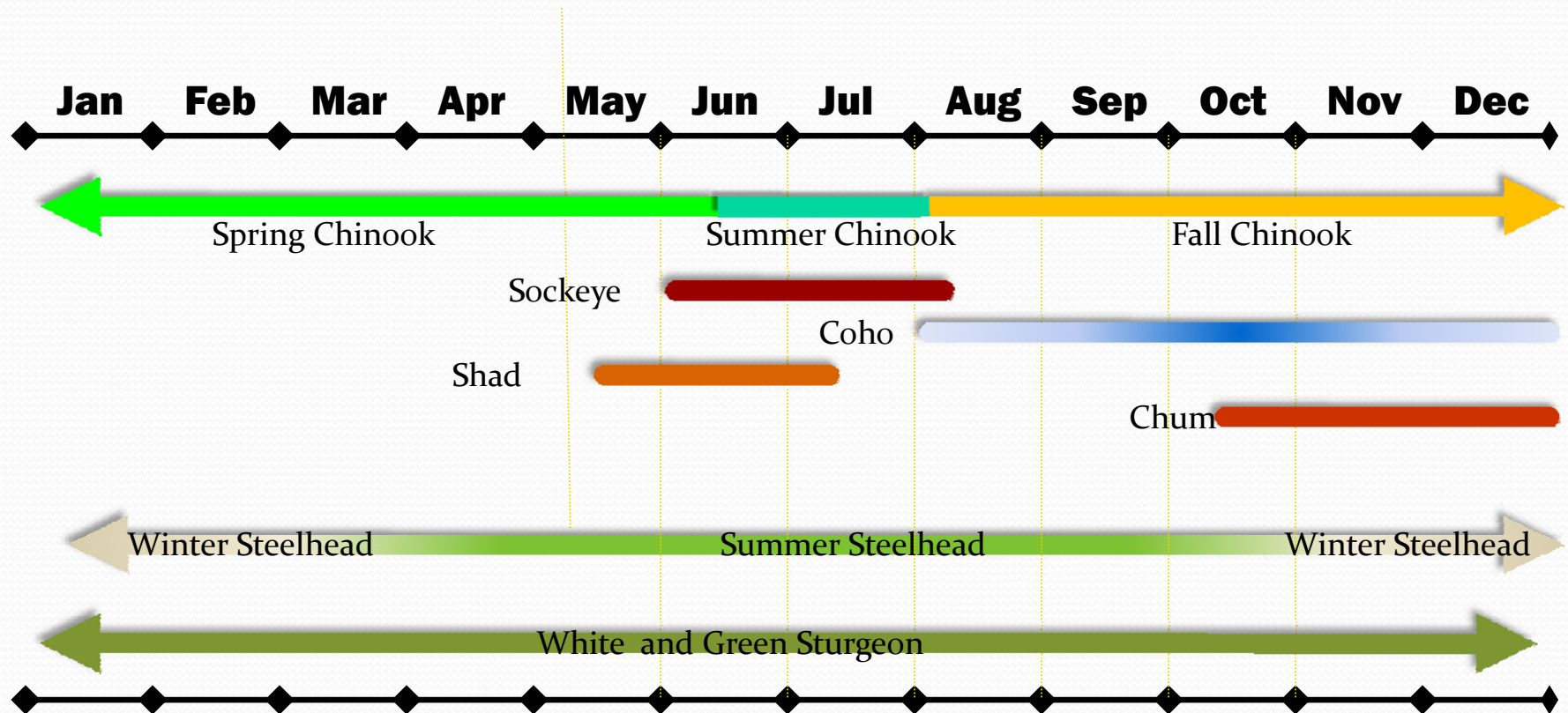
Management Cycle

- Preseason forecasts with TAC
- Meet with Advisor Groups to develop seasons
 - Columbia River Recreational and Commercial
- Compact/Joint State hearing
 - Public provides comments on recommendations
- Monitor fisheries and runs in-season (TAC)
 - Catch estimates, CWTs, dam counts
- Modify fisheries as needed



Columbia River

Annual presence of management species





Pre-Season Forecasts

- Age Based Relationships
- Efforts to incorporate environmental factors
- Forecast error often larger with extreme data points
- Pre-season forecast used for planning early season fisheries
- Pre-season forecasts are not as critical if timely run size updates can be made

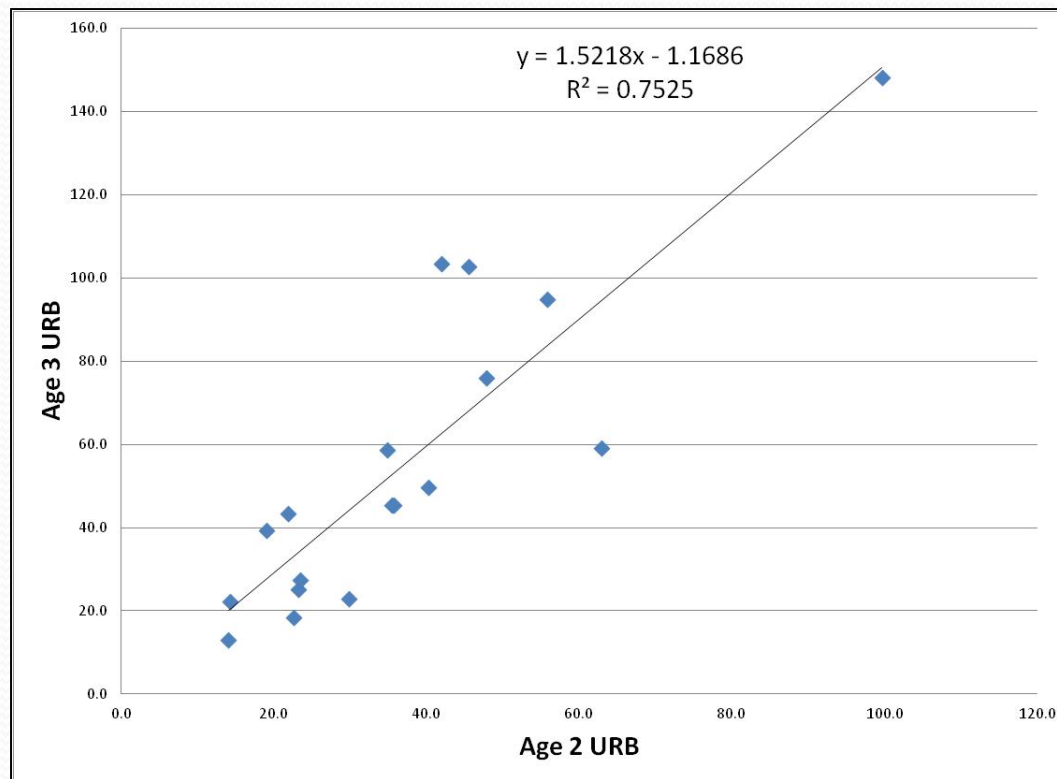
Database – URB Fall Chinook

Returns to the Columbia River of the Upriver Bright Stock, By Age, 1964-2011.

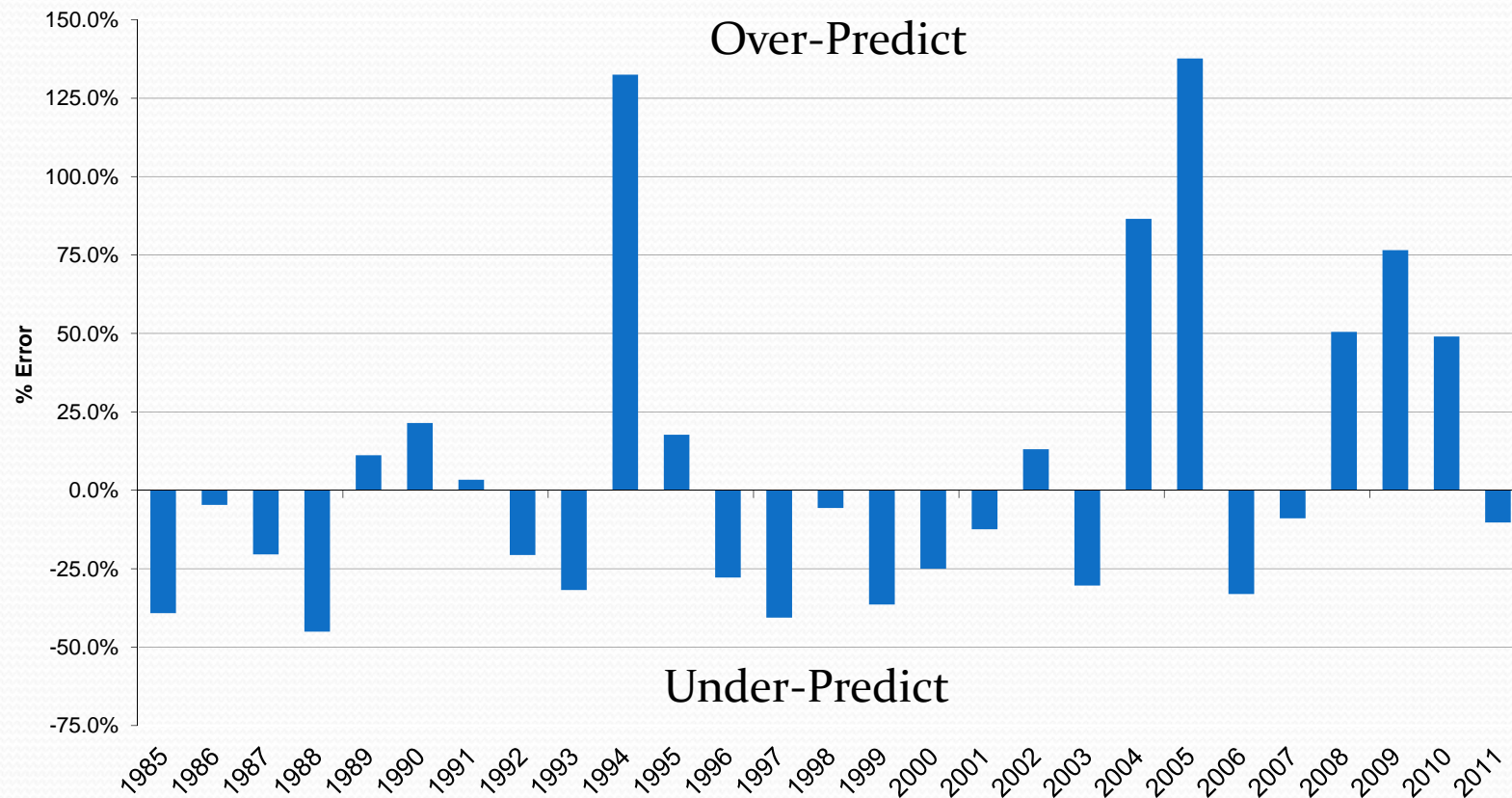
<u>Return Year</u>	<u>Age 2</u>	<u>Age 3</u>	<u>Age 4</u>	<u>Age 5</u>	<u>Age 6</u>	<u>Total</u>	<u>Total Adults</u>
1964	18.0	47.0	28.8	1.2		95.0	77.0
1990	34.6	8.8	70.1	68.0	6.7	188.2	153.6
1991	37.6	9.7	26.2	62.1	5.4	140.9	103.3
1992	29.0	17.6	37.7	24.3	1.4	110.0	81.0
1993	14.0	13.4	62.3	26.7	0.6	116.9	102.9
1994	29.7	13.0	63.1	56.4	0.3	162.6	132.8
1995	40.2	23.0	19.4	62.2	1.9	146.6	106.5
1996	14.2	49.6	71.0	16.9	1.8	153.6	139.4
1997	21.8	22.2	108.1	30.8	0.7	183.5	161.7
1998	23.1	43.3	22.2	75.2	0.9	164.7	141.6
1999	22.6	25.2	119.4	19.3	2.0	188.4	165.9
2000	47.8	18.4	63.3	74.7	0.3	204.4	156.6
2001	62.9	76.1	111.1	41.6	3.6	295.2	232.4
2002	35.5	59.1	168.1	52.0	0.4	315.0	279.5
2003	42.0	45.5	216.5	111.4	0.8	416.1	374.2
2004	34.8	103.4	94.2	160.3	4.9	397.6	362.8
2005	19.0	58.6	155.1	57.5	7.3	297.6	278.5
2006	23.4	39.3	88.2	100.1	2.9	253.8	230.4
2007	45.4	27.3	52.2	32.1	2.4	159.4	114.0
2008	35.7	102.7	56.5	37.5	0.6	233.0	197.3
2009	99.6	45.4	137.6	28.3	0.8	311.7	212.1
2010	55.8	148.1	112.1	64.3	0.4	380.7	324.9
2011	76.3	93.8	196.5	33.4	0.3	400.4	324.1

Run Forecasts

- Need historical abundances by age and stock
- Cohort relationships are the preferred method – younger aged fish predict older aged fish



Percent Error in Upriver Spring Chinook Forecast





Prepare Fishing Plans

- Ensure conservation objectives are achieved
 - Determine allowable harvest rates
- Staff meets with Columbia River Advisor Groups
 - Also North of Falcon meetings
- Based on preseason forecasts and allowable impact rates what should fisheries look like?
- Prepare fishing plans
 - Based on Commissions policies for allocation
 - Discussions with constituents

Early Season Fisheries

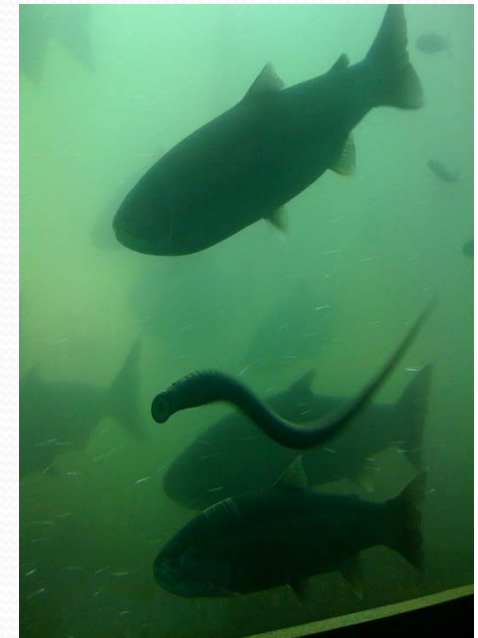
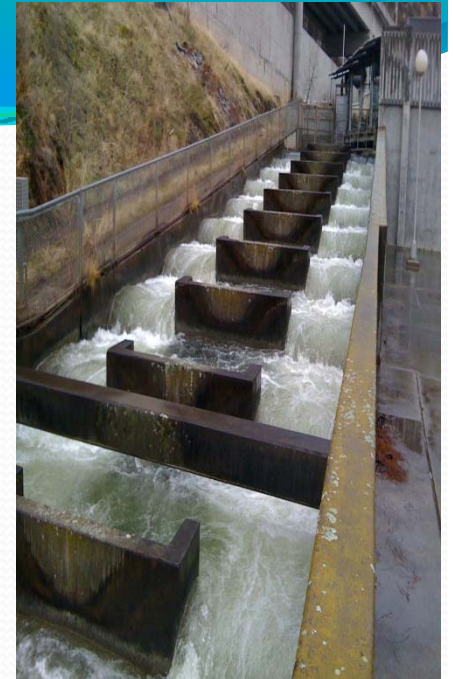


- Planned conservatively in case runs are less than forecast
- Some risk that if fisheries are too conservative, late season fisheries won't be able to catch all the allowed fish
- Hatchery surplus is typically substantial



Forecast Updates

- Bonneville Dam counts key to updating forecasts
- Historical run timing data used
 - Runs can be early, late or normally timed
- Goal to update run accurately as early as possible
- Updating run sizes uses both data and judgment



Forecast Updates and In-Season Management

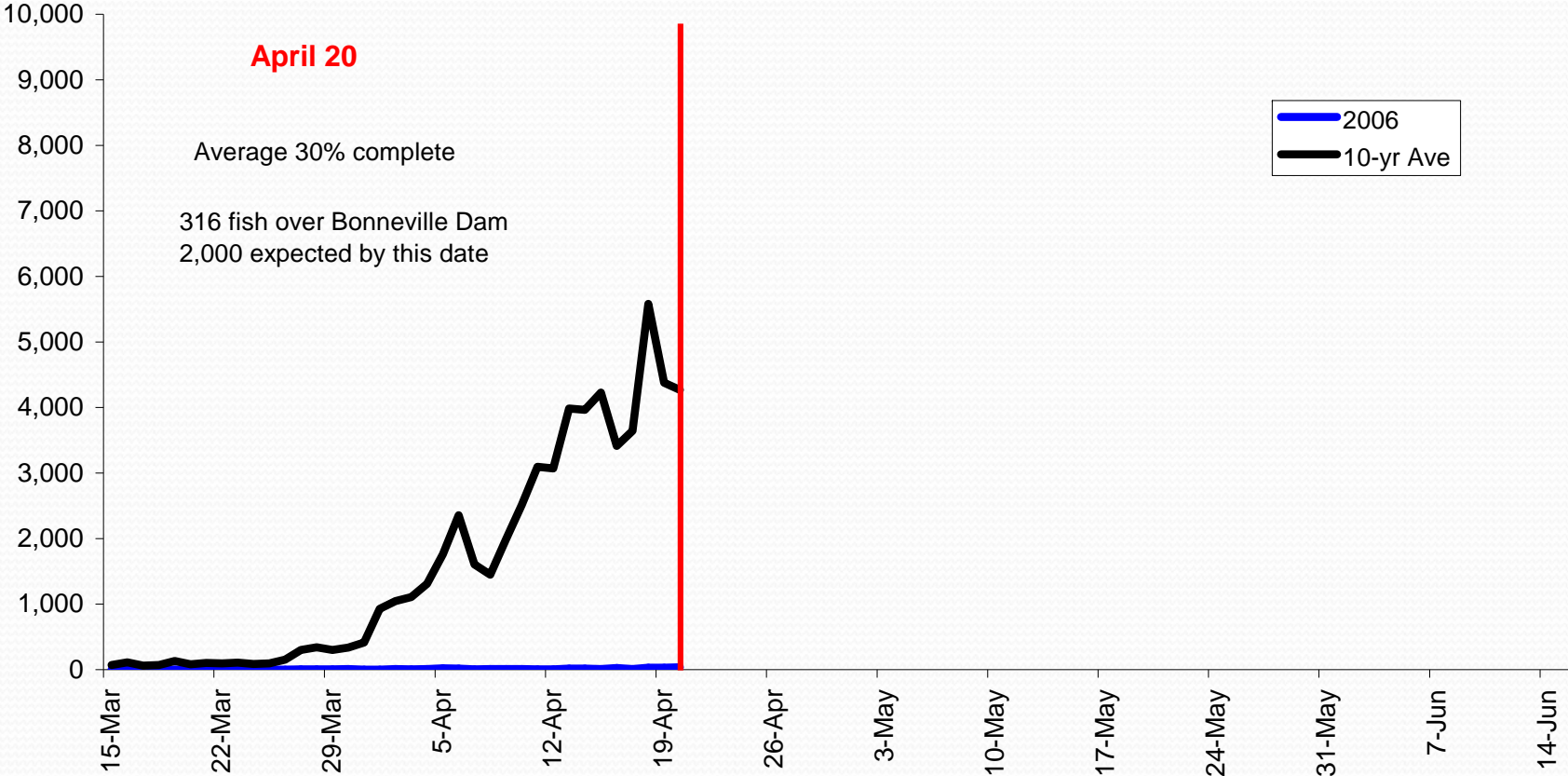
- Expected run to Bonneville updated first
- Catches in lower river fisheries added to get river mouth run size
- Run sizes normally updated weekly – sometimes twice a week
- Fisheries catch by stock in-season based on CWT analysis or VSI (visual stock identification)

Why We Do In-Season Management

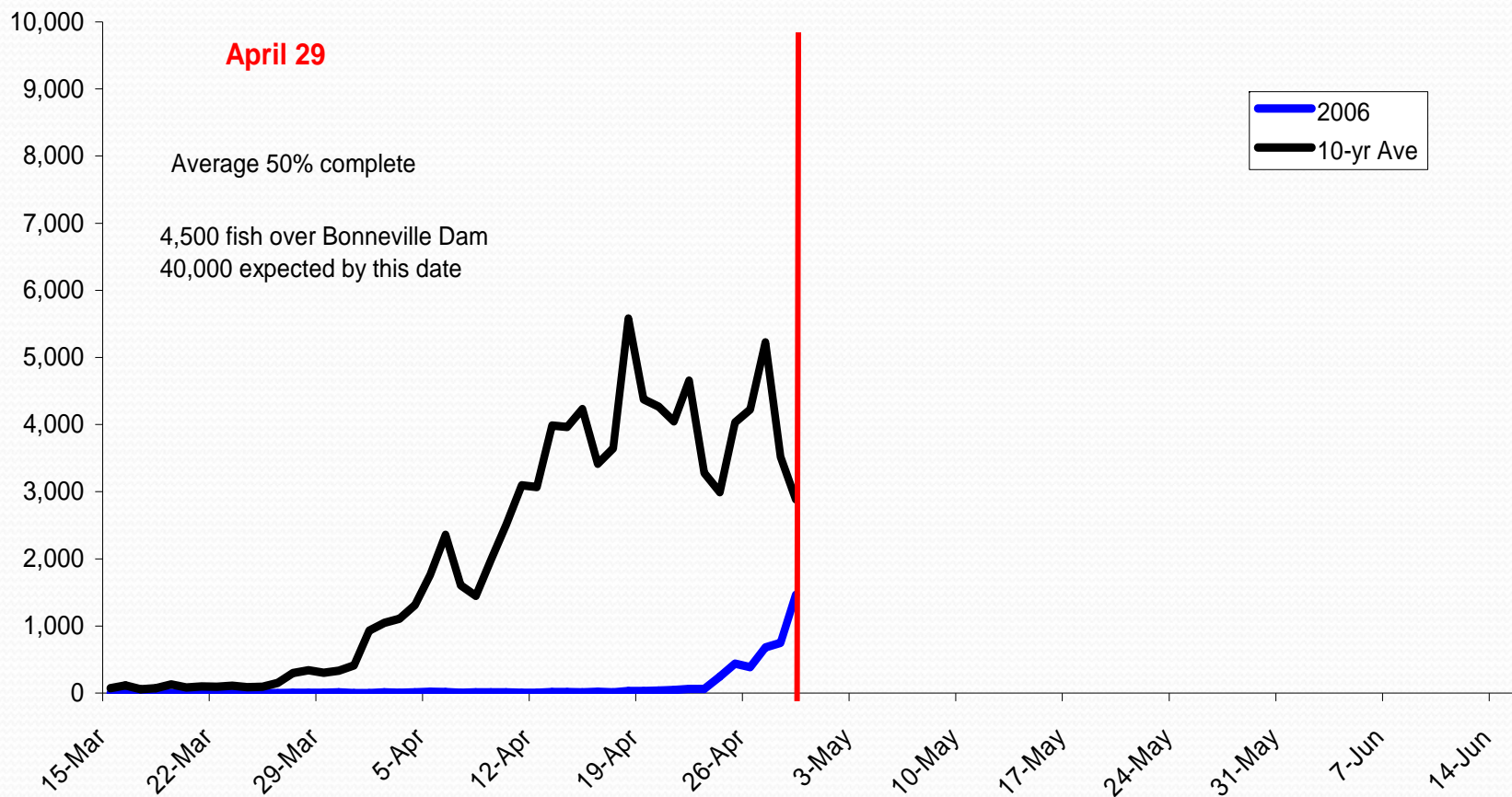
- Run size of one or more stocks may be different than preseason forecast
 - ESA impact rates vary based on abundance
- Stock composition of the catch may be different than modeled
- Run timing of one or more stocks may not be normal
 - Confusion on whether run is late or less than predicted



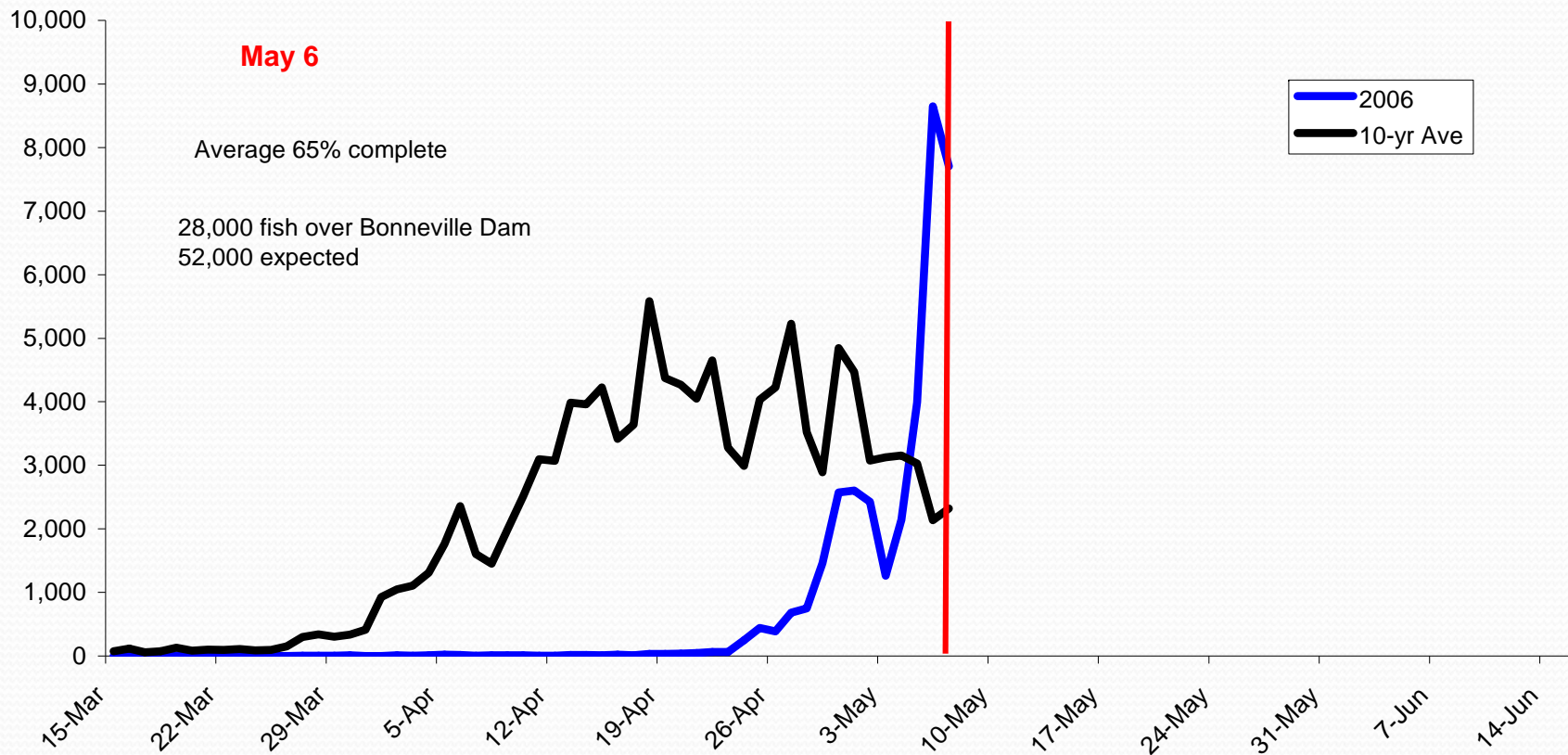
Spring Chinook Daily Passage at Bonneville Dam



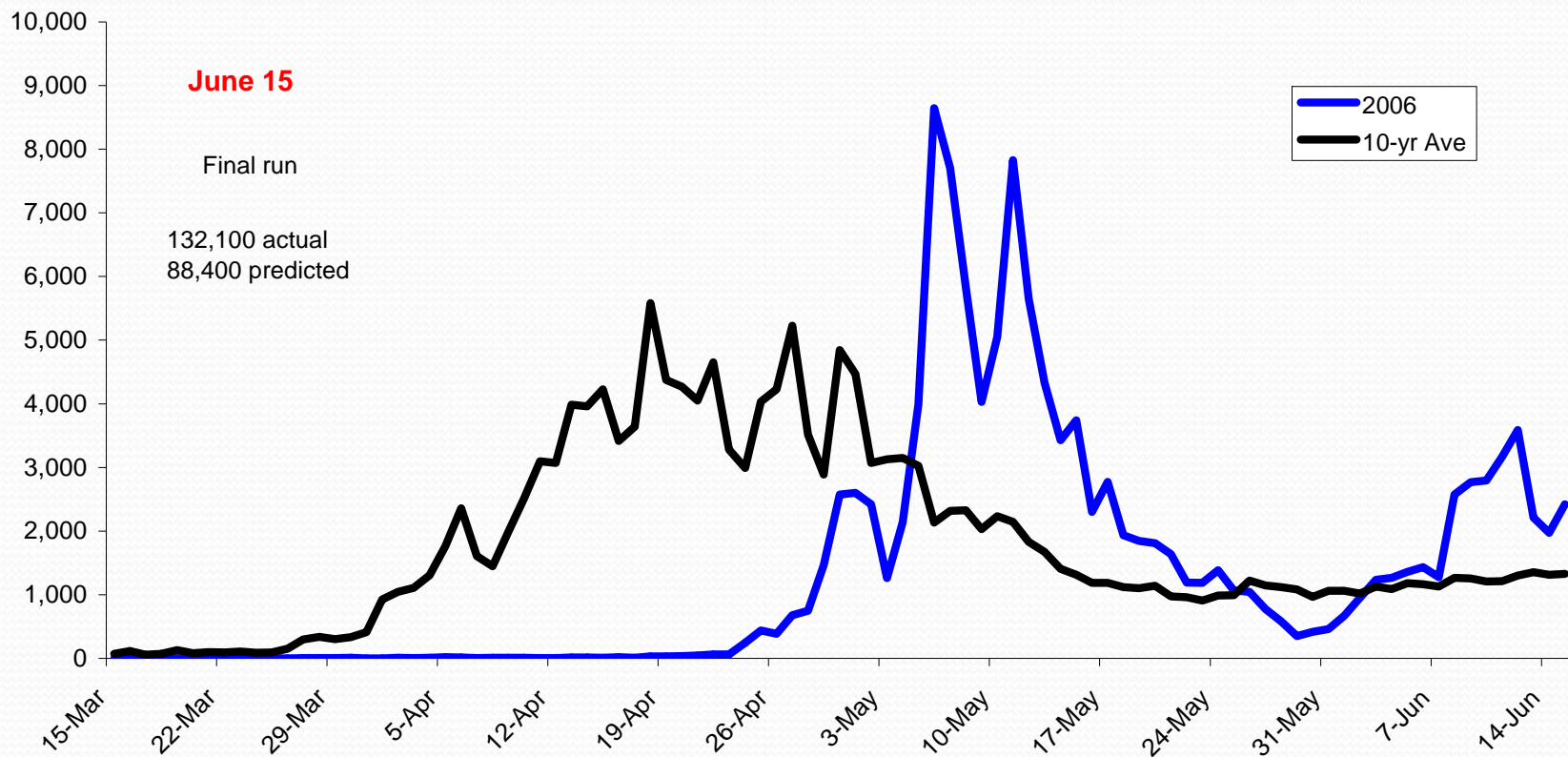
Spring Chinook Daily Passage at Bonneville Dam



Spring Chinook Daily Passage at Bonneville Dam



Spring Chinook Daily Passage at Bonneville Dam



Upriver Spring Chinook ESA Impact Rates

Year	Actual ESA Impact Rate	Allowed ESA Impact Rate
2001	1.4%	2.0%
2002	1.8%	2.0%
2003	1.7%	2.0%
2004	2.1%	2.0%
2005	1.7%	2.0%
2006	1.4%	2.0%
2007	1.2%	2.0%
2008	2.2%	1.9%
2009	1.6%	1.9%
2010	1.9%	2.2%
2011	1.5%	2.0%



Run Reconstruction

- Runs are “reconstructed” post-season using actual catches, dam counts, hatchery returns and spawning ground data
- Reconstructed run sizes and actual fisheries are used to assess ESA and Management Agreement compliance
- Reconstructed runs by age are used for forecasts



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Tools For Managing Fisheries

- Catch quotas
- Selective fisheries
 - Mark-selective (MSF) – release fish with fins intact
 - Time, area, gear selective
 - Season structure (time/area)
 - Gear type (e.g. net mesh size)
- Sanctuaries
 - Commercial fishing sanctuaries in place at river mouths
 - Sport fishing sanctuaries below fish ladders

Management Approaches

- Escapement Goal Management
 - Summer Chinook – Not ESA-listed

$$\begin{array}{rccccccc} \text{RUN SIZE} & - & \text{SPAWNING NEED} & = & \text{HARVESTABLE} \\ 100,000 & - & 40,000 & = & 60,000 \end{array}$$

- Harvest Rate Based Management
 - Upriver Spring Chinook – ESA-listed

$$\begin{array}{rccccccc} \text{RUN SIZE} & \times & \% \text{ ALLOWABLE} & = & \text{HARVESTABLE} \\ 100,000 & \times & 12\% & = & 12,000 \end{array}$$



Catch Quotas

- Fisheries managed for catch guidelines/quotas
- May be stock-specific within total catch
- Sport fisheries estimated by catch and effort counts
- Commercial estimated by landings
- Tribal estimated by both

Selective Fisheries

- Minimize take/mortality of wild or ESA-listed fish
- Minimize by-catch
- Maximize harvest of hatchery/target stocks



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Selective Fisheries

- Mark-Selective: Harvest limited to retention of fin-marked hatchery fish
- T-A-G Selective: Fisheries using time, area, and/or gear regulations to minimize by-catch while targeting a specific species or stock



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Time, Area, and Gear Selectivity

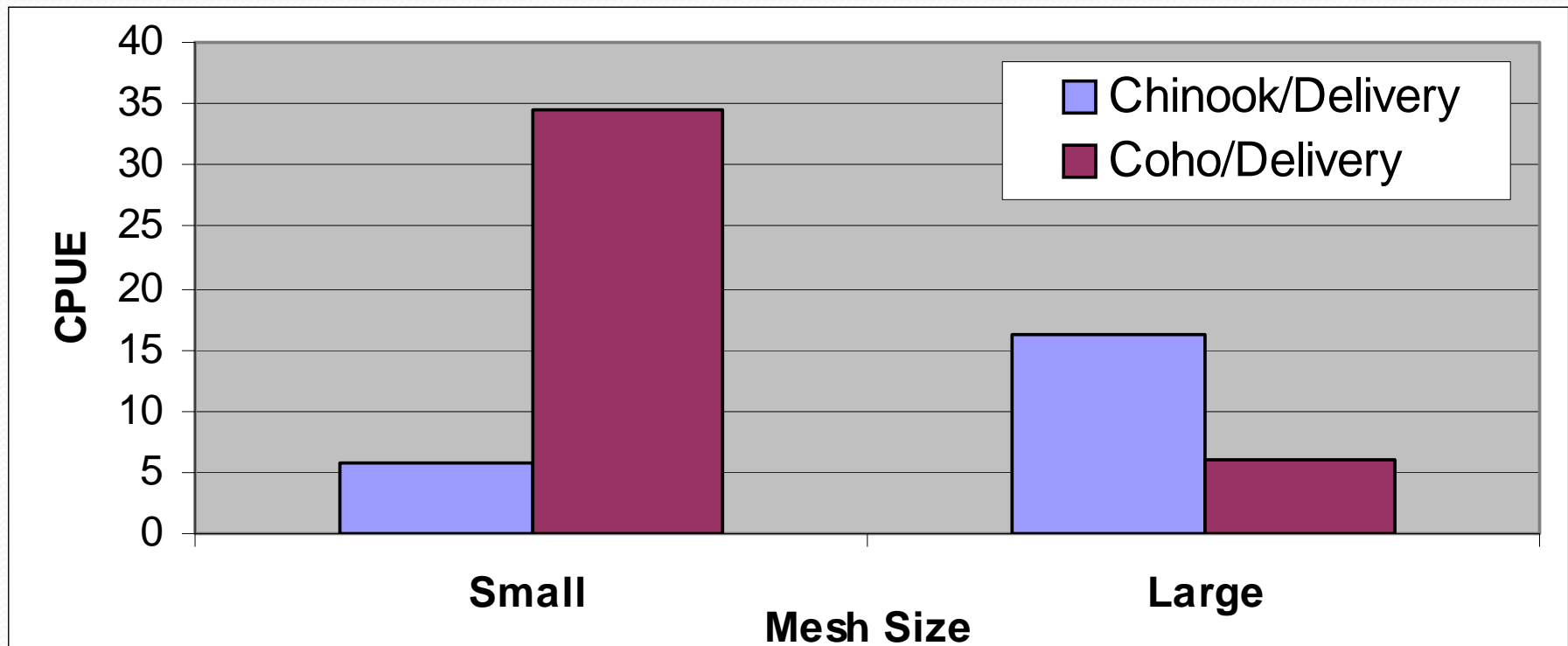


Figure X. Average catch per delivery by mesh size during mainstem late fall commercial fishing periods, 2006-2007



Angler Trips and Ex-Vessel Values

- Economic Overview
 - Angler trips and ex-vessel value cannot be directly compared
- Angler trips presented are multiplied by \$58
- Ex-vessel values are averages over the course of a fishery
 - Fall Chinook values are combined for bright and tule Chinook

Fishery Sampling

- Sport, commercial, tribal
- Mainstem, SAFE, tributaries
- Mouth upstream to Wells Dam and Snake River



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Fishery Sampling

- Information Collected
 - Weight, sex, scales, length, marks, scars/bites, skin color
 - CWT, PIT, DNA, other tags as needed
 - Catch and effort estimates in sport fishery
 - Landings in commercial fisheries
 - On-board monitoring provides numbers of fish handled



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On-board Monitoring

- Conducted during spring Chinook commercial fishery
- Requires budgetary commitment
- Occasionally conducted during summer and fall season fisheries
 - ODFW received funding for one year of monitoring



Sport Fishery Below Bonneville

- Aerial Flights (ODFW)
 - Count bank rods (OR & WA)
 - Boats by river section (1-10)
 - ~80 midday flights/year (6-12 per month; February – October)
 - Weekdays and weekends
 - Model incorporates tide, weather, and water conditions



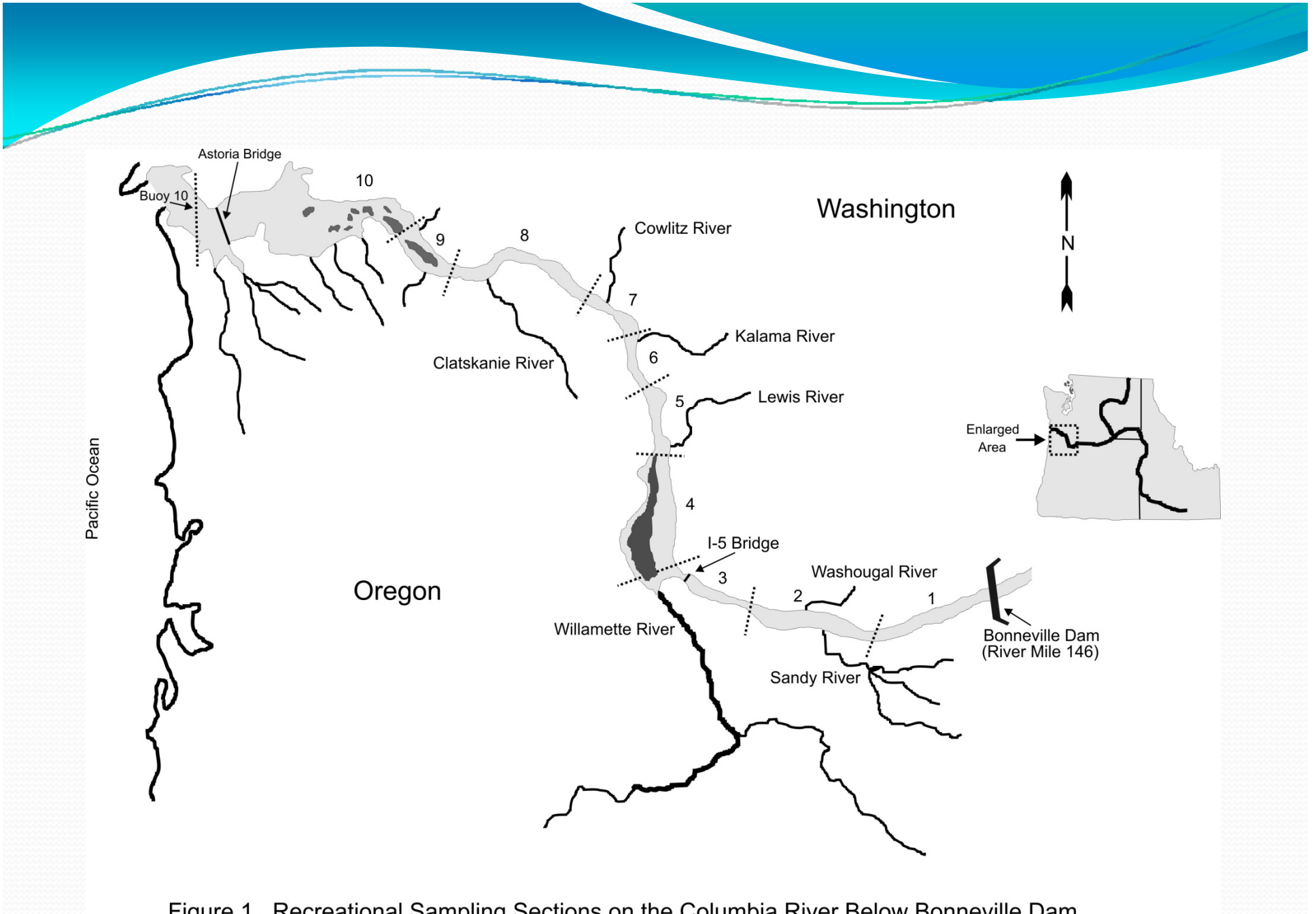


Figure 1. Recreational Sampling Sections on the Columbia River Below Bonneville Dam

Sport Fishery Below Bonneville

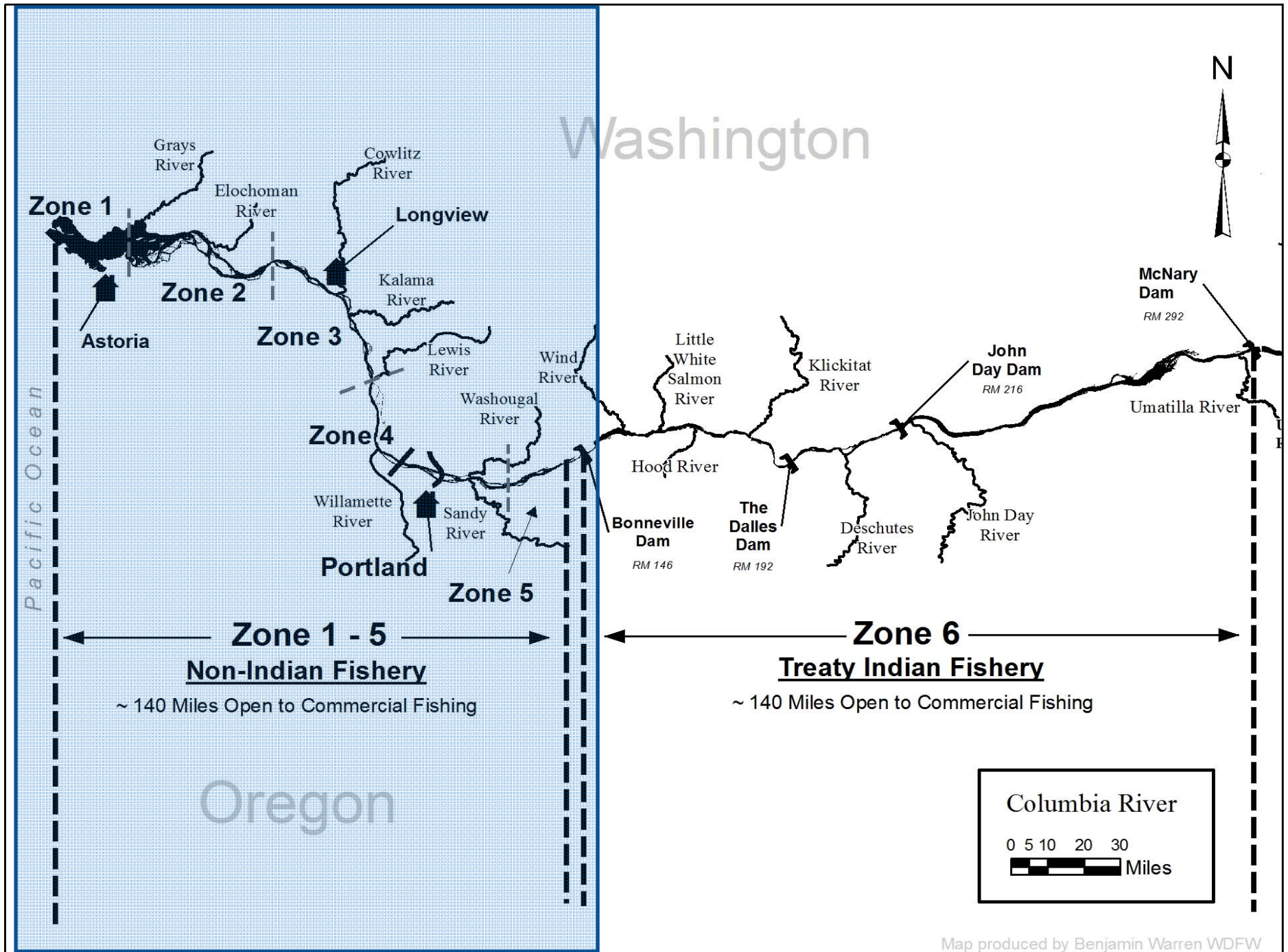
- Creel sampling at boat ramps and bank fishing areas
 - Date
 - Interview location
 - River section
 - Angler type
 - Number of anglers in party
 - Start-interview-quit times
 - Catch data
 - Release data
- Boat Survey
 - Weekly on-the-water survey throughout year to supplement creel data and determine state of origin





Non-Indian Commercial Fishery

- WDFW and ODFW staff sample fish at major fish buyers
- Information Collected
 - Weight – used to get average weight
 - Average weight applied to total pounds to get landings
 - Scale samples – used to get age composition
 - CWTs – used to get stock composition
- Landings are reported to agencies within 24 hours



Commercial Sampling



Non-Indian



SAFE



Treaty Indian

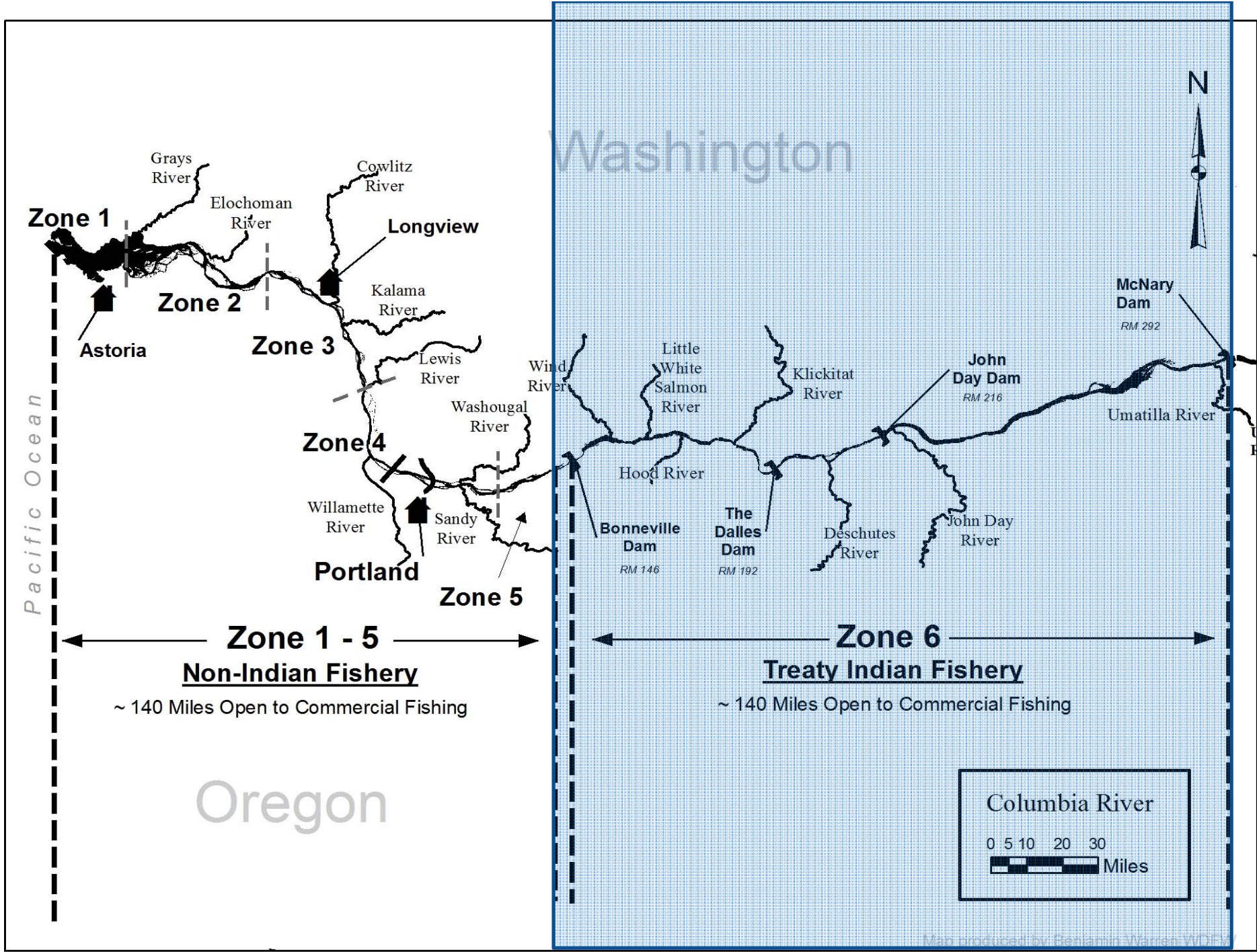
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Treaty Indian Fishery

- Fishery conducted with set gill nets, drift gill nets, hoop nets and hook and line
- Tribal staff estimates effort with weekly flights and expands based on dockside interviews
- WDFW and ODFW staff sample fish at major fish buyers





Map produced by Benjamin Warner WDFW



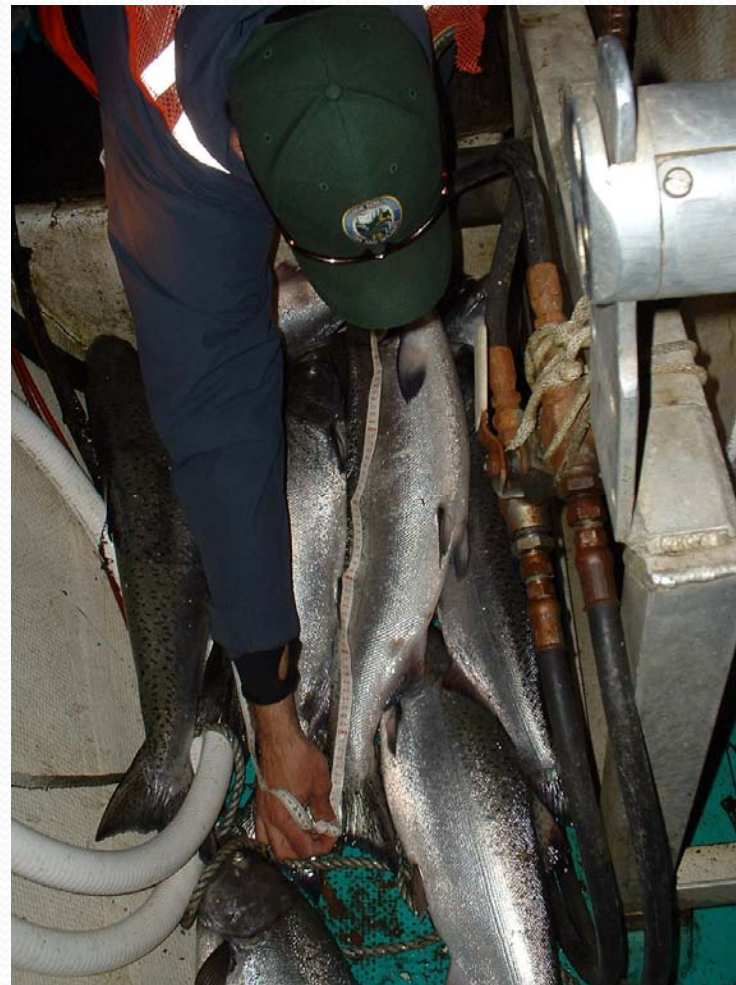
Sampling Statistics 2008-2010

- Goal is 20% of catch
- Below Bonneville Sport
 - 18,650 Salmonids
 - 129,000 angler trips
- Above Bonneville Sport
 - 1,630 Salmonids
 - 5,000 angler trips
- Mainstem Commercial
 - 3,625 Salmonids
- Treaty Indian
 - 11,075 Salmonids

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Fisheries

- Summer Season
 - Summer Chinook/Sockeye
- Fall Season
 - Fall Chinook/Coho/Steelhead
- Spring Season
 - Smelt/Spring Chinook



Summer Season Fisheries

- Below Bonneville Dam
 - Sport/Commercial
- Bonneville Dam to Priest Rapids
 - Sport/Tribal/Tributaries
- Upper Columbia – summer Chinook/sockeye
 - Priest Rapids to Chief Joseph Dam
 - Mainstem Sport/tribal
 - Okanogan/Similkameen
 - Wenatchee/Chelan Falls



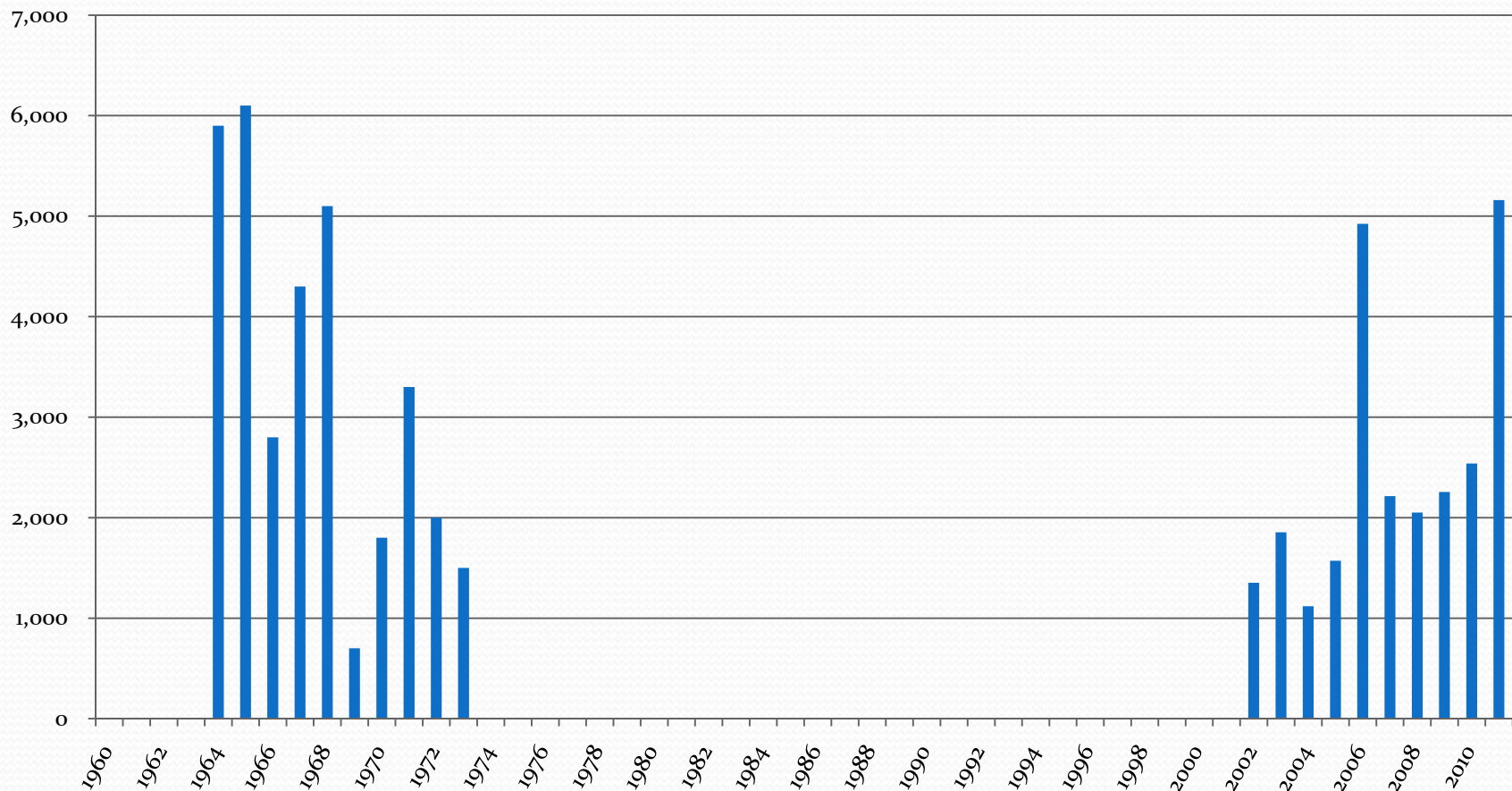
Summer Management Conservation Objectives

- ESA Listed Stock Impact Guidelines
 - Snake River Steelhead – 2%
 - Upper Columbia Steelhead – 2%
 - Snake River Sockeye – 1%
- Upper Columbia Management Agreement
- Commission policy
 - Allocation downstream of Priest Rapids Dam
- Management Approach
 - Mark-selective sport fishery
 - Commercial fishery uses large mesh to avoid steelhead

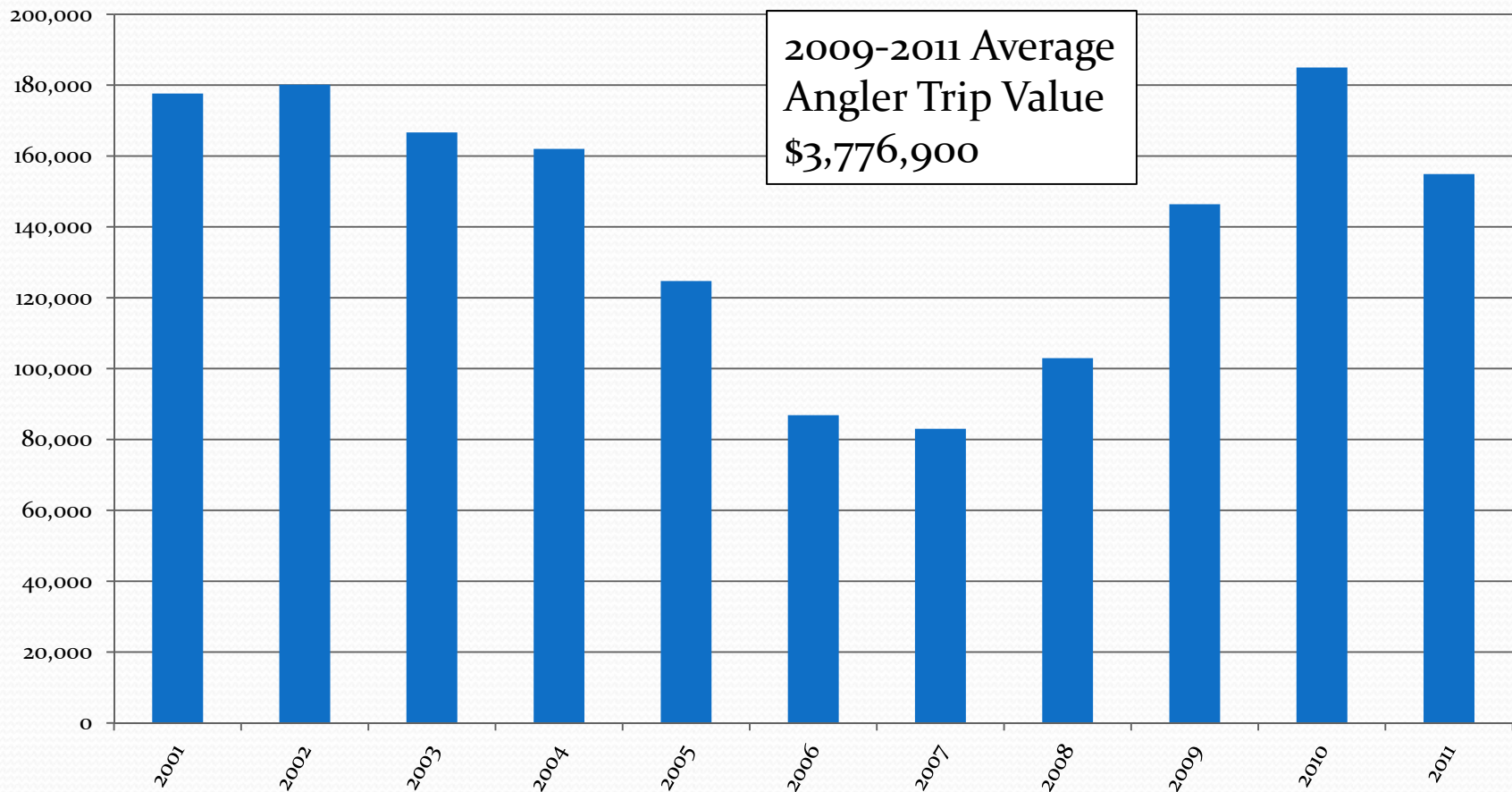
Summer Chinook Fisheries Below Bonneville Dam

- Fisheries were closed beginning in 1960s
 - Upper Columbia sport reopened 2000
 - Lower Columbia sport reopened 2002
 - Commercial reopened 2005
- Fisheries target non-listed upper Columbia summer Chinook
- FWC Policy provides guidance
 - Meet conservation requirement of 20,000 escapement goal
 - Sport fishery above Priest Rapids highest priority
 - Commercial fishery allocated 50% of allowable catch below Priest
- Upper Columbia Management Agreement
- Agreement with Colville Tribe
- Fisheries occur during June 16-July 31

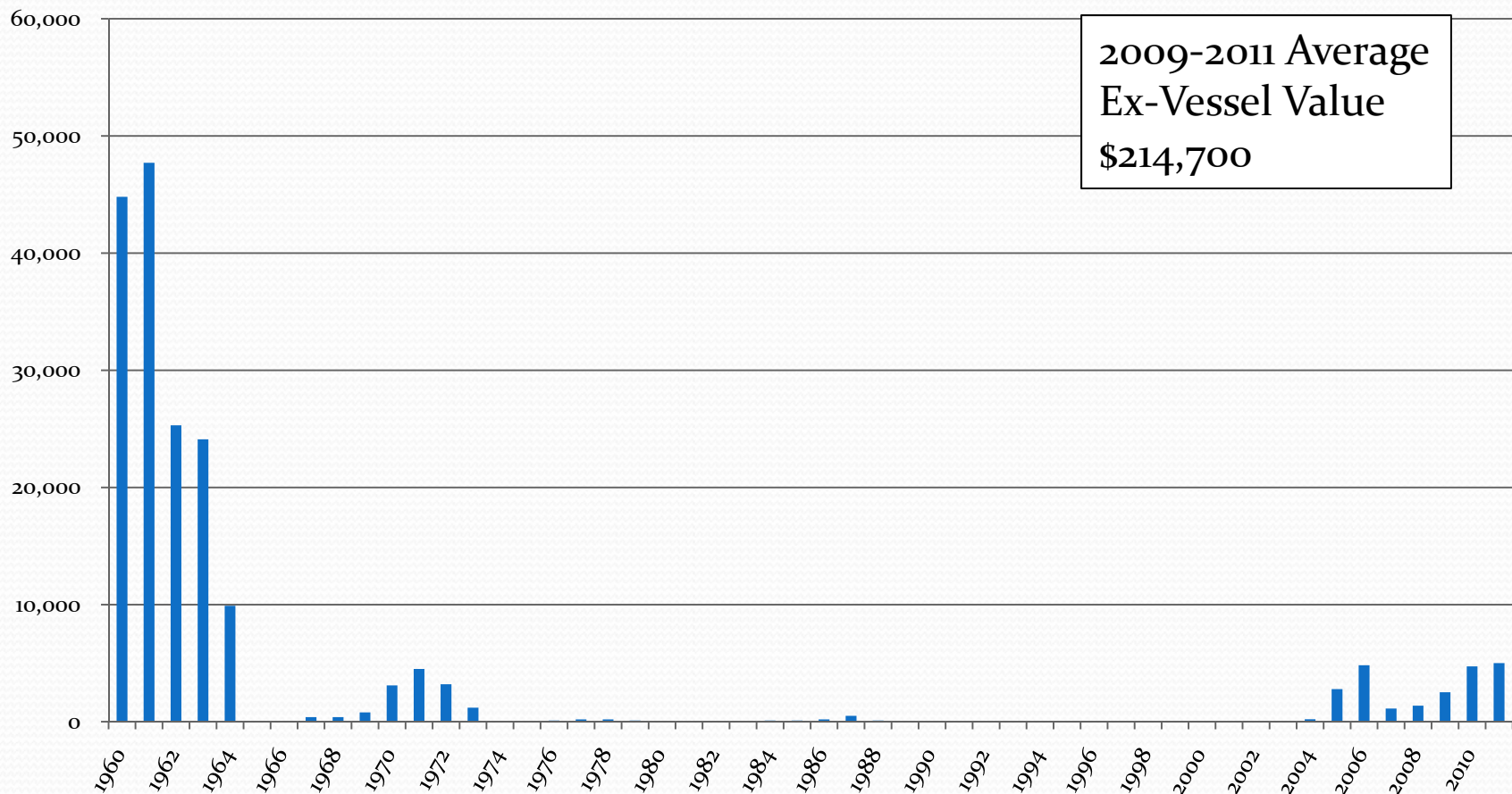
Summer Chinook Sport Harvest Below Bonneville Dam



Angler Trips Below Bonneville Dam During Summer Season

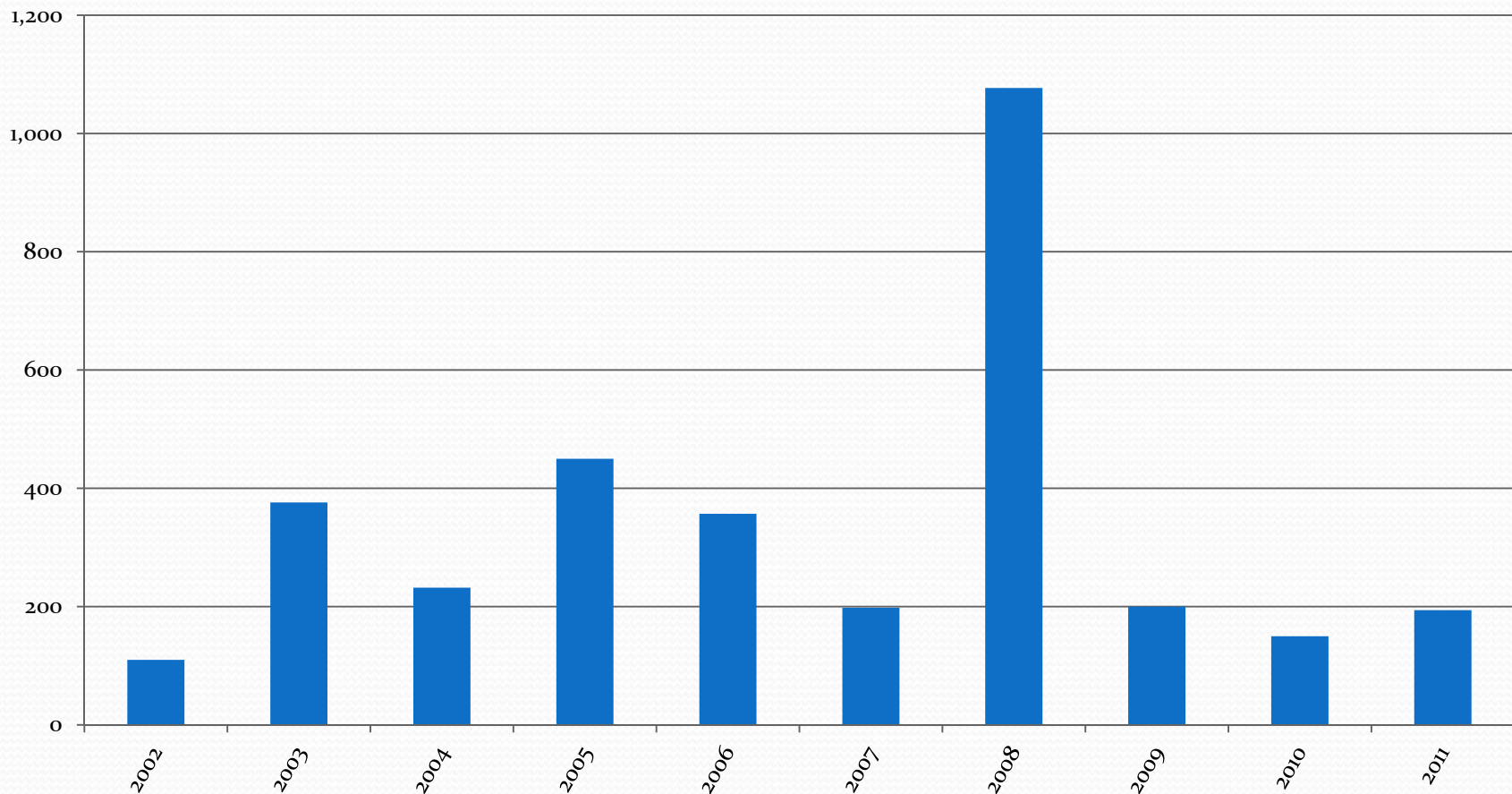


Summer Chinook Commercial Harvest Below Bonneville Dam





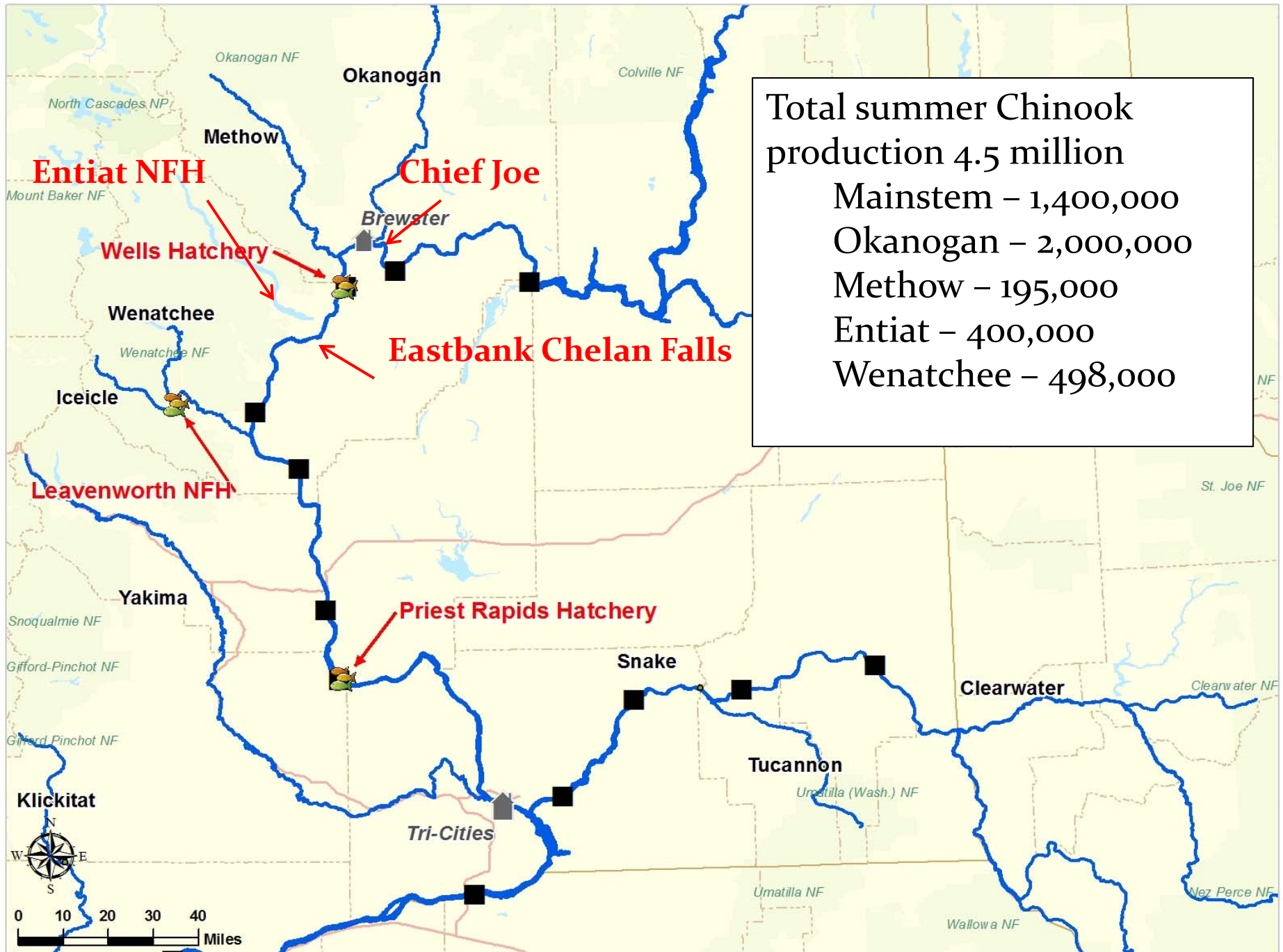
Summer Chinook Sport Harvest Bonneville-Priest Rapids Dam



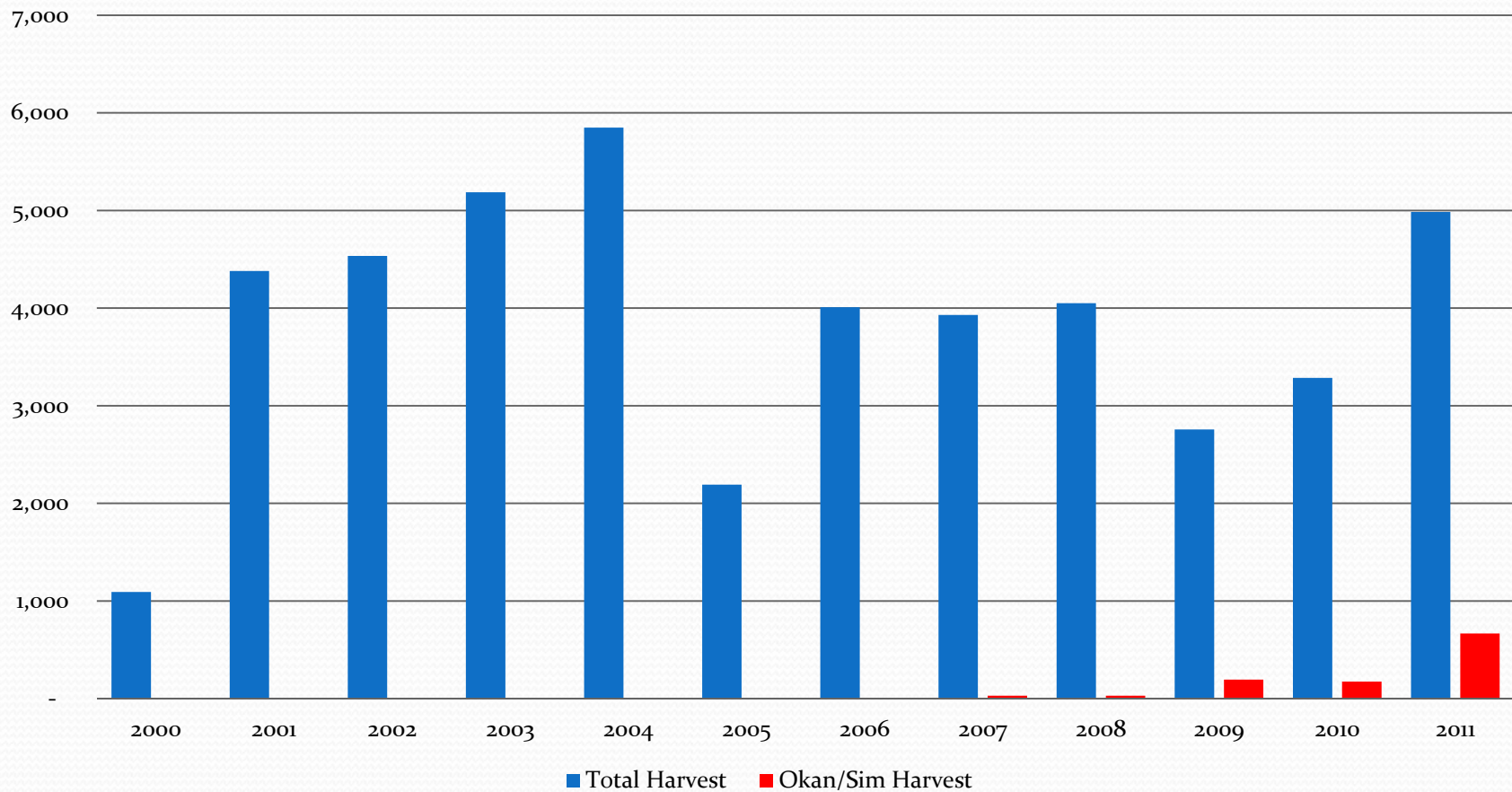


Upper Columbia River – Summer Chinook Management

- Management Approach
 - Mark-selective fishery – soon
 - Seasons
 - July – September
 - October
 - Sport fishery and Colville tribal fishery highest priority in allocation
 - Sport harvest increasing



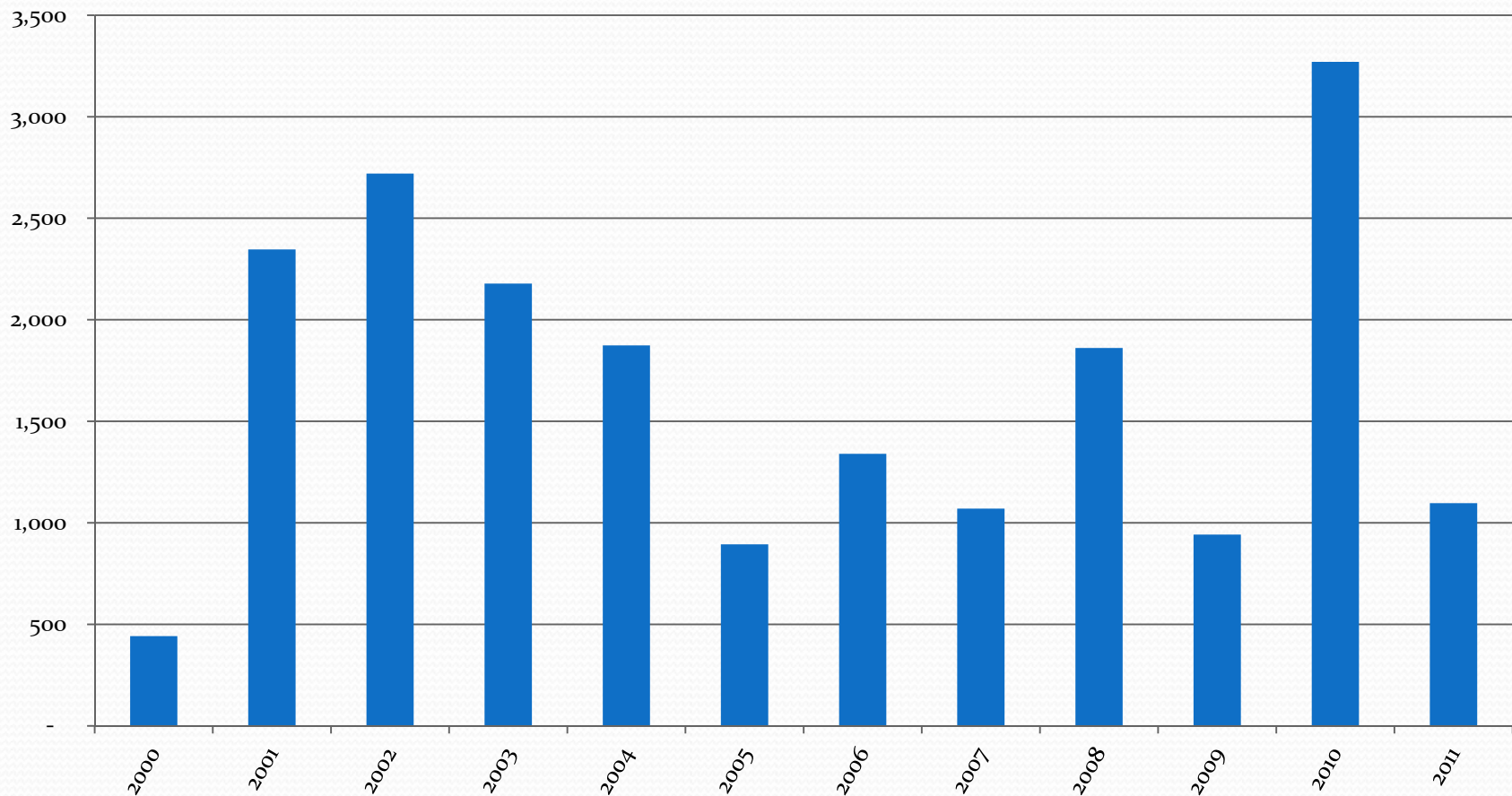
Summer Chinook Sport Harvest Above Priest Rapids Dam



Upper Columbia River – Summer Chinook Fishery

- Effort
 - 10,000-20,000 angler trips – average 16,000
 - Includes summer Chinook and sockeye trips
- Current Fisheries
 - Mainstem
 - Wells pool to Okanogan River
 - Below Wanapum Dam/below Wells Dam
 - Tributaries
 - Okanogan/Similkameen – 1,500-2,000 angler trips
 - Wenatchee and Chelan Falls – 2011 was first year
 - Entiat – 2014 first year?

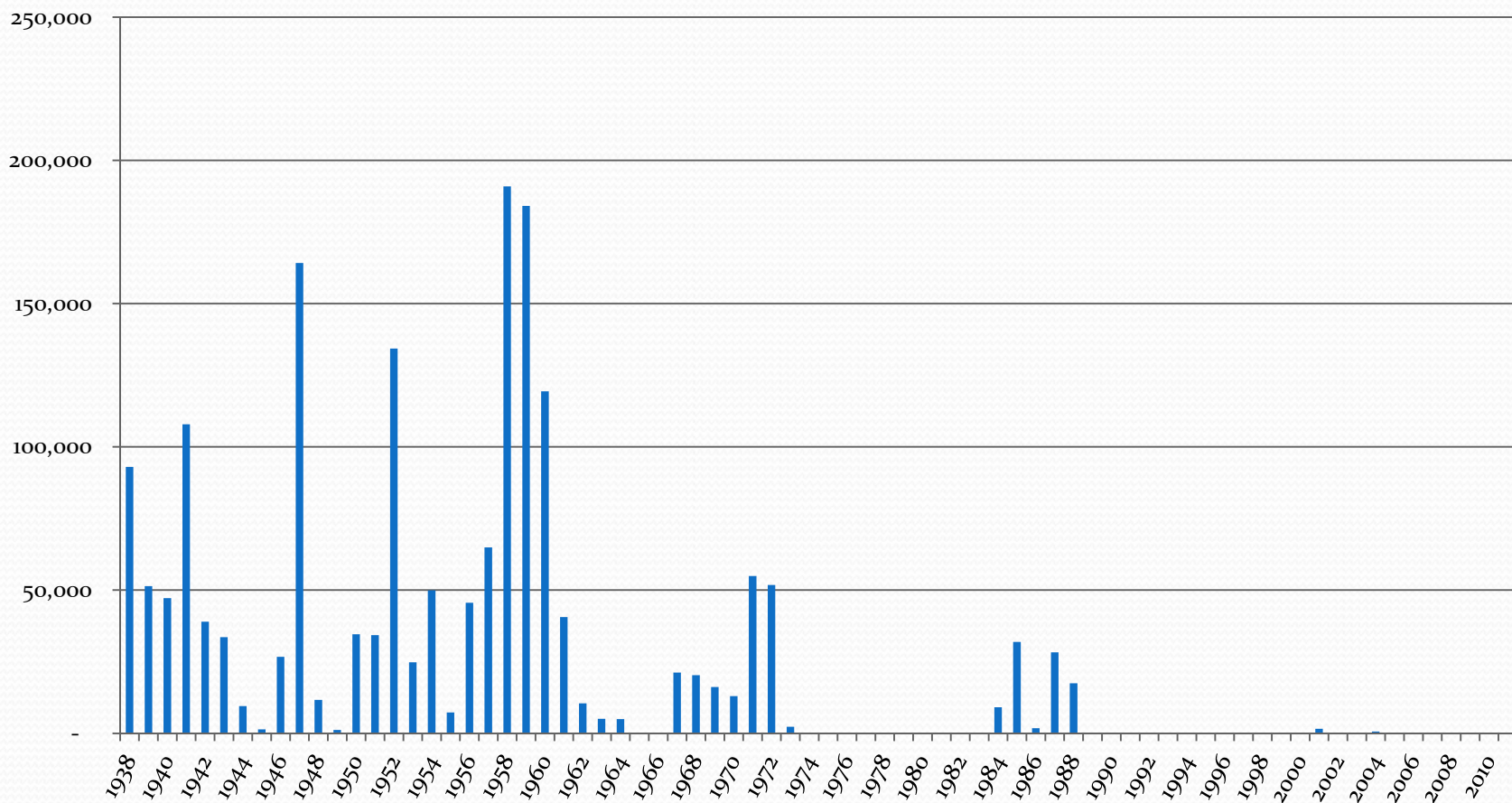
Summer Chinook Harvest by the Colville Tribe



Summer Chinook Harvest Summary 2009-2011 Average

- Average escapement past fisheries – 39,700
 - Goal – 20,000
- Total sport harvest – 7,200
 - Mainstem below Bonneville – 3,300
 - Bonneville to Priest Rapids – 200
 - Above Priest Rapids – 3,700
- Total commercial harvest – 4,100
- Colville tribal harvest – 1,800

Sockeye Commercial Harvest



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Mainstem Sockeye Fishery

- Includes harvest of Wenatchee and Okanogan runs
- Recent dramatic increase in Okanogan run sizes 2008-2011
- Okanogan harvest highly dependent on river conditions
 - 2008 – 491 catch
 - 2009- 1,518 catch
 - 2010 – 10,702 catch – low water/thermal block in Okan.
 - 2011 – 1,989 catch – high, fast water/no thermal block

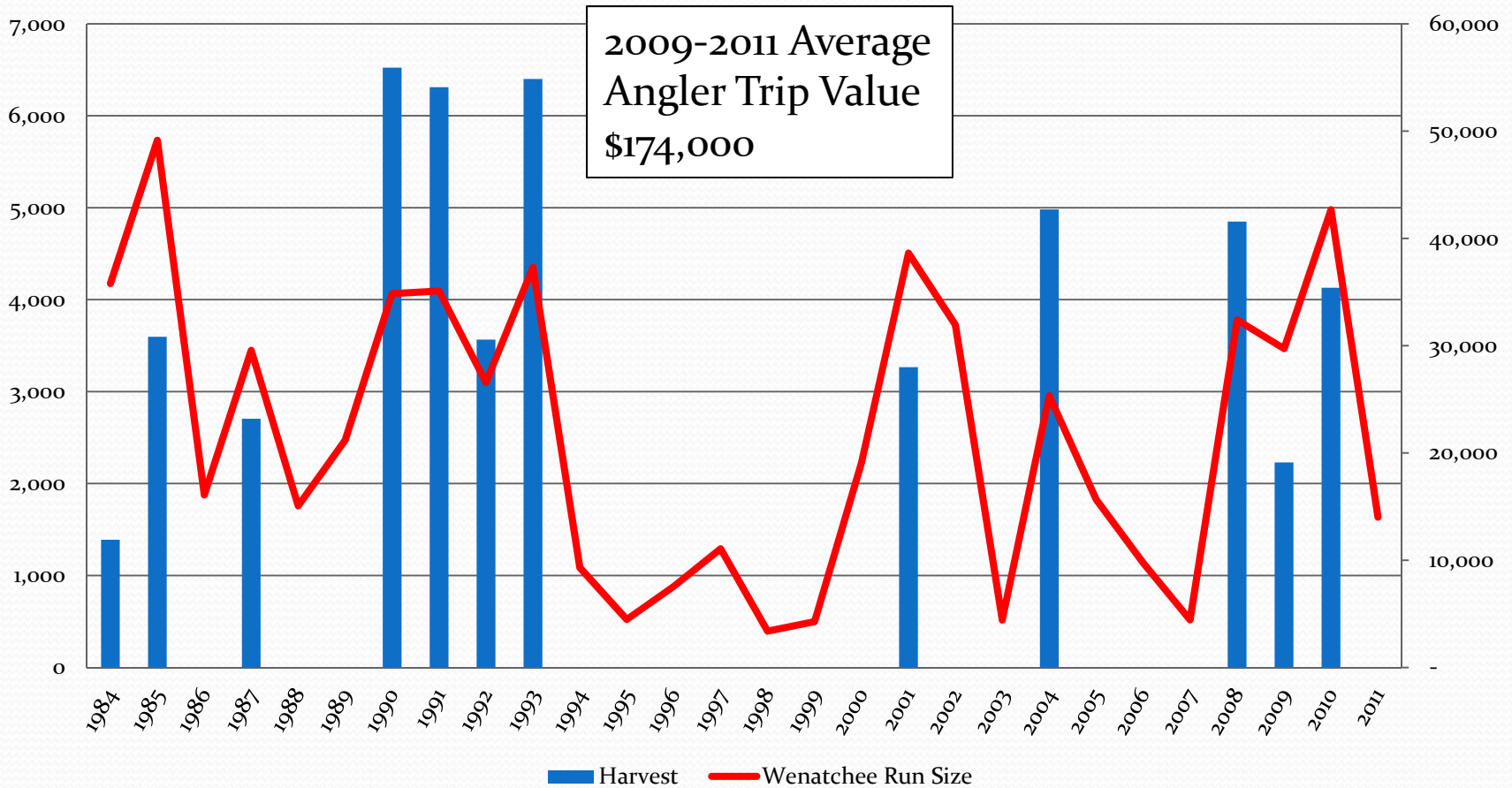


Lake Wenatchee Sockeye Fishery

- Wenatchee stock size hard to predict
- Need about 26,000 to Wenatchee to consider fishery
- Sporadic seasons
- 2,000-4,000 angler trips/season
- 1,400-6,500 harvest/average 4,300
- In-season management based on dam counts
 - Rock Island minus Rocky Reach



Lake Wenatchee Sockeye Fishery



BREAK





Fall Season Fisheries

- Below Bonneville Dam
 - Sport/Commercial/SAFE
- Bonneville Dam to McNary Dam
 - Sport/Tribal/Tributaries
- Upper Columbia – summer Chinook/sockeye
 - McNary to Priest Rapids Dam
 - Hanford/Ringold sport
 - Priest Rapids to Chief Joseph Dam – steelhead sport
 - Mainstem
 - Okanogan/Similkameen
 - Wenatchee
 - Methow



Fall Management

- ESA Listed Stock Impact Guidelines
 - Snake River Fall Chinook – 1.5⁰%-15⁰%
 - Lower Columbia Chinook – 30⁰%-41⁰%
 - Steelhead – 2-4⁰%
 - Lower Columbia Coho – 8⁰%-45⁰%
- Management Approach
 - North of Falcon discussions for sharing conservation burden
 - Mark-selective sport fisheries for coho and steelhead
 - Time, area, gear for commercial fisheries
 - Time/Area closures for fall Chinook sport and commercial

Management Stocks

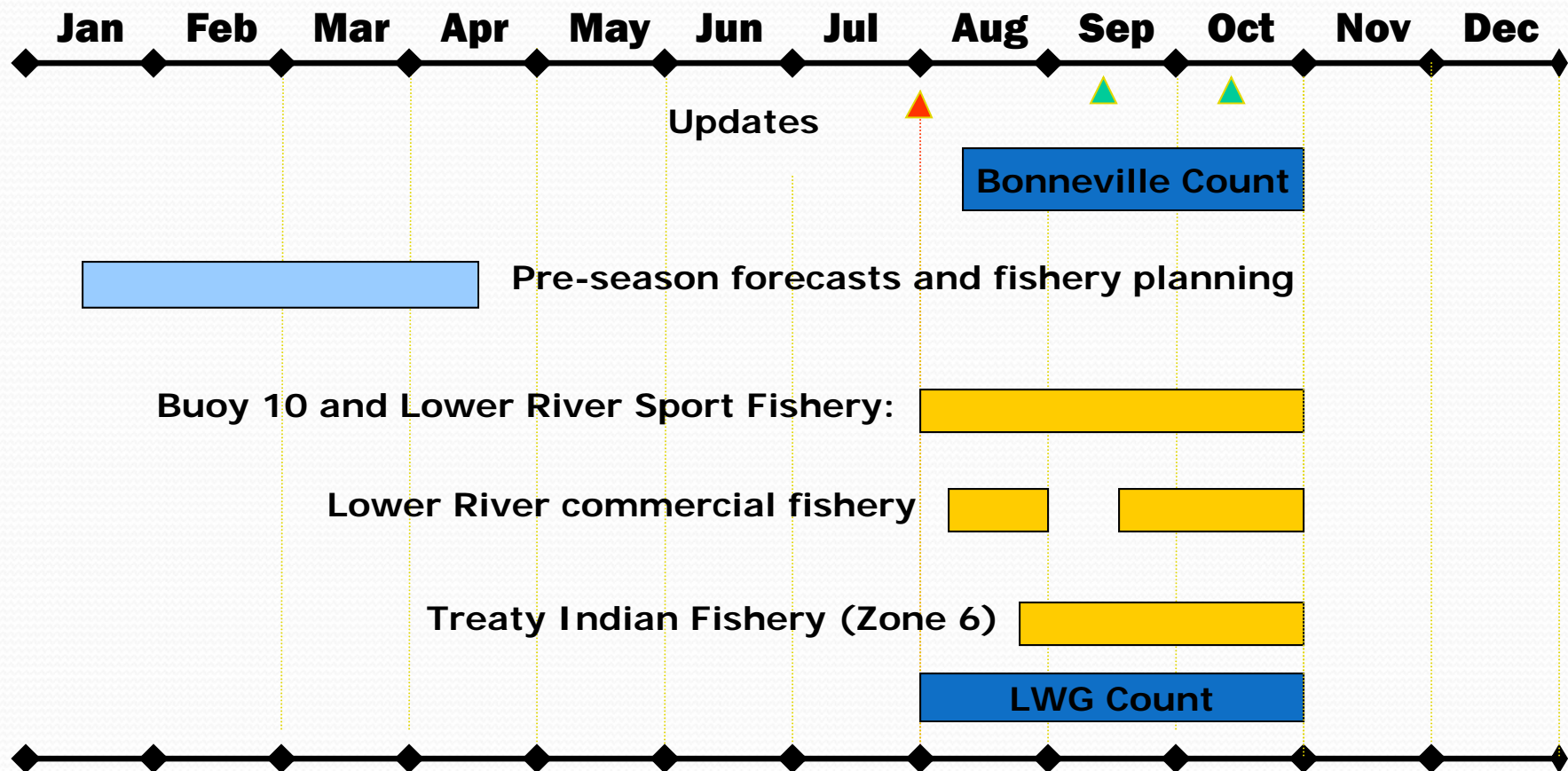
- Fall Chinook stock groups are:
 - LRH – Lower River Hatchery
 - LRW – Lower River Wild
 - SAB – Select Area Bright
 - BUB – Bonneville Upriver Bright

 - BPH – Bonneville Pool Hatchery
 - PUB – Pool Upriver Bright
 - URB – Upriver Bright



Fall Season Timeline

- Fall Chinook-management period begins Aug. 1



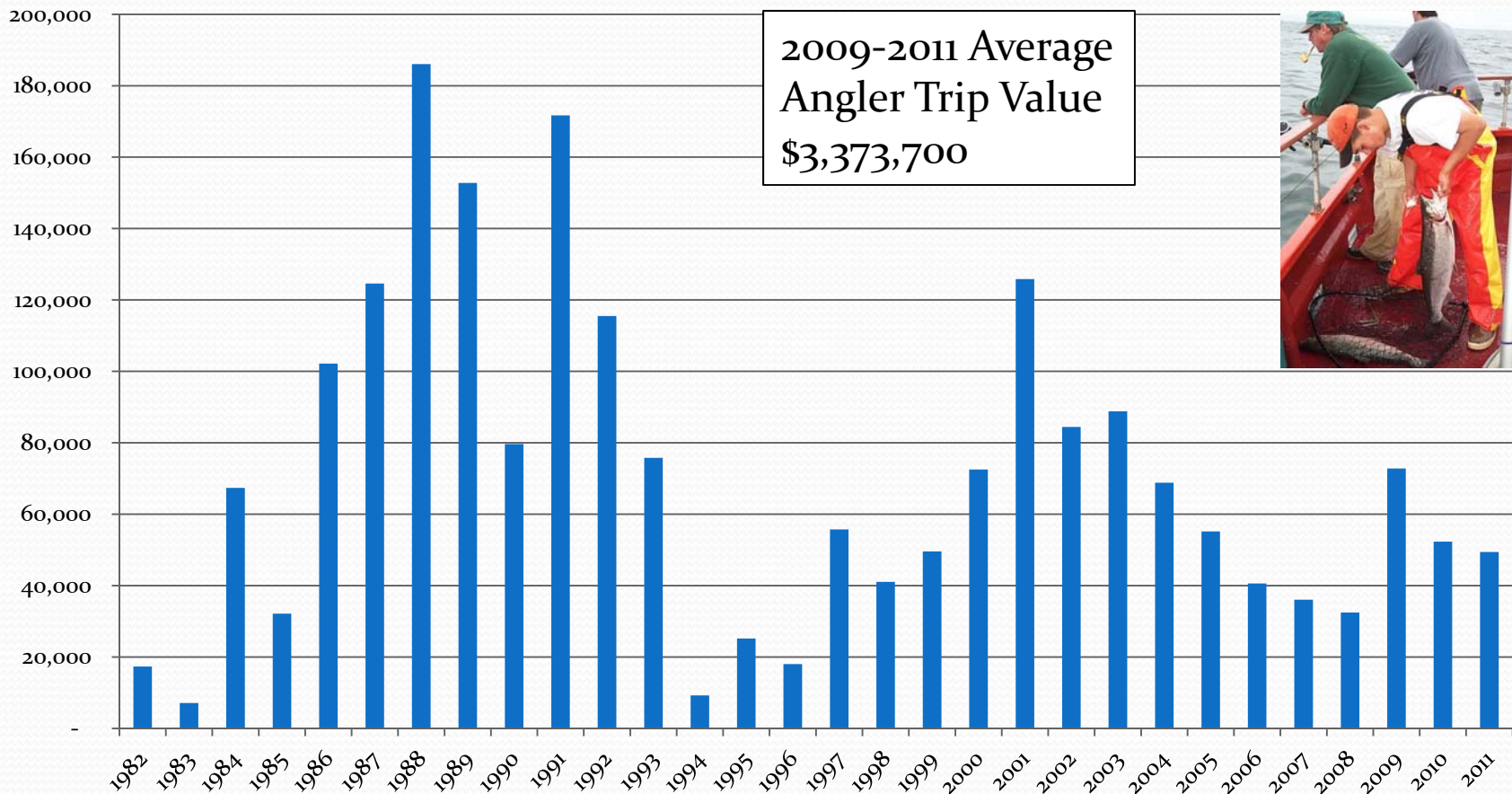




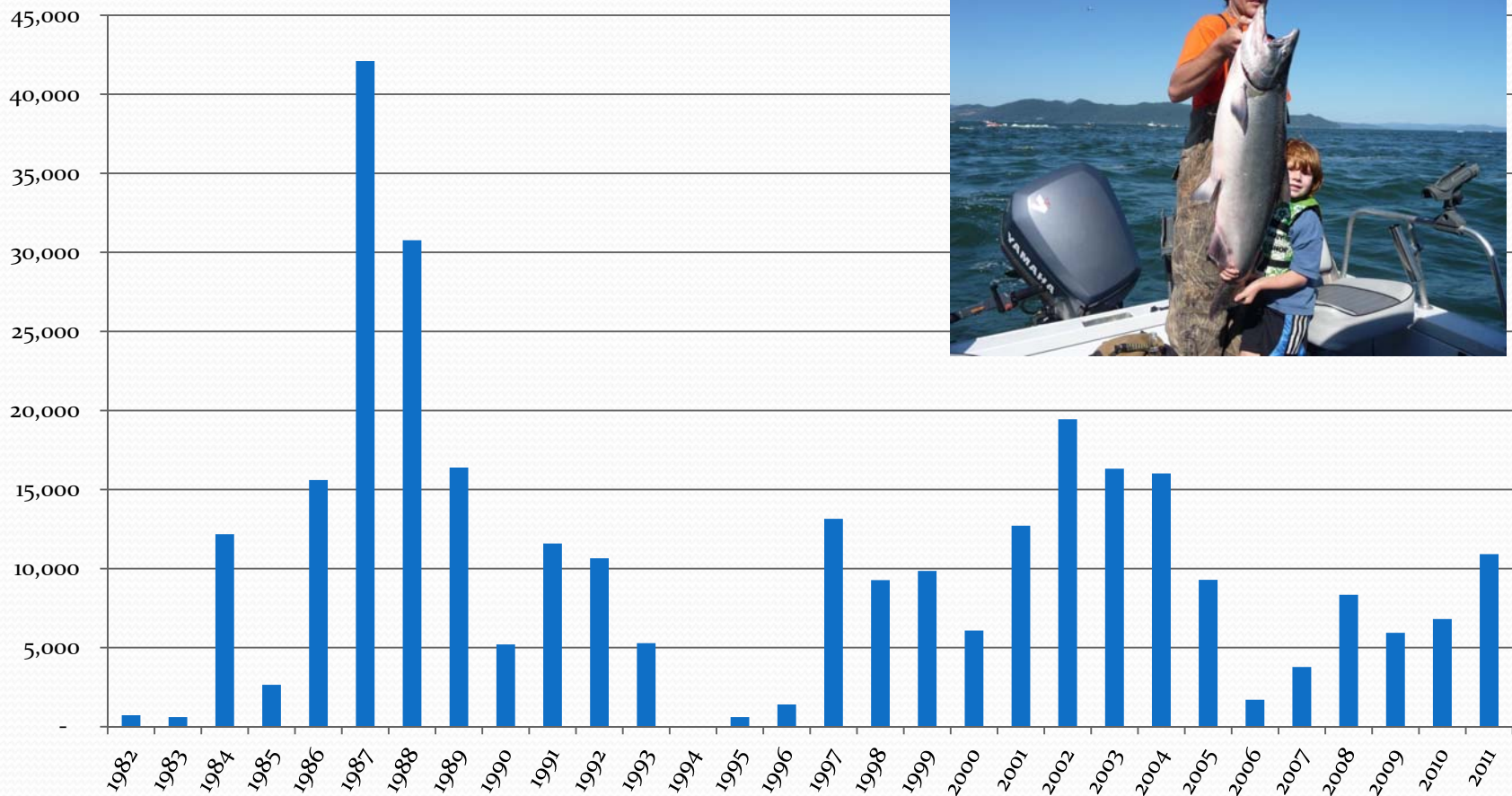
Buoy 10 Fishery

- Estuary fishery targeting coho and Chinook
- Open August 1 through December 31
 - Most harvest occurs last two weeks of August
- Fishery became popular in the early 1990s
- Majority of the sport coho catch occurs here
- Recent fisheries constrained by ESA-listed lower river Chinook
- Goal has been to allow Chinook retention through at least Labor Day

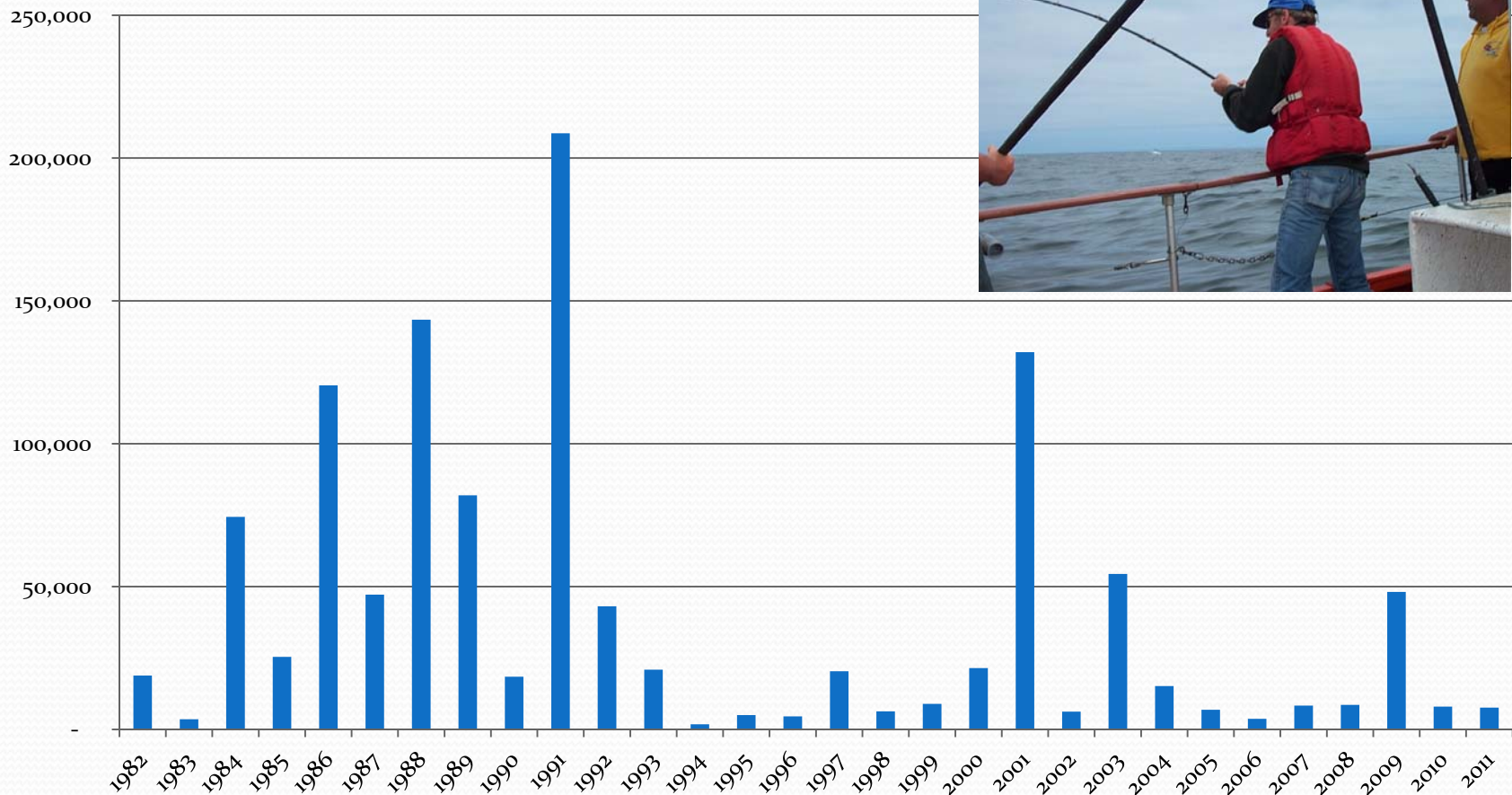
Angler Trips – Buoy 10



Chinook Harvest in the Buoy 10 Fishery



Coho Harvest in the Buoy 10 Fishery



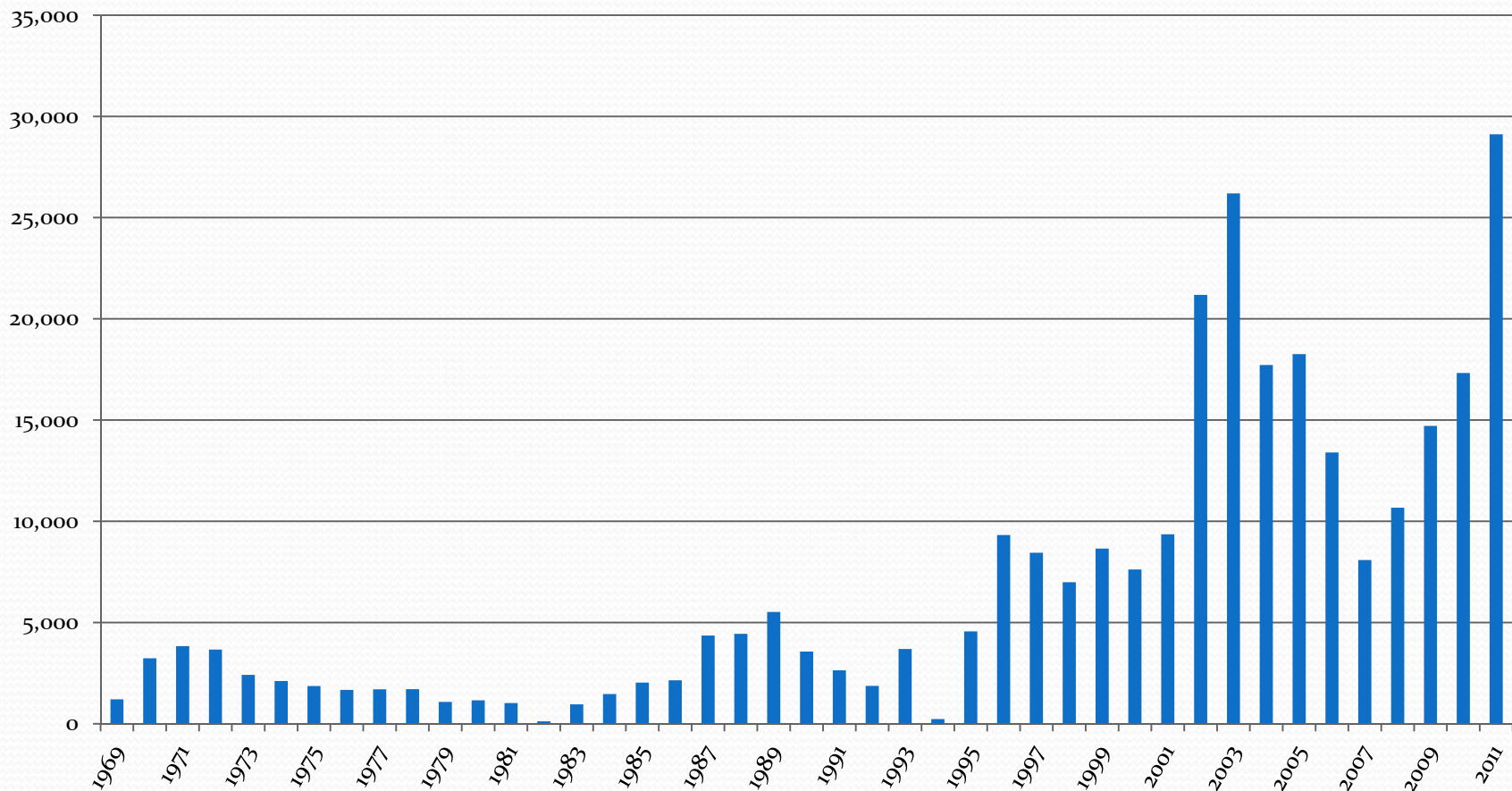




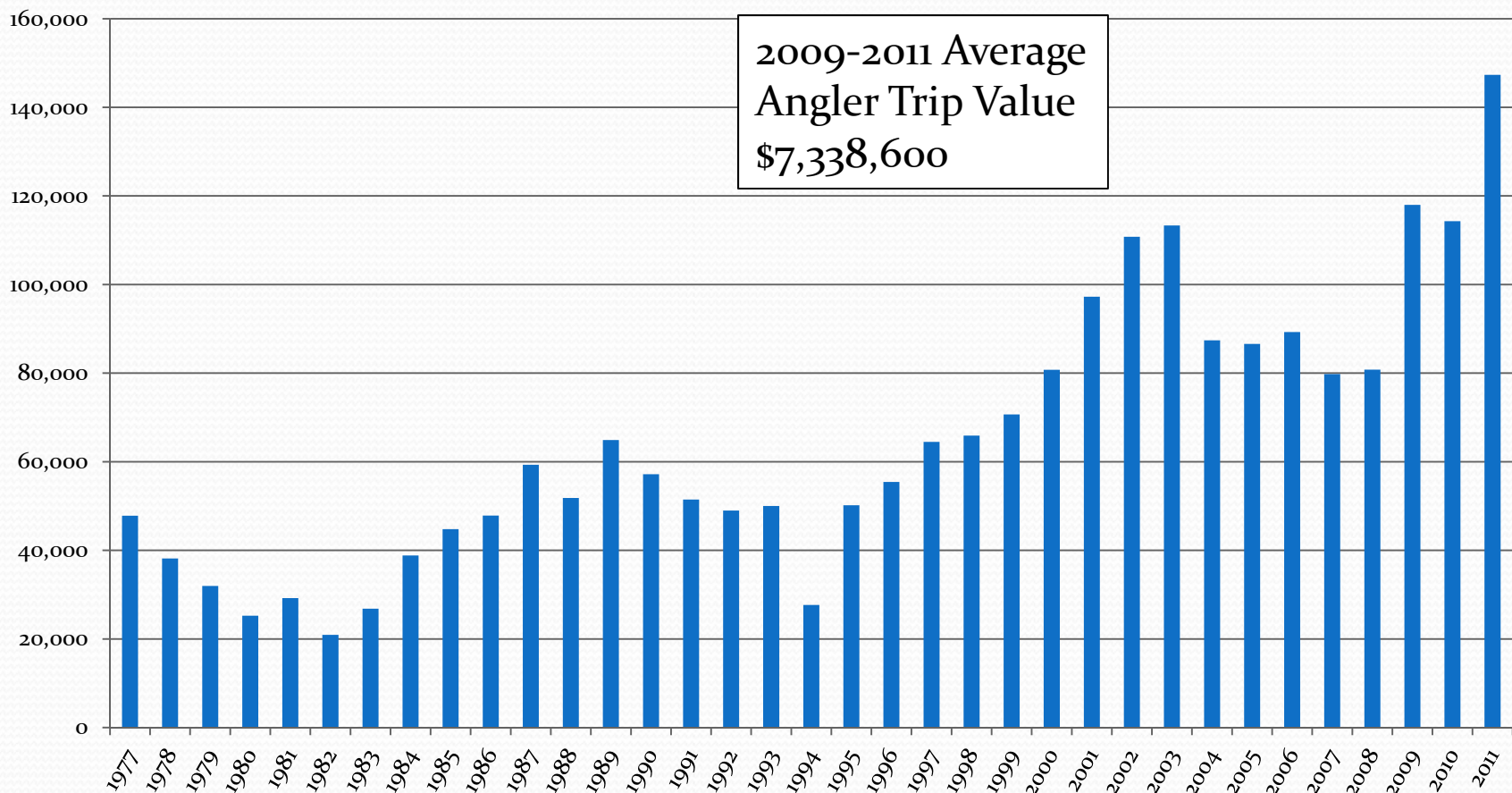
Below Bonneville Sport Fisheries

- Fishery occurs from Rocky Point/Tongue Point line upstream to Bonneville Dam
- Season is August 1 through December 31
- Historically warm water hindered anglers ability to catch salmon in shallow waters – now targeting Chinook in the deeper, cooler waters
- As a result catch and angler trips have increased exponentially
- Recent year fisheries have been restricted to time and area closures for Chinook

Below Bonneville Fall Chinook Sport Harvest



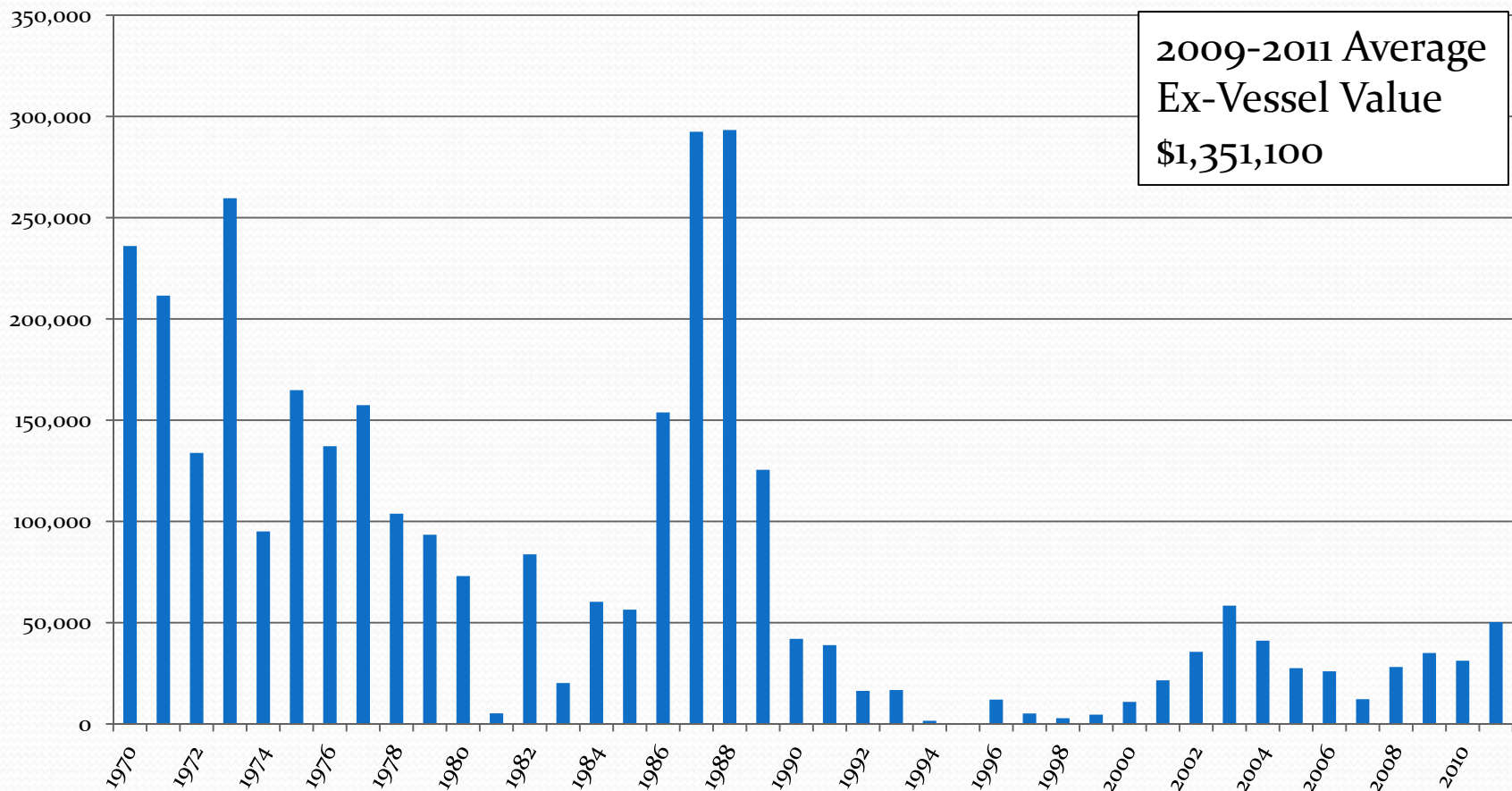
Below Bonneville Angler Trips



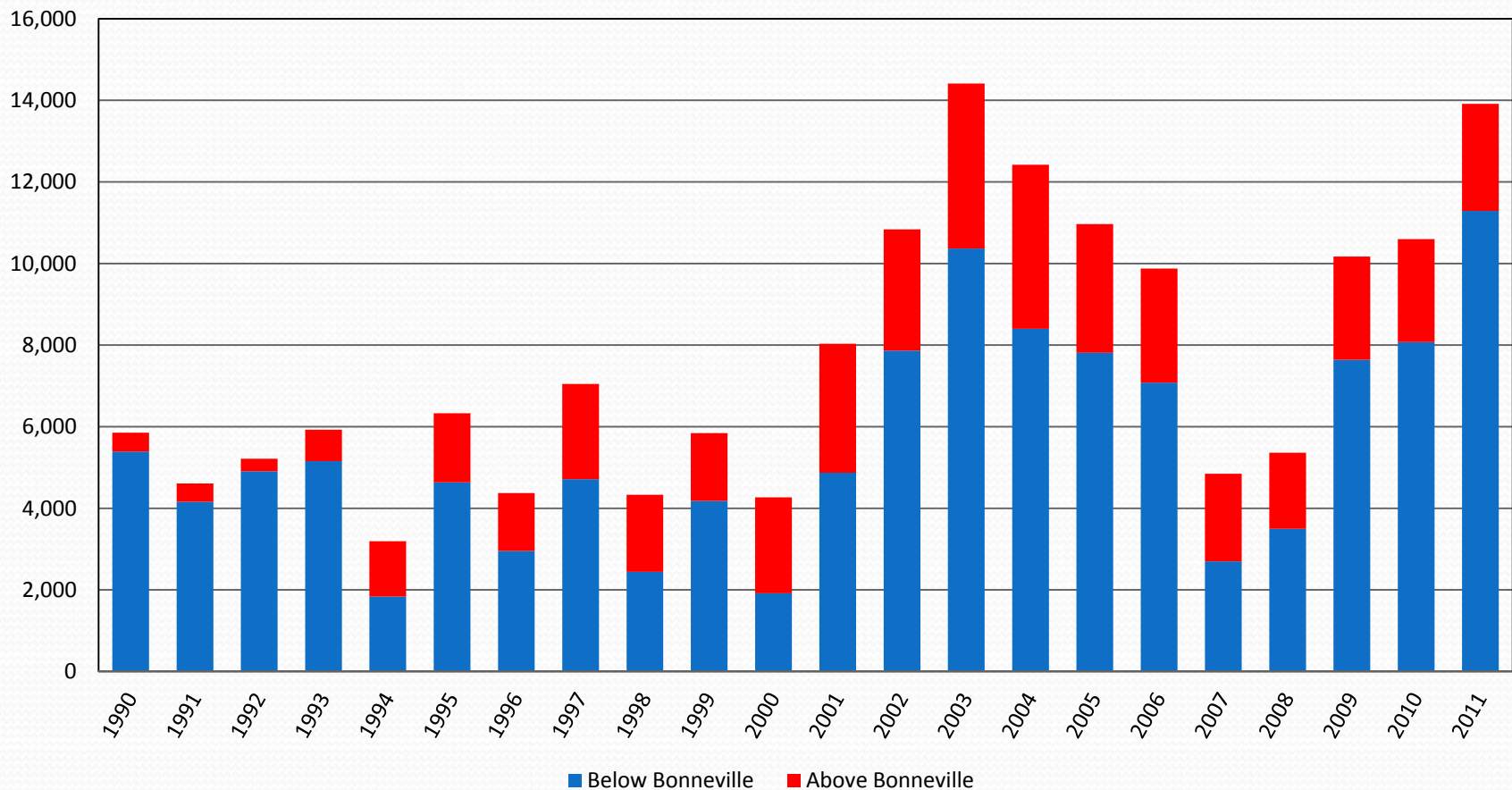
Below Bonneville Commercial Fisheries

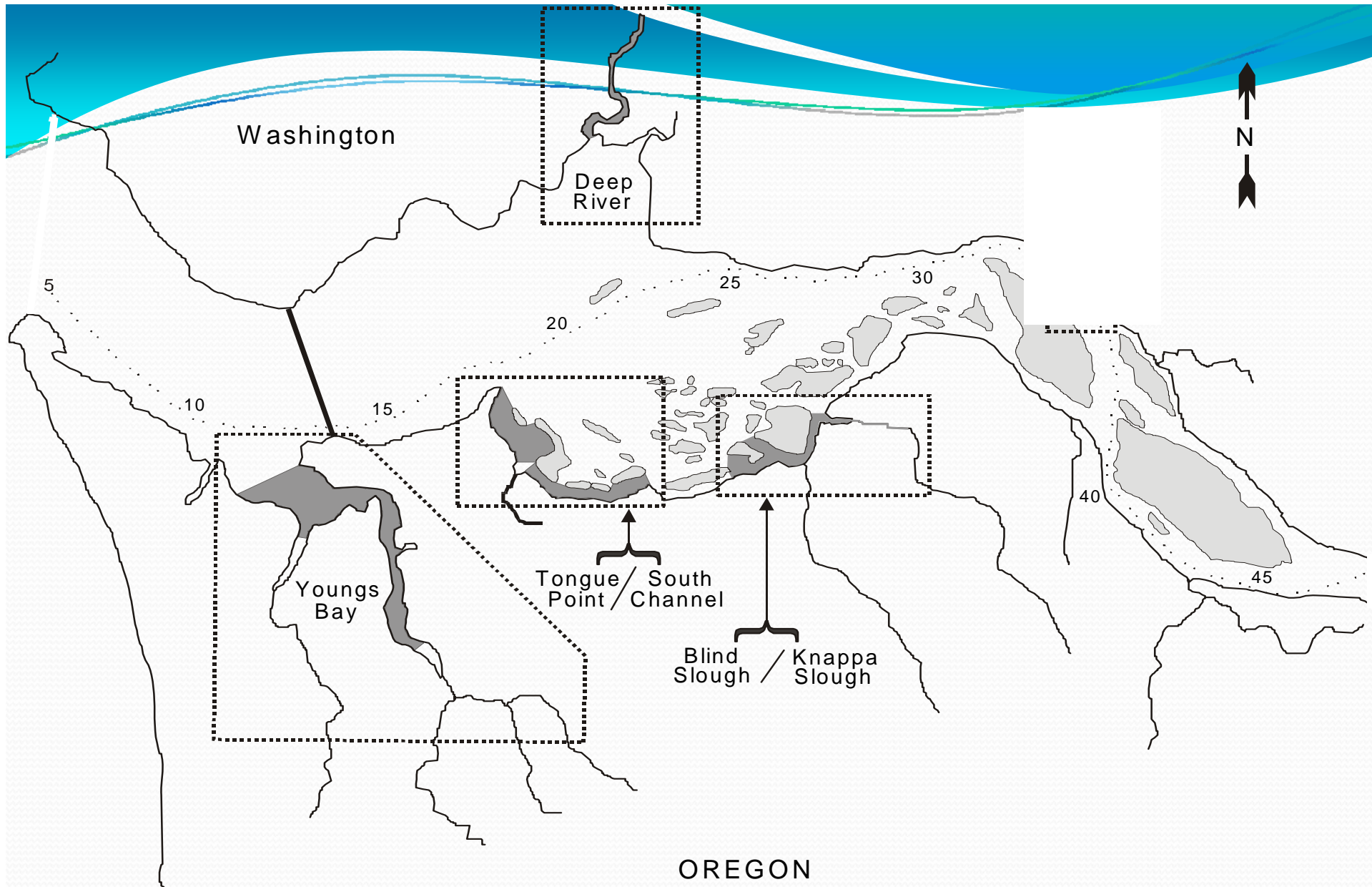
- Traditional fisheries occurred during early fall (August) and late fall (September-November)
 - Early fall fisheries targeted Chinook
 - Late fall fisheries targeted coho
- Steelhead landings occurred until 1975
- Seasons have been reduced since 1992 with ESA listings
- Recent fisheries are severely restricted by area
 - ESA-listed Chinook and coho constraining

Below Bonn Fall Chinook Commercial Harvest



Tributary Fall Chinook Harvest



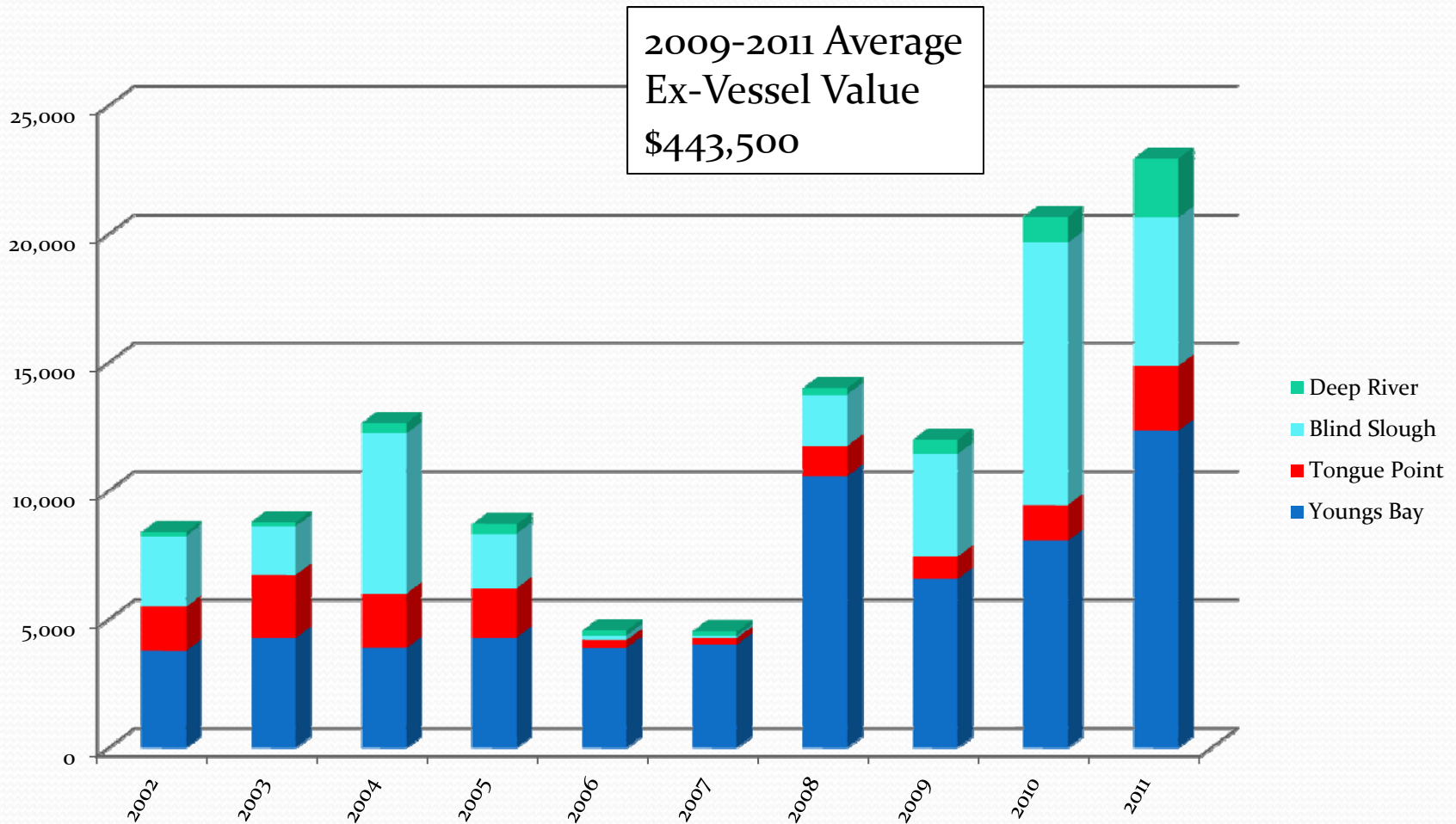


Fall Select Area Fishery Locations

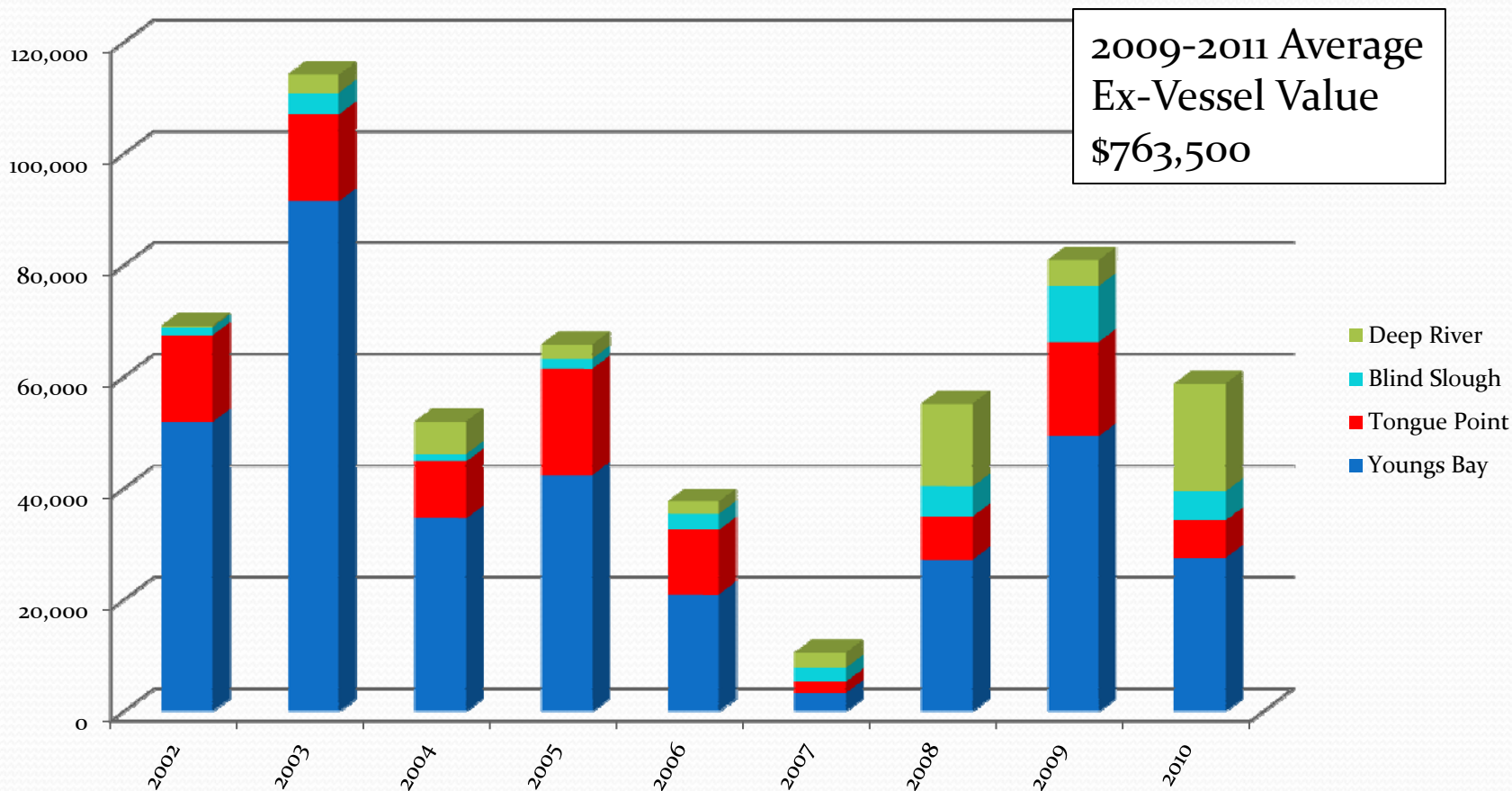
WA Dept. of Fish and Wildlife, Information subject to changes and amendments over time

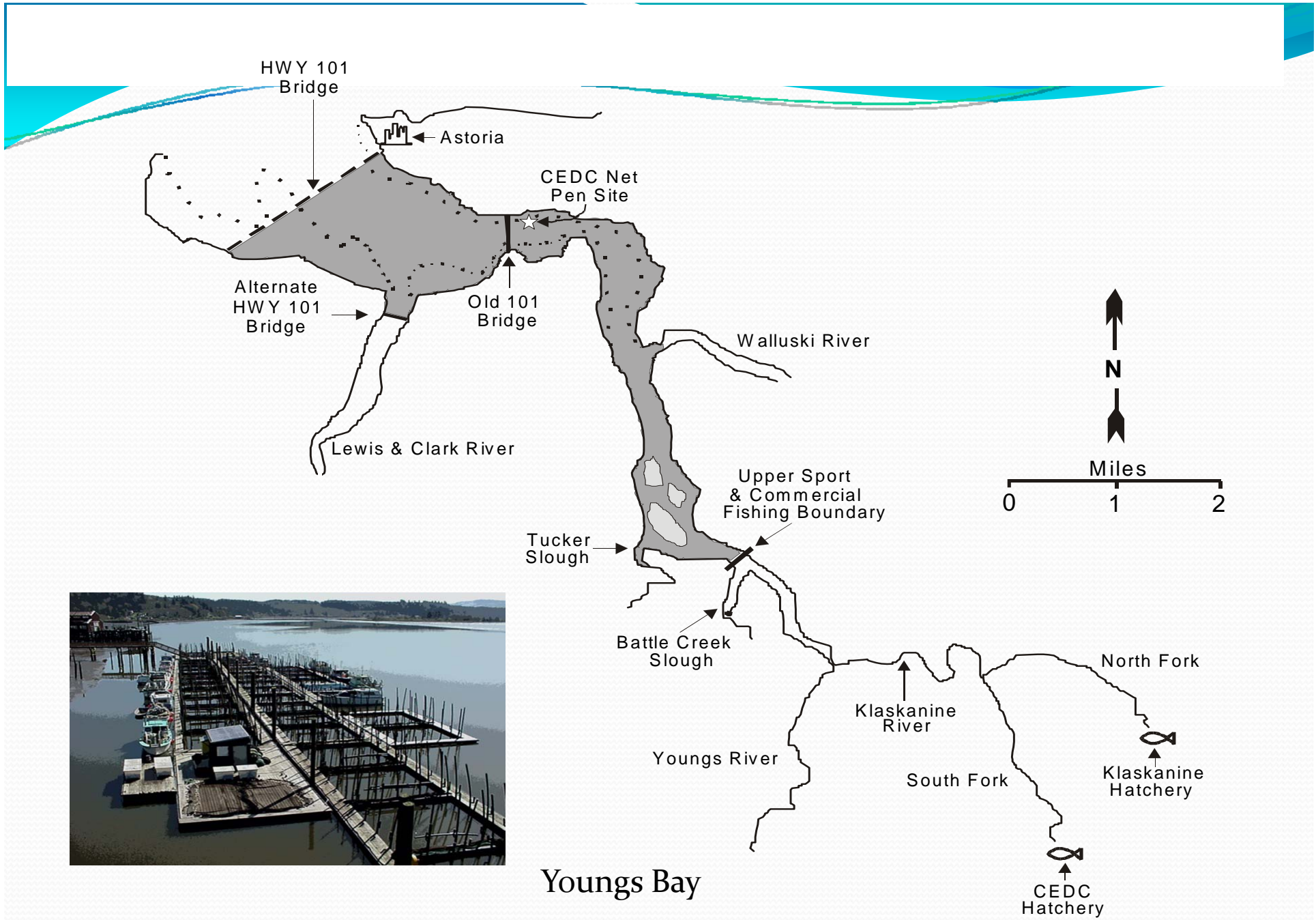
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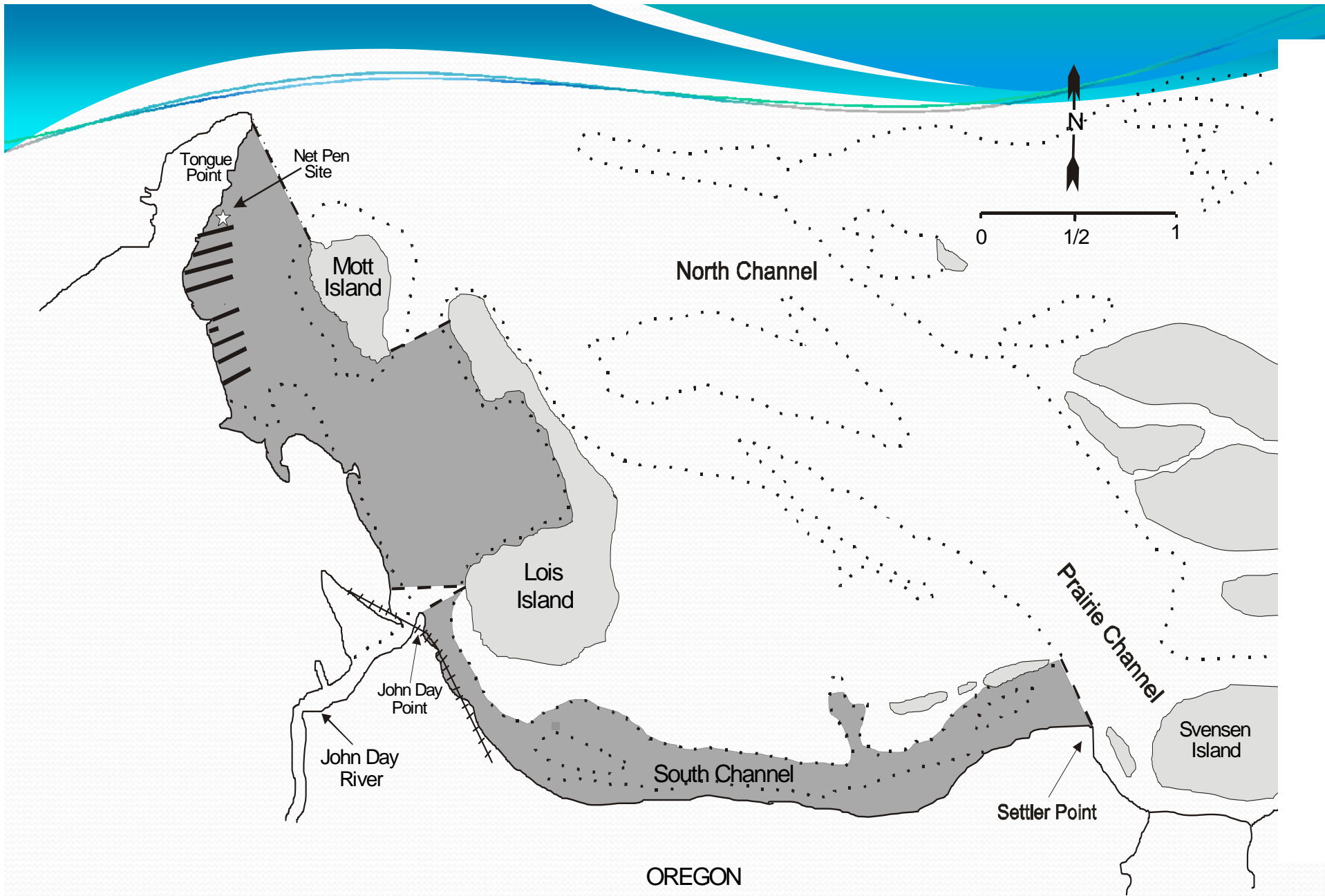
Fall Chinook Harvest in SAFE



Coho Harvest in SAFE







OREGON

Tongue Point/South Channel

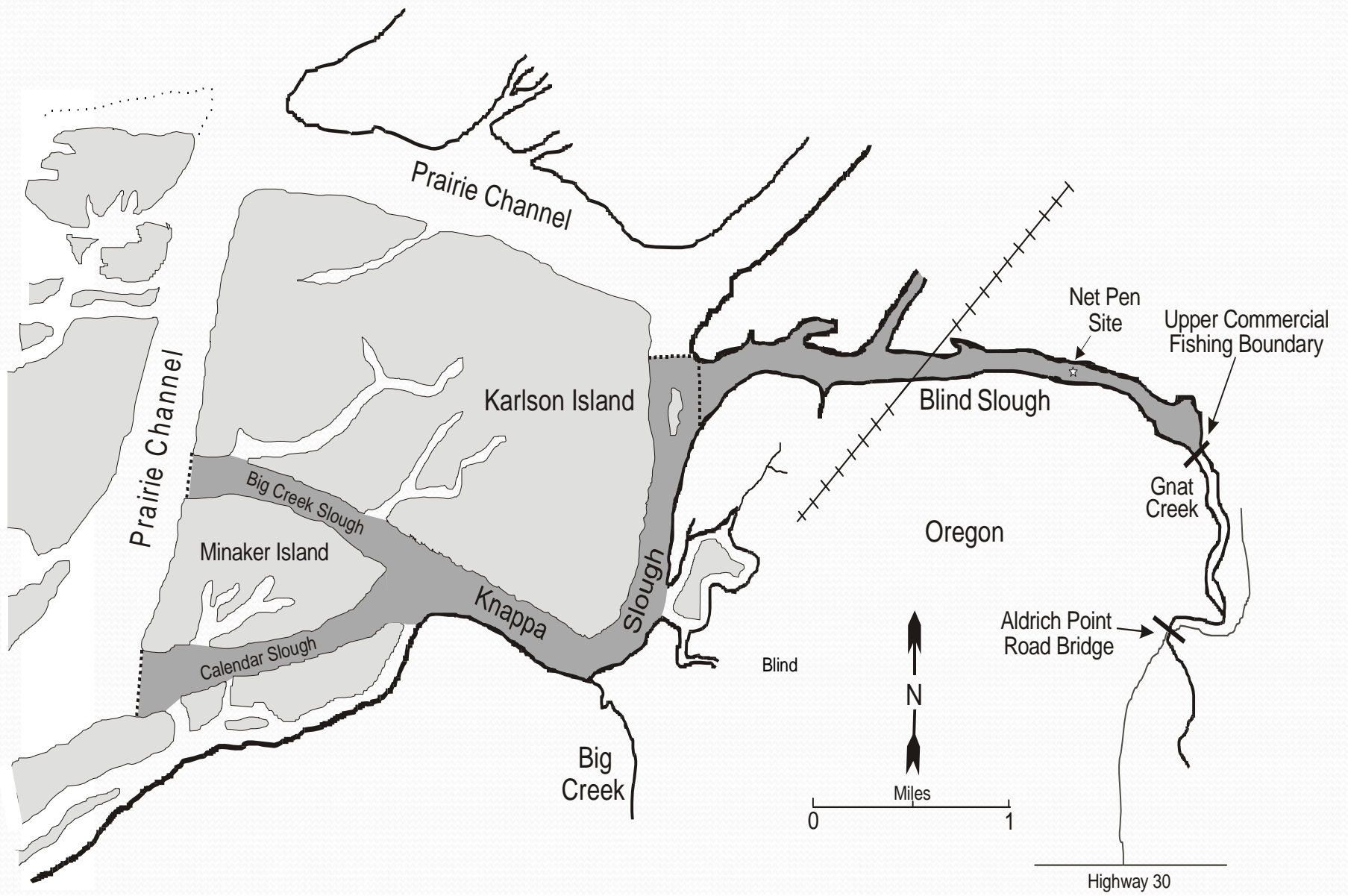
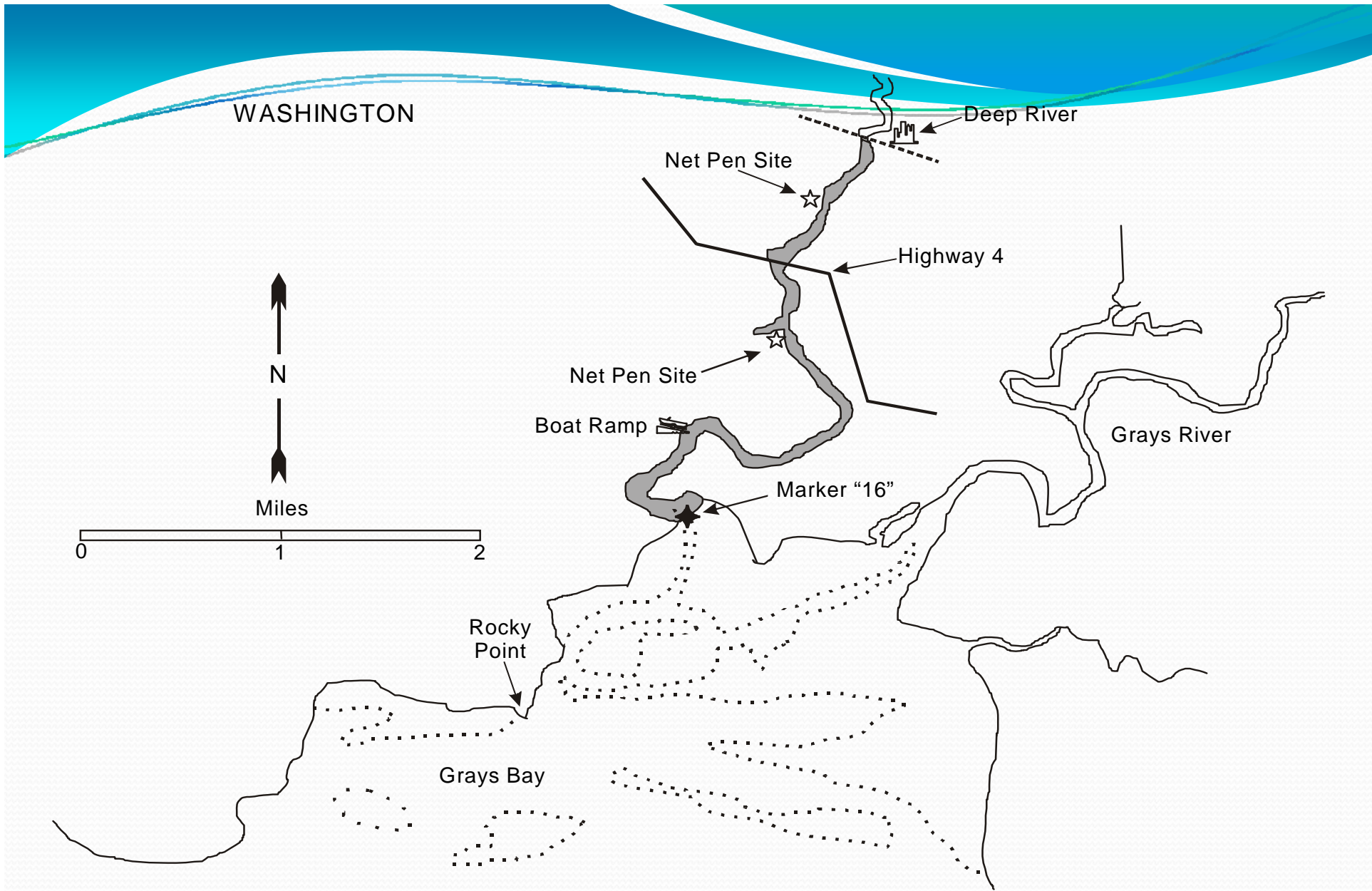


Figure 4. Blind Slough/Knappa Slough Select Area Fishery Site



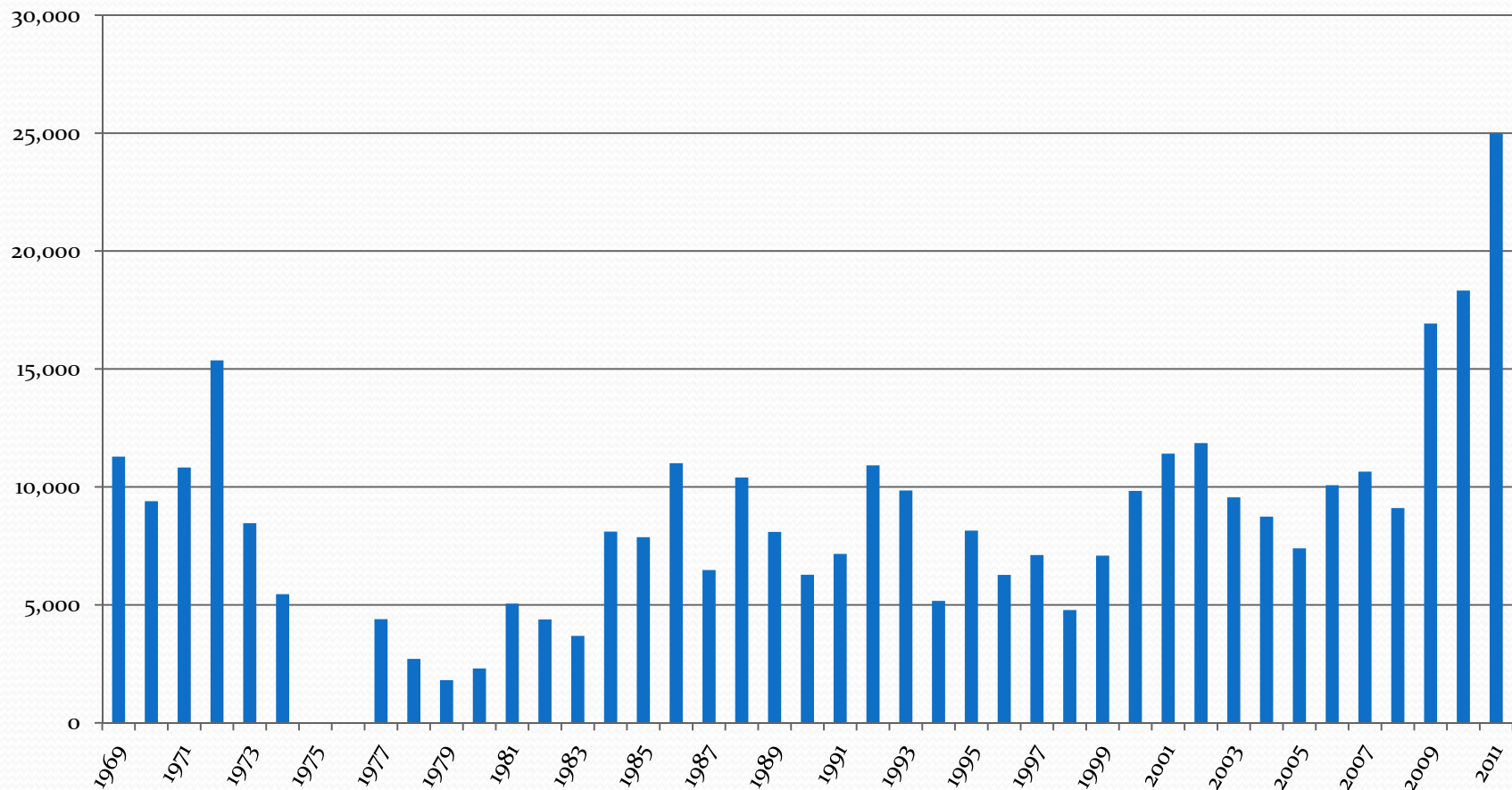
Deep River



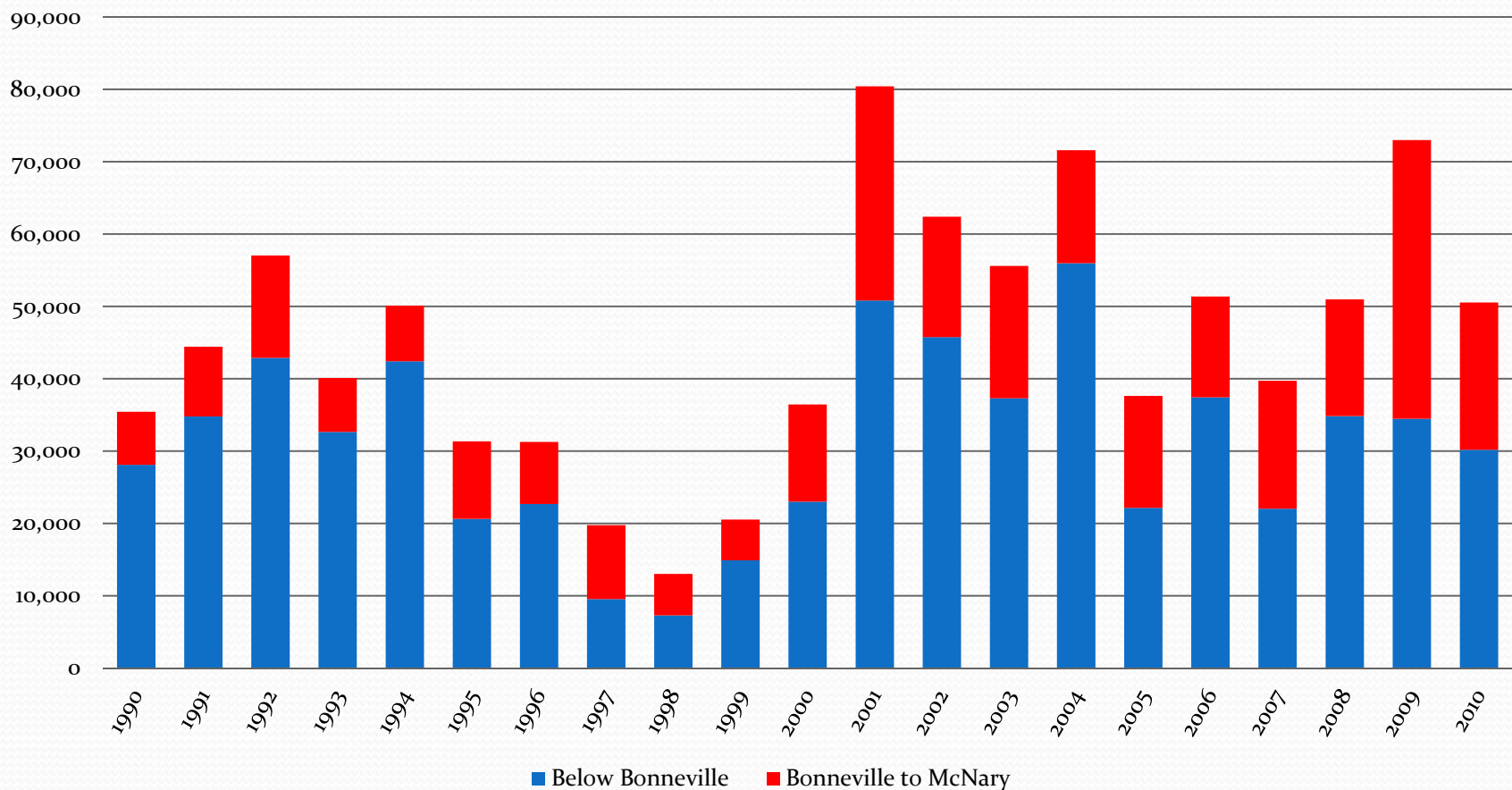
Historical Steelhead Fisheries

- Winter steelhead harvest prior to 1970s of 60%-70% impact rates
- Sale of steelhead prohibited in 1975
- Large mesh used in commercial fishery to avoid steelhead
- Sport fishery wild steelhead release implemented during 1984 – 1994

Summer Steelhead Sport Catch Below Bonneville Dam



Summer Steelhead Sport Harvest in Tributaries

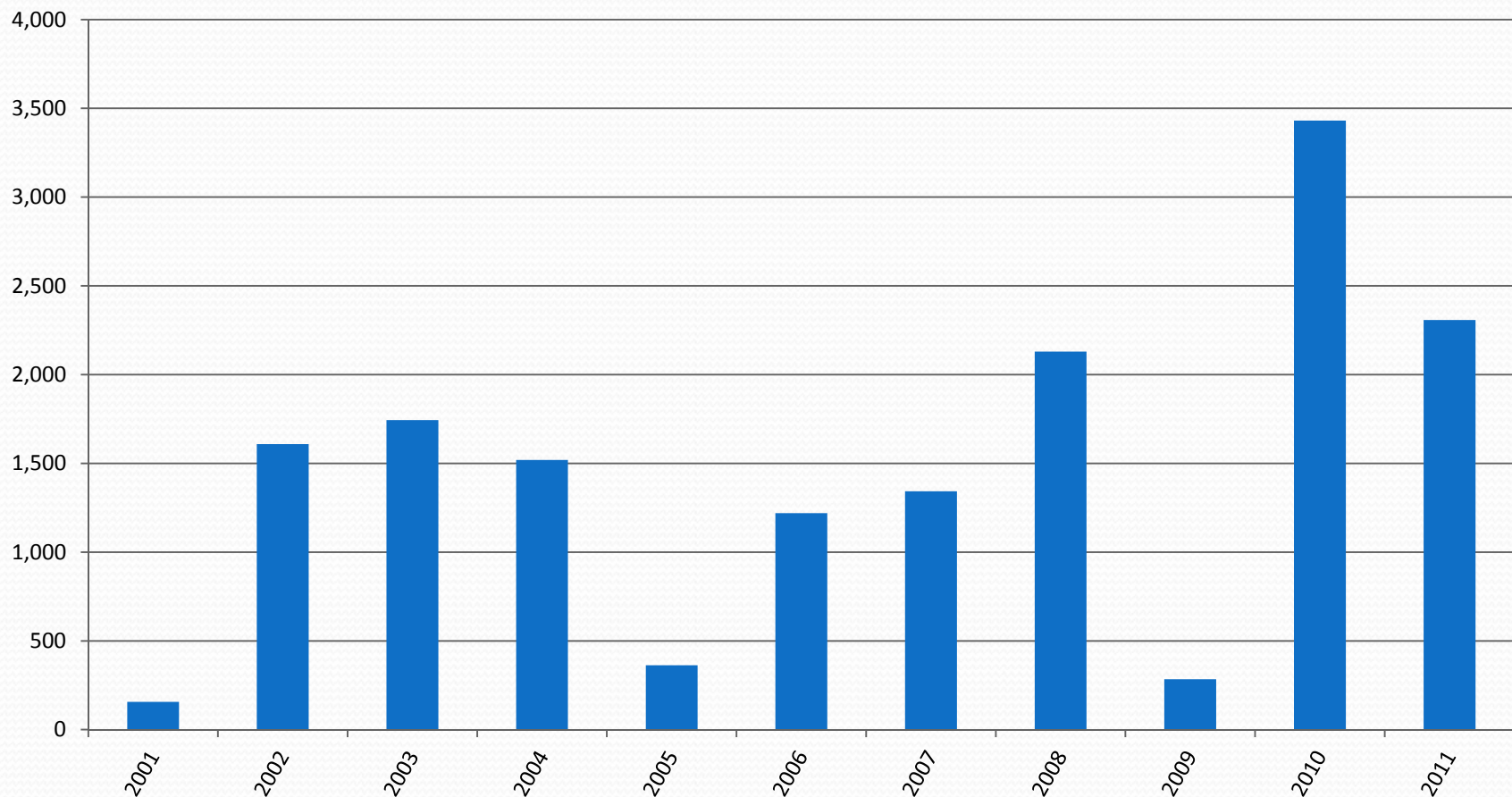


Bonneville Dam

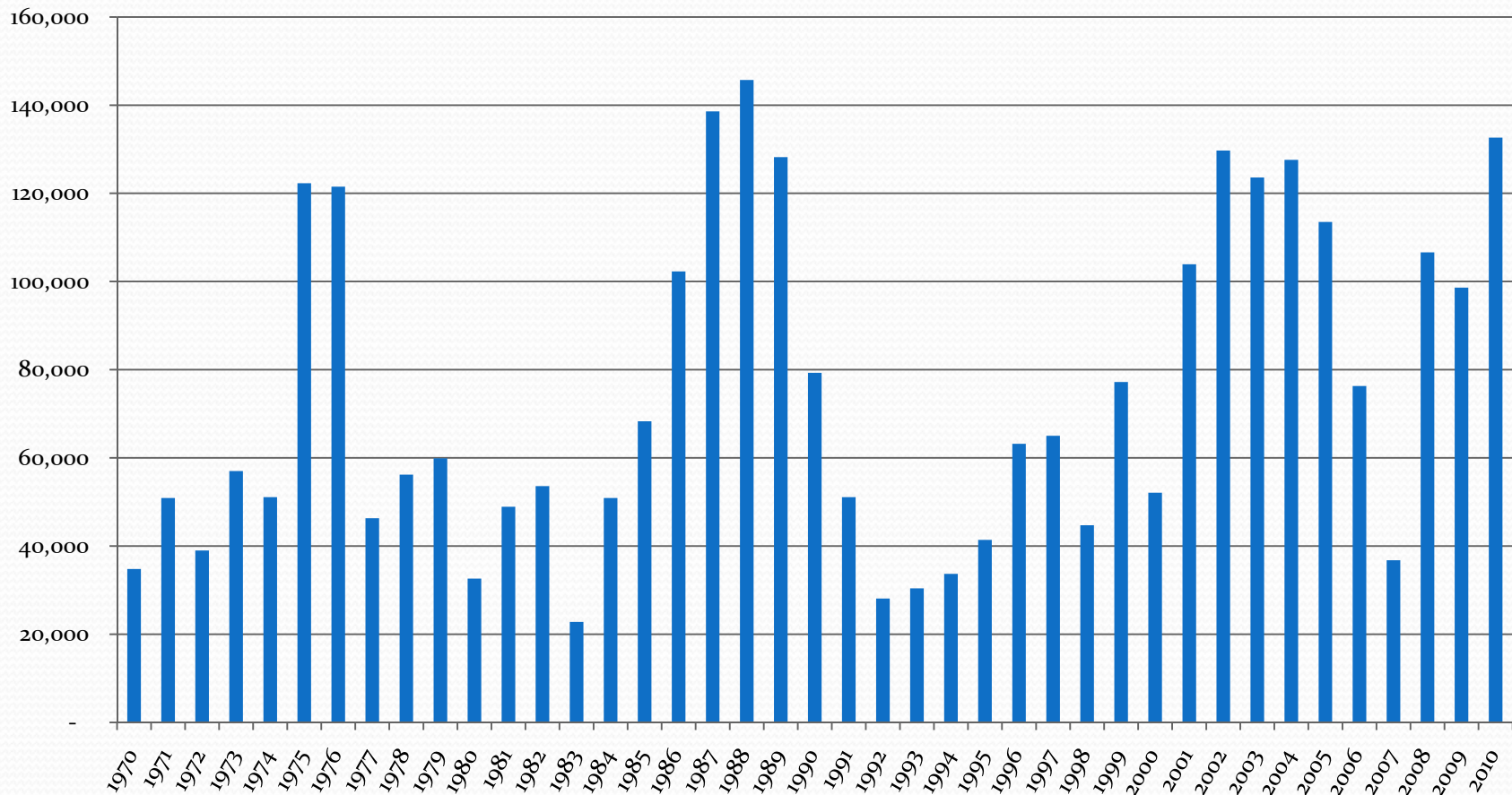




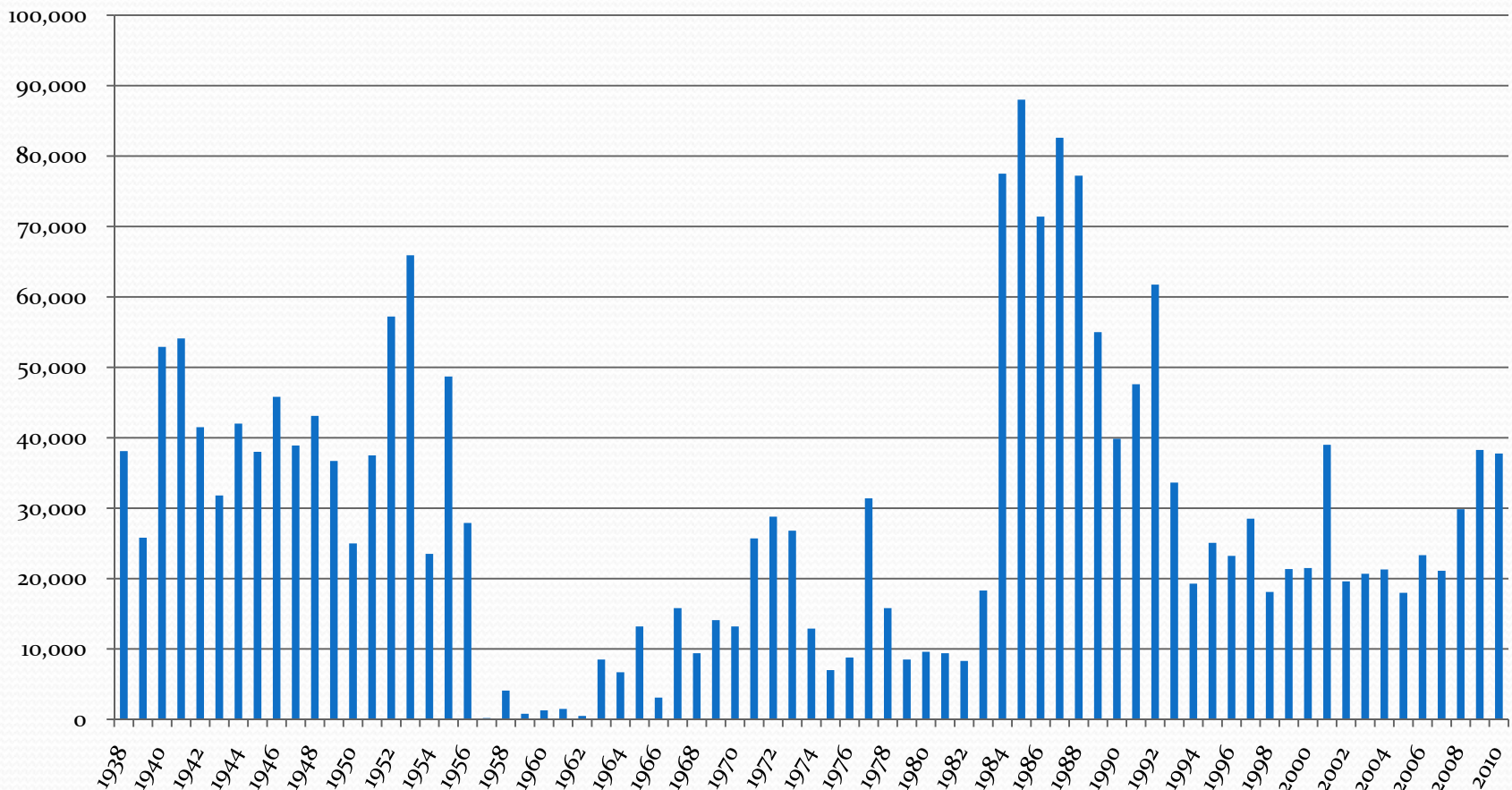
Mainstem Fall Chinook Sport Harvest – Bonneville Dam to McNary Dam



Treaty Indian Fall Chinook Harvest



Treaty Indian Steelhead Harvest

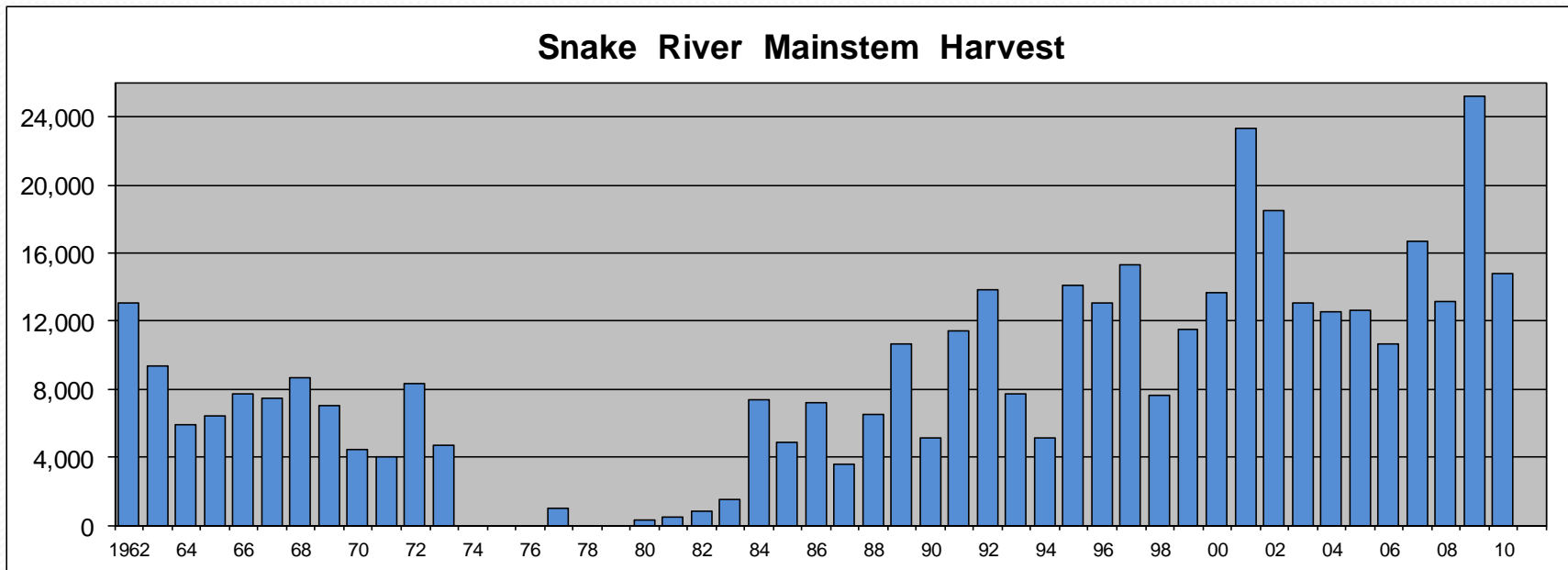




Southeast Washington Steelhead Harvest

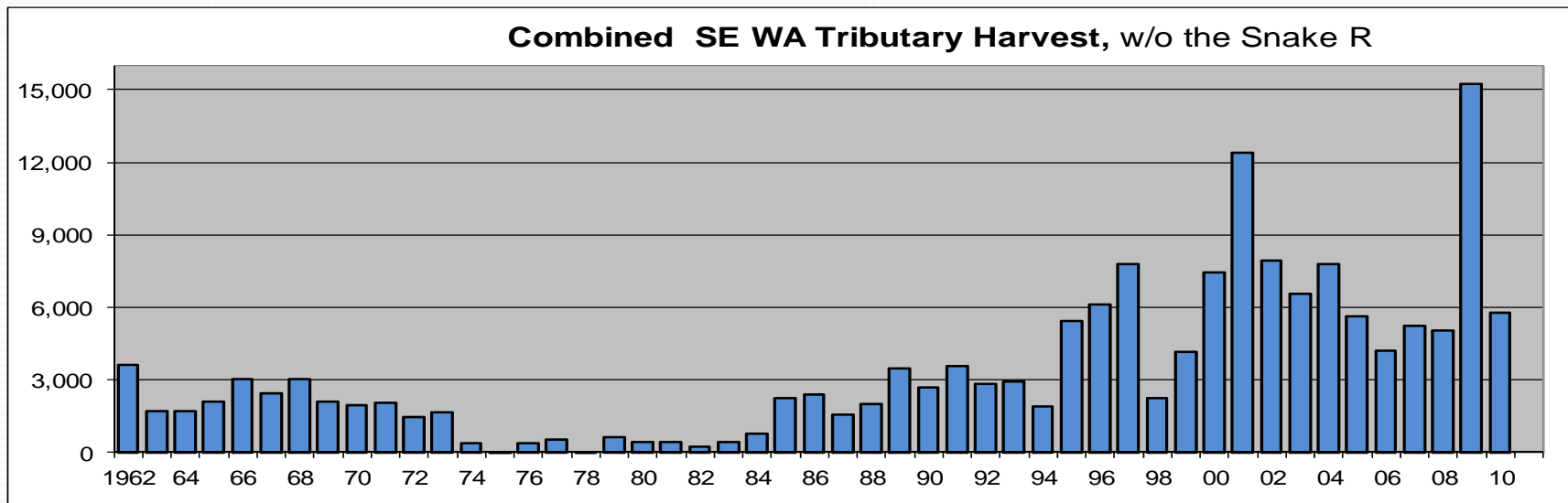
- Steelhead fisheries generally occur Sept-March in SE WA, with the peak effort & harvest in Oct – Dec
- Selective fisheries for hatchery fish since 1983
- Includes the Snake, Grande Ronde, & Tucannon rivers in the Snake Basin, + the Touchet and Walla Walla rivers
- Snake River fishery areas are usually included in the **Top 10** steelhead harvest areas annually in WA
- The Grande Ronde River fishery is **nationally renowned** and draws anglers from many other states
- Economic value of these fisheries is at least \$14-40 million/yr (2000-2010)

Snake River Steelhead Harvest



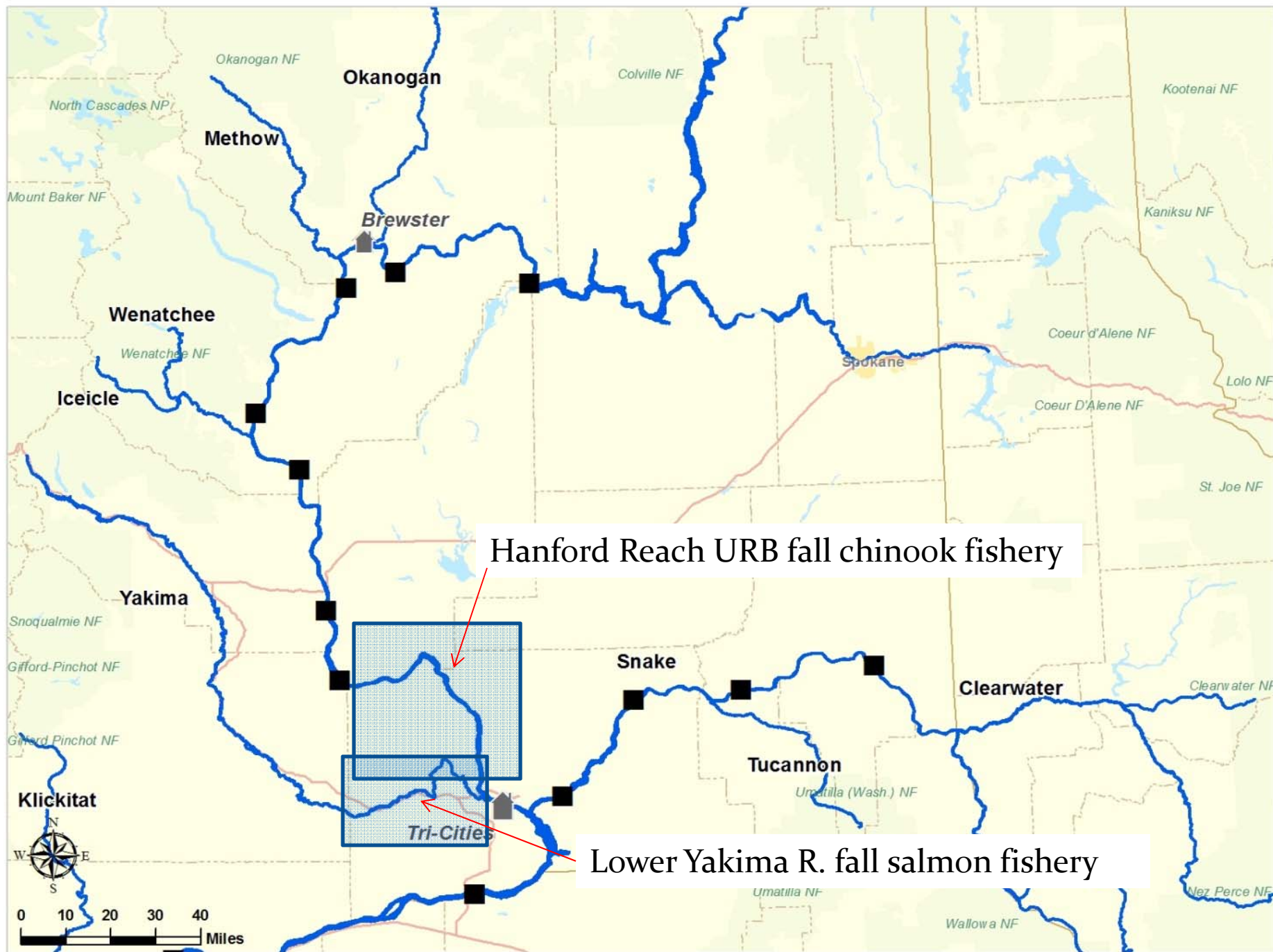
Southeast Washington Steelhead Fisheries

- Harvest has been on an increasing trend since 1990s



Southeast Washington Fall Chinook Harvest

- In 1993, the Snake River was closed to fall Chinook salmon fishing and it remained closed until fall of 2008
- From 2008-2010, select fall fishing areas opened in the lower Snake River with limited harvest observed
- In 2011, incidental opportunity for hatchery fall Chinook fishing opened Sept 1 – Oct 31 in the entire Snake River within Washington, including the boundary waters
- For 2011, an estimated 636 adults and 257 jacks were harvested in the boundary waters (WA, ID, OR)
 - Half of these were harvested by Washington anglers



Hanford Reach URB fall chinook fishery

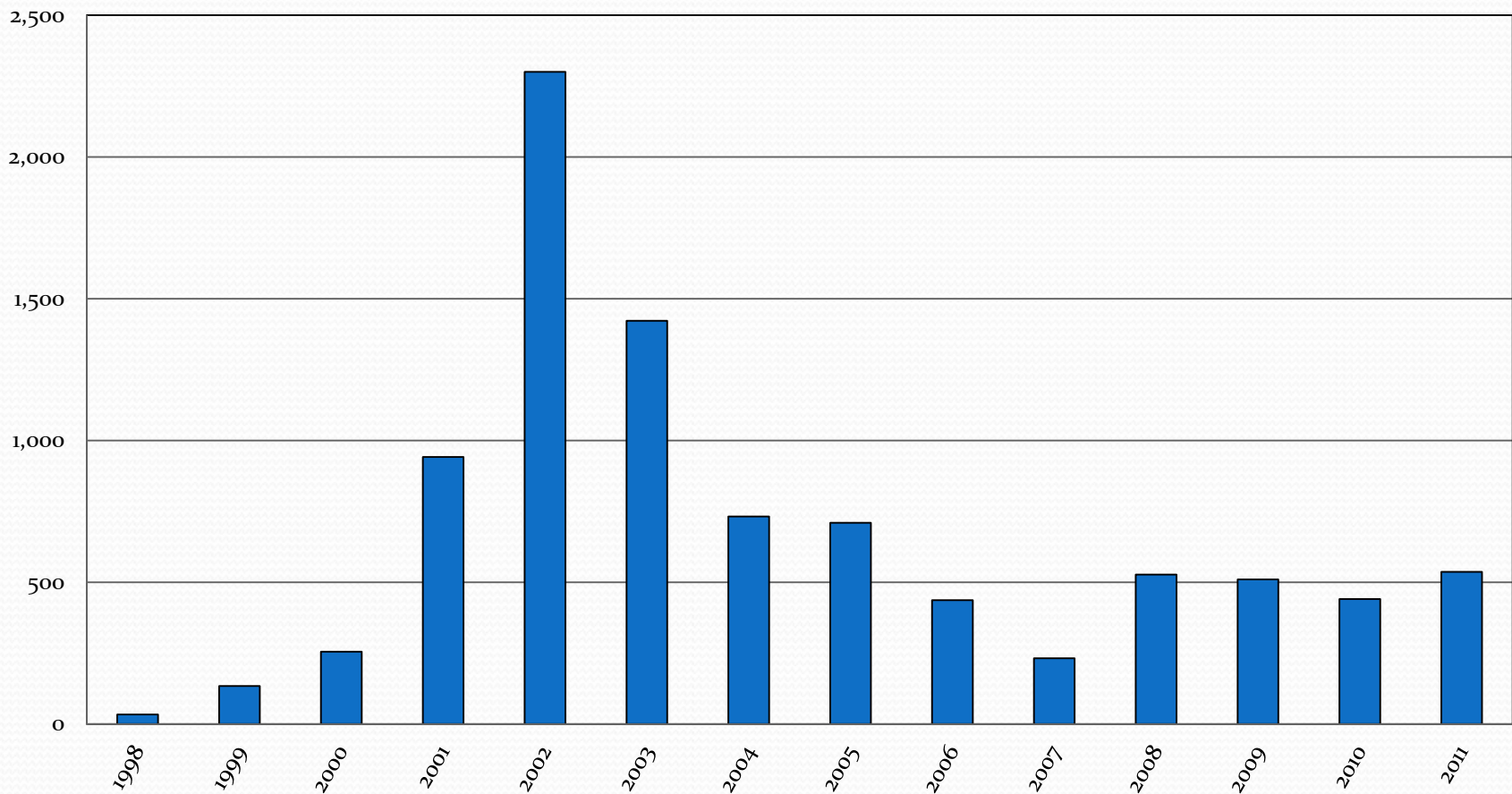
Lower Yakima R. fall salmon fishery

Yakima River Fall Chinook Fishery

- Mouth to Prosser; Sept. 1 – Oct. 22; non-selective; primarily URB fall chinook with small number of coho taken (50+/-)



Yakima River Fall Chinook Sport Harvest





Hanford Reach Fall Chinook Fishery

- Tri-cities to Priest Rapids Dam
- Aug. 1 – Oct. 22
- Non-selective because high proportion of natural-origin fish (80-85%) and approx. 50% of hatchery URB's are not currently mass-marked
- Sport harvest has increased every year since 2006 and exceeded 12K in 2010 and 14K in 2011...years with good returns and increasing angler effort and CPUE

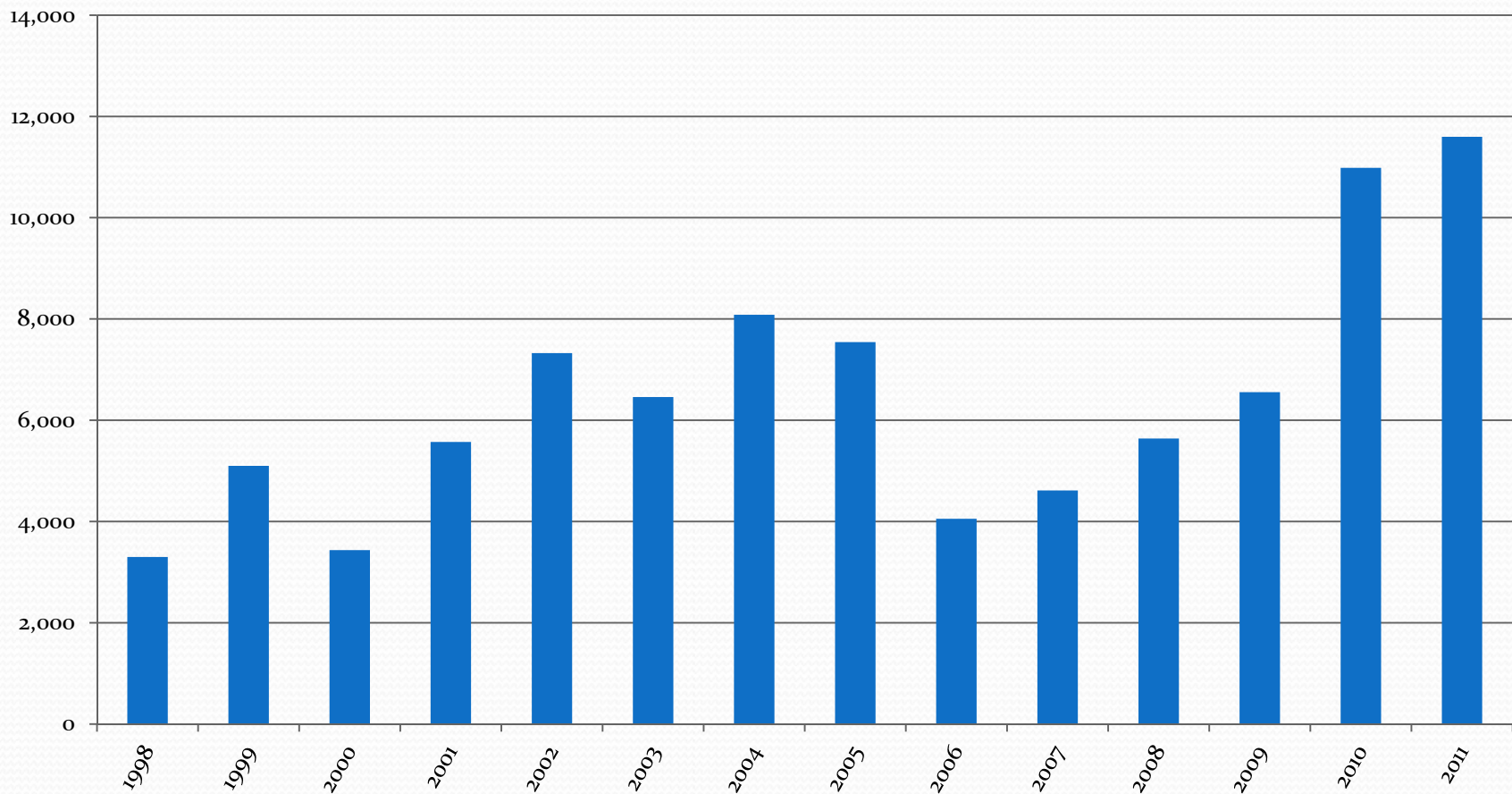
URB Fall Chinook



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Hanford Reach Fall Chinook Harvest



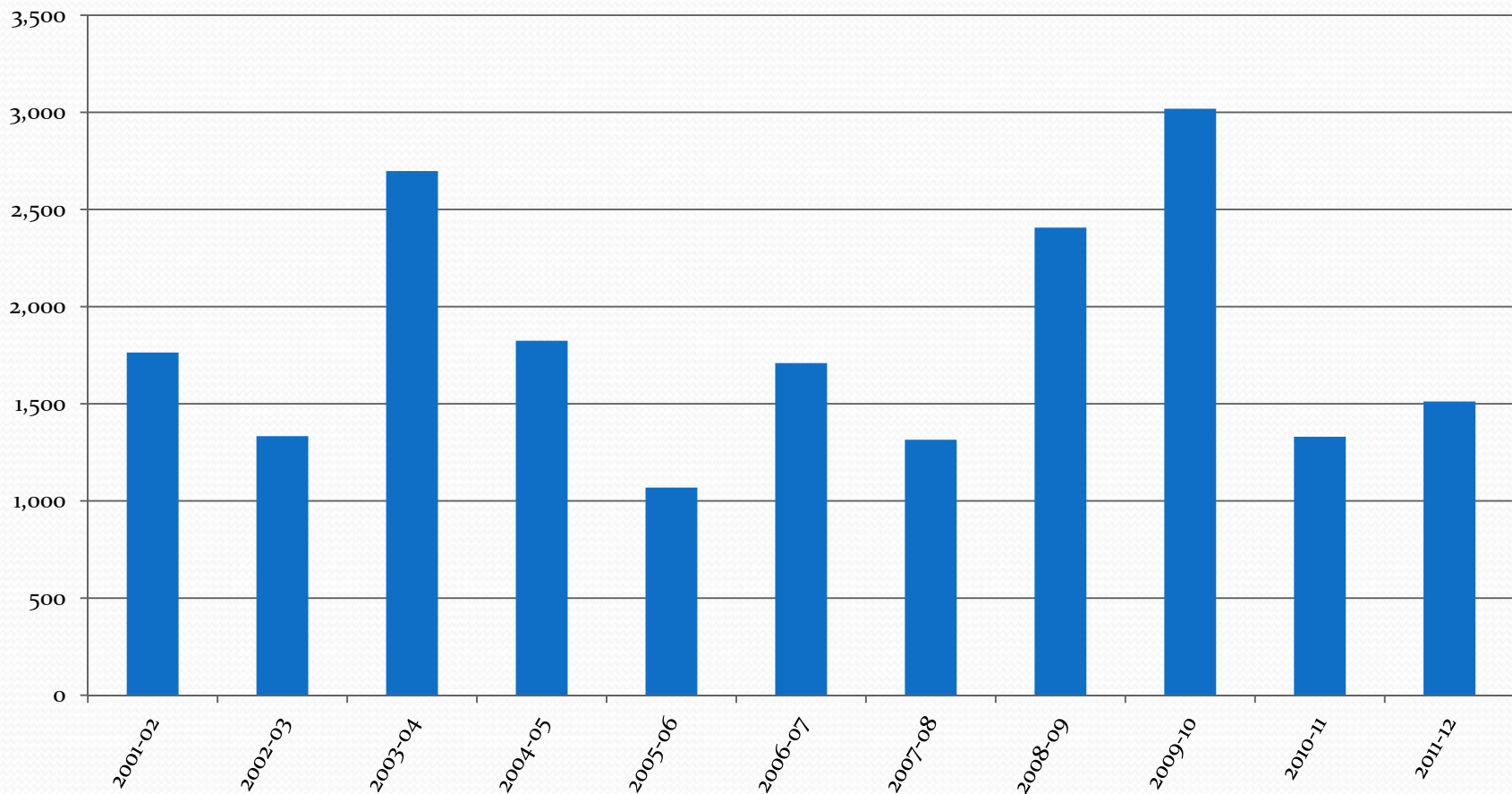
Hanford/Ringold Steelhead Fishery

- MSF primarily targeting Ringold Springs Rearing Facility (RSRF) steelhead with double fin clip (AD + RV); any hatchery steelhead after upper CR opens
- RSRF steelhead program (180K smolts/yr) funded by Mitchell Act
- Hwy. 395 Bridge in Tri-cities to wooden powerline towers 8 miles upstream of RSRF; powerline towers to PRD if strong upriver run and sufficient ESA impacts
- Fishery begins Oct. 1 (or in Sept. if R2 opens the upper CR above Priest Rapids Dam earlier) and runs thru March 31; April 1 – 15 bank fishery only at Ringold

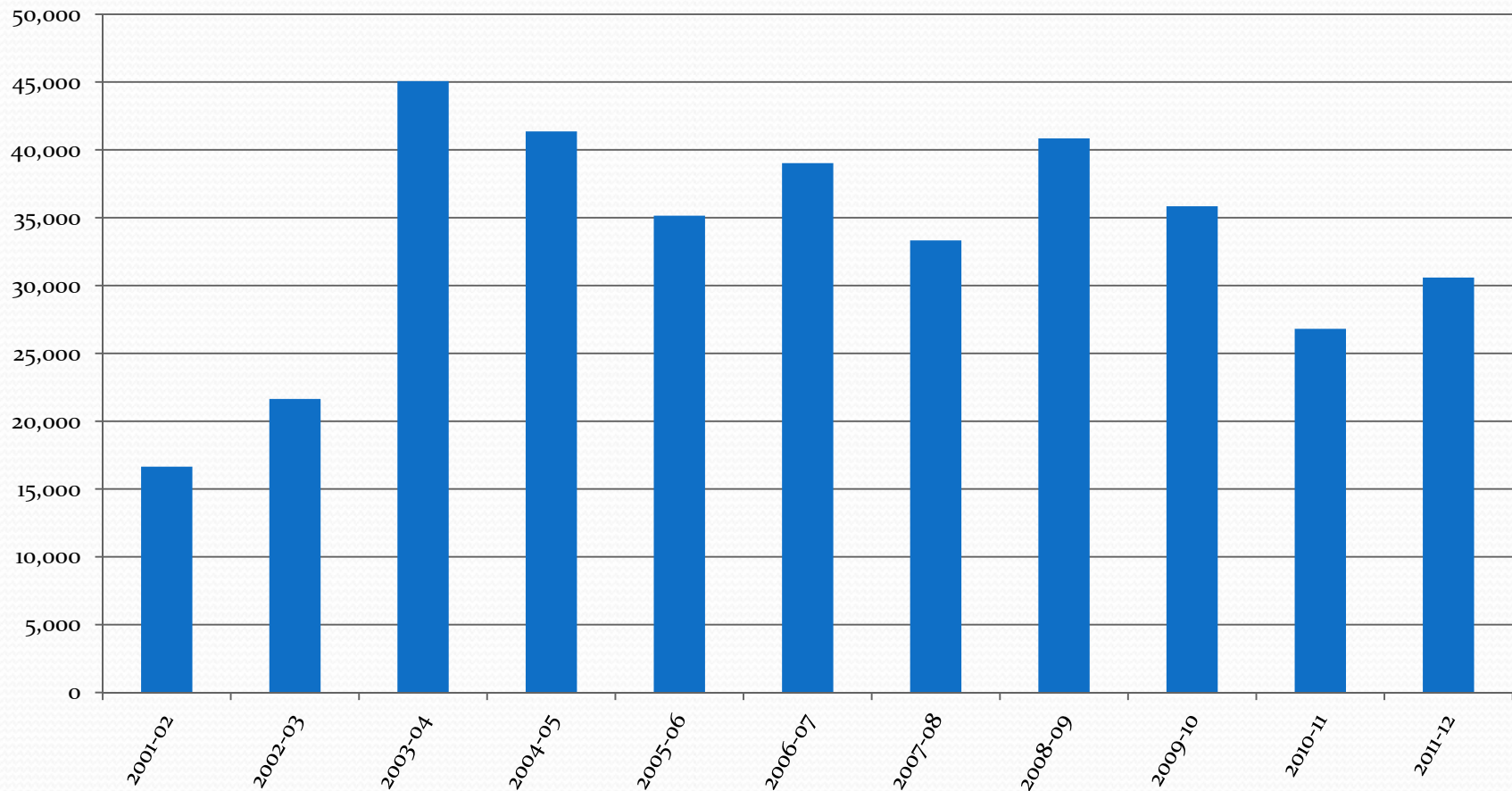
Hanford/Ringold Steelhead Fishery

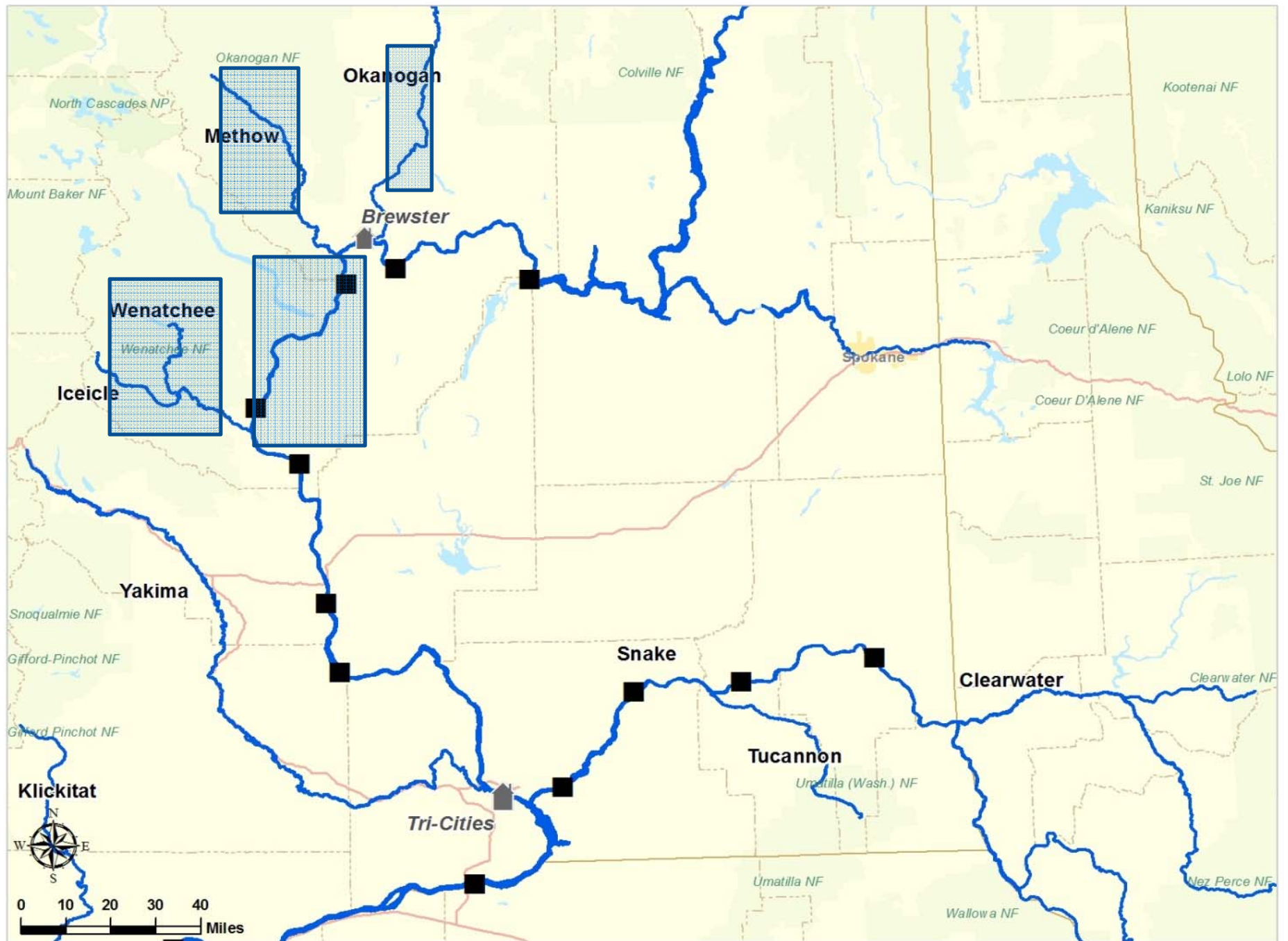


Hanford Reach Steelhead Harvest



Effort (Angler-Hours) for Steelhead





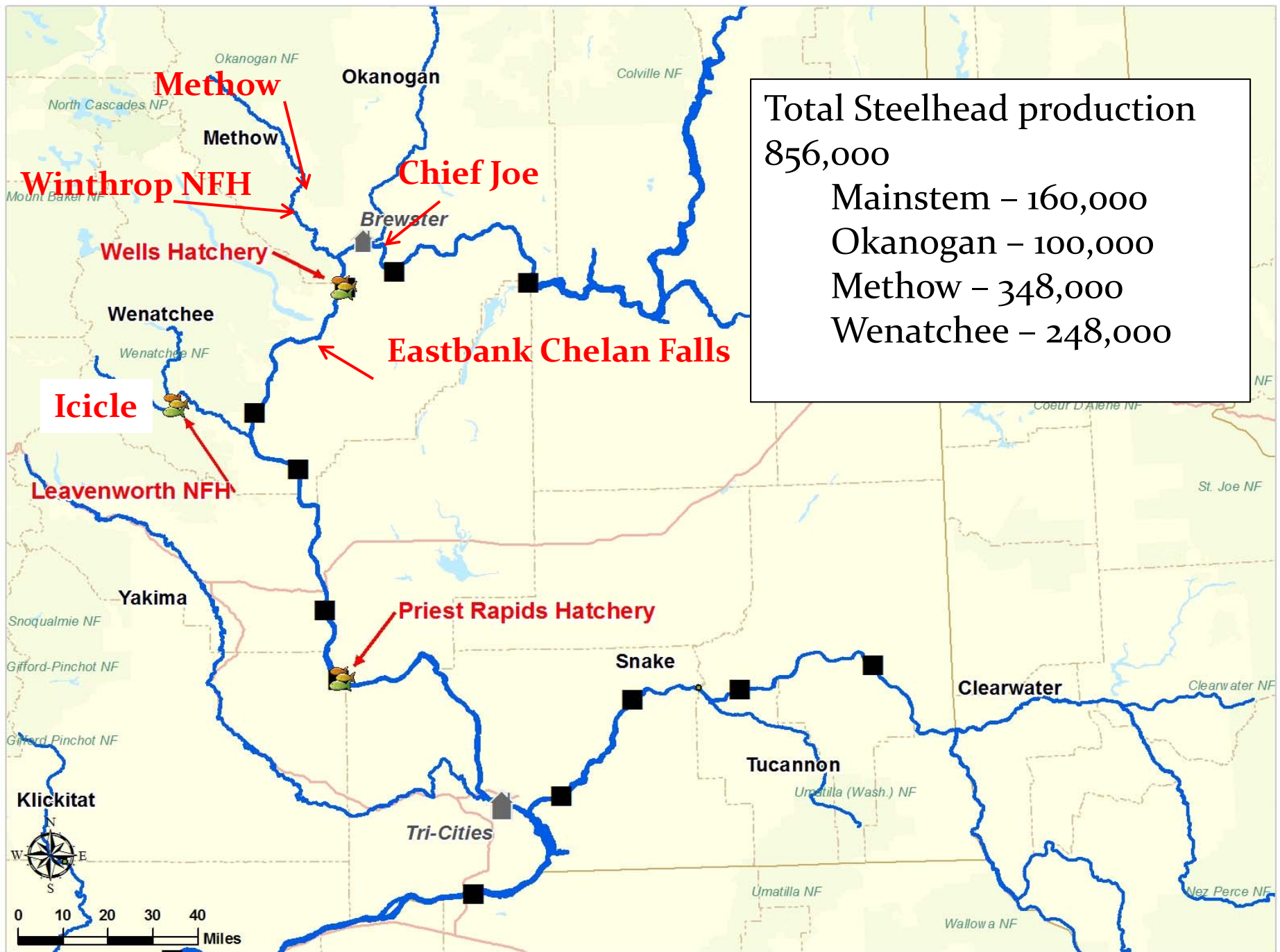
Upper Columbia Steelhead Management

- Listed as threatened under the ESA in late 1990s
 - All fishery and hatchery programs operate under ESA permit
 - Fisheries important for controlling escapement of hatchery-origin fish on spawning grounds
 - Increased public acceptance of other management measures
 - Fish removed at dams and hatcheries
- Management Approach
 - Mark-selective fisheries/gear restrictions
 - Season variable – dependent on natural-origin run size
 - September/October to March

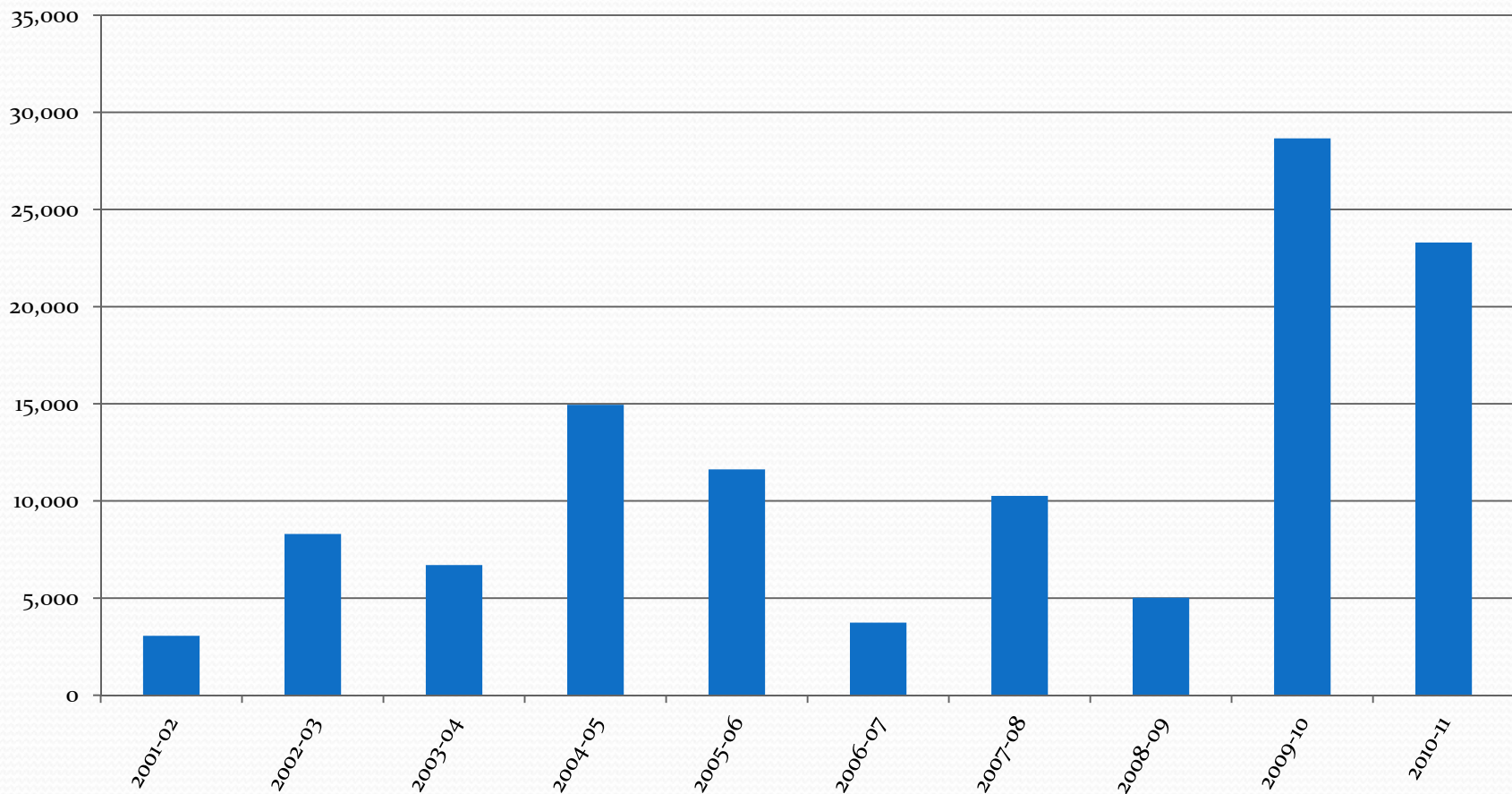


Upper Columbia Steelhead Fishery

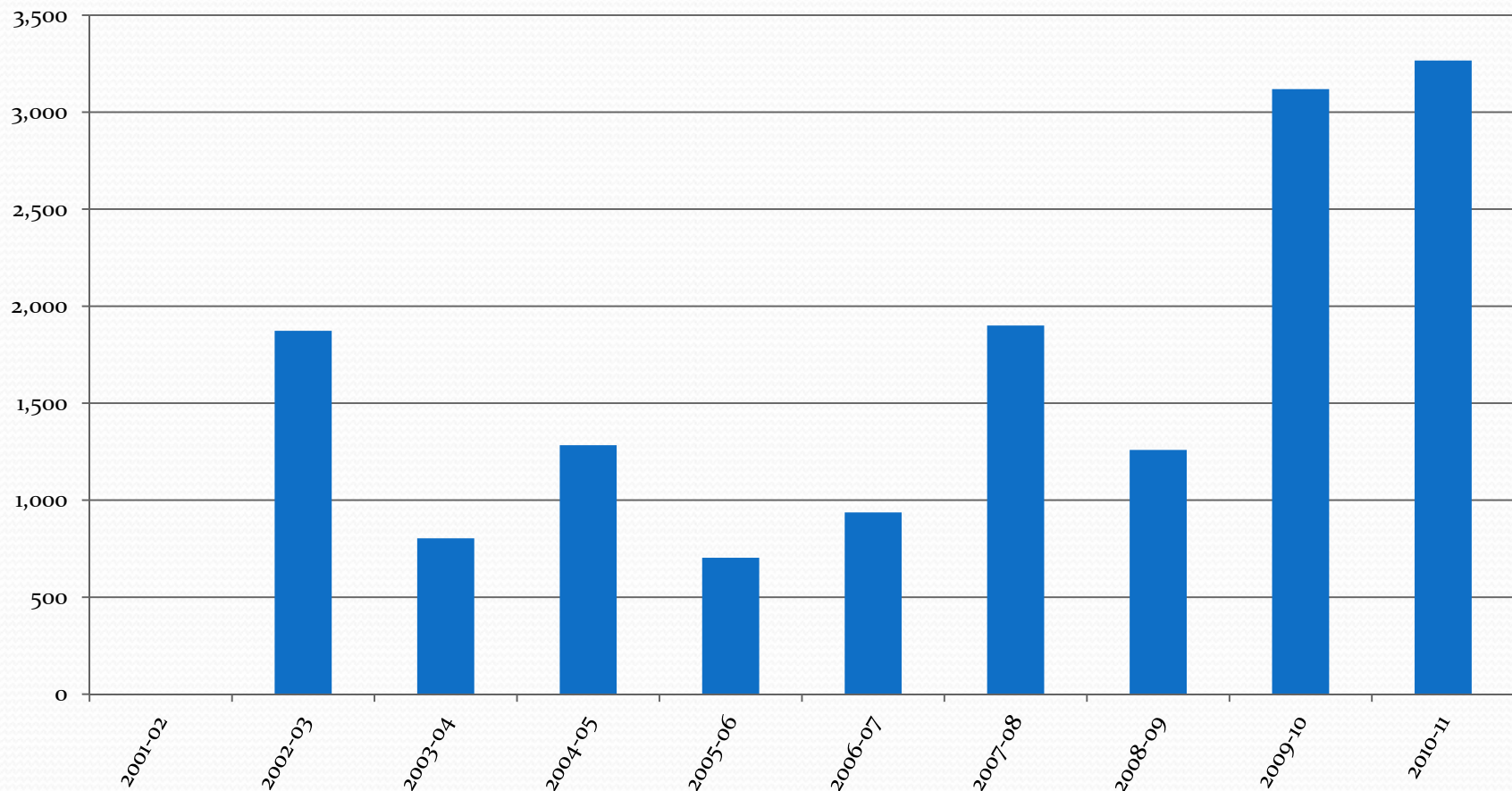
- Effort
 - 3,000 – 29,000 angler trips/season
 - Average 11,600 trips
- Harvest
 - 2001-2002 through 2008-2009
 - 3,000 fish/season
 - Mandatory retention of hatchery-origin fish began 2009-2010
 - 2009-2010 through 2010-2011 averaged 13,400 fish/season



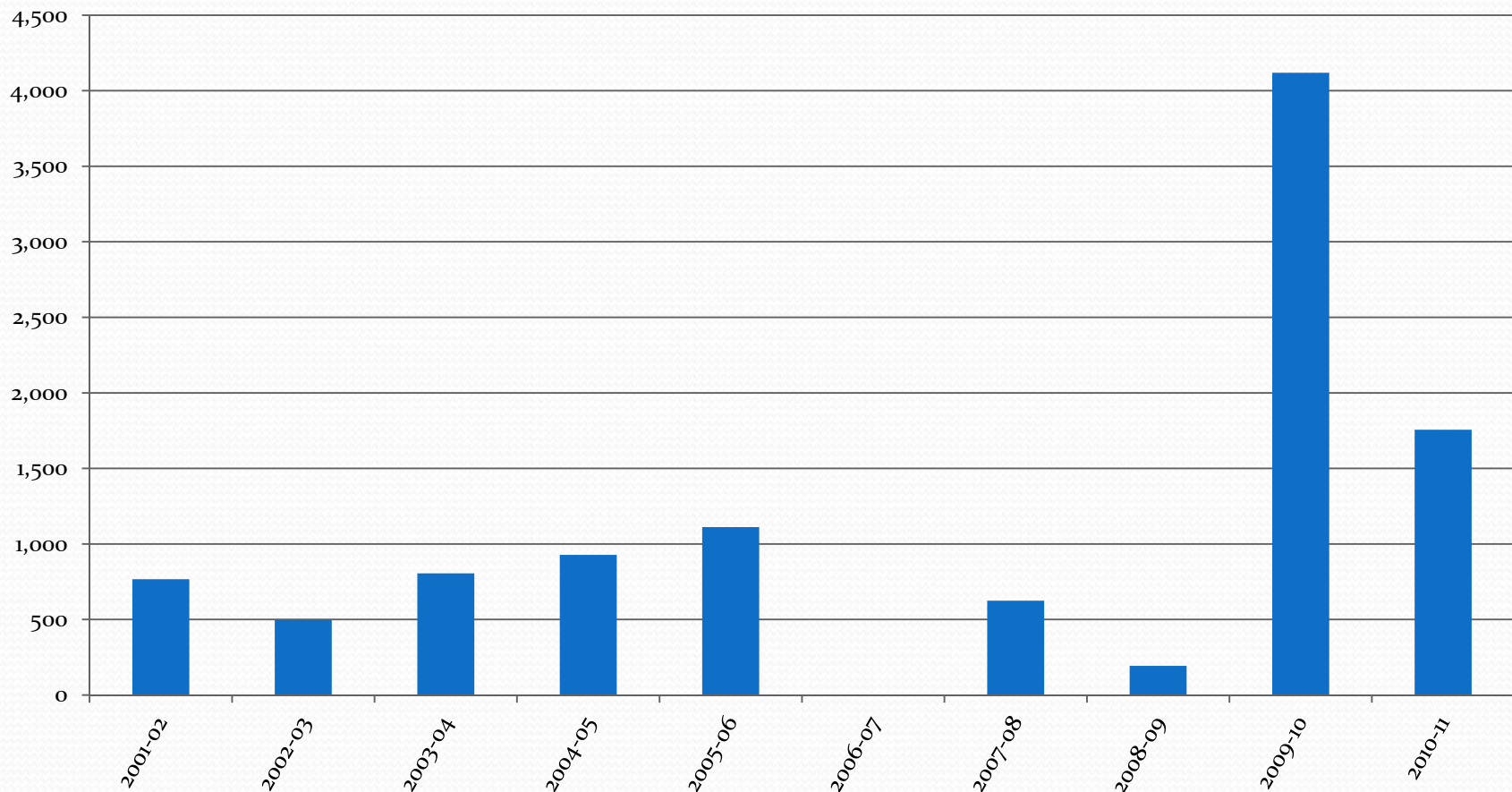
Steelhead Angler Trips – Mainstem and Tributaries



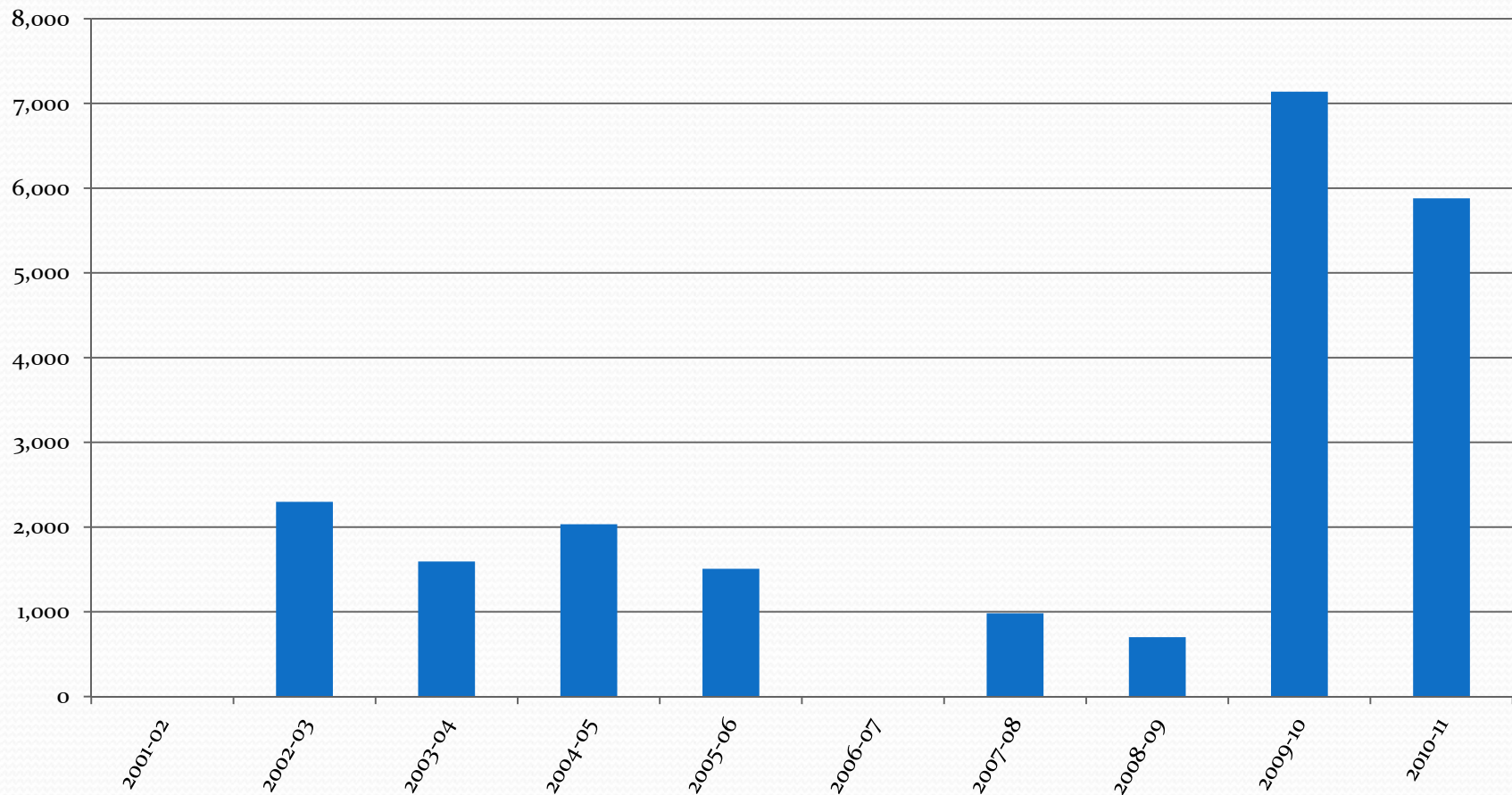
Upper Columbia Steelhead Harvest Mainstem Only



Steelhead Harvest in the Okanogan/Similkameen Rivers



Steelhead Harvest in the Methow River

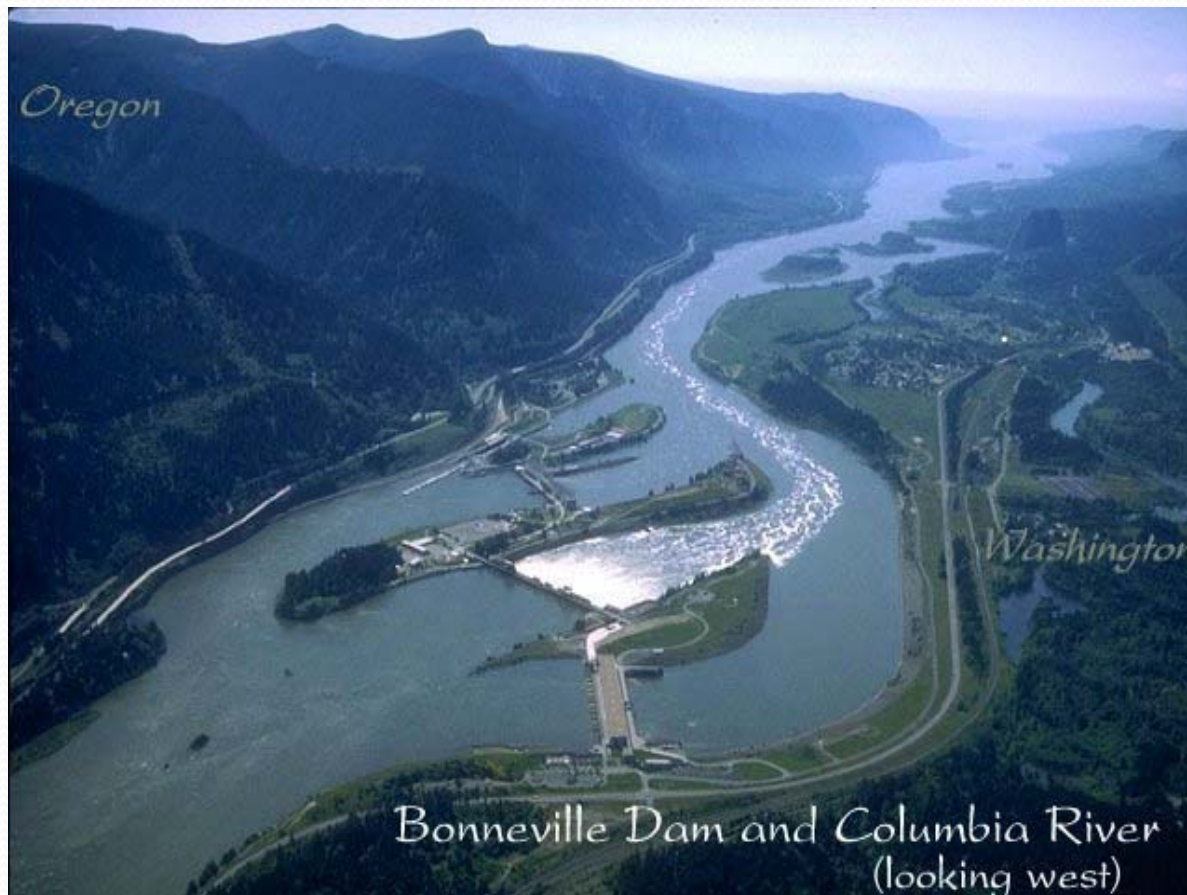


Fall Chinook Harvest Summary

2009-2011 Average

- Conservation objectives for Upriver Bright Chinook
 - McNary escapement of 154,800 compared to goal of 60,000
 - Snake River Wild harvest rate of 10.7% compared to limit of 10.5%
 - Lower Columbia tule exploitation rate of 36.7% compared to limit of 37.7%
- Total sport harvest – 137,500
 - Mainstem (includes Hanford) – 126,200
 - 65% below Bonneville (Buoy 10 and mainstem)
 - Tributaries – 11,200
- Total commercial harvest – 172,000
 - Mainstem – 116,500
 - SAFE – 55,600

BREAK



Spring Season Fisheries



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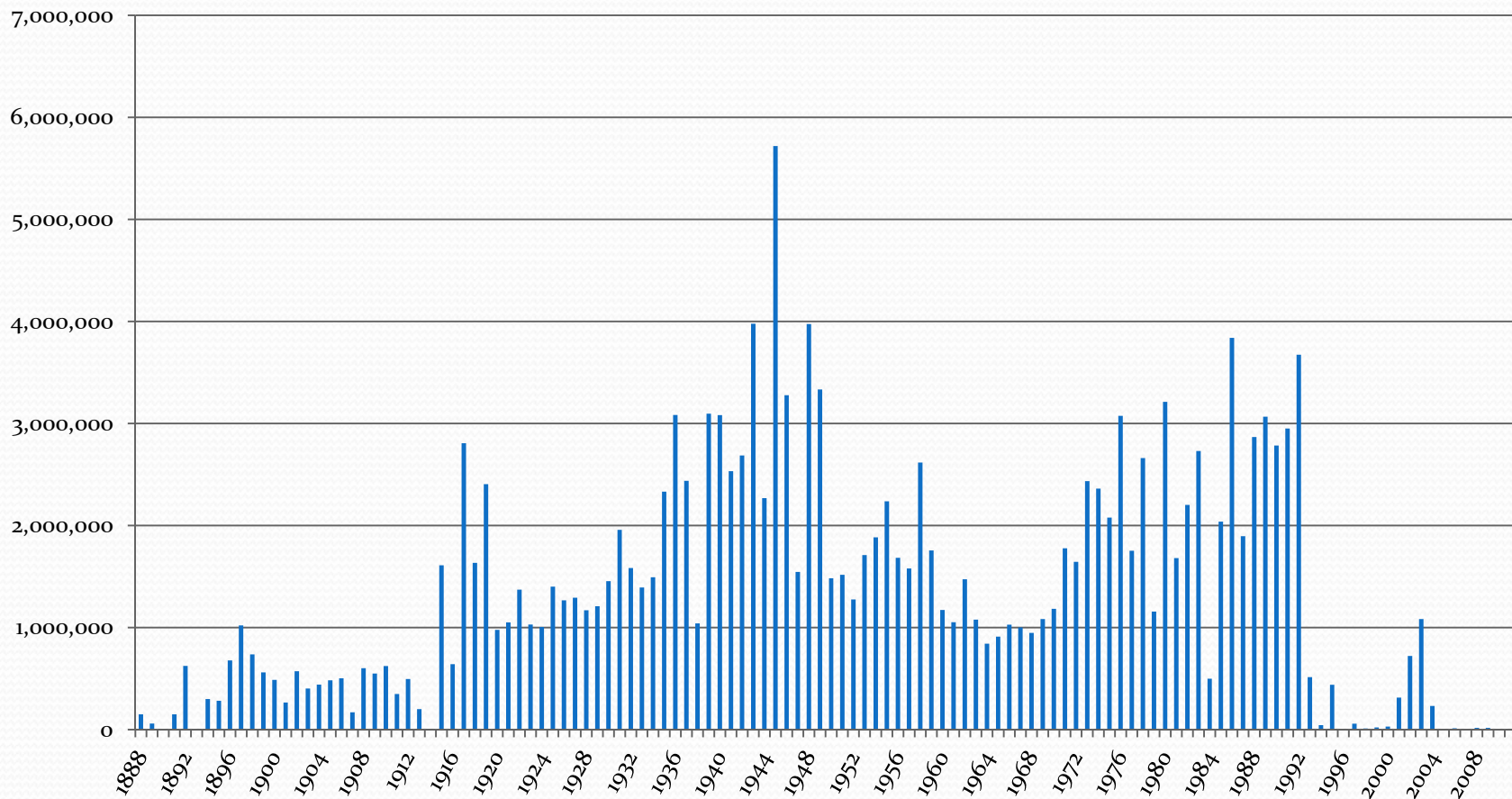
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Smelt Fisheries

- Prior to 1986 commercial fisheries open year round
 - 1995-2010 – December through March with in-season closures
 - 2011 – Closed
- Sport fisheries were open year round until mid 1990s
- Joint WA/OR Eulachon Management plan
 - Finalized in 2001
 - Three fishery levels



Commercial Smelt Landings



Current Landscape

- Listed as threatened under the ESA – 2010
- Sport and commercial fisheries closed
- Some research activities by the states





Spring Chinook Fisheries

- Below Bonneville Dam
 - Sport/Commercial/SAFE/Tributaries
- Bonneville Dam to McNary Dam
 - Sport/Tribal/Tributaries
- Snake River
 - Sport
- Upper Columbia
 - McNary to Priest Rapids
 - Ringold/Yakima/Wanapum
 - Priest Rapids to Chief Joe
 - Icicle sport/tribal
 - Future – Wenatchee/Methow/Mainstem



Spring Management

- ESA Listed Stock Impact Guidelines
 - Willamette Spring Chinook – 15%
 - Upriver Spring Chinook – 0.5%-2.7%
 - Lower Columbia Winter Steelhead – 2%
 - Willamette Winter Steelhead – 2%
- Commission allocation policy
 - Sharing of ESA impacts – sport/commercial
 - *U.S. v OR* catch balance
- Management Approach
 - Mark-selective fishery regulations
 - Time/Area closures

Washington Fish and Wildlife Commission Allocation Policy

- Sport/Commercial ESA impact allocation based on matrix (WA and OR Fish and Wildlife Commissions)
 - Shares change based on run size of upriver spring Chinook and Willamette spring Chinook
 - Sport share ranges from 50%-80%
 - Commercial share ranges from 15%-45%
 - Sport allocation is shared:
 - 75% of impacts below Bonneville Dam
 - 25% of impacts above Bonneville Dam
 - Includes Snake River sport and Wanapum tribal fisheries

Spring Management Period Harvest Rate Schedule-U.S. v. Oregon

Total Upriver Run Size	Snake River Natural Run Size	Treaty Indian Harvest Rate	Treaty Indian Catch Guideline	Non-Indian Harvest Rate	Non-Indian Mortality Guideline	Total Harvest Rate
82,000	8,200	7.4%	6,068	1.6%	6,068	9.0%
109,000	10,900	8.3%	9,047	1.7%	9,047	10.0%
141,000	14,100	9.1%	12,831	1.9%	12,831	11.0%
217,000	21,700	10.0%	21,700	2.0%	21,700	12.0%
271,000	27,100	10.8%	29,268	2.2%	29,268	13.0%
326,000	32,600	11.7%	38,142	2.3%	38,142	14.0%
380,000	38,000	12.5%	47,500	2.5%	47,500	15.0%
434,000	43,400	13.4%	58,156	2.6%	58,156	16.0%
488,000	48,800	14.3%	69,784	2.7%	69,784	17.0%



Historical Spring Chinook Fisheries

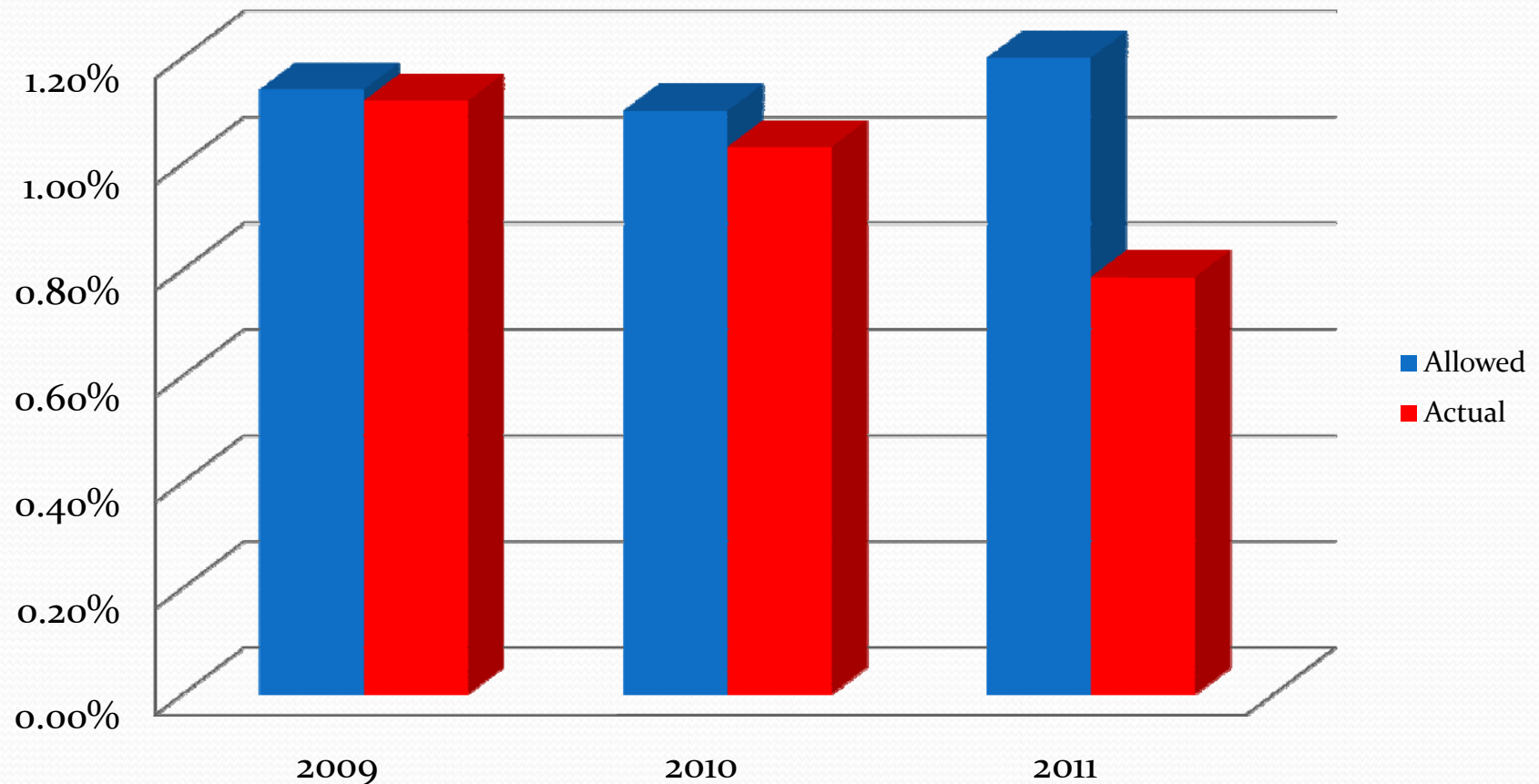
- Prior to 1977 upriver spring Chinook targeted
- 1978-2000 (avoid upriver spring Chinook)
 - Commercial fisheries ended March 10
 - Recreational fisheries ended March 31
 - All fisheries below mouth of the Willamette
- 1990s
 - ESA listings
 - *U.S. vs. Oregon* Agreements address ESA
 - Small run sizes
 - Little or no mainstem fishing in mid to late 1990s

Historical Spring Chinook Fisheries

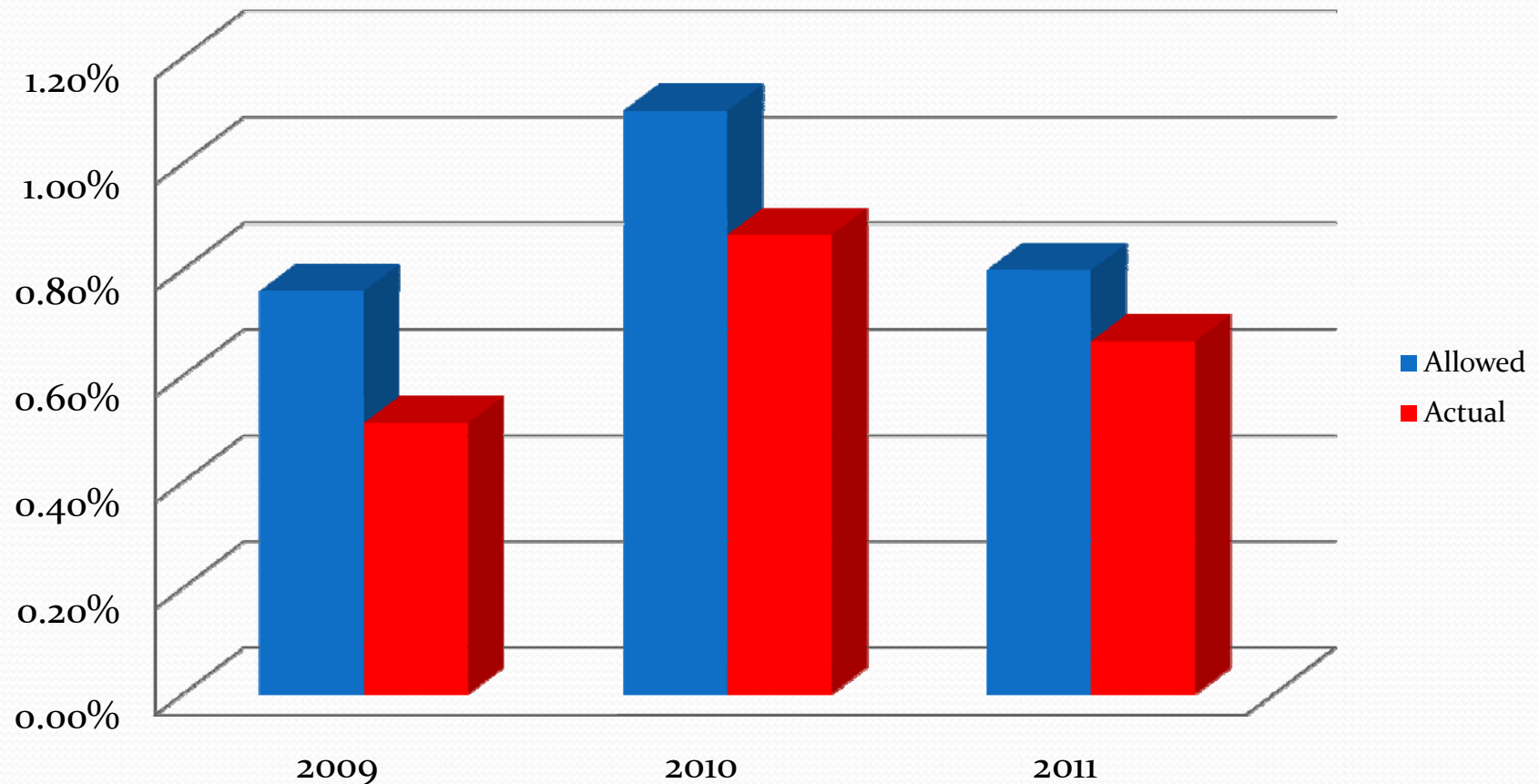
- 2001 – New agreements, mass-marking, large upriver forecast
- Fisheries expanded in time and area
 - Fishing occurs in months of April-June
 - Area expanded above the Willamette and above Bonneville Dam Including Snake River



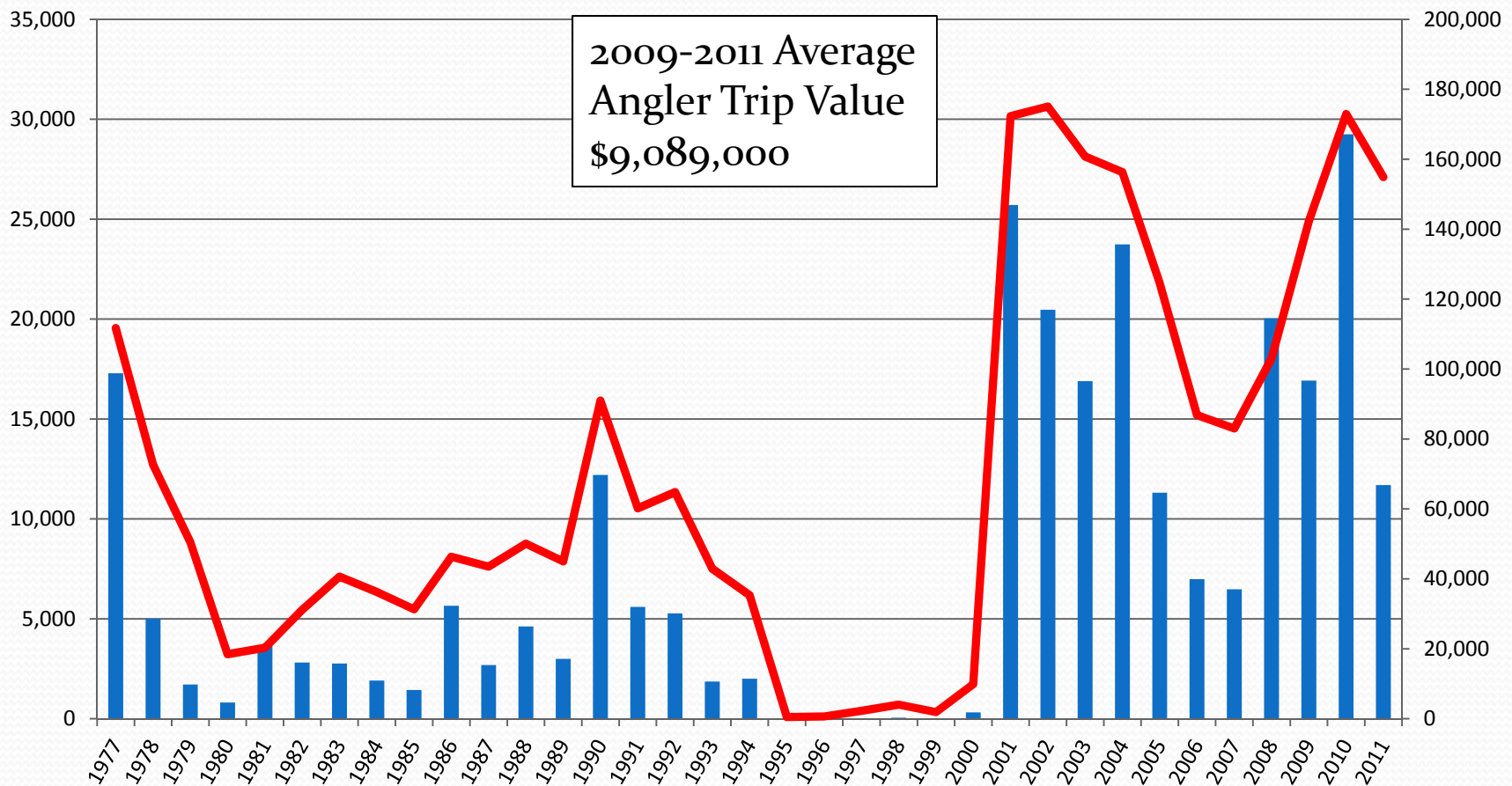
Upriver Spring Chinook ESA Impact Allocation – Sport Fisheries



Upriver Spring Chinook ESA Impact Allocation – Commercial Fisheries



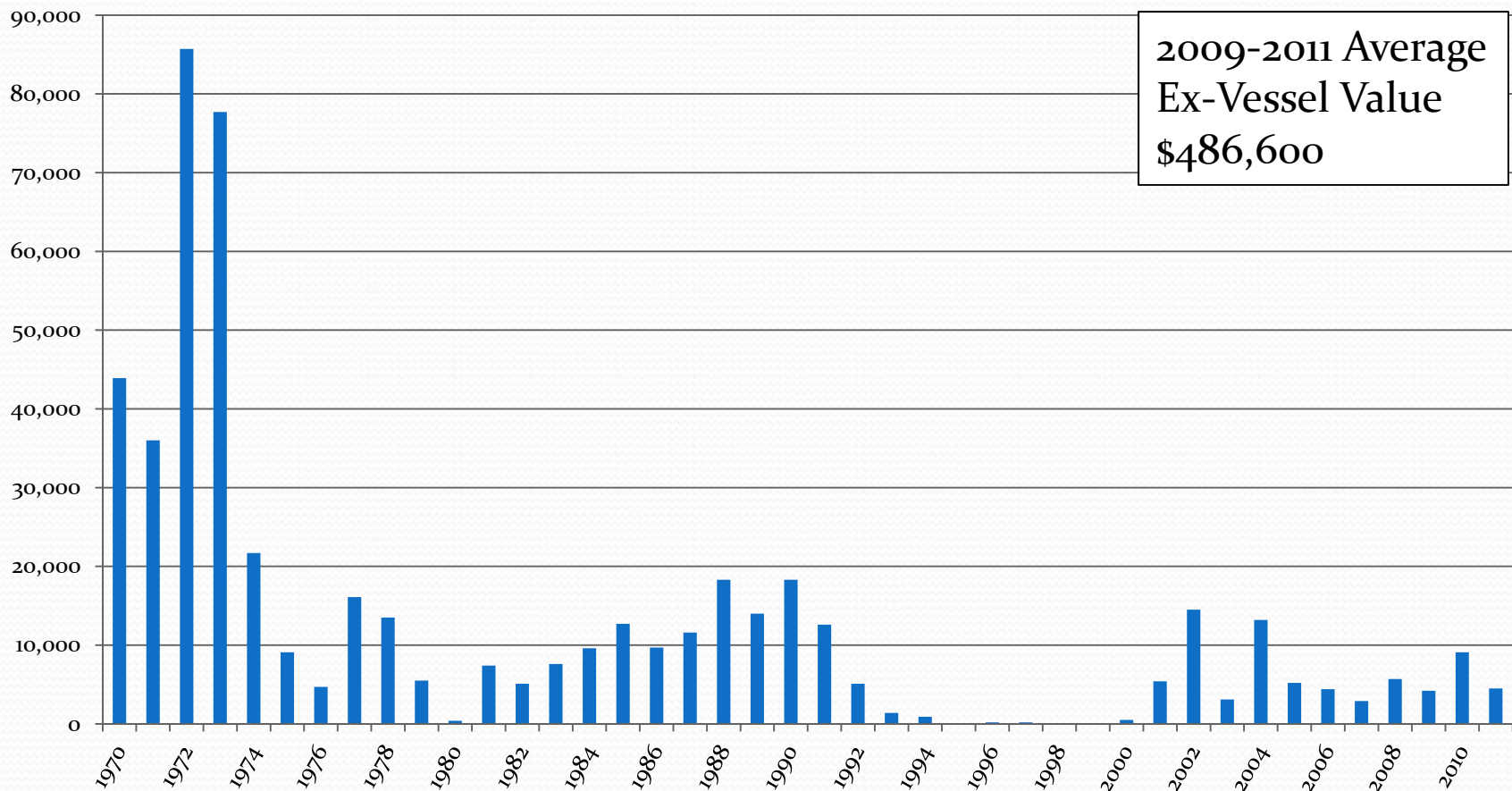
Spring Chinook Sport Harvest and Angler Trips Below Bonneville Dam



Current Spring Chinook Sport Fishery Below Bonneville Dam

- Opens January 1 through March 31 below I-5 Bridge
- Preseason plan developed with Advisor Group
- Fishery occurs upstream to Bonneville Dam
 - End date in early to mid-April
- In-season management
 - Catch updates and stock composition
 - Potential extensions
- Run size update in mid-May
 - Fisheries in late May through June 15

Non-Indian Mainstem Spring Chinook Commercial Harvest

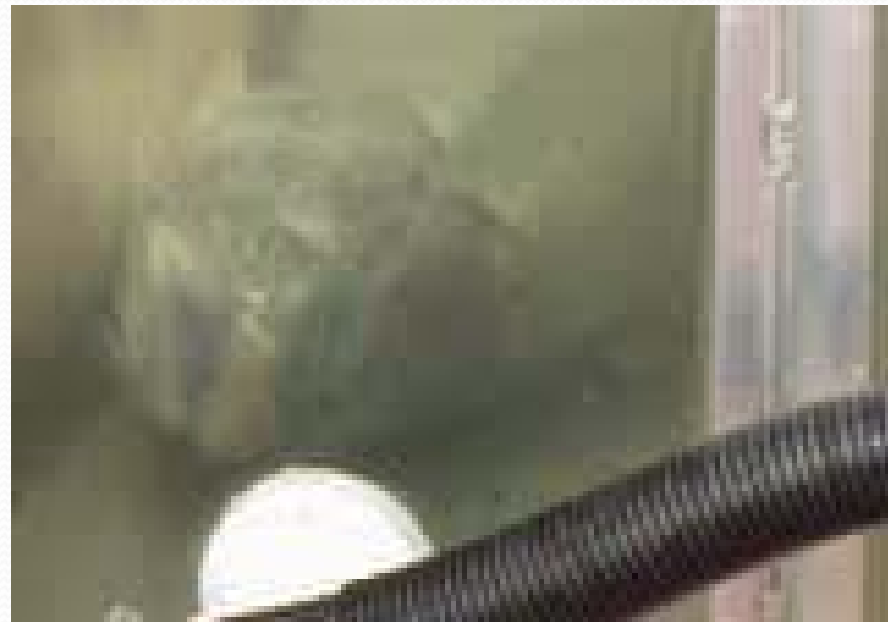
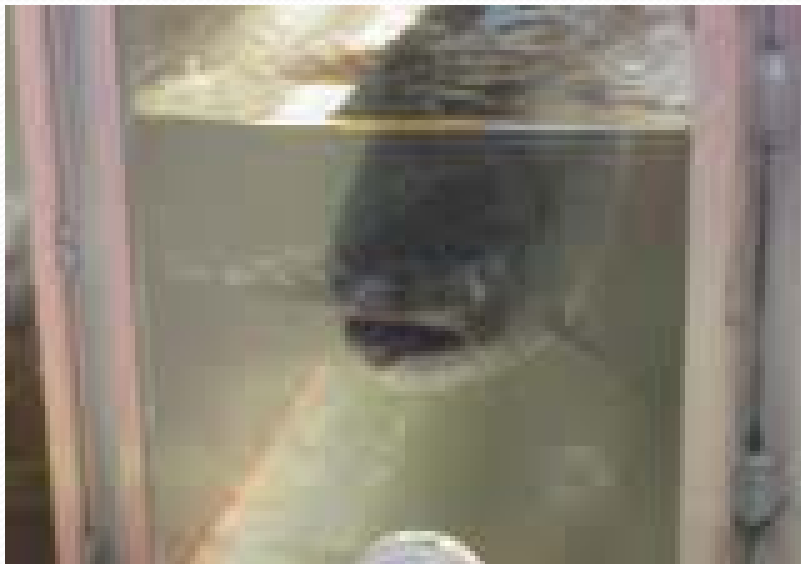


Spring Chinook Commercial Fisheries

- Highly Regulated
 - Tangle nets, recovery boxes, training
 - Recovery box – must have two chambers or two boxes
 - Size specifications
 - Must pump 16-20 gallons per minute
 - Shorter nets, short soak times
 - Red corks, lighted buoys
- On-board monitoring
 - Provides estimates of released fish



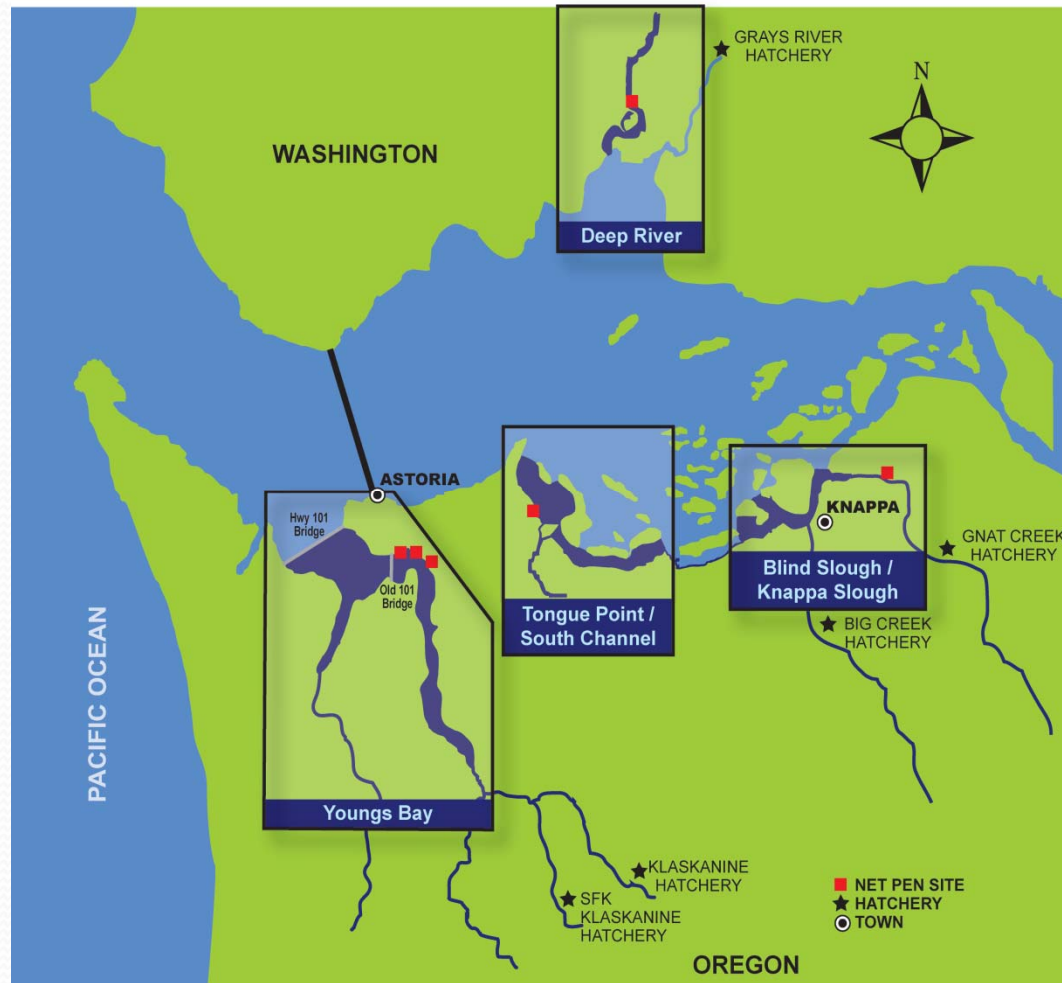
Recovery Boxes in Action



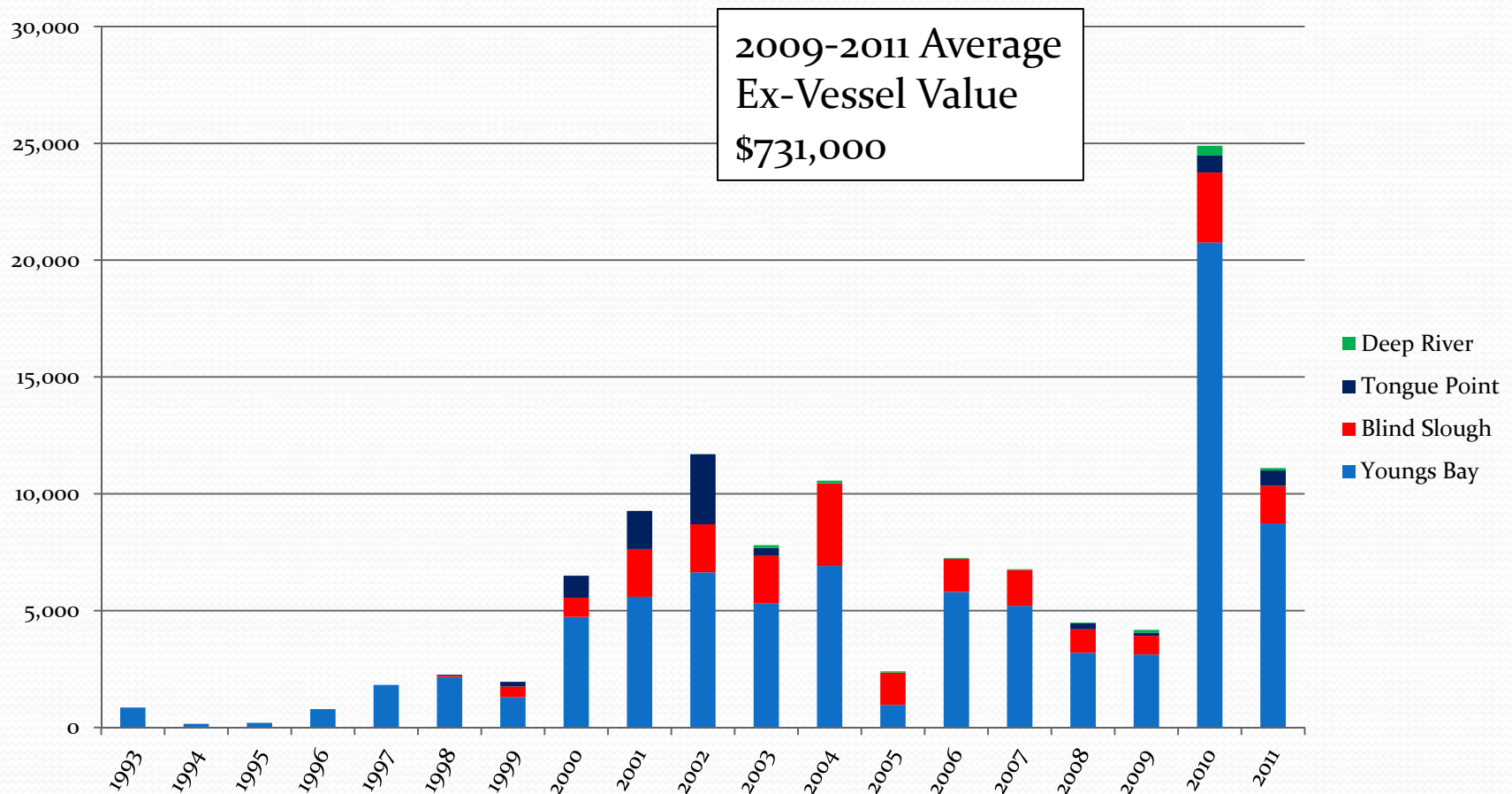
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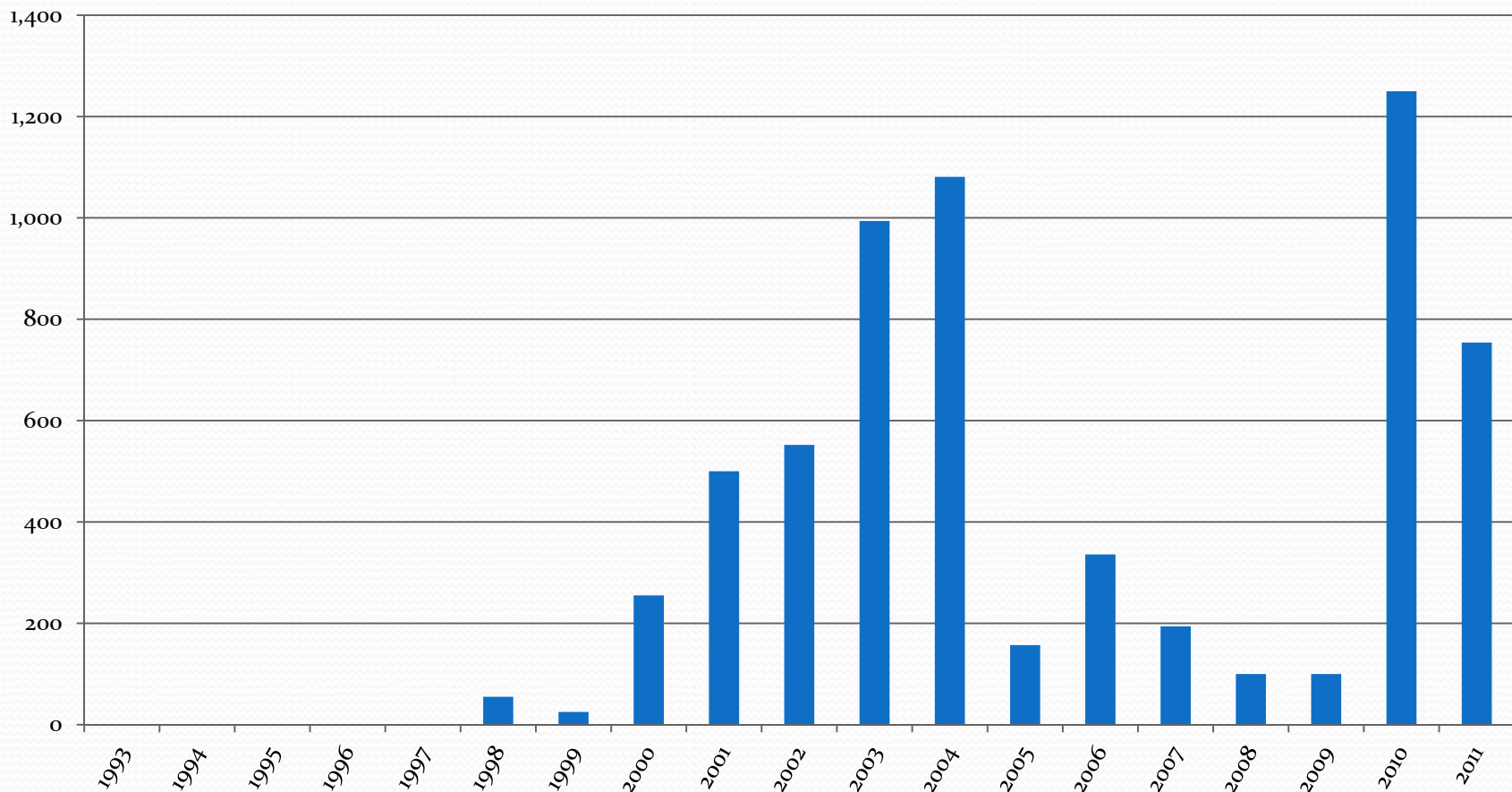
Select Area Fisheries (SAFE)



Spring Chinook Commercial Harvest – Select Areas

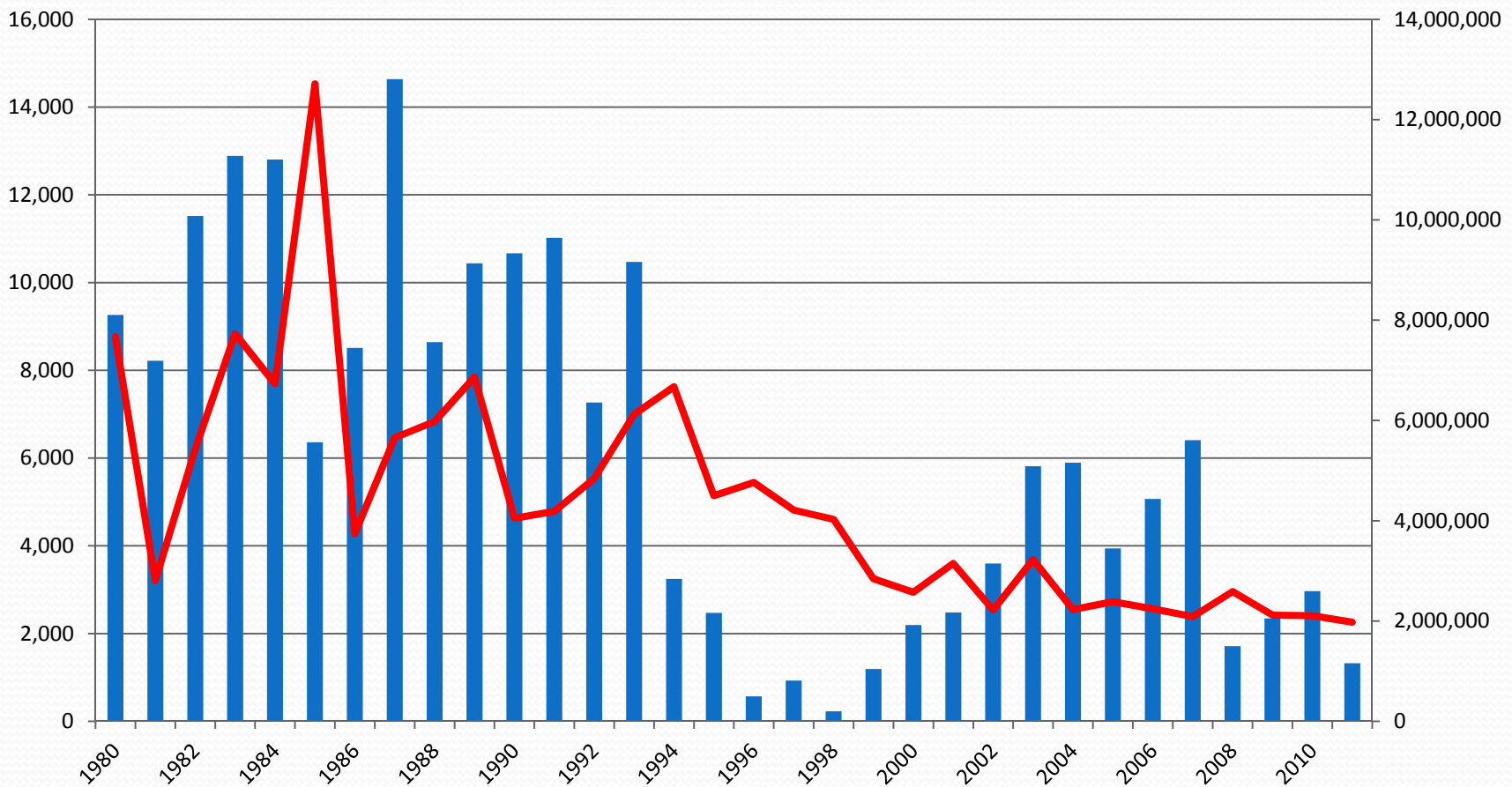


Spring Chinook Sport Harvest – Select Areas





Spring Chinook Sport Harvest and Smolt Releases – Cowlitz, Kalama, Lewis Rivers

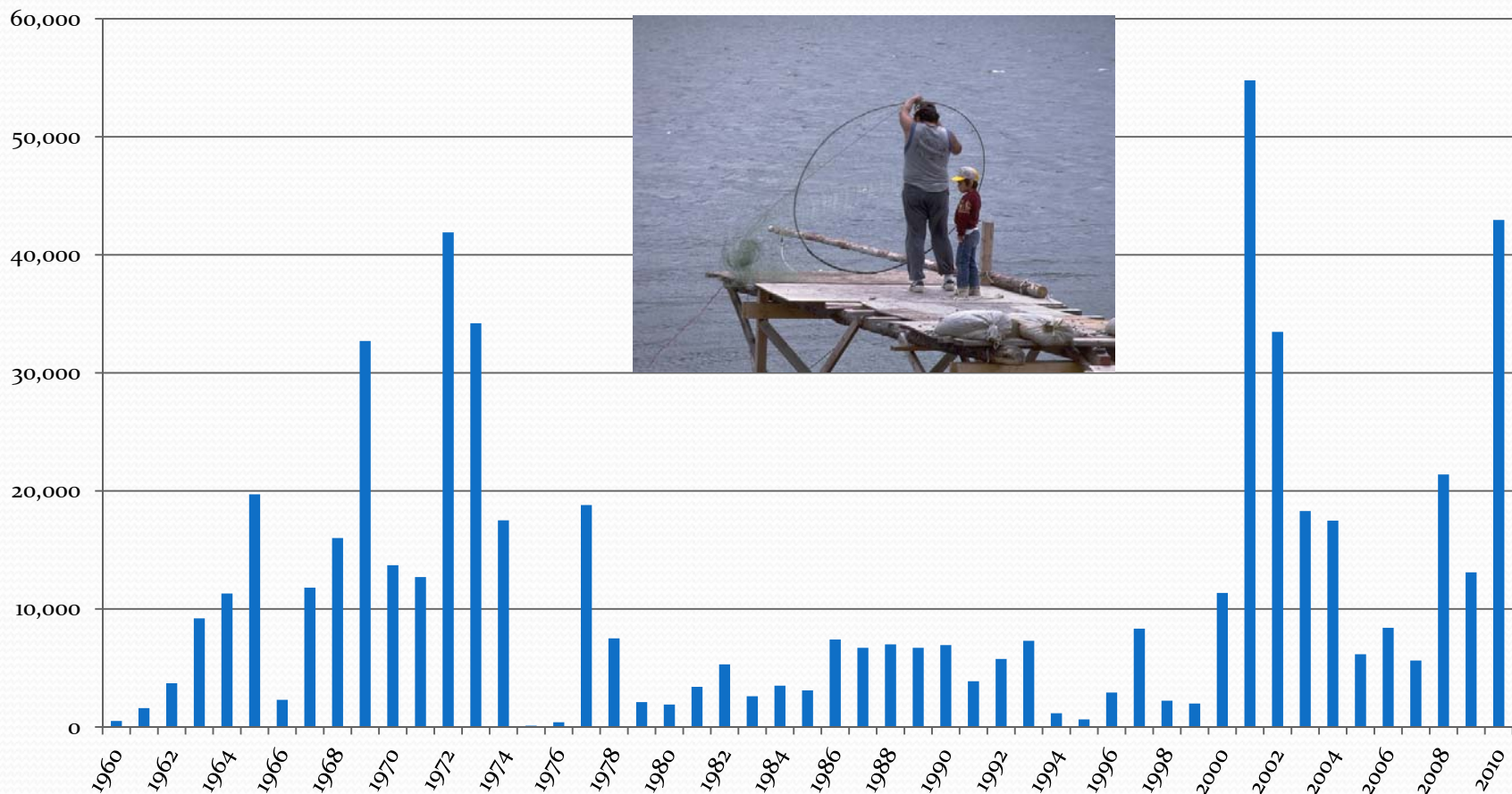


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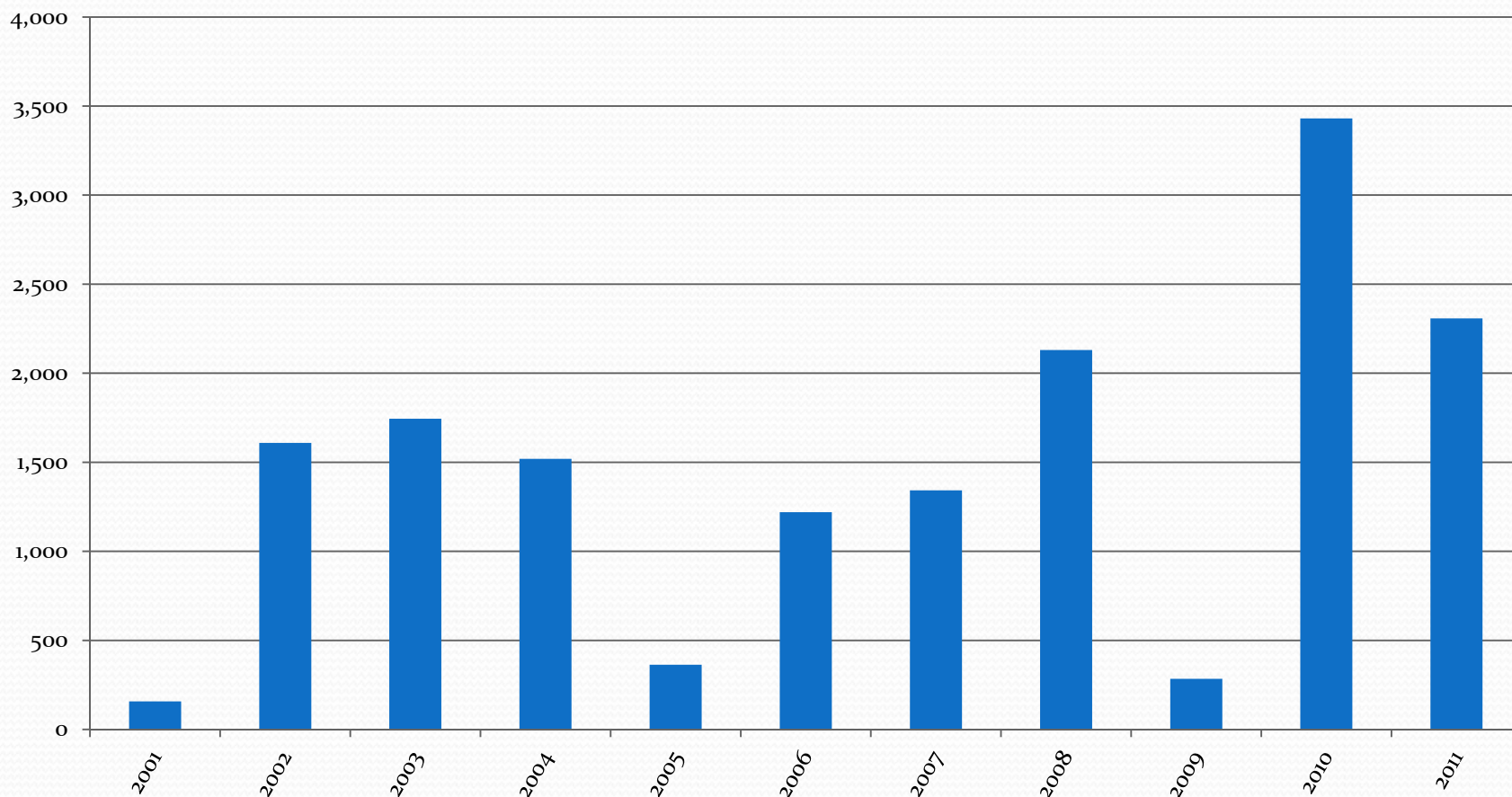
Commission Presentation
Special Workshop May 31, 2012

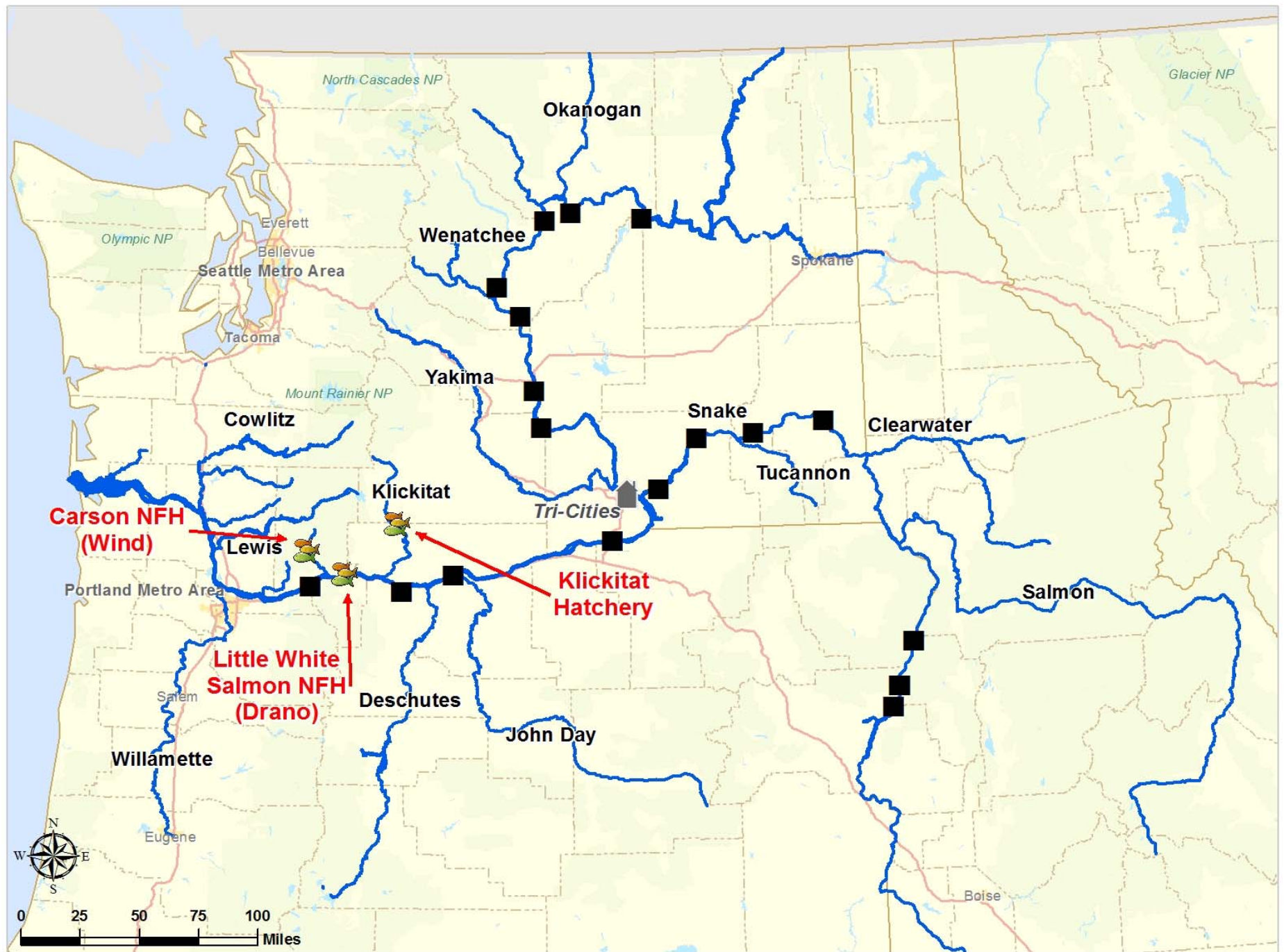


Treaty Indian Harvest of Spring Chinook

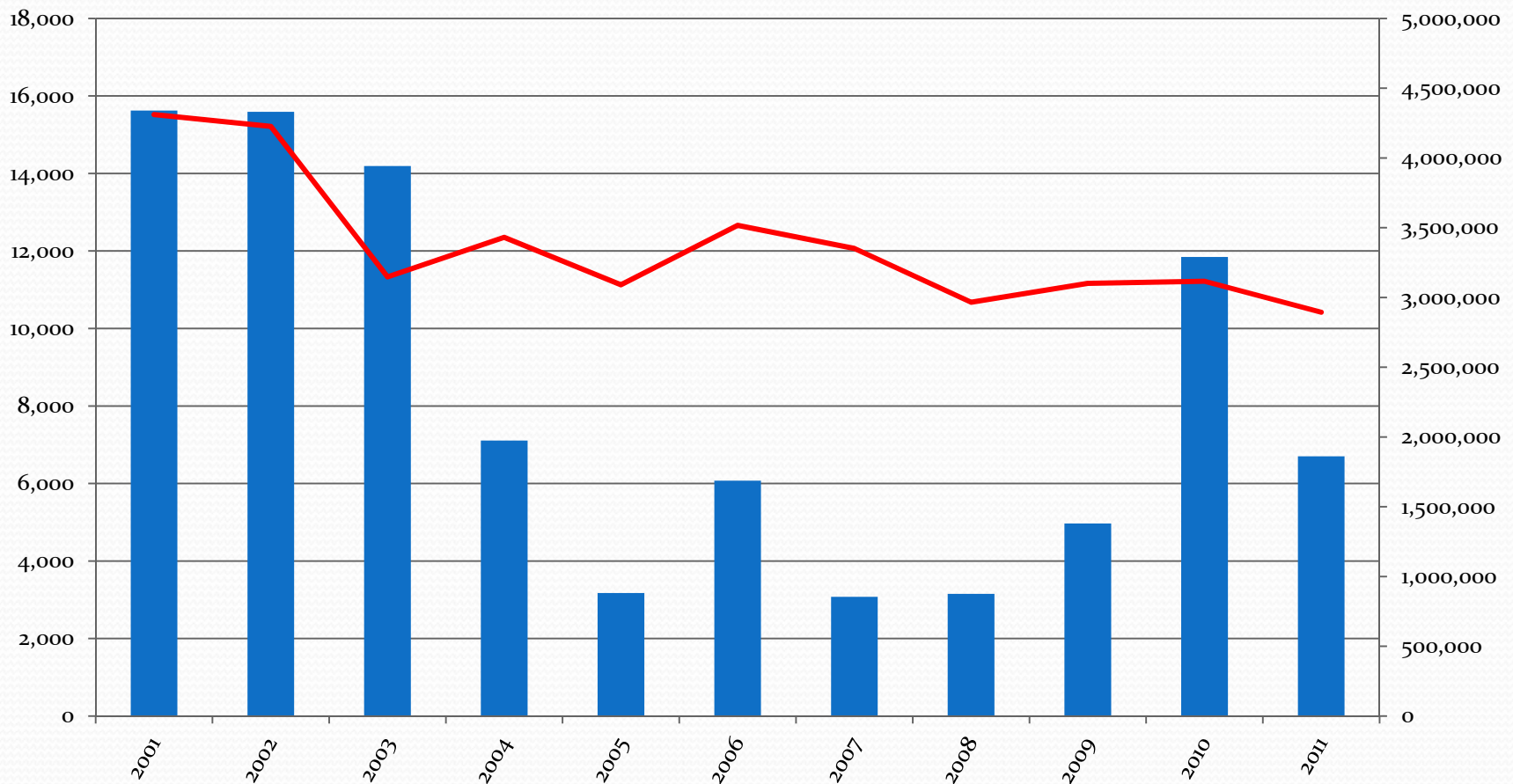


Mainstem Spring Chinook Sport Harvest Bonneville Dam to McNary Dam





Spring Chinook Sport Harvest and Smolt Releases in Bonneville Pool Tributaries



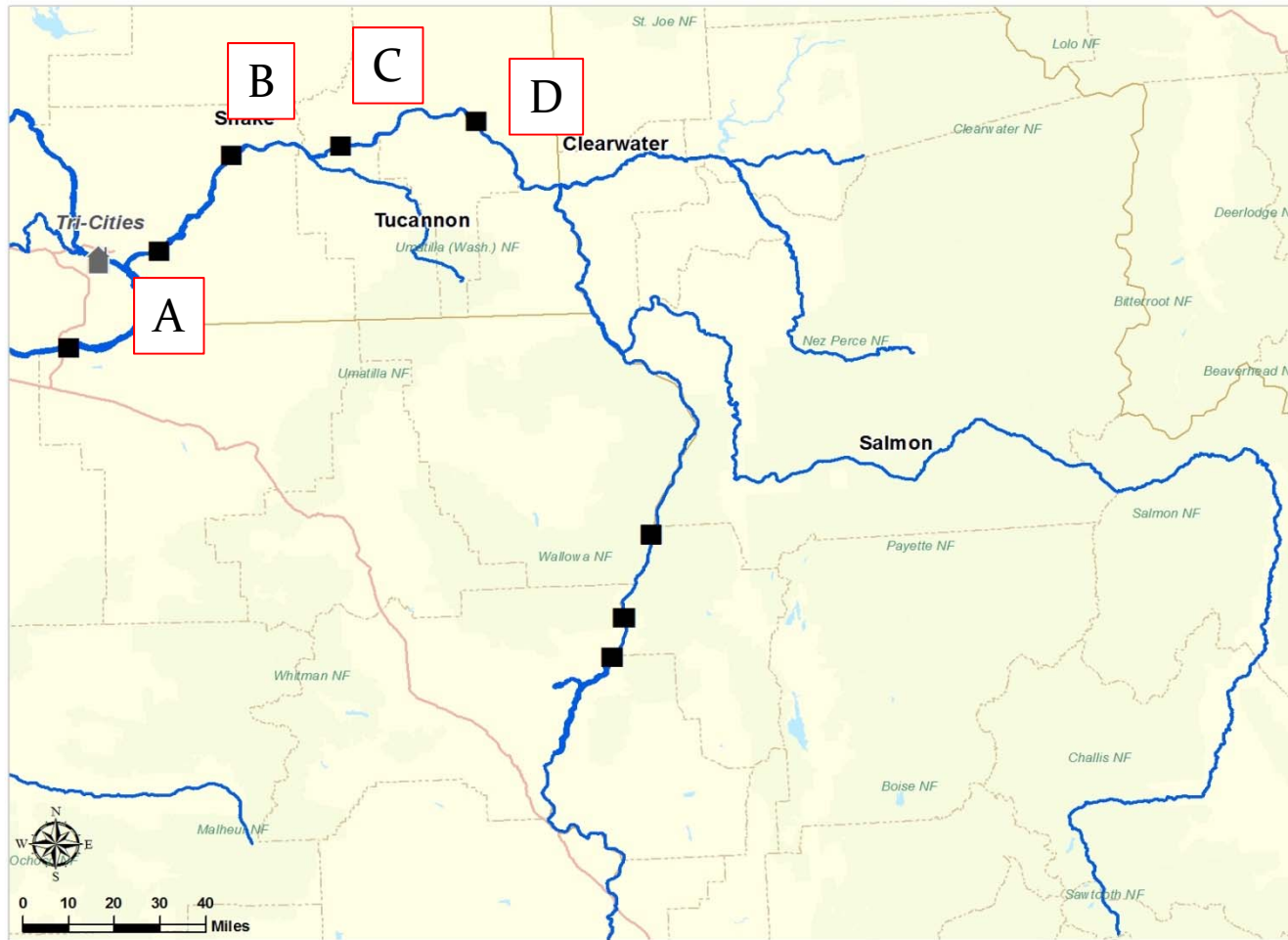


Snake River Spring Chinook Fishery

- Small zones open annually (below IHR, LGO, LGR & Clarkston area) – by emergency rule
- Small harvest and ESA allocations that are linked with lower Columbia River fisheries
- Increasing interest, participation & harvest
- High angler frustration with
 - Low harvest & ESA allocations
 - Short, unpredictable seasons & early closures most years



Snake River Fishery



WA Dept. of Fish and Wildlife, Information subject to changes and amendments over time

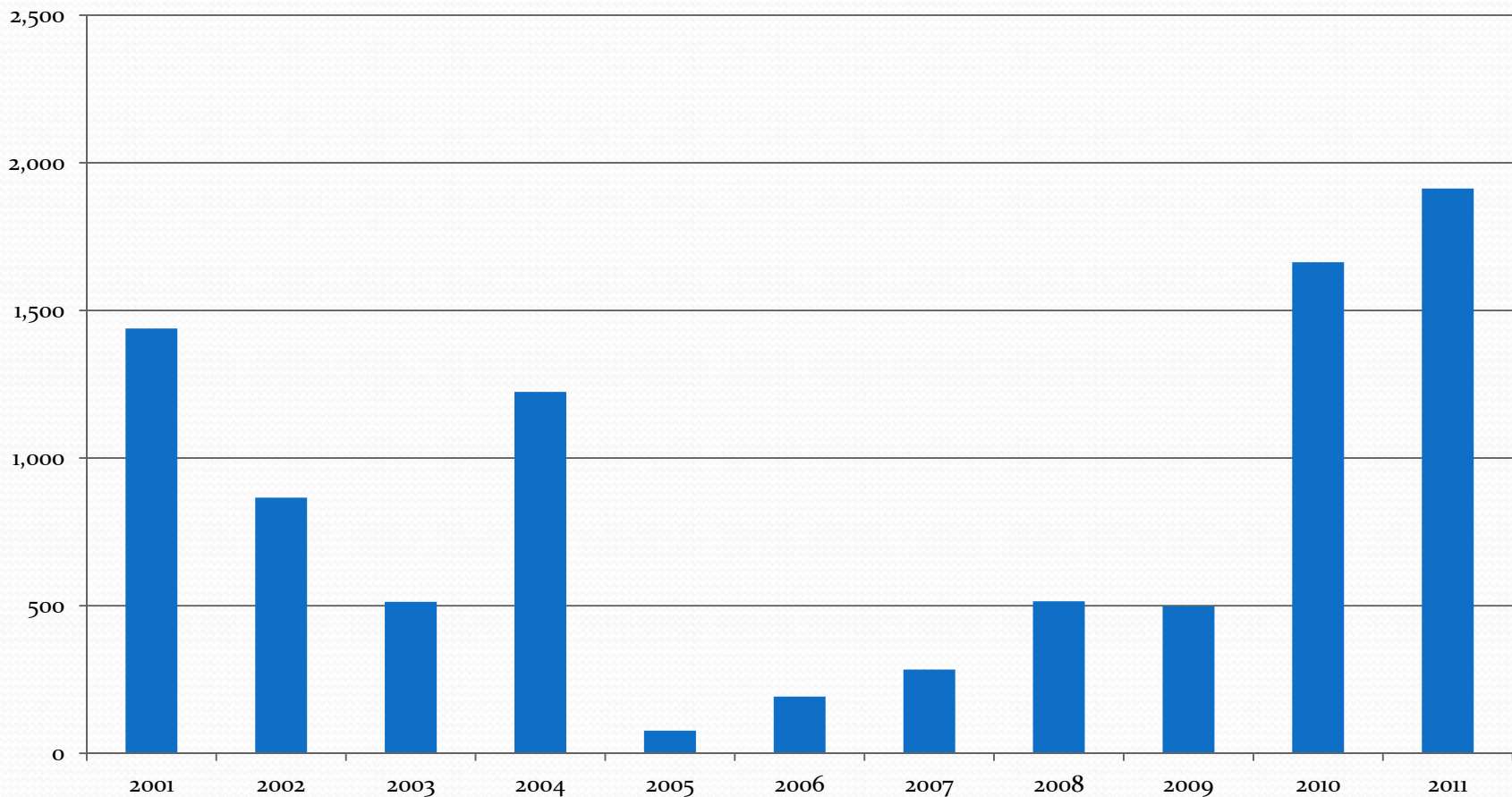
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Snake River Spring Chinook Fishery

- Angler effort, catch rates and harvest increased dramatically in 2011 & 2012 (peaks of < 5 hrs per fish)
- Effort has been 50,000-76,500 hrs annually
 - 8,000-11,000 angler trips the last 3 yrs (2010-2012)
- The economic value of this fishery has been \$3.5 - 4.8 million annually (2010-2012)

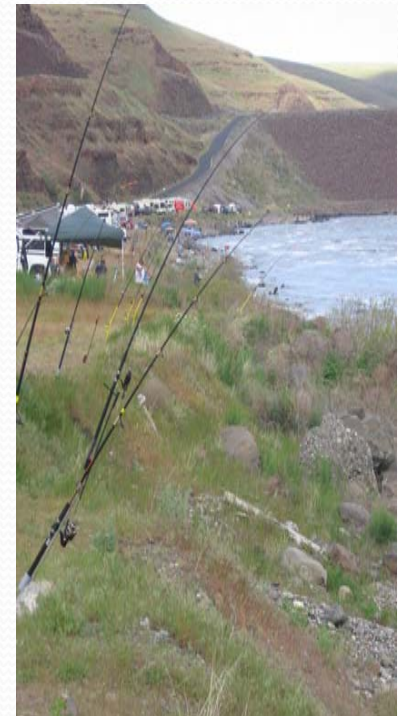


Spring Chinook Sport Harvest in the Lower Snake River



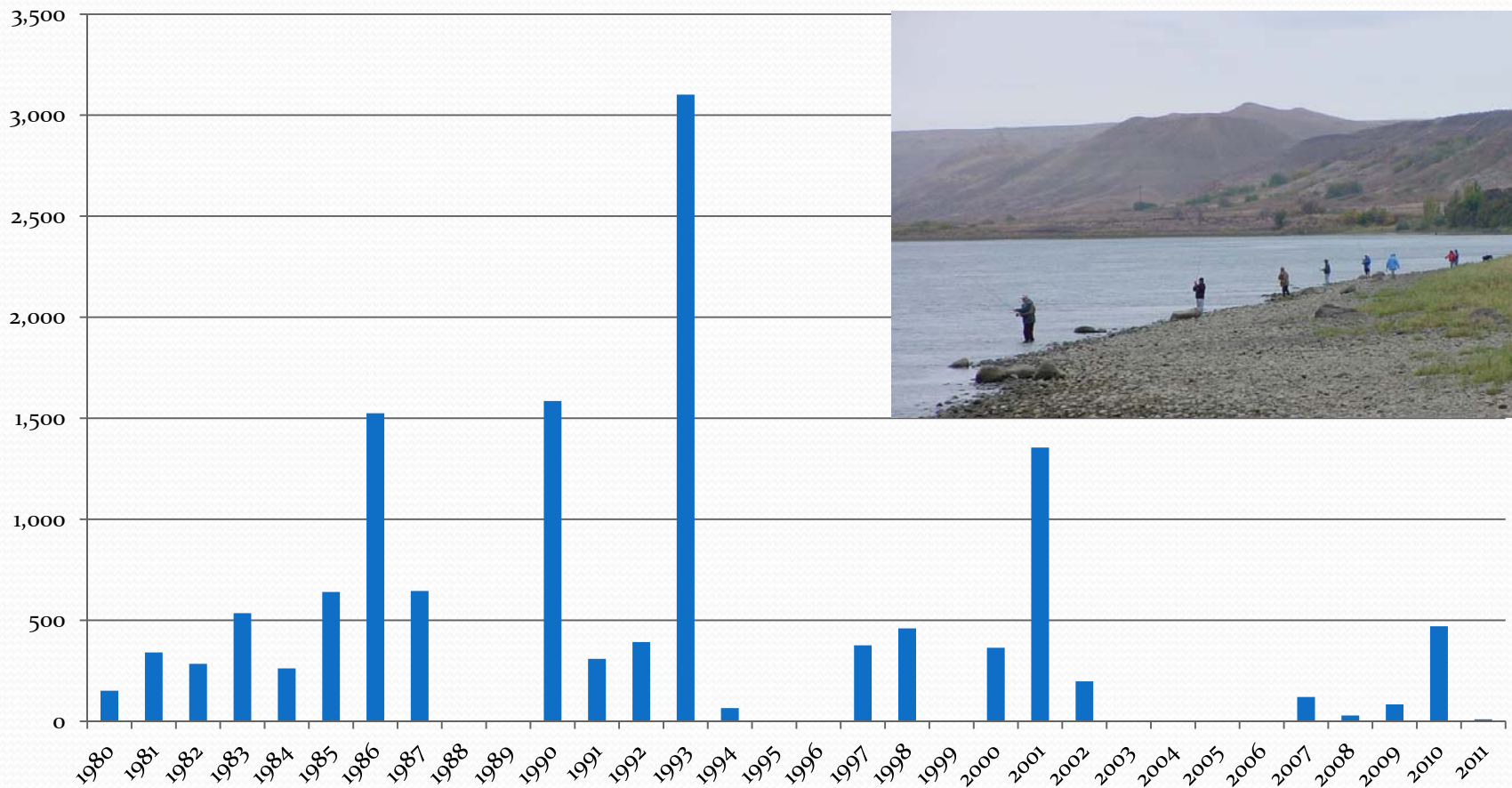
Snake River Spring Chinook Fishery

- In 2013, changes to consider:
 - Reduce the harvest rate
 - Extend the length of the fishery after fish arrive in the area
 - Allow more opportunity in the upper two zones for more equitable harvest in the Snake River
 - Eastside public participation & Involvement for setting allocation levels for the Snake River for 2014 fisheries





Spring Chinook Sport Harvest in the Ringold Area Bank Fishery

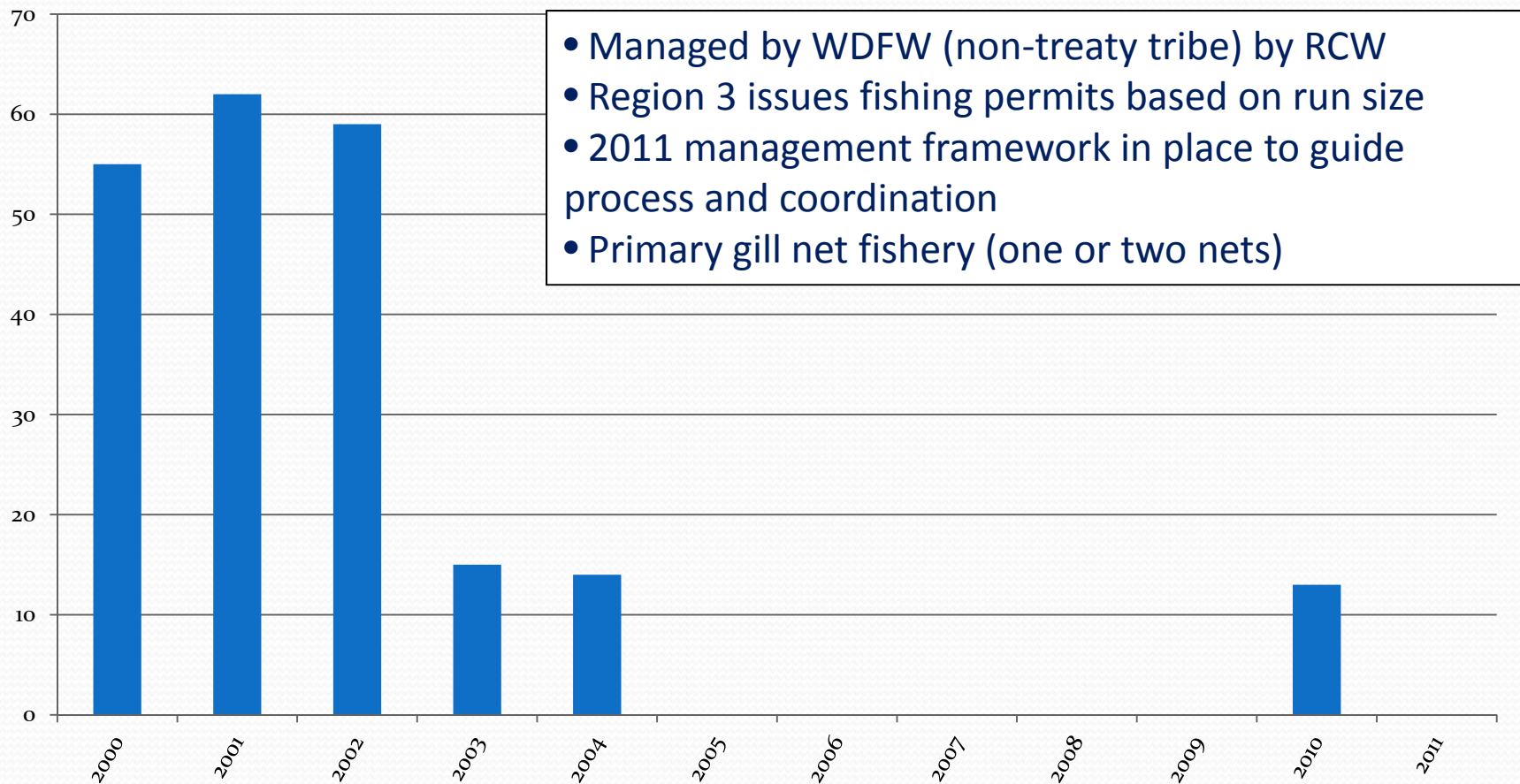




Ringold Spring Chinook Fishery

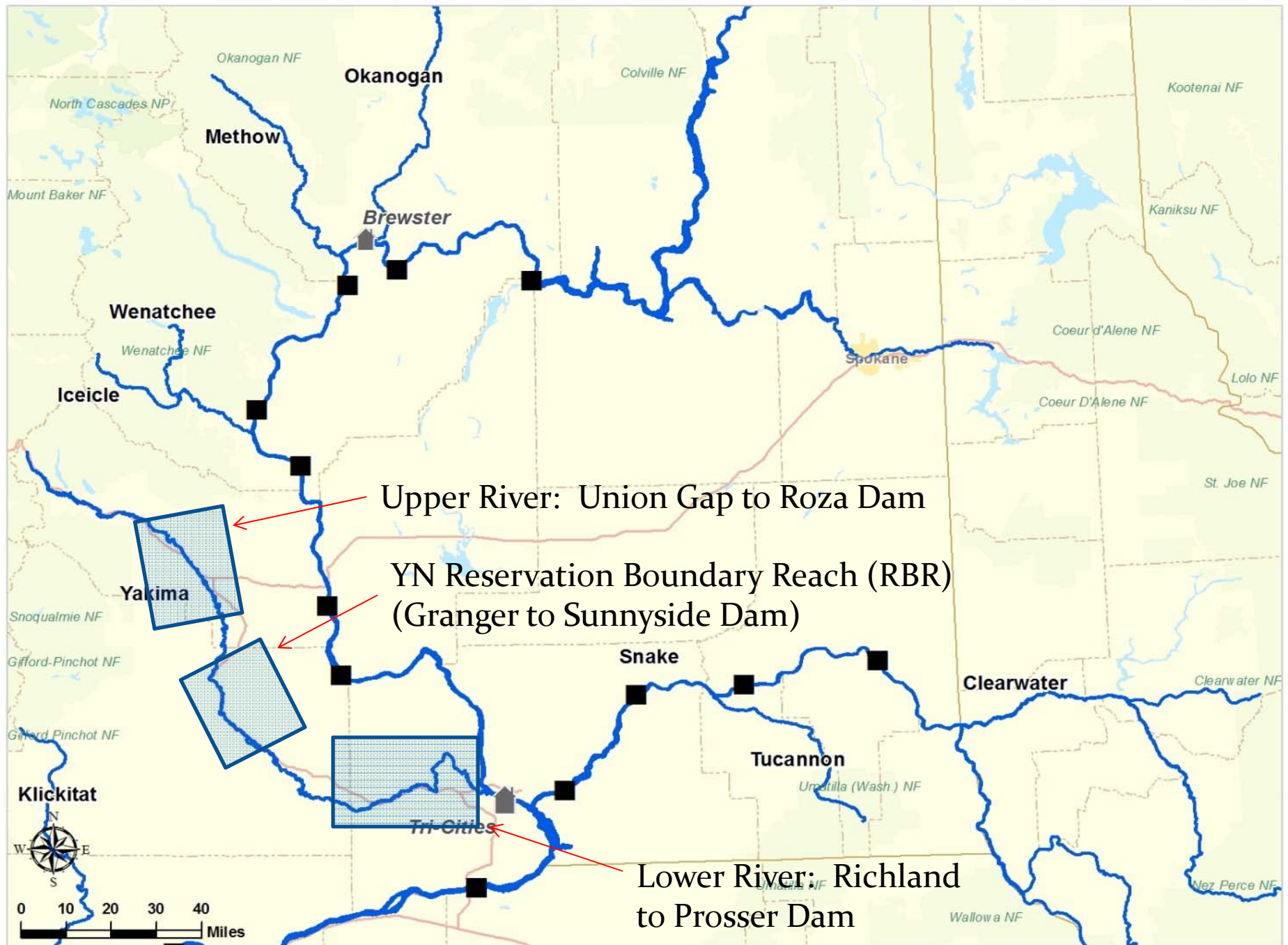
- Unique fishery occurring in mainstem Columbia
 - Fishing area restricted to bank only near hatchery stream
- Fishery was supported by production at Ringold Springs Rearing Facility (500K – 1M smolts/yr)
- Mitchell Act funded until FFY 2000
- Sporadic production (2003, 2004, 2006) following loss of Mitchell Act dollars
- Last fishery in 2011
 - Permanent rule opening season rescinded in 2012

Spring Chinook Harvest in the Wanapum Tribal C&S Fishery



Yakima River Spring Chinook Fishery





Upper River: Union Gap to Roza Dam

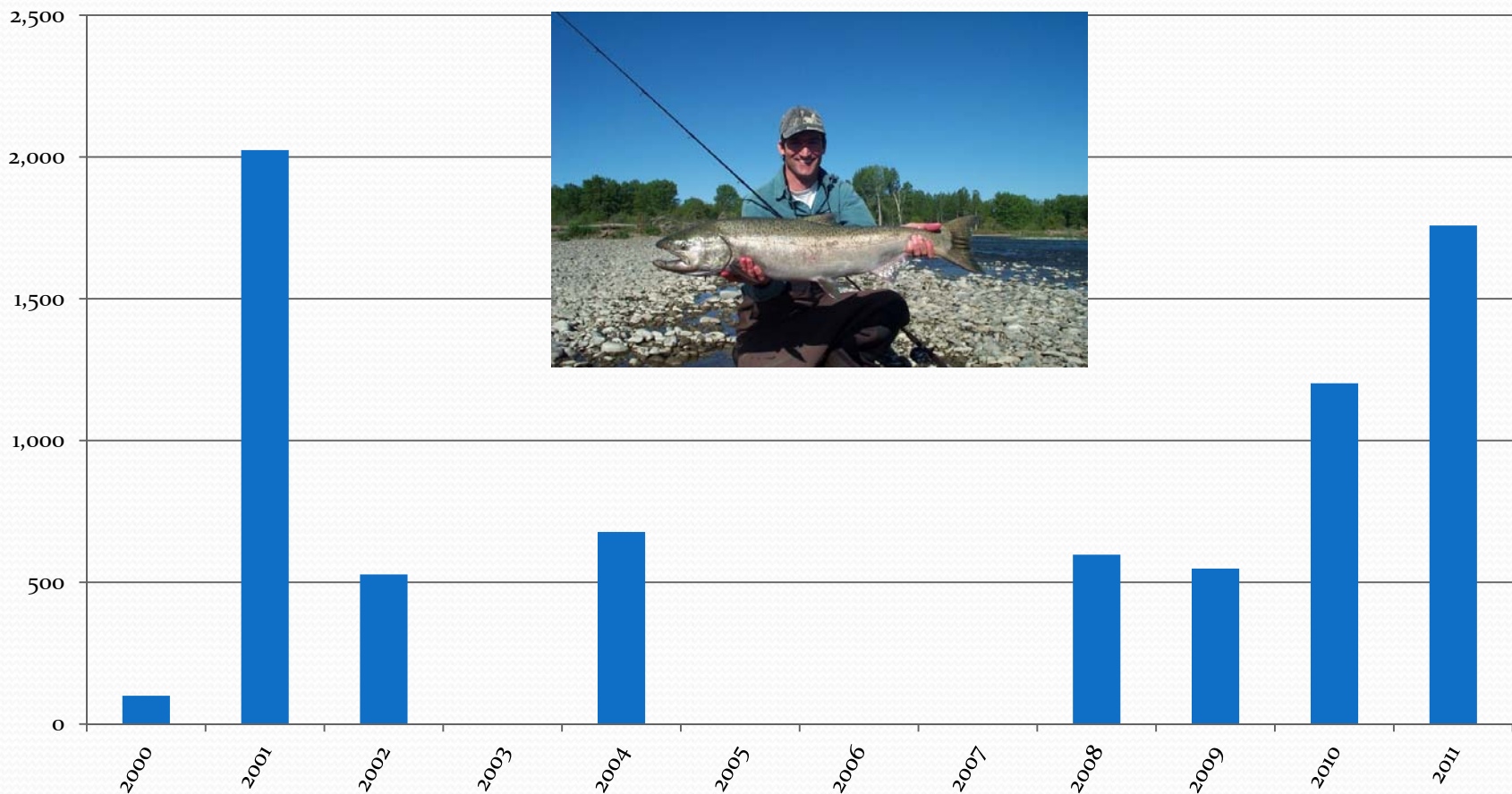
YN Reservation Boundary Reach (RBR)
(Granger to Sunnyside Dam)

Lower River: Richland
to Prosser Dam

Yakima River Spring Chinook Fishery

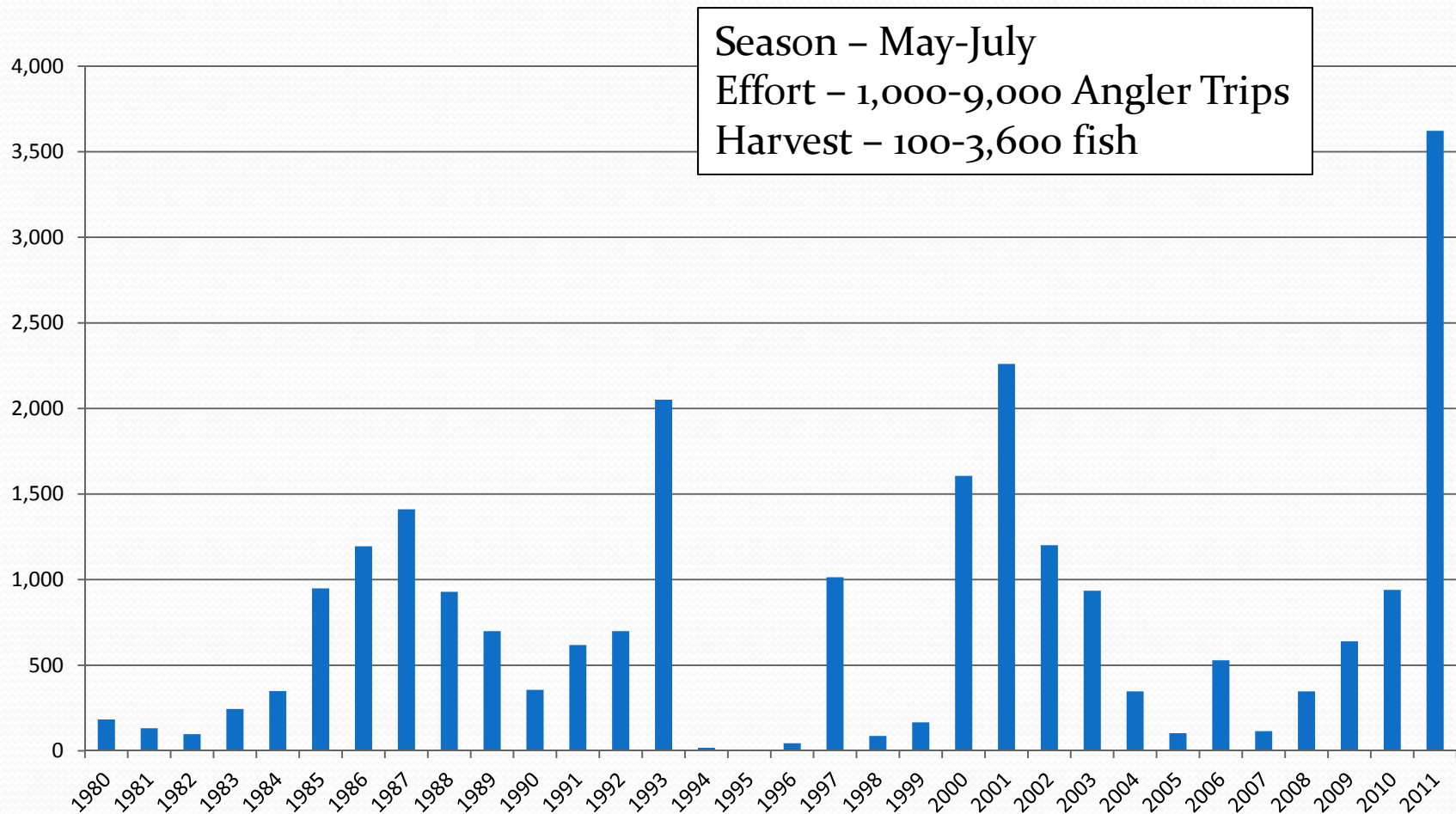
- MSF targeting Yakima-Klickitat Fisheries Project (YKFP) Cle Elum Hatchery spring chinook produced by the Yakama Nation (YN)
- Two sections opened by WDFW above and below YN Reservation: 1) Richland to Prosser and 2) Union Gap to Roza Dam
- YN has treaty-secured exclusive fishing rights in “YN Reservation Boundary Reach” from Mabton to Union Gap; WDFW annually requests YN to open RBR for non-tribal sport fishing for spring chinook; open in 2001, 2002, 2004, 2011, and 2012 (June 1 – 30)
- Open May through June (or July in upper reach if run late)

Spring Chinook Sport Harvest in the Yakima River





Spring Chinook Sport Harvest in the Icicle Creek



Upper Columbia Spring Chinook Management

- Endemic stocks ESA-listed – Endangered
 - All hatchery programs conducted under permit
 - No fisheries
- Carson stock – Leavenworth Hatchery – fishery in Icicle River
- Production – 3,153,000 total
 - Okanogan – 900,000
 - Methow – 624,000
 - Wenatchee – 420,000
 - Leavenworth NFH – 1,200,000



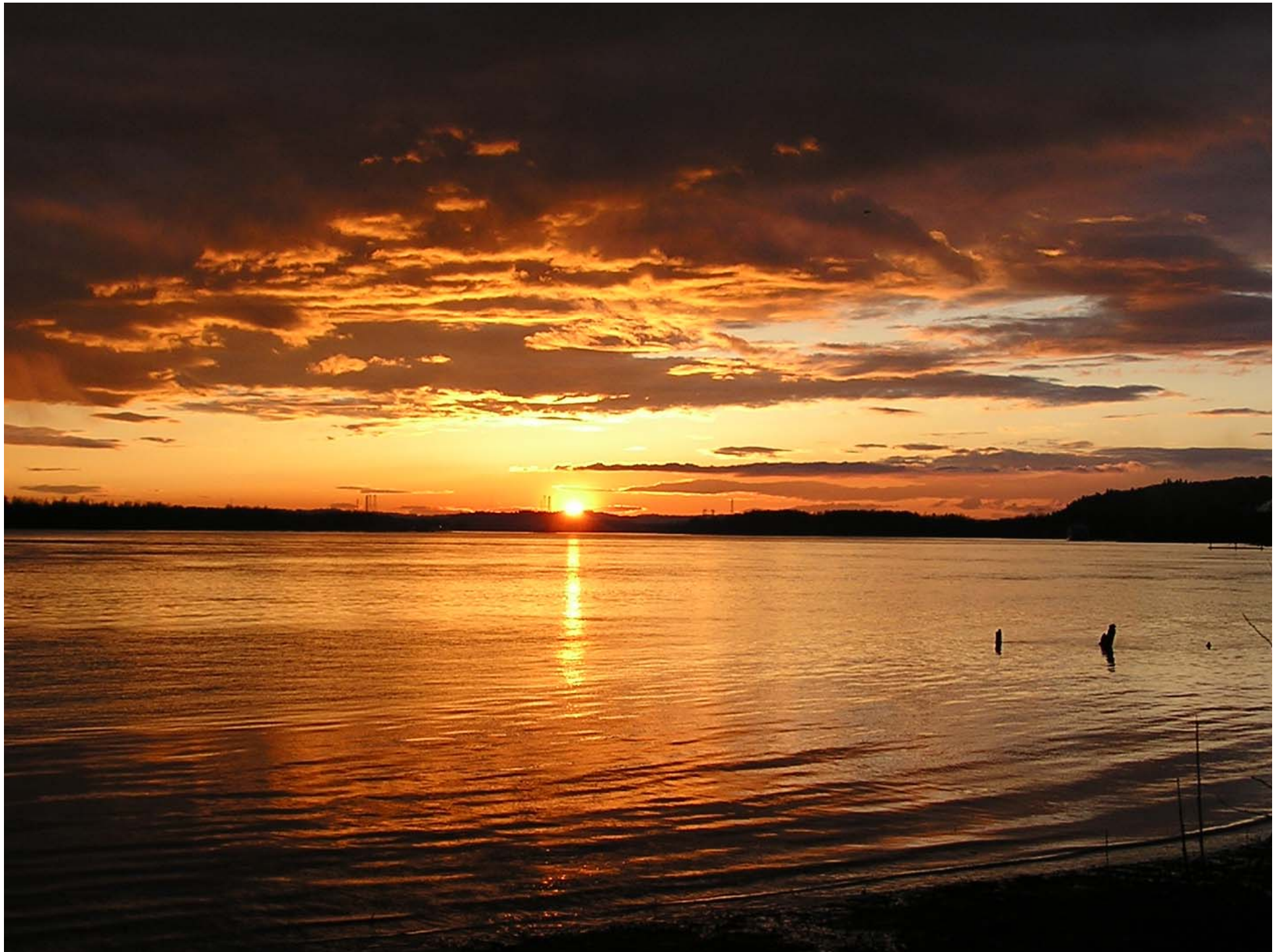
Spring Chinook - Future

- Wenatchee and Methow
 - New permits for hatchery programs as a result of hatchery reform measures
 - Includes fisheries as critical tool for managing stock composition of escapement
 - Wenatchee – 2012
 - Methow – 2012, 2013
 - Marking issues need to be resolved

Spring Chinook Harvest Summary

2009-2011 Average

- Conservation objective – Upriver spring Chinook ESA impact rate of 1.7% compared to 2.0%
 - All years less than limit
- Total sport harvest – 37,200
 - Mainstem (includes Snake and Ringold) – 22,800
 - 84% below Bonneville
 - Tributaries – 14,300
- Total commercial harvest – 19,300
 - Mainstem – 5,900
 - SAFE – 13,400



Reference Materials





ESA-Listed Chinook

- Upper Columbia spring run – endangered
- Snake River spring/summer run – threatened
- Willamette spring run – threatened
- Snake River fall run – threatened
- Lower Columbia River spring/fall run – threatened



ESA-Listed Steelhead

- Upper Columbia River – threatened
- Snake River – threatened
- Mid-Columbia River – threatened
- Lower Columbia River – threatened
- Upper Willamette River – threatened



Other ESA-Listed Species

- Lower Columbia River coho – threatened
- Lower Columbia River chum – threatened
- Snake River sockeye – endangered
- Bull trout – threatened
- Eulachon – threatened
- Green sturgeon – threatened

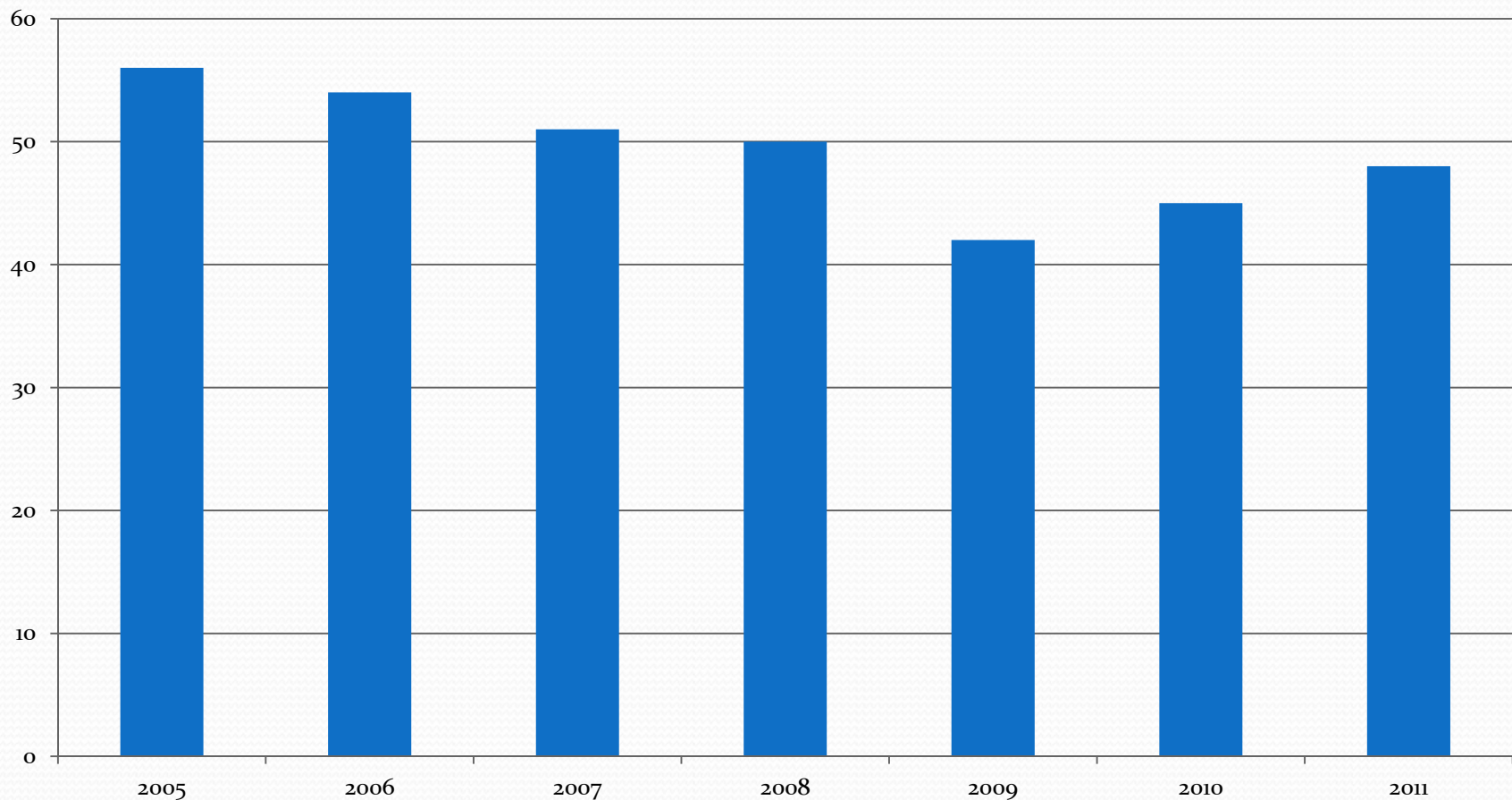
Pacific Fishery Management Council (PFMC)

- PFMC technical committees collaborate to reach consensus on scientific data
- PFMC technical committees coordinate with other committees
 - TAC and Chinook Technical Committee (CTC)
- PFMC recommended ocean seasons are promulgated by the Secretary of Commerce
- States adopt ocean regulations in state waters

Pacific Fishery Management Council (PFMC)

- Fishery seasons designed with help of constituents
- March meeting – 3 ocean options for public review
- April meeting – final ocean option

Number of Compacts/Joint State Hearings





U.S. v. OREGON

- The 1988 plan guided salmon and steelhead production and harvest decisions until it expired in 1999.
- Annual agreements guided harvest and production decisions while a new plan was being negotiated.



North of Falcon (NOF)

- Begins in late February with preseason run forecasts
- A series of public meetings are held coincident with the two PFMC meetings in March and April



North of Falcon (NOF)

- Opportunity for discussion, analysis and negotiation among all interested parties.
- Participants investigate the biological (ESA) consequences of options for the outside (ocean) and inside (Columbia River) fisheries.
- Try to achieve a consensus on an overall management plan for the upcoming fishing year.
- The process is supported by technical analyses provided by professional biologists from various state, tribal and federal management agencies.



Pacific Salmon Commission

- 1985 salmon treaty between the U.S. and Canada for management of Pacific salmon
- Four commissioners and four alternates from each country
- There are four panels (Northern, Southern, Fraser and TBR)
- Several technical committees including a Chinook Technical Committee (CTC)

PST 2008 Chinook Agreement

- Several changes over the 1999 Agreement
- Major reductions to northern AABM* fisheries:
 - 15% in SEAK & 30% in BC, triggers for add'l reduction
 - WA stocks expected to benefit, up to 5-10% increase
- New limits for ISBM* fisheries impacting stocks that fail to meet agreed-to escapement objectives:
 - Mort. can't exceed 63.5 & 60% (Can, US) of '79-82 levels
- A shift to a total mortality management regime...

***AABM** = an Aggregate Abundance-Based Management regime; catch levels are set by the expected abundance (index) summed over all stocks present in a fishery

***ISBM** = an Individual Stock-Based Management regime; fisheries are shaped w/ consideration of objectives for particular stocks (all So. US, most So. BC fisheries)

PST 2008 Chinook Agreement

- Appropriates finances for treaty implementation:
 - \$30 M to Canada to mitigate commercial reductions
 - \$7.5 M (US) + \$7.5 M (Can) for CWT improvement
 - \$10 M from No. & So. Endowment funds to newly est'd Sentinel Stocks Program (escapement studies)
 - \$2 M for Improving CTCs Chinook Model
- 5-year review in 2014
- The Agreement expires in 2018



Sampling Statistics 2008-2010

- Below Bonneville Sport – Goal is 20% of catch
 - 9,200 spring Chinook
 - 700 summer Chinook
 - 3,800 summer steelhead
 - 150 sockeye
 - 4,400 fall Chinook
 - 400 coho
 - 129,000 angler trips
- Above Bonneville Sport – Goal is 20% of catch
 - 275 spring Chinook
 - 175 summer Chinook
 - 100 summer steelhead
 - 3 sockeye
 - 180 fall Chinook
 - 900 coho
 - 5,000 angler trips



Sampling Statistics 2008-2010

- Non-Indian Commercial – Goal is 20% of catch
 - 670 spring Chinook
 - 820 summer Chinook
 - 775 fall Chinook
 - 1,360 coho

Sampling Statistics 2008-2010

- Treaty Indian Commercial– Goal is 20% of catch
 - 1,390 spring Chinook
 - 2,700 summer Chinook
 - 1,360 summer steelhead
 - 325 sockeye
 - 3400 fall Chinook
 - 1,900 coho





Smelt Fisheries

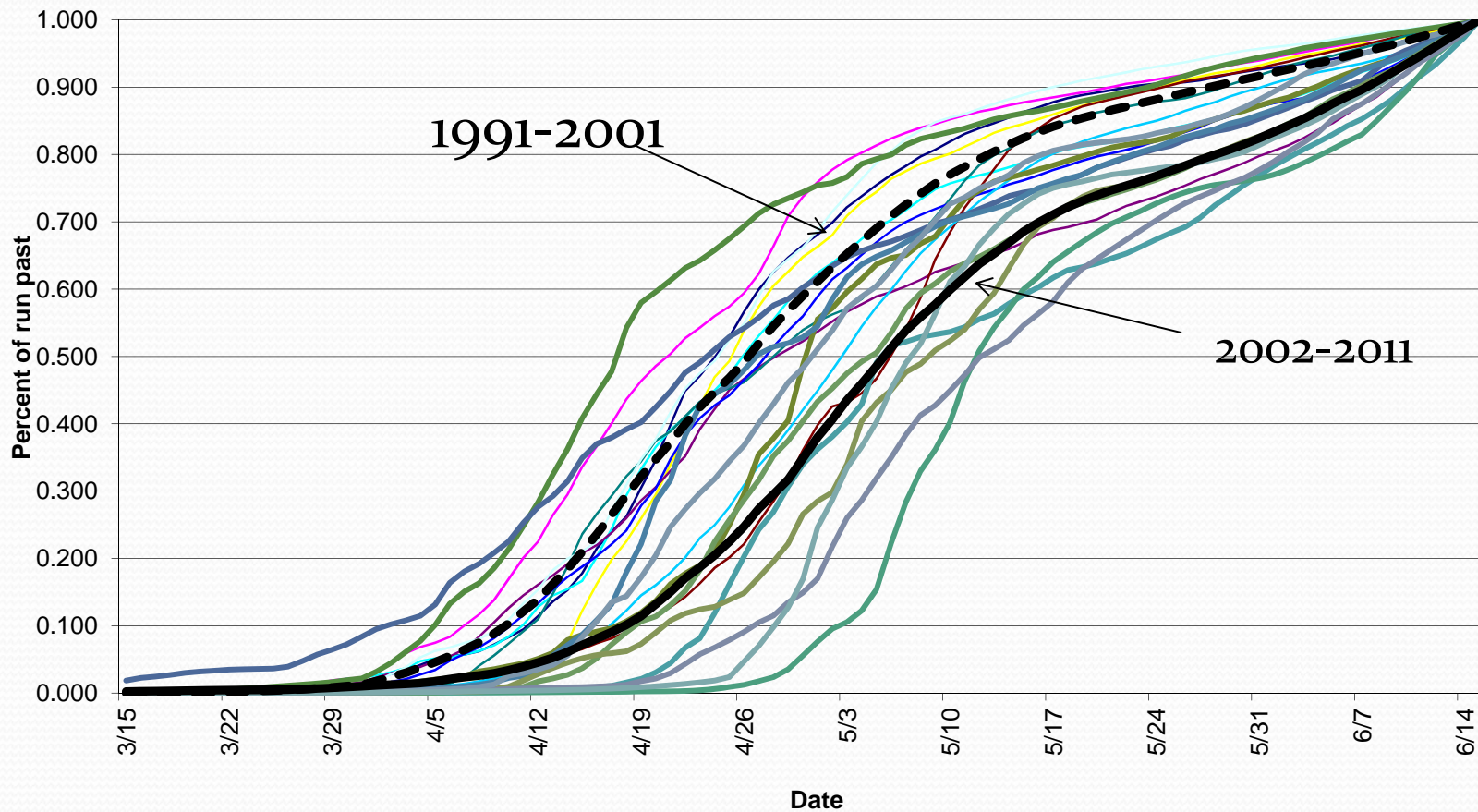
- Prior to 1986 commercial fisheries open year round
 - 1955-1977 – weekly closed periods
 - 1978-1985 – 7 days/week
 - 1986-1994 – December through March
 - 1995-2010 – December through March with in-season closures
 - 2011 – Closed
- Sport fisheries were open year round until in-season management in mid 1990s



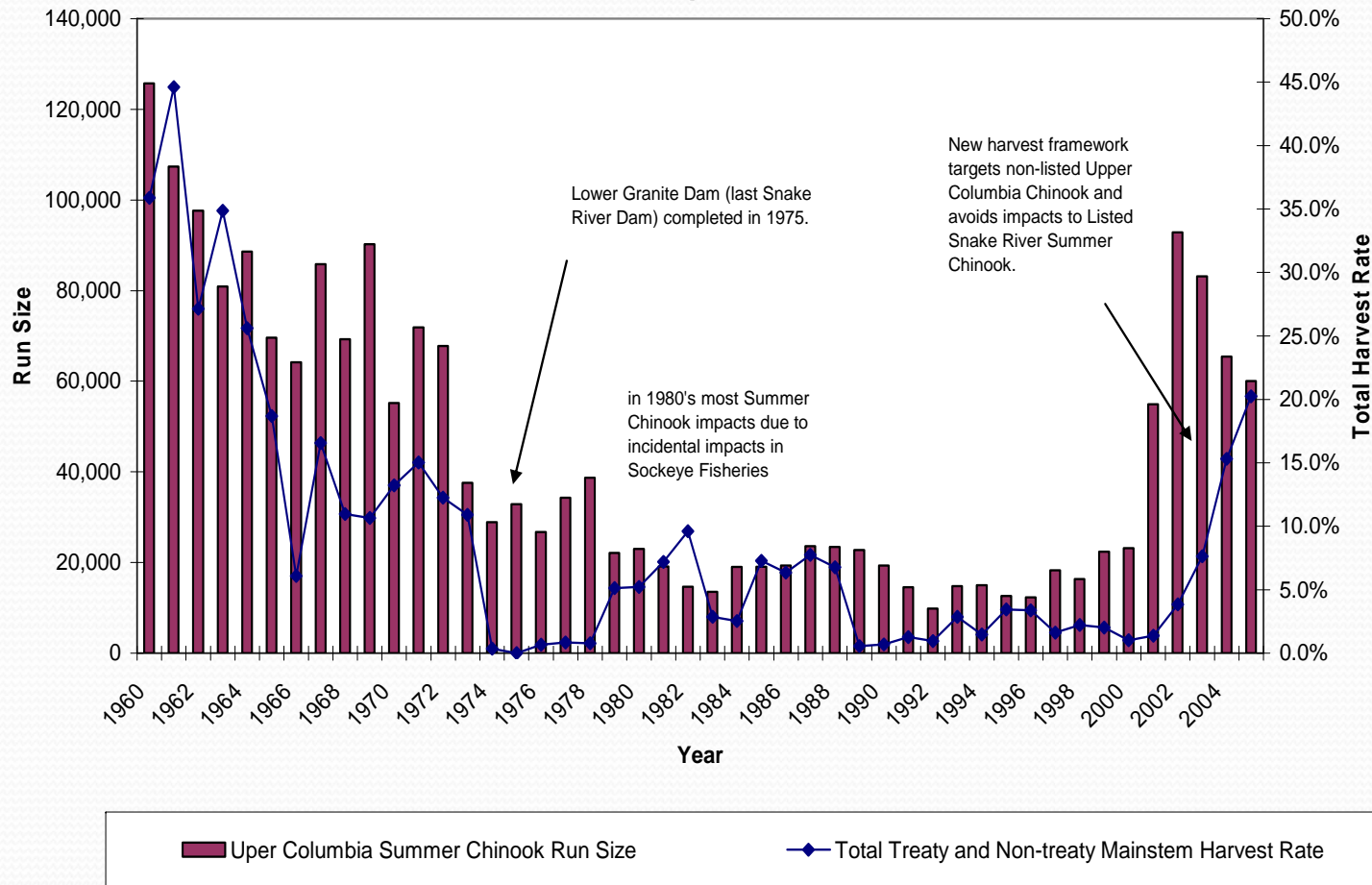
Eulachon Management Plan

- Joint WA/OR plan finalized in 2001
- Three fishery levels – based on expectations for abundance
 - Level 1 – uncertainty in run strength
 - Minimal fisheries – obtain information to maintain database
 - Level 2 – Productivity indices favorable
 - Reduced fisheries – 2-3 days/week
 - Level 3 – Very positive indicators
 - Increased fisheries – 4-7 days/week

Run timing of spring Chinook at Bonneville Dam



Upper Columbia River Summer Chinook Run Size and Mainstem Harvest Impacts



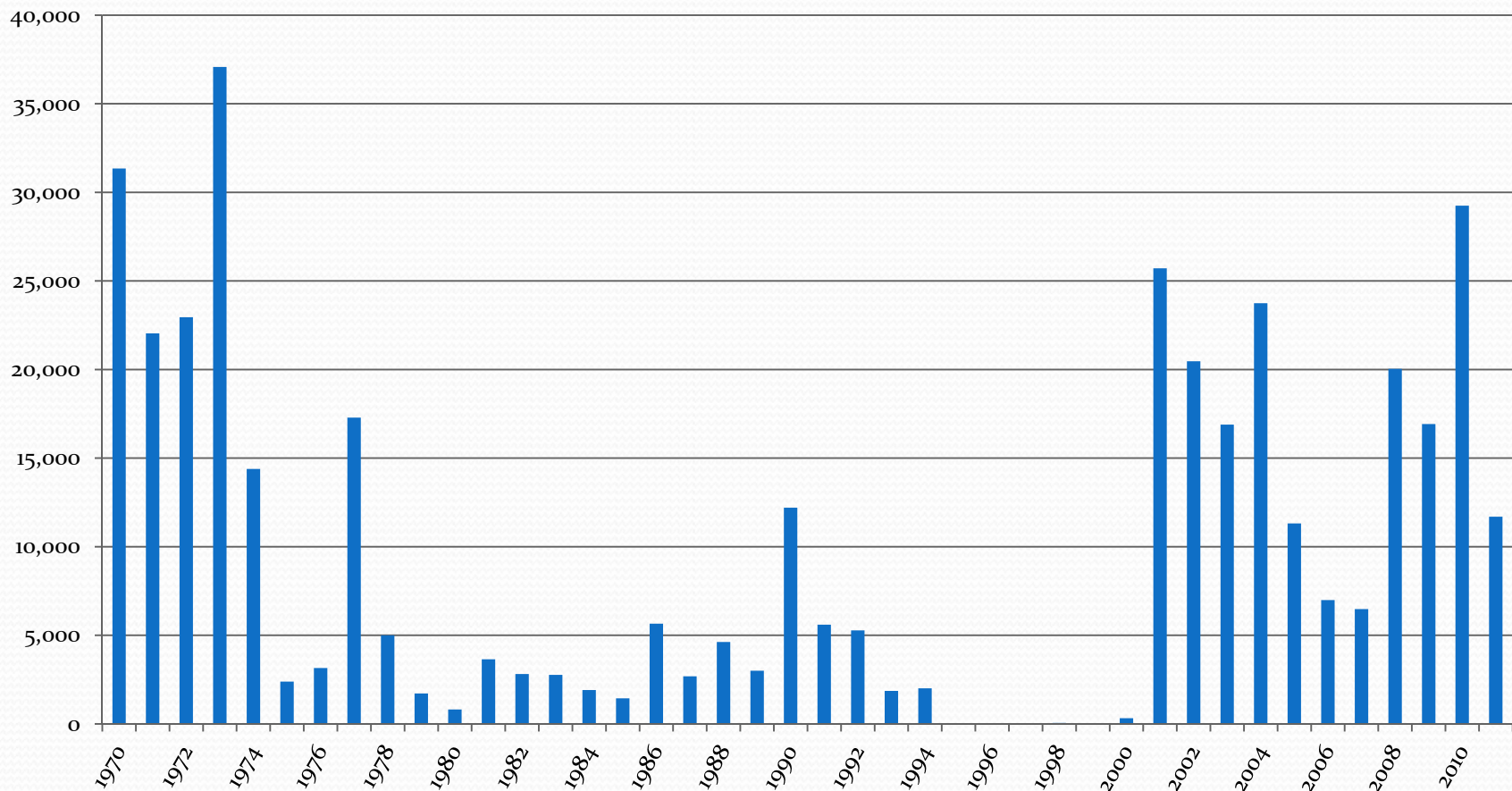
Note: Spring Chinook run size and harvest excludes fish includes fish passing Bonneville between June 1-15 after 1978



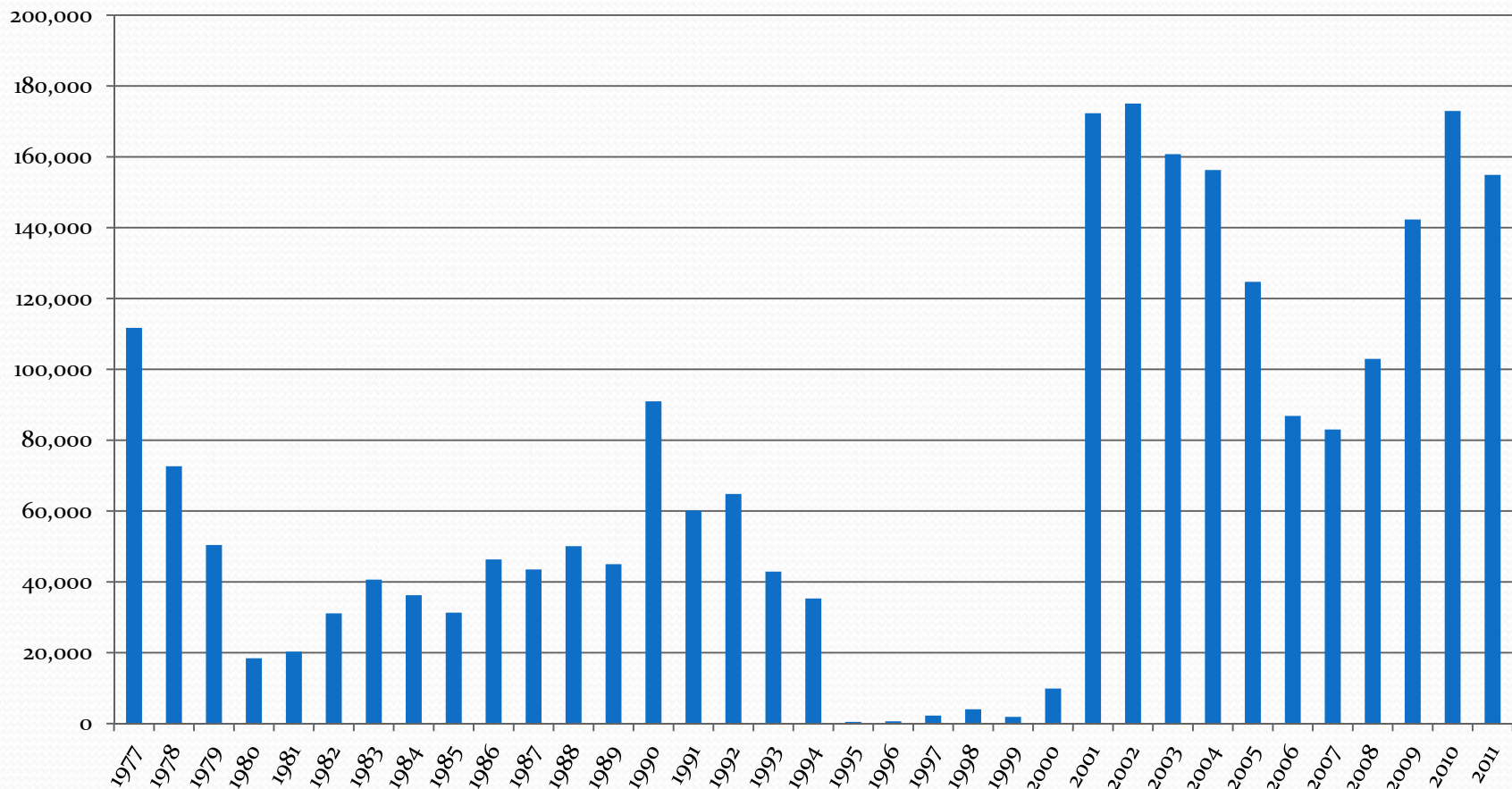
Run Reconstruction – Fall Chinook

- Fishery harvest by age and stock group for each fishery
 - Sport, commercial, tribal, SAFE, tributary
 - By fishing periods
- Hatchery and natural escapements added to fisheries by stock and age
- Product is Columbia River mouth returns by age and major stock groups

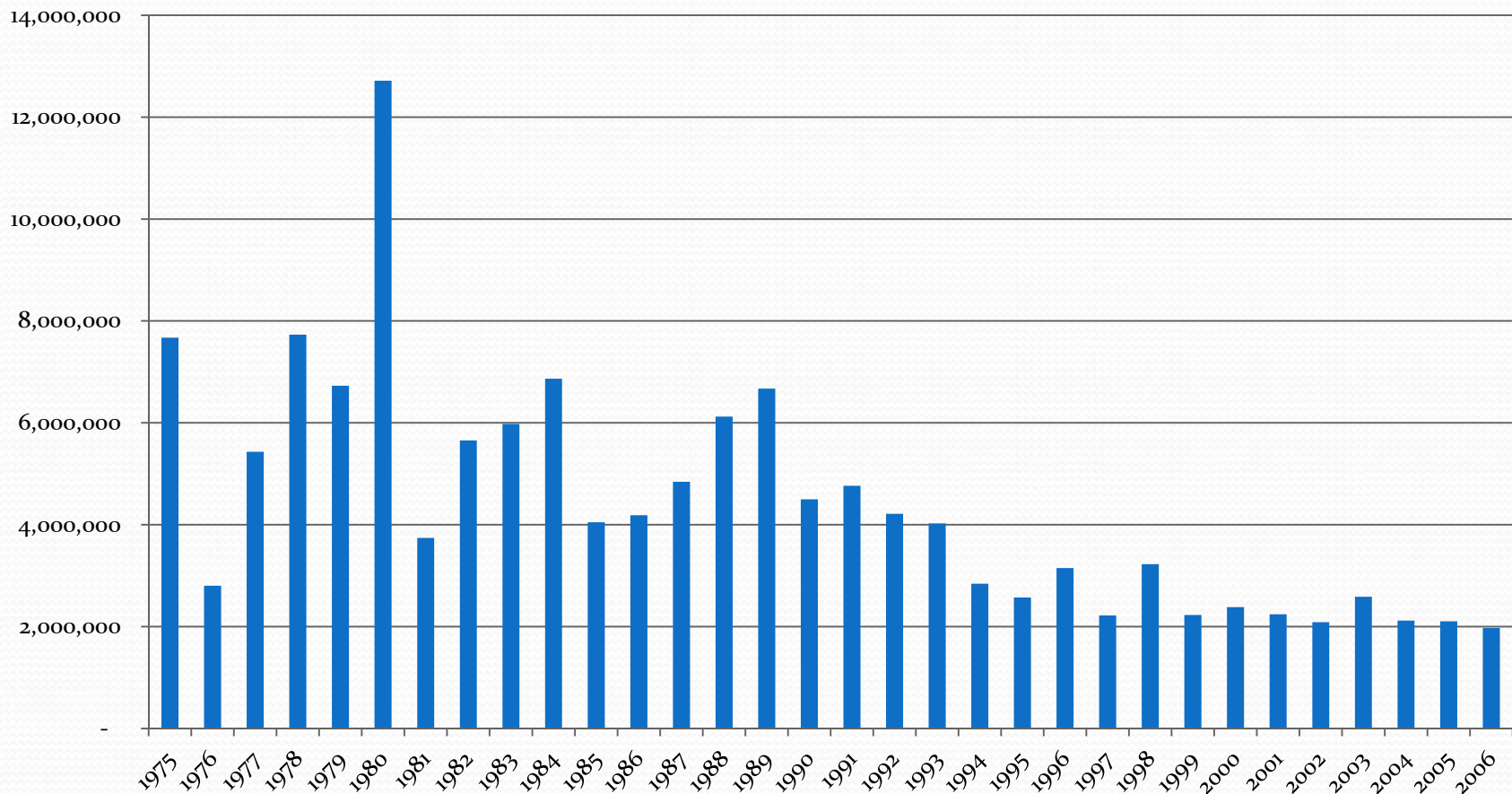
Spring Chinook Sport Harvest Below Bonneville Dam



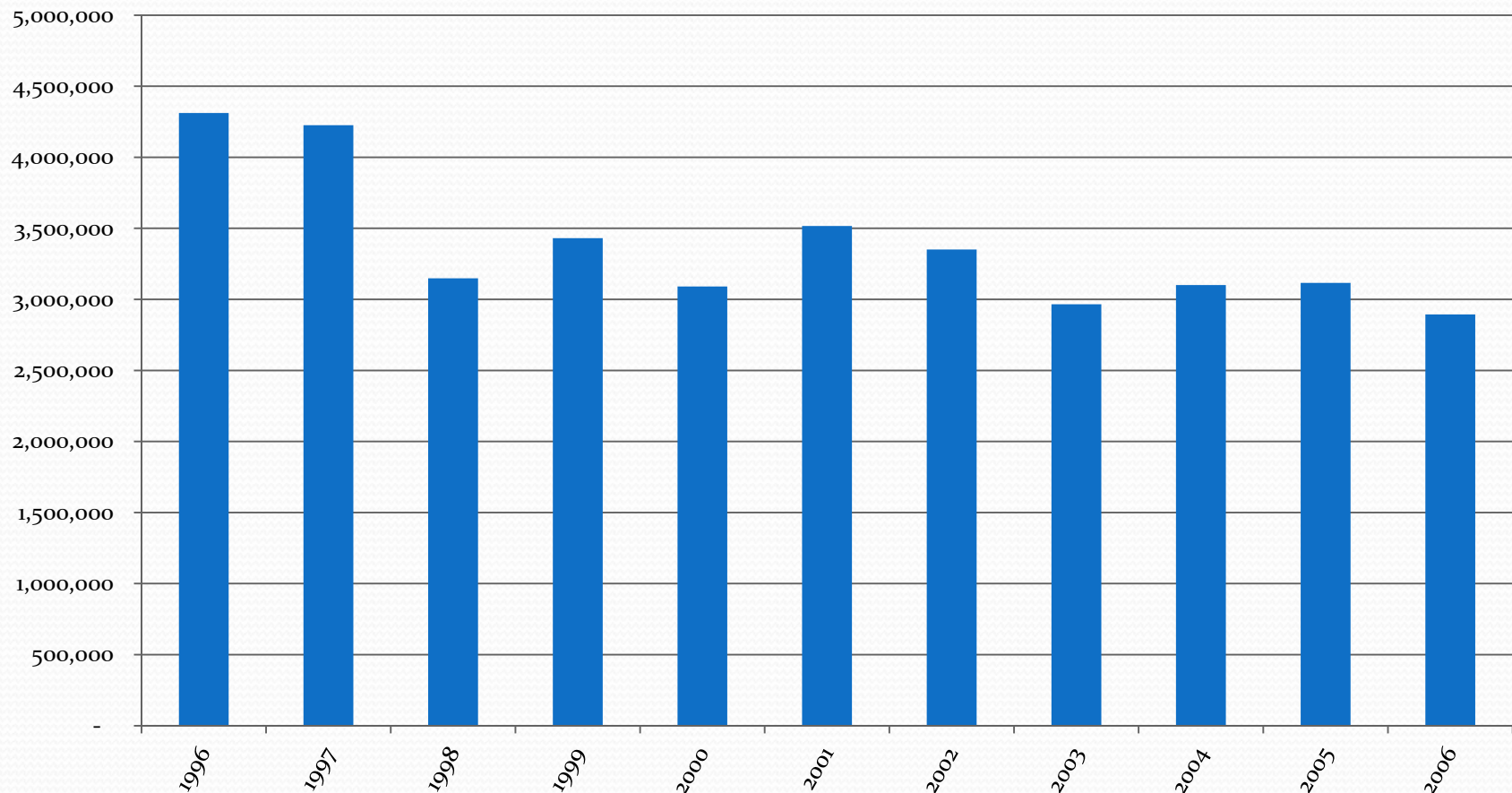
Spring Chinook Angler Trips Below Bonneville Dam



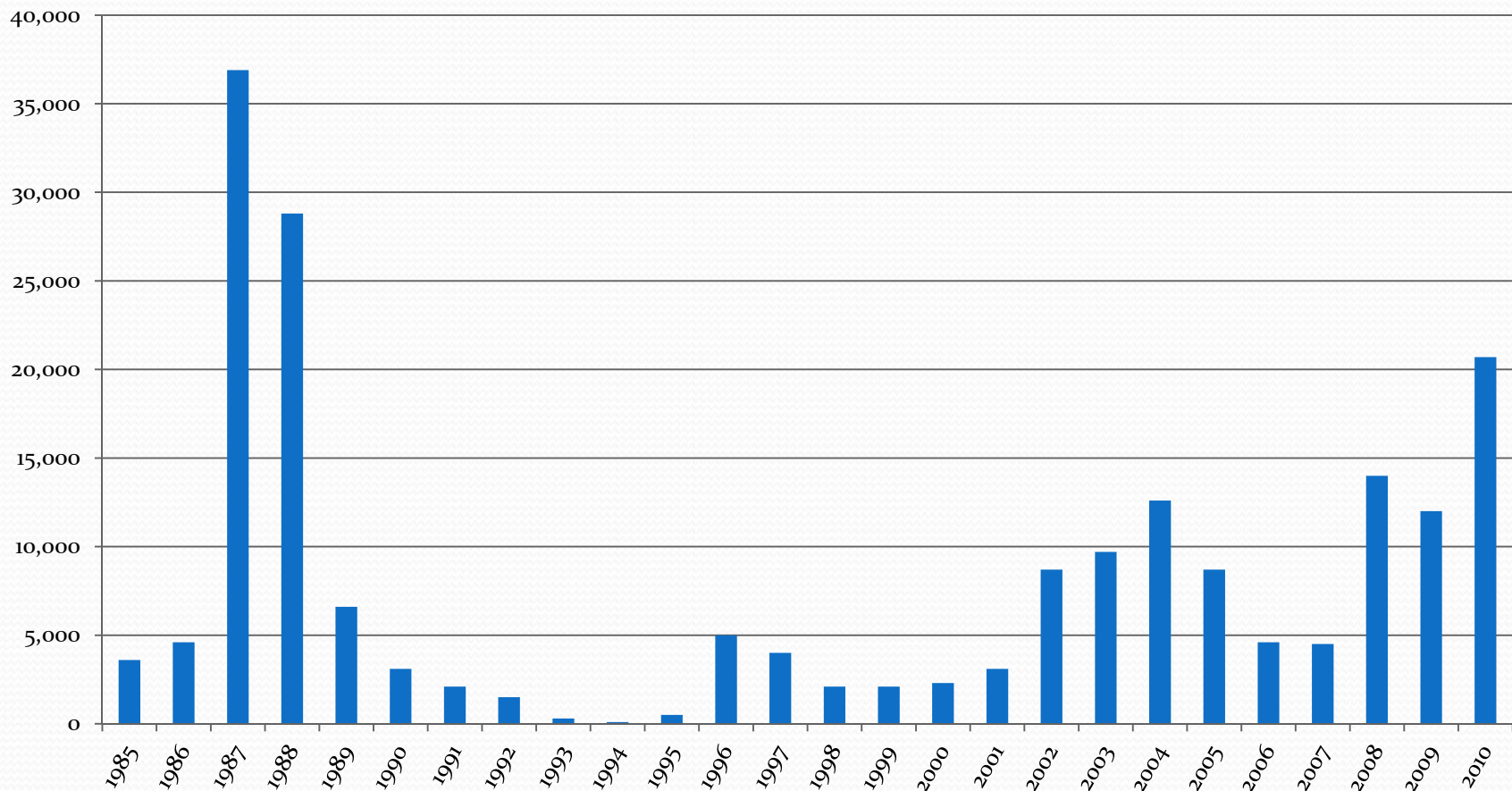
Spring Chinook Releases From Cowlitz, Kalama, Lewis Hatcheries



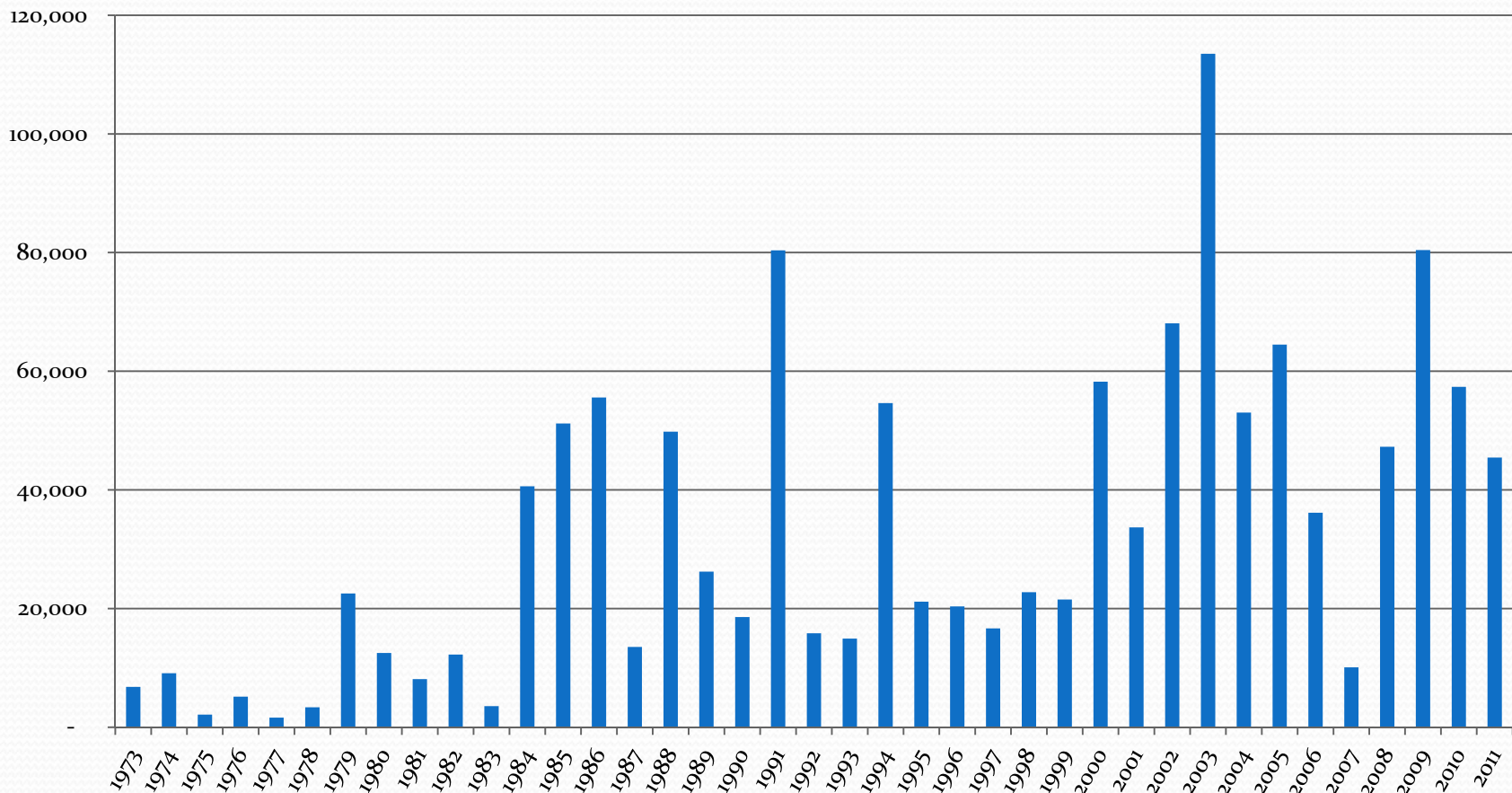
Spring Chinook Releases From Bonneville Pool Hatcheries



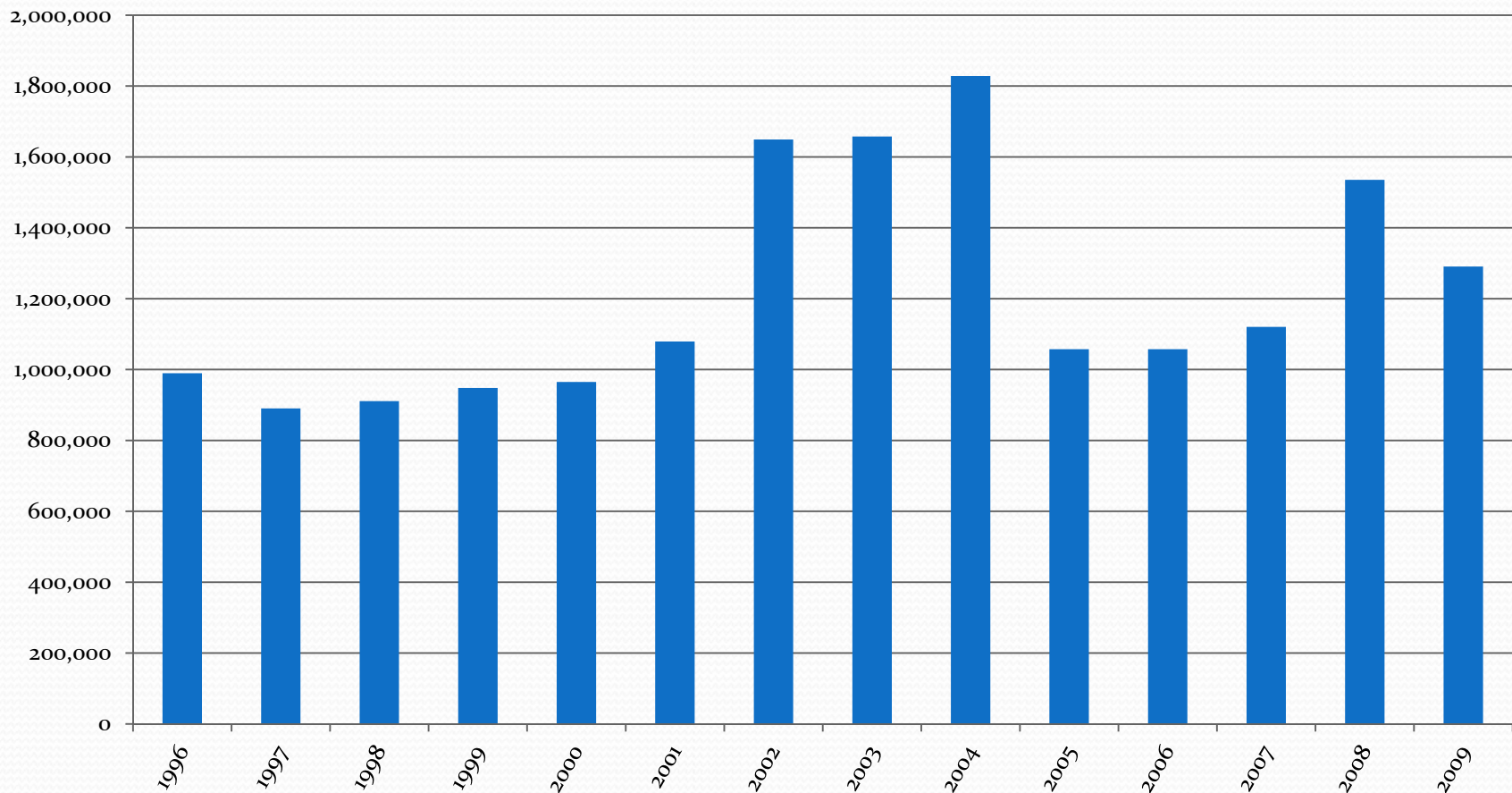
SAFE Fall Chinook Harvest



SAFE Coho Harvest



Spring Chinook Smolt Releases in SAFE Areas



<http://wdfw.wa.gov/fishing/crc/>



WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Columbia River Compact

The Columbia River Compact	Joint State Staff Reports	Joint State Action Notices	Fact Sheets	Other Compact Information
<p>The Columbia River Compact is charged by congressional and statutory authority to adopt seasons and rules for Columbia River commercial fisheries. In recent years the Compact has consisted of the Oregon and Washington agency directors, or their delegates, acting on behalf of the Oregon Fish and Wildlife Commission (OFWC) and the Washington Fish and Wildlife Commission (WFWC). In addition, the Columbia River Treaty tribes have authority to regulate treaty Indian fisheries.</p> <p>When addressing commercial seasons for salmon, steelhead, and sturgeon the Compact must consider the effect of the commercial fishery on escapement, treaty rights, and sport fisheries, as well as the impact on species listed under the Endangered Species Act (ESA). Although the Compact has no authority to adopt sport fishing seasons or rules, it is an inherent responsibility of the Compact to address the allocation of limited resources among users. This responsibility has become increasingly demanding in recent years. The Compact can be expected to be more conservative than in the past when considering fisheries that will impact listed salmon and steelhead.</p>	<p>January 26, 2009 - 2009 Joint Staff Report Stock Status and Fisheries for Spring Chinook, Summer Chinook, Sockeye, Steelhead, and Other Species and Miscellaneous Regulations.</p> <p>December 9, 2008 - 2009 Joint Staff Report Concerning Stock Status and Fisheries for Sturgeon and Smelt.</p> <p>July 14, 2008 - 2008 Joint Staff Report: Stock Status and Fisheries for Fall Chinook, Coho Salmon, Chum Salmon, Summer Steelhead, and White Sturgeon</p> <p>January 31, 2008 - 2008 Joint Staff Report: Stock Status and Fisheries for Spring Chinook, Summer Chinook, Sockeye, Steelhead, and Other Species, and Miscellaneous Regulations</p> <p>December 3, 2007 - 2008 Joint Staff Report Concerning Stock Status and Fisheries for Sturgeon and Smelt.</p> <p>July 13, 2007 - Joint Staff Report: Stock Status and Fisheries for Fall Chinook, Salmon, Coho Salmon, Chum Salmon, Summer Steelhead, and White Sturgeon.</p> <p>January 12, 2007 - Joint Staff Report: Stock Status and Fisheries for Spring Chinook, Summer Chinook, Sockeye, Steelhead, and other species and miscellaneous regulations.</p>	<p>Jun 10, 2009 Jun 3, 2009 May 14, 2009 May 13, 2009 Apr 13, 2009 Apr 6, 2009 Apr 1, 2009 Mar 20, 2009 Mar 4, 2009 Feb 13, 2009 Feb 11, 2009 Jan 29, 2009 Dec 16, 2008 Oct 21, 2008 Oct 16, 2008 Oct 14, 2008 Oct 7, 2008 Oct 6, 2008 Sep 29, 2008 Sep 23, 2008 Sep 18, 2008 Sep 16, 2008 Sep 11, 2008 Sep 8, 2008 Sep 4, 2008 Aug 28, 2008 Aug 21, 2008 Aug 13, 2008 Aug 11, 2008 Jul 24, 2008 Jul 22, 2008 Jul 10, 2008 Jul 8, 2008 Jul 3, 2008 Jun 27, 2008 Jun 20, 2008 Jun 19, 2008 Jun 12, 2008 Jun 3, 2008 May 12, 2008 May 9, 2008 May 1, 2008 Apr 24, 2008</p>	<p>2009 Summer Fact Sheets - Fact Sheet No. 2 - Jun 18, 2009 - Fact Sheet No. 1 - Jun 10, 2009 - Fact Sheet No. 1a - Jun 10, 2009</p> <p>2009 Spring Fact Sheets - Fact Sheet No. 6 - Jun 8, 2009 - Fact Sheet No. 5 - Jun 3, 2009 - Fact Sheet No. 4 - May 26, 2009 - Fact Sheet No. 3 - May 14, 2009 - Fact Sheet No. 2 - May 13, 2009 - Fact Sheet No. 1 - Apr 22, 2009</p> <p>2008/2009 Winter Fact Sheets - Fact Sheet No. 9 - Apr 13, 2009 - Fact Sheet No. 8 - Apr 6, 2009 - Fact Sheet No. 7 - Apr 1, 2009 - Fact Sheet No. 6 - Mar 20, 2009 - Fact Sheet No. 5 - Mar 4, 2009 - Fact Sheet No. 4 - Feb 13, 2009 - Fact Sheet No. 3 - Feb 11, 2009 - Fact Sheet No. 2 - Jan 29, 2009 - Fact Sheet No. 1 - Dec 18, 2008</p>	<p>THE COLUMBIA RIVER COMPACT By Brenda Woods, Assistant Attorney General, Washington Attorney General's Office - August 2008</p> <p>June 23, 2008 - Announcement of Joint State Hearing June 25, 2009</p> <p>June 9, 2008 - REVISED Announcement of Joint State Hearing June 10, 2009</p> <p>June 2, 2008 - Announcement of Joint State Hearing June 3, 2009</p> <p>May 29, 2008 - Announcement of Joint State Hearing June 10, 2009</p> <p>May 12, 2008 - Announcement of Joint State Hearing May 13, 2009</p> <p>April 2, 2008 - Announcement of Joint State Hearing April 6, 2009</p> <p>April 1, 2008 - Announcement of Joint State Hearing April 1, 2009</p> <p>March 17, 2008 -</p>

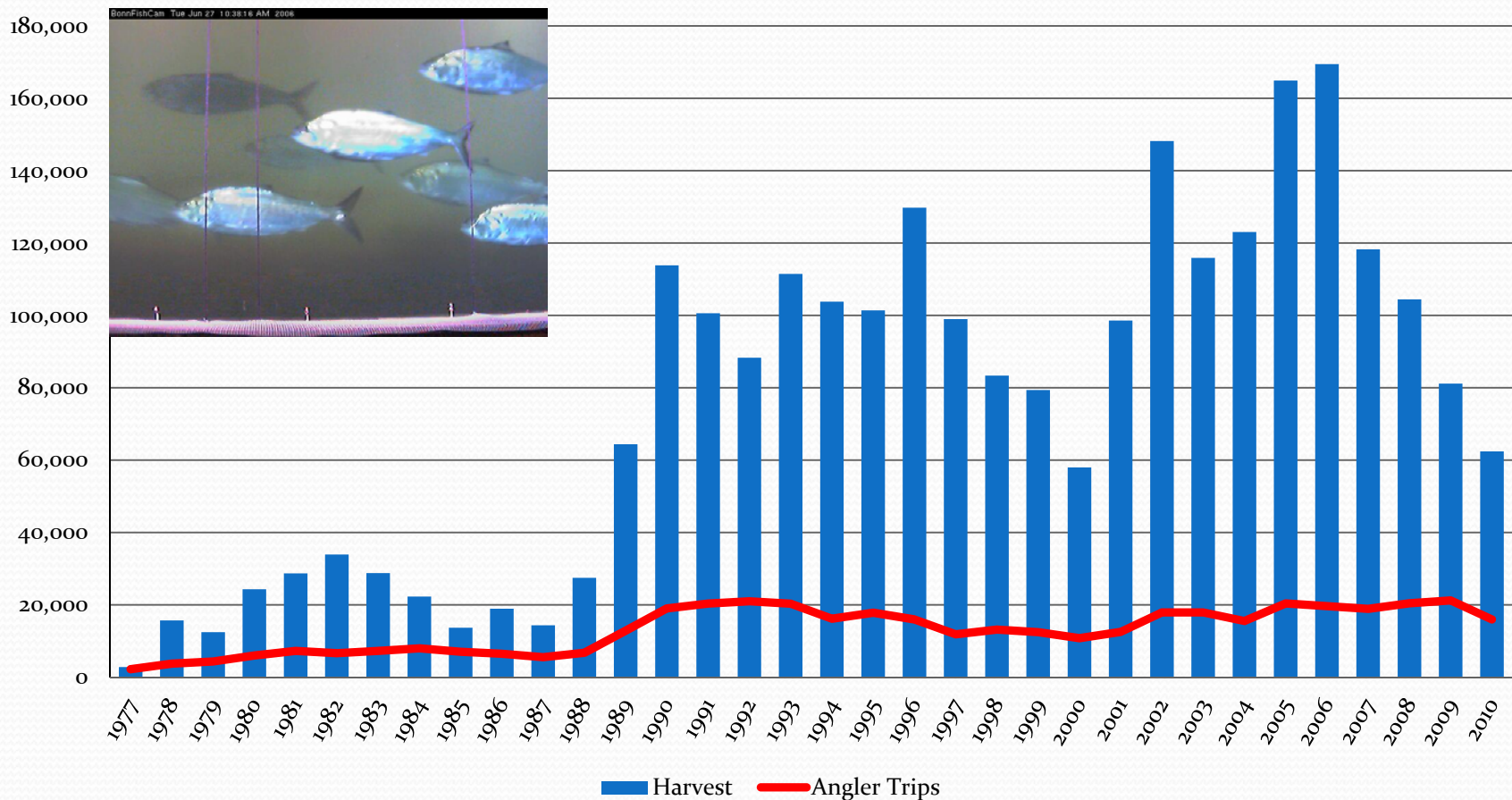
Major Fishery Events

- 1855 Treaties signed between the United States and Columbia River Indian tribes
- 1861 Commercial fishing became an important industry
- 1866 Salmon canning began
- 1877 The first salmon hatchery was established on the Clackamas River
- 1909 Beginning of consistent Oregon and Washington seasons
- 1918 U.S. Congress ratified the compact and agreement between Oregon and Washington covering concurrent jurisdiction of Columbia River fisheries
- 1937 Mitchell Act passed to provide mitigation funds to compensate for fish lost as a result of dam construction
- 1938 Bonneville Dam completed
- 1941 Grand Coulee Dam completed

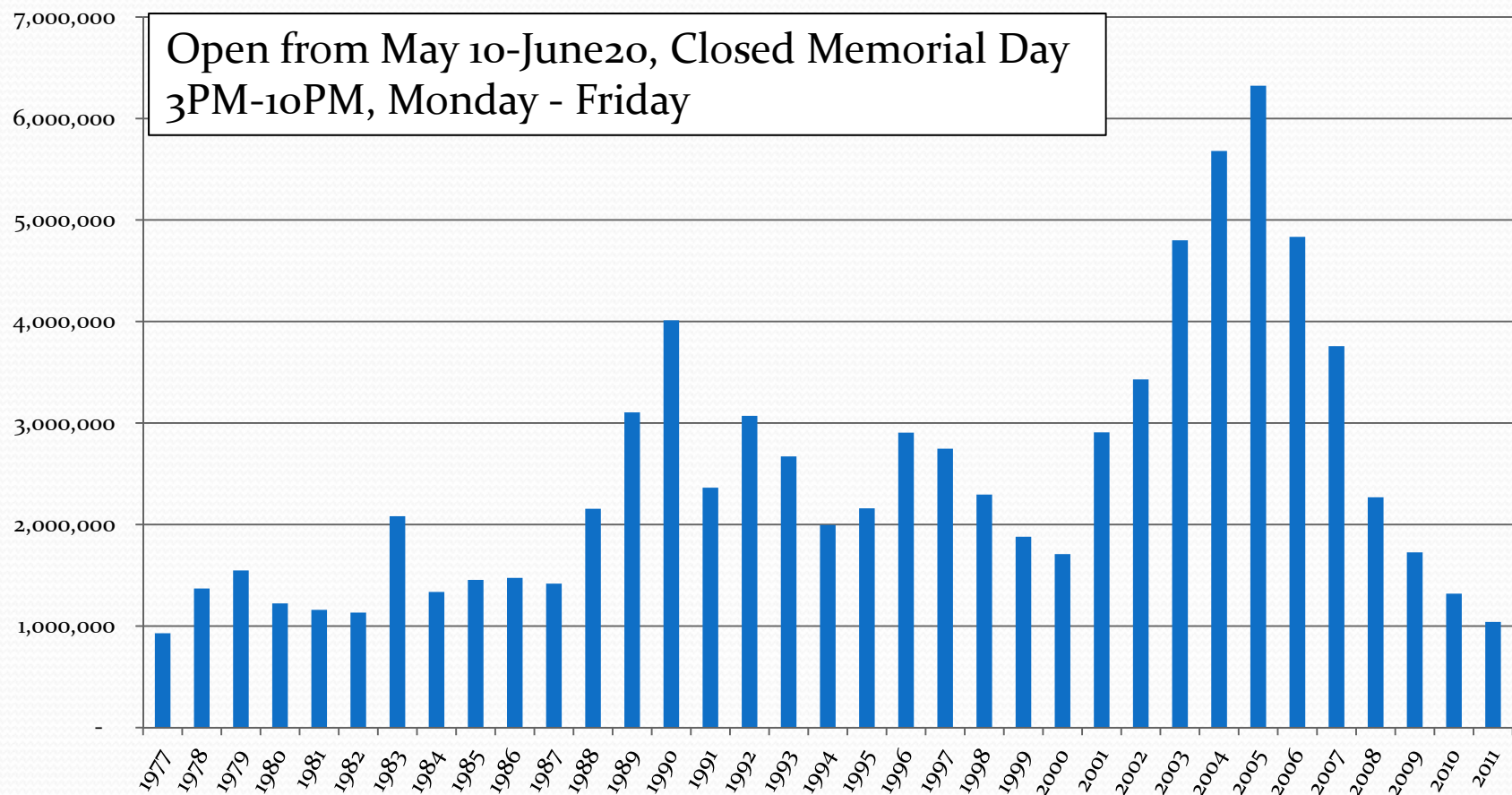
Major Fishery Events

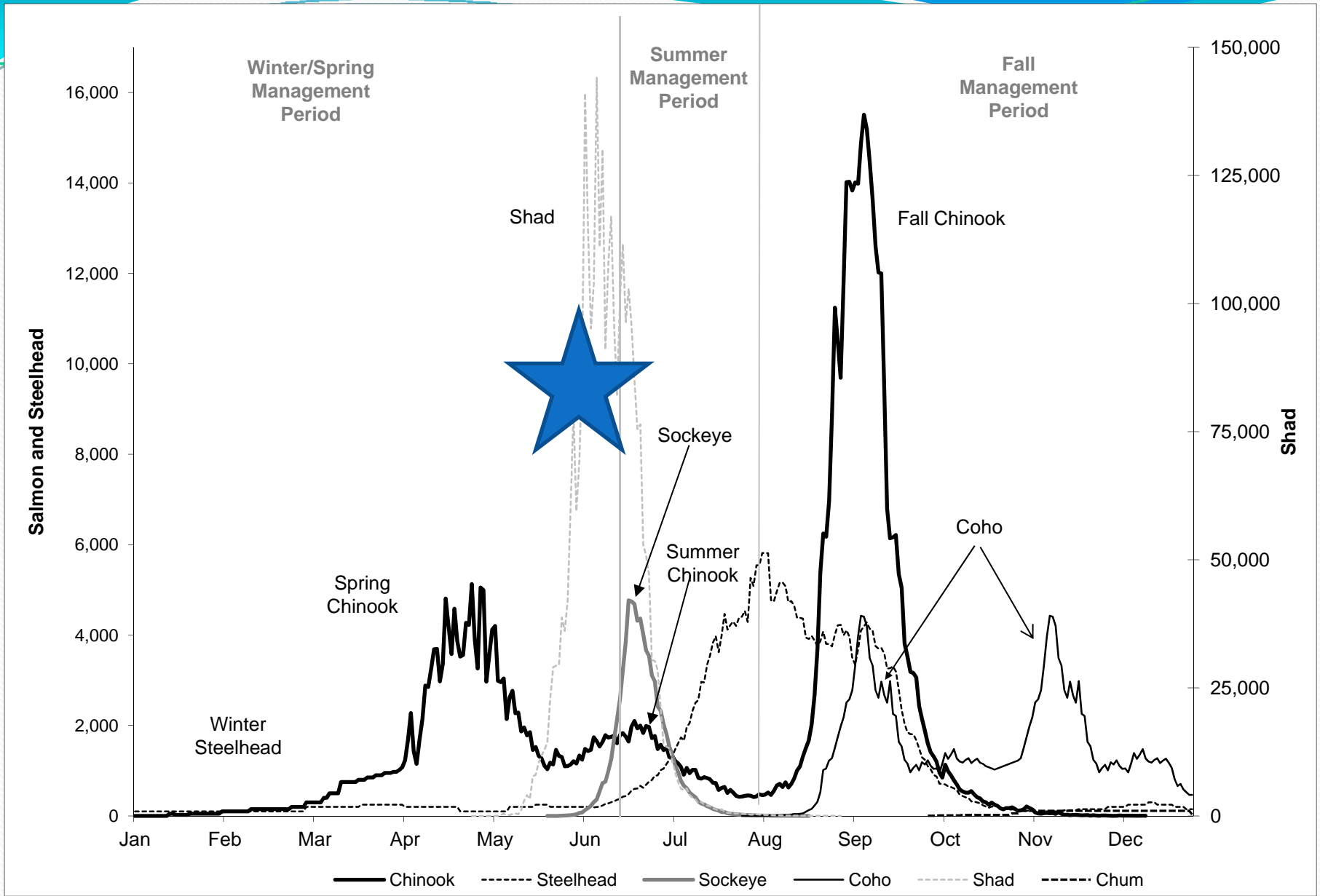
- 1943 Columbia season reductions begin
- 1960 Ocean fishery expansion
- 1968 U.S. v. Oregon judgment
- 1973 ESA passes congress
- 1976 Magnuson Fishery Conservation Act
- 1984 Coordinated ocean/freshwater weak stock management
- 1985 U.S. - Canada fishery treaty
- 1988 U.S. v. Oregon 10 year agreement for all species
- 1991-05 ESA listing of 13 Columbia River ESUs
- 1999 U.S. – Canada fishery management regimes modified
- 1999 Selective fisheries for marked hatchery coho
- 2001 U.S. v Oregon agreement for spring Chinook
- 2008 U.S. v. Oregon 10 year agreement for all species

Sport Shad Harvest Below Bonneville Dam



Commercial Shad Harvest



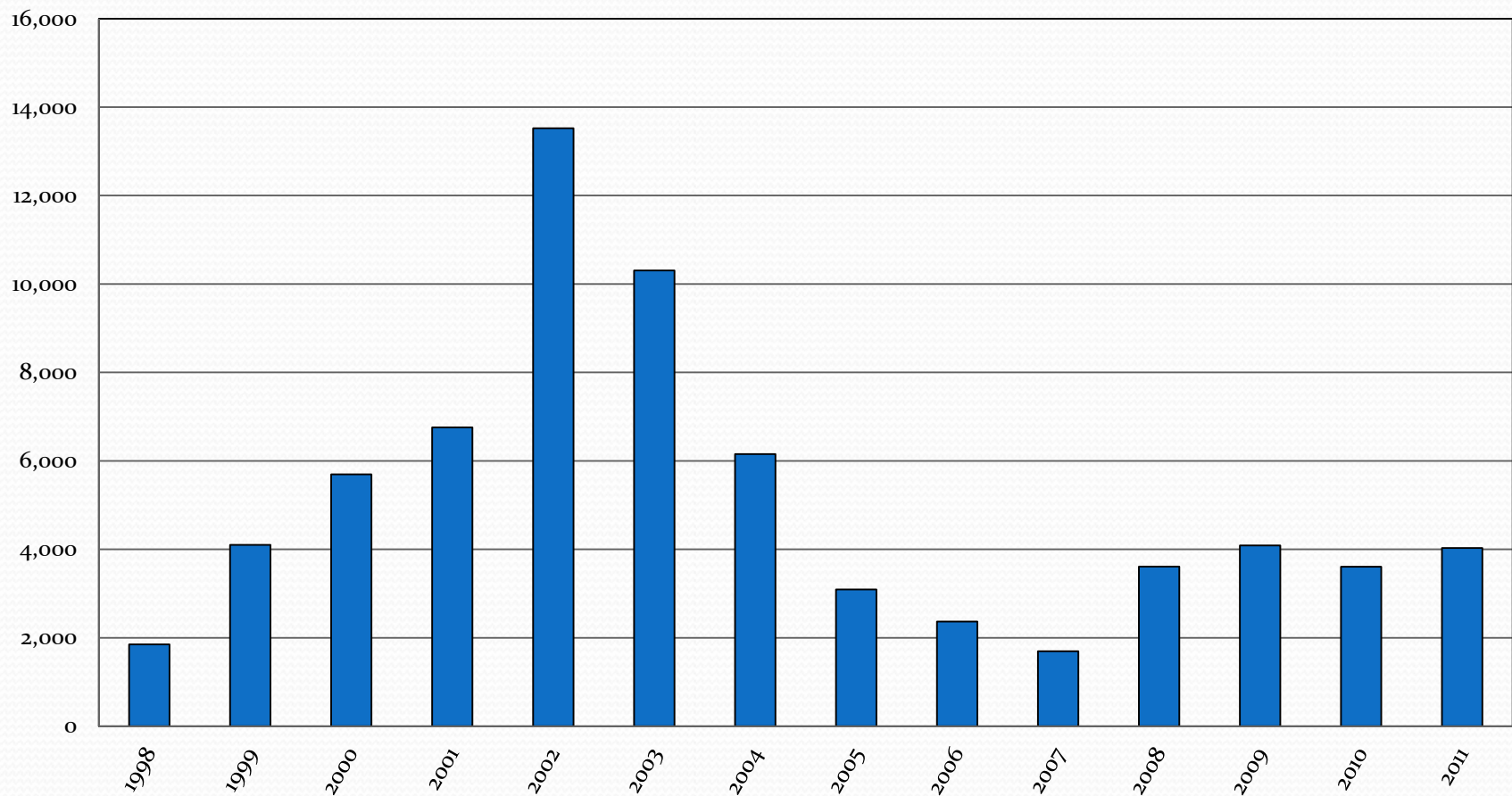




Sanctuaries

- Commercial fishing sanctuaries in place at river mouths
 - Grays
 - Elochoman – A and B
 - Abernathy
 - Cowlitz
 - Kalama – A and B
 - Lewis – A and B
 - Washougal
 - Sandy - Oregon
- Sport fishing sanctuaries below fish ladders

Yakima River Fall Chinook Returns





Costs to Manage Fisheries – Region 1

- WDFW Staffing levels in Snake & Walla Walla Basins
 - Coded-wire tag (CWT) = **\$1,300,000**
 - Hatchery evaluation/escapement/fishery monitoring/stock status – LSRCF & direct BPA (federal) funded = **\$1,100,000**
 - 4 biologists, 4 full time technicians, 12 seasonal technicians
 - State funded & CRSSE = **\$250,000** - primarily for escapement/stock status/fishery monitoring
 - 2 biologists, 3-4 seasonal technicians
- Total in SE WA = **\$2,650,000**



Costs to Manage Fisheries – Region 5

- Needed to Meet Conservation Objectives
- WDFW Staffing levels – Region 5/Below McNary
 - Coded-wire tag (CWT) program – BPA (federal) funded \$1,560,100 – primarily fishery sampling
 - 2 biologists, 6 full time technicians, 27 seasonal technicians
 - State and PUD funded – primarily escapement/fishery monitoring – includes on-board monitoring/CRSSE
 - \$900,000
 - Other federally funded – escapement/stock status
 - \$2,636,000
 - Total below McNary – \$5,096,100



Costs to Manage Fisheries – Region 1

- Coded-wire tag (CWT) program
 - 1 full time biologist
 - 10 seasonal technicians
- Spawning surveys/adult trap operations/run reconstruction
 - 4 full time biologists
 - 3 full time technicians
 - 2 seasonal technicians
- Creel Surveys & fishery management
 - 2 full time biologists
 - 1 full time technician
 - 6 seasonal technicians



Costs to Manage Fisheries – Region 2

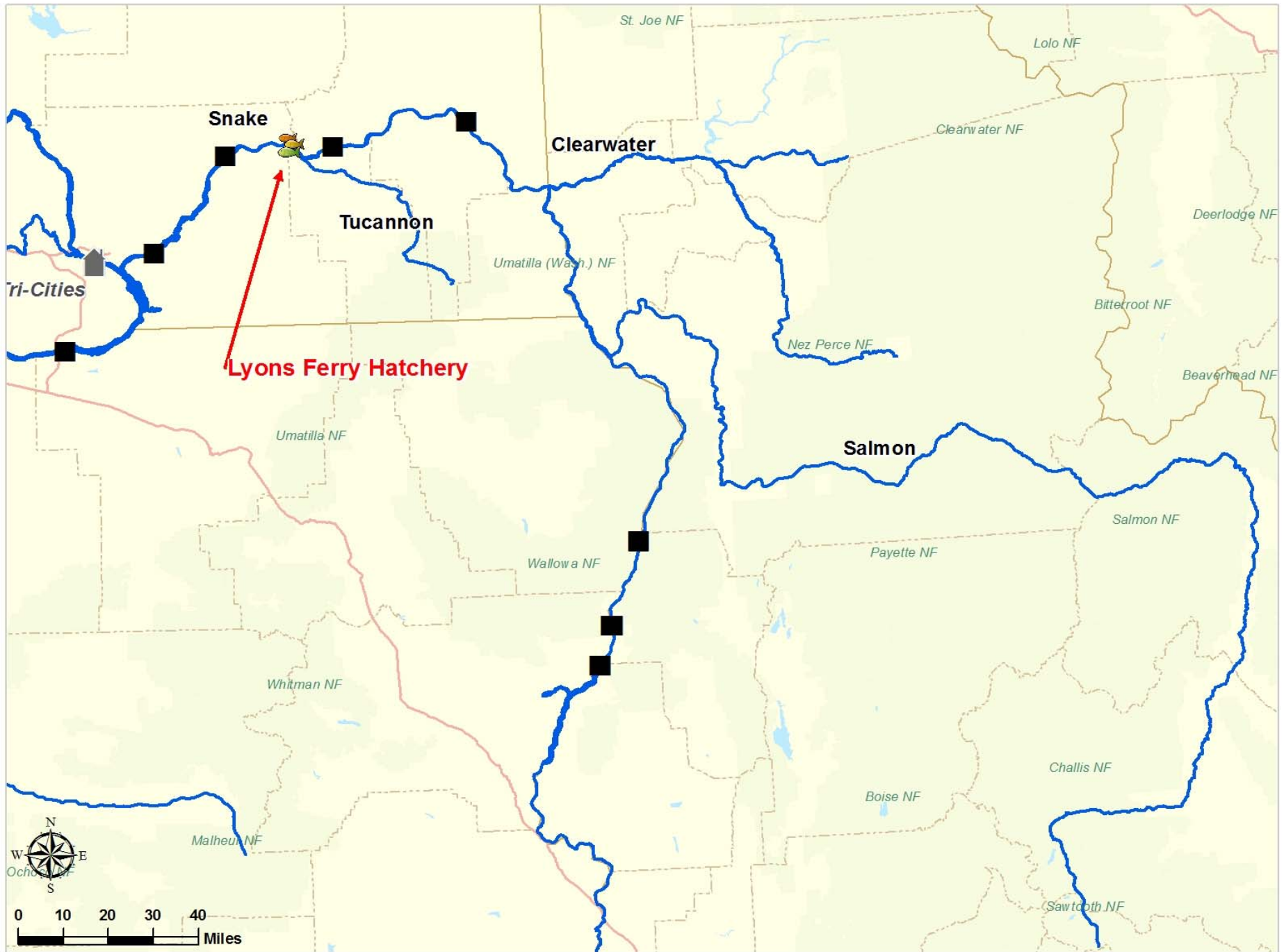
- Creel surveys - Steelhead, Chinook, sockeye fisheries
 - Goal 20% of anglers sampled – up to 40% if ESA-listed
 - May through March
 - \$300,000-\$400,000 per year
 - 6-8 seasonal technicians
 - Primary funding through CRSSE
- Regulations/permitting/oversight – Regional staff
 - 2-3 FTEs
 - About \$300,000/year
- Monitoring and Evaluation
 - Critical to fisheries planning and analysis
 - PUD mitigation funding - \$1 million/year minimum

Costs to Manage Fisheries – Region 3

- Yakima R. creel surveys – spring chinook, fall chinook
 - Goal 10 - 20% of anglers sampled (not ESA-listed)
 - May – July; Sept. – Oct.
 - \$28K in spring; \$8 – 10K in fall
 - Seasonal technicians – 2 or 3 in spring; 1 in fall
 - CRSSE funding for spring fishery; WL-S in fall
- Monitoring and Evaluation
 - Estimate harvest of YKFP (Cle Elum Hatchery) spring chinook; coded-wire tag recovery of YKFP experimental groups

Costs to Manage Fisheries – Region 3 (cont.)

- Hanford Reach URB fall chinook and steelhead creel
 - CRSSE-funded steelhead @ \$36K per year
 - One technician from Sept. thru March (also collects fall chinook creel data at the Ringold boat launch)
 - CR Coded-Wire Tag Recovery (PSMFC) funds approx. 75% of fall chinook creel sampling and covers the popular White Bluffs and Vernita boat launches; \$61K per year



BREAK



WA Dept. of Fish and Wildlife, Information subject to changes and amendments over time

Commission Presentation
Special Workshop May 31, 2012