OR-WA Policy Review Committee

JULY 28, 2021

2. THE CURRENT SELECTIVITY AND CATCH AND RELEASE MORTALITY ESTIMATES FOR BOTH COMMERCIAL AND RECREATIONAL GEAR OF ESA LISTED SPECIES.

What is Selectivity?

The ability of a fishing operation to avoid non-target species or stocks, OR when encountered, to release those animals alive and unharmed.

- 100% avoidance is largely unattainable due to overlapping run timings, behavioral similarities, etc.
- No known harvest method can encounter fish and release them with 100% survival.
- In the context of the Columbia River, avoidance and release efforts are not mutually exclusive – can be/are used in combination.

… The ability of a fishing operation to avoid non-target species or stocks…

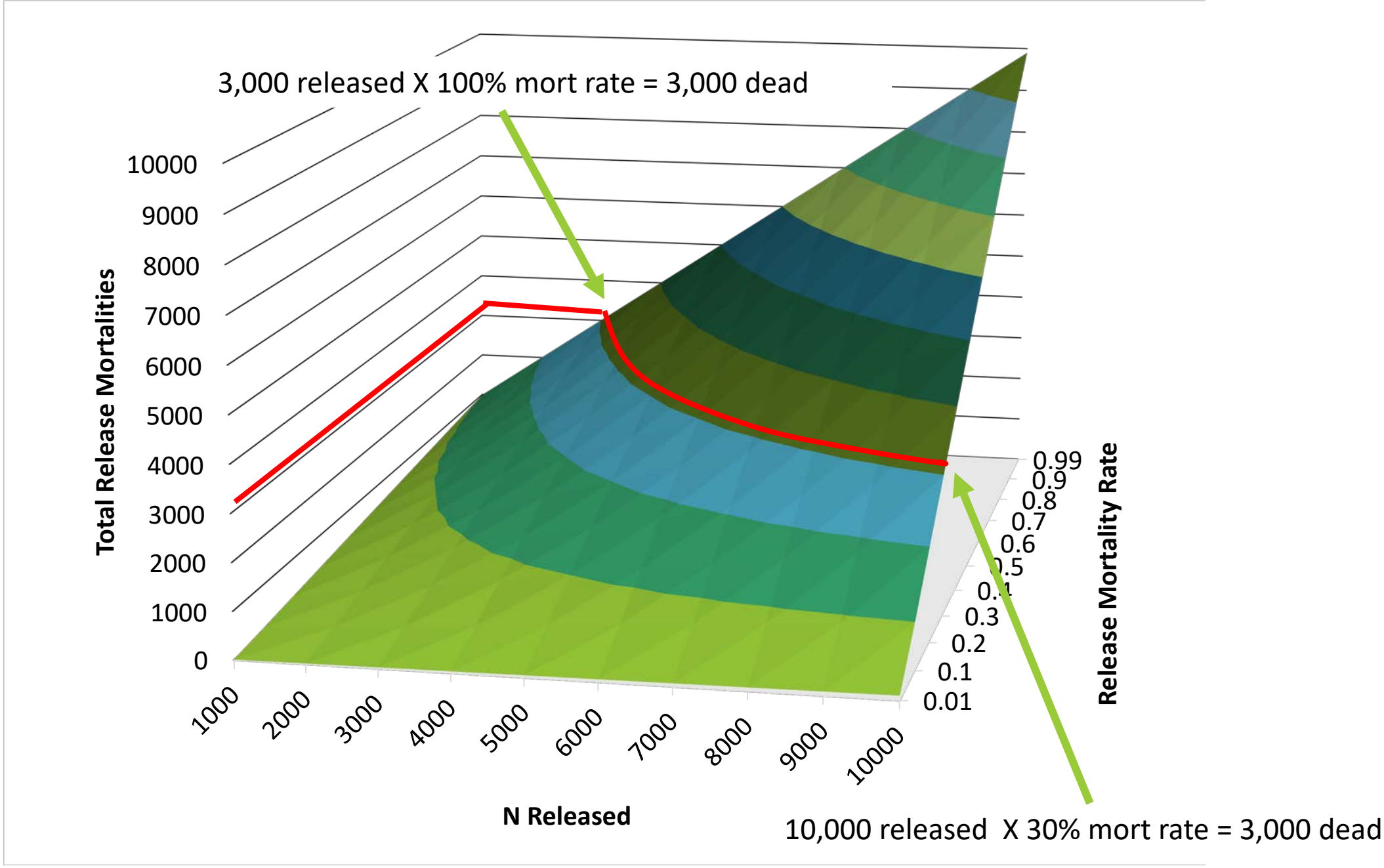
Methods to **avoid/reduce** encounters:

- Time, Area, Gear (TAG)
  - Time – e.g., fishing around run timing
  - Area – e.g., fishing in areas with less non-target presence
  - Gear – e.g., avoidance/reduction by size of fish
- Structure timing, area, gear used in a fishery to focus harvest on target species/stock and minimize encounters of non-target species/stocks.
- Can be effective for encounters of different species or stocks/run types but is less likely to be effective for marked/unmarked components within the same stock/run type and species.

…. or when encountered, to release those animals alive and unharmed.

Minimize mortality of released fish:

- Live release regulations
- Improve operation; e.g., use of recovery boxes
- Use gear with lower handle and post-release mortality rates
- Could be applied to any non-target fish
- Total release mortalities = # released X mortality rate


3,000 released X 100% mort rate = 3,000 dead
Total Release Mortalities
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
N Released
0.99
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.01
Release Mortality Rate
10,000 released X 30% mort rate = 3,000 dead

Mark-Selective Fisheries

- Retention only allowed for marked fish (usually adipose clip); unmarked fish (unmarked hatchery, ESA wild, healthy wild, etc.) must be released.
- Focuses harvest on marked hatchery fish, some level of mortality of released fish occurs.
- Most effective when the mark rate is high and the release mortality rate is low.
- Number of mortalities is the product of the number of fish released and the release mortality rate.

Sector	Fishery	Season	Species	Per fish release mortality rate
Commercial	Select Area	Winter/Spring	Steelhead	30%
		Summer		59%
		Fall		66%
	Zone 1-5 Tangle	Winter/Spring	Steelhead	18.5%
			Chinook	14.7%
	Zone 1-5 Large Mesh		Steelhead	30%
			Chinook	40%
	Zone 4-5 Large Mesh	Fall	Steelhead	38.3 or 44.8%
	Zone 1-3 Tangle net	Fall	Steelhead	23.6%
			Coho	23.6%
	Beach seine	Fall	Chinook	33%
			Coho	38%
			Steelhead	5%
	Purse seine	Fall	Chinook	21%
			Coho	29%
			Steelhead	2%
	Pound net	Fall	Chinook	7%
			Coho	9%
			Steelhead	6%
Recreational	Mainstem	Spring	Steelhead	10%
			Chinook	10%
		Summer	Chinook	15%
			Steelhead	10%
		Fall	Chinook	19%
			Coho	19%
			Steelhead	10%
	Willamette	Spring	Chinook	12%
			Steelhead	10%
	Cowlitz	Year-round	Steelhead, Chinook, Coho	TBD

Current non-treaty mortality rates

Kept vs. Released

Sector	Fishery	Average annual salmonid handle [1]							
		Data Years	MSF	Handled [2]	Kept	Released	Kept %	Released %	Kept/Rel mort
Commercial	Select Area (all seasons)	2016-2020	No	46,684	46,301	383	99%	1%	281
	Zone 1-5 Tangle net (winter/spring)	2012-2016	Yes	4,979	3,259	1,720	65%	35%	12
	Zone 4-5 Gillnet (8-9.75"; fall)	2016-2020	No	27,096	26,303	793	97%	3%	123
	Zone 1-3 Tangle net (fall)	2013-15, 19-20	Mixed	9,420	7,790	1,629	83%	17%	20
	Beach seine (fall)	2014-2016	Yes	3,145	1,293	1,853	41%	59%	2
	Purse seine (fall)	2014-2016	Yes	6,208	2,179	4,029	35%	65%	3
	Pound net (fall) [3]	2018-2020	Yes	4,686	1,770	2,916	38%	62%	7
Recreational (below Bonn w/ B10)	Mainstem Spring	2016-2020	Yes	9,816	6,472	3,344	66%	34%	39
	Mainstem Summer	2016-2020	Yes	8,943	5,033	3,910	56%	44%	10
	Mainstem Fall	2016-2020	Mixed	72,702	49,448	23,255	68%	32%	11

1 Includes Chinook, coho, sockeye, steelhead, and chum although some minor handle in some fisheries may not be included.
2 For commercial fisheries, data includes adults and jacks. Recreational is adults only.
3 Operated as a test fishery only in one location.

ESA-listed Species Mortalities

Sector	Fishery	Data Years	Average annual mortalities of ESA-listed salmonids [1]	Average annual kept salmonid per ESA-listed salmonid mortality [2]
Commercial	Select Area (all seasons)	2016-2020	415	112
	Zone 1-5 Tangle net (winter/spring)	2012-2016	191	17
	Zone 4-5 Gillnet (8-9.75"; fall)	2016-2020	1,004	26
	Zone 1-3 Tangle net (fall)	2013-15, 19-20	153	51
	Beach seine (fall)	2014-2016	36	36
	Purse seine (fall)	2014-2016	73	30
	Pound net (fall) [3]	2018-2020	35	50
Recreational (below Bonneville w/ B10)	Mainstem Spring	2016-2020	229	28
	Mainstem Summer	2016-2020	149	34
	Mainstem Fall	2016-2020	2,148	23

1 Includes Chinook, coho, sockeye, steelhead, and chum although some minor handle in some fisheries may not be included.
2 For commercial fisheries, data includes adults and jacks. Recreational is adults only.
3 Operated as a test fishery only in one location.

Kept Catch: Things to Consider

Not all “kept catch” is the same

- Composition of kept catch (species, stock, etc.) will vary by gear, location, etc.
  - Commercial: Z4/5 = 96% Chinook, Fall Tangle Net = 81% Coho
  - Recreational: Buoy 10 = 41% Tule, Warrior Rock-Bonneville = 87% Bright
- Commercial price value differences
  - Z4/5 = $44/fish, Purse Seine = $18/fish
- Size/weight of fish

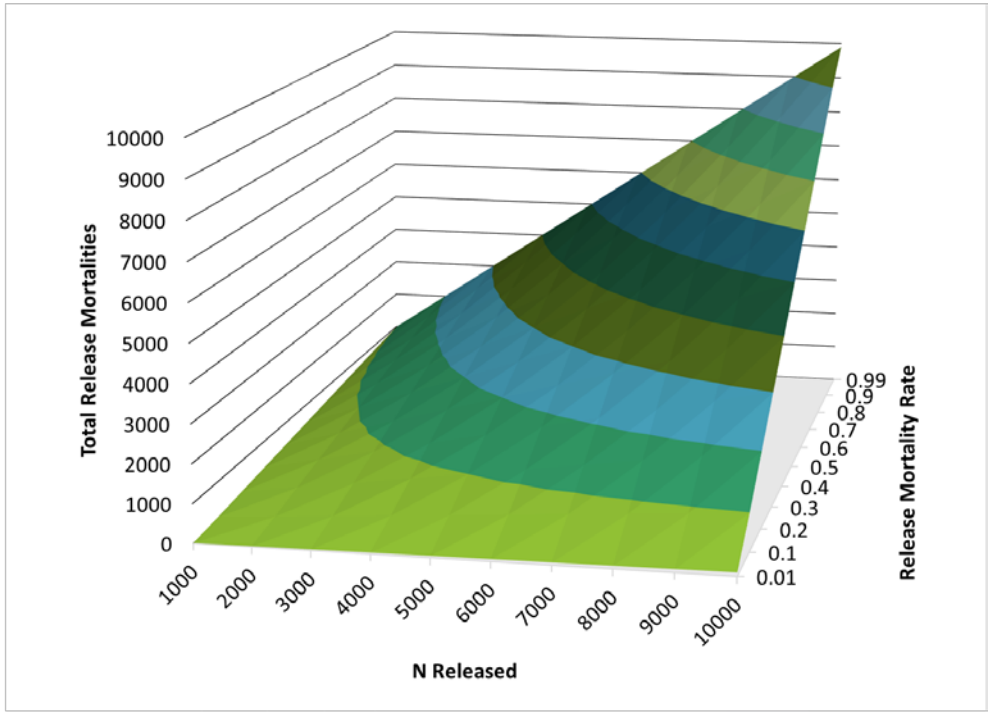
Kept catch alone does not necessarily reflect ‘value’ of opportunity

- Preferred species/stock
  - Upriver Bright Chinook are preferred over Tule Chinook for both commercial and recreational fisheries
- Quality of fishing opportunities
  - Mark rates, catch rates, stock composition, etc., all can impact fishing satisfaction

Selectivity Wrap Up

What is your objective?

- Lower non-target mortality?
- Higher target catch?
- Other?



Questions?

3. INFORMATION REGARDING INCREASE/DECREASE IN FISHING PRESSURE IN THE COLUMBIA RIVER MAINSTEM FISHERIES IN BOTH COMMERCIAL AND RECREATIONAL FISHERIES.

Fishing Effort

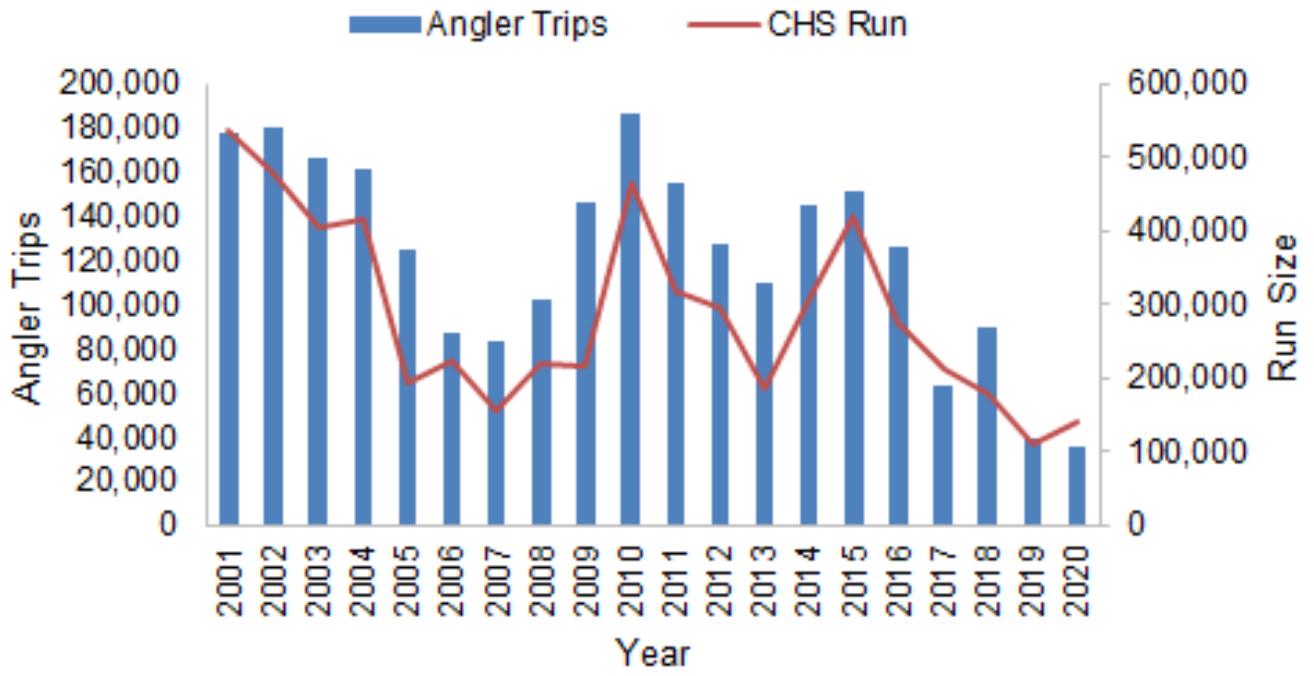
Recreational effort is in units of “angler trips”

Commercial effort is in “number of deliveries”

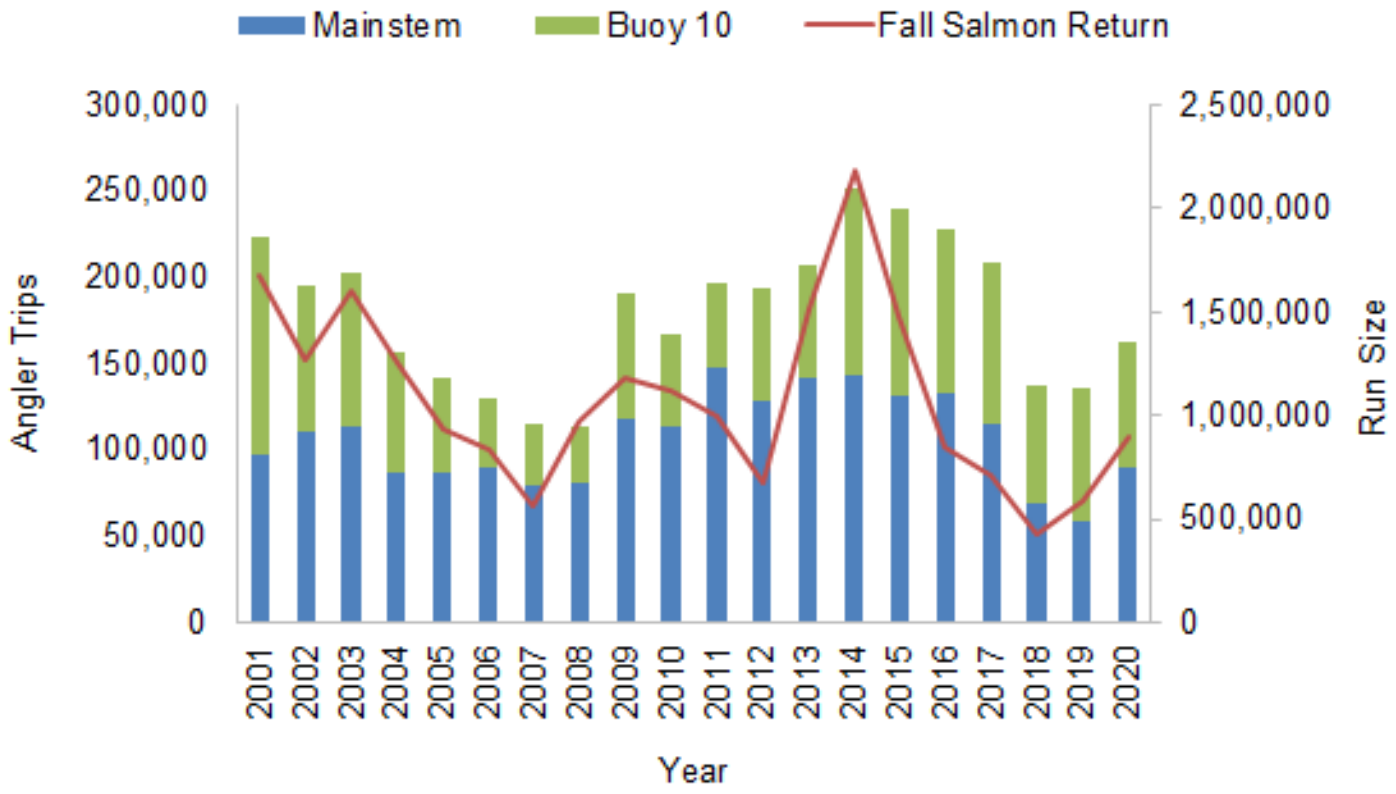
Effort is driven by multiple factors

- Run size – expectations/forecast/available impacts
- Performance – catch rates, reports, social
- Gear Improvements – Fish Finders, etc.
- Weather, available time, etc.
- Opportunity – number of open days
- Other

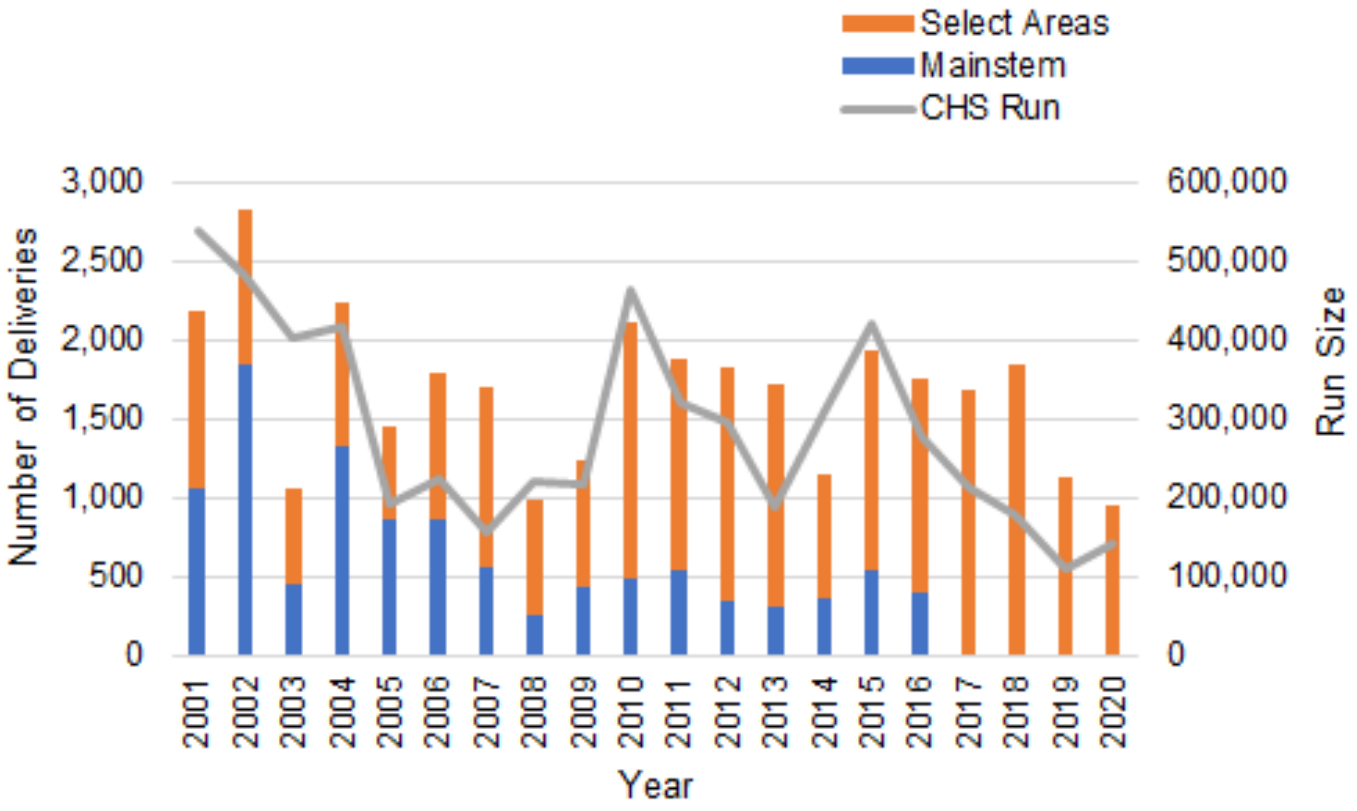
Recreational below Bonn: Spring Season



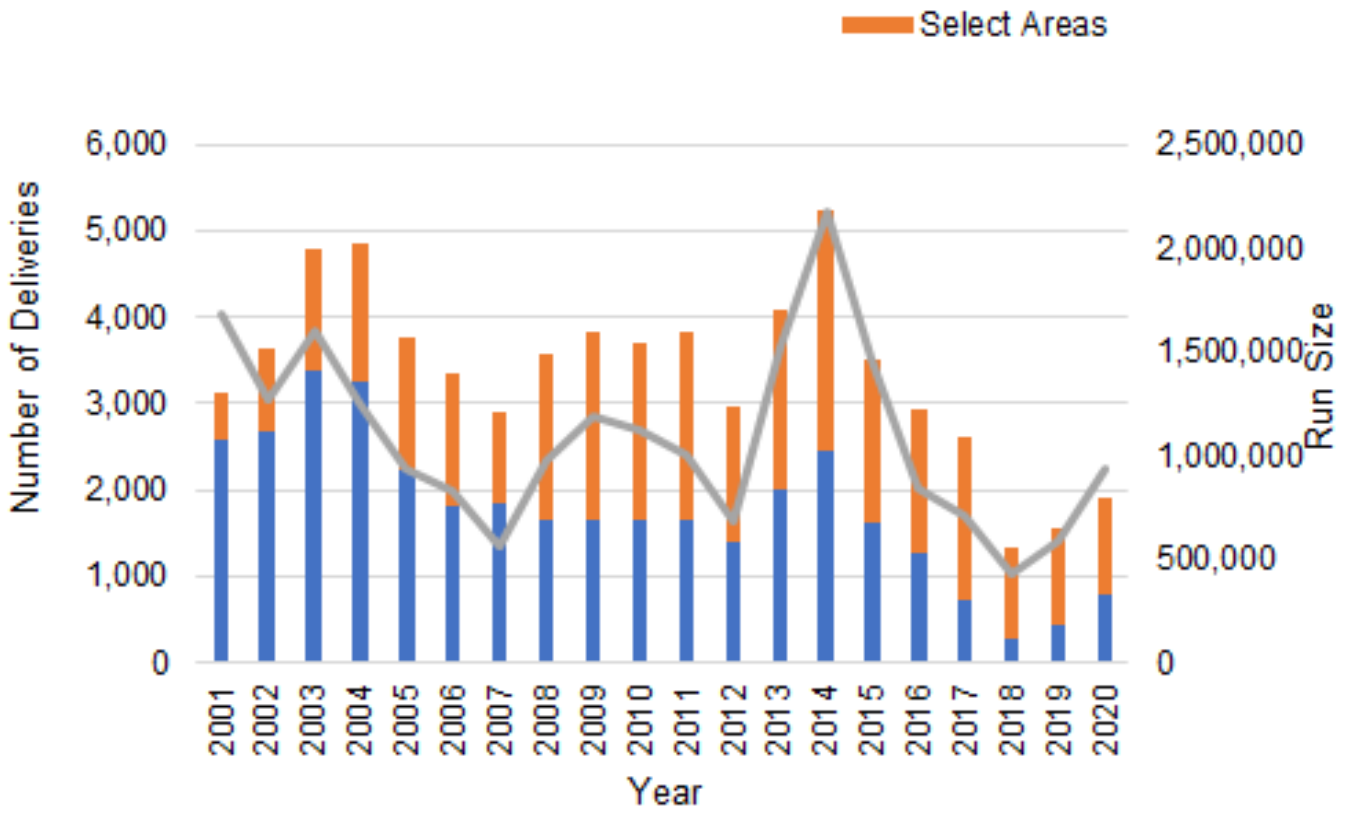
Recreational below Bonn: Fall Season



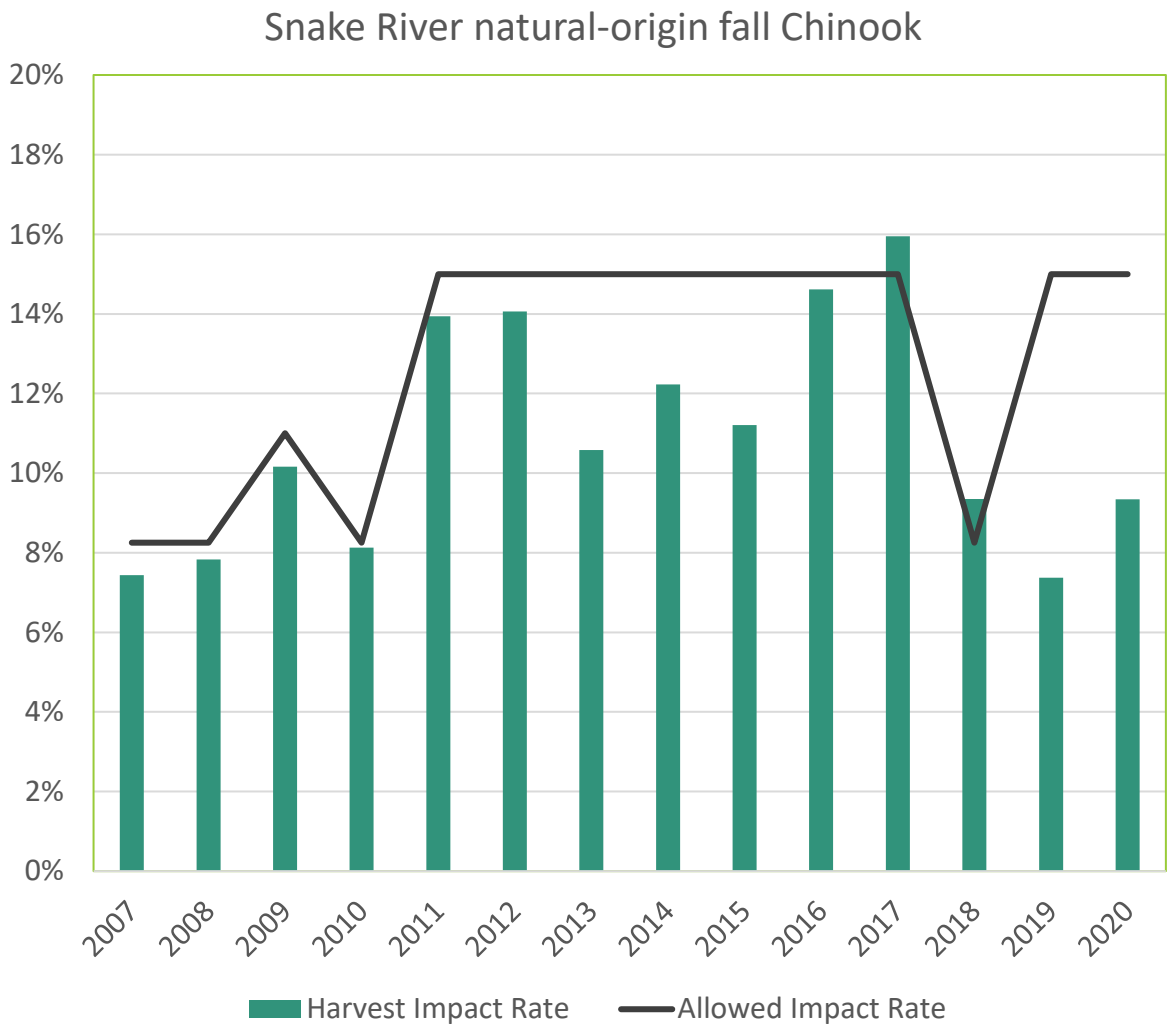
Commercial: Spring Season

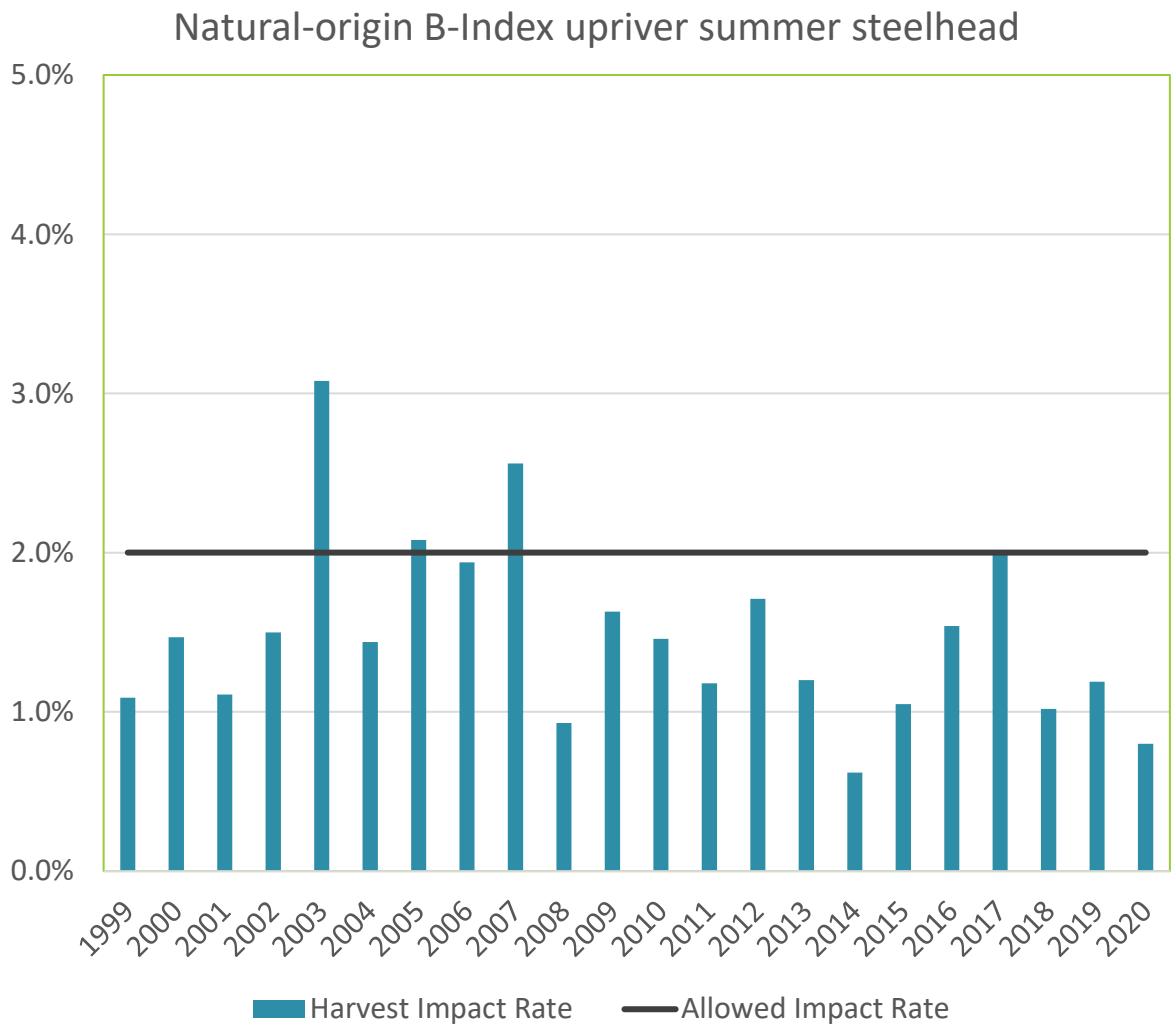


Commercial: Fall Season



Non-Treaty Combined ESA Harvest Rate (examples)



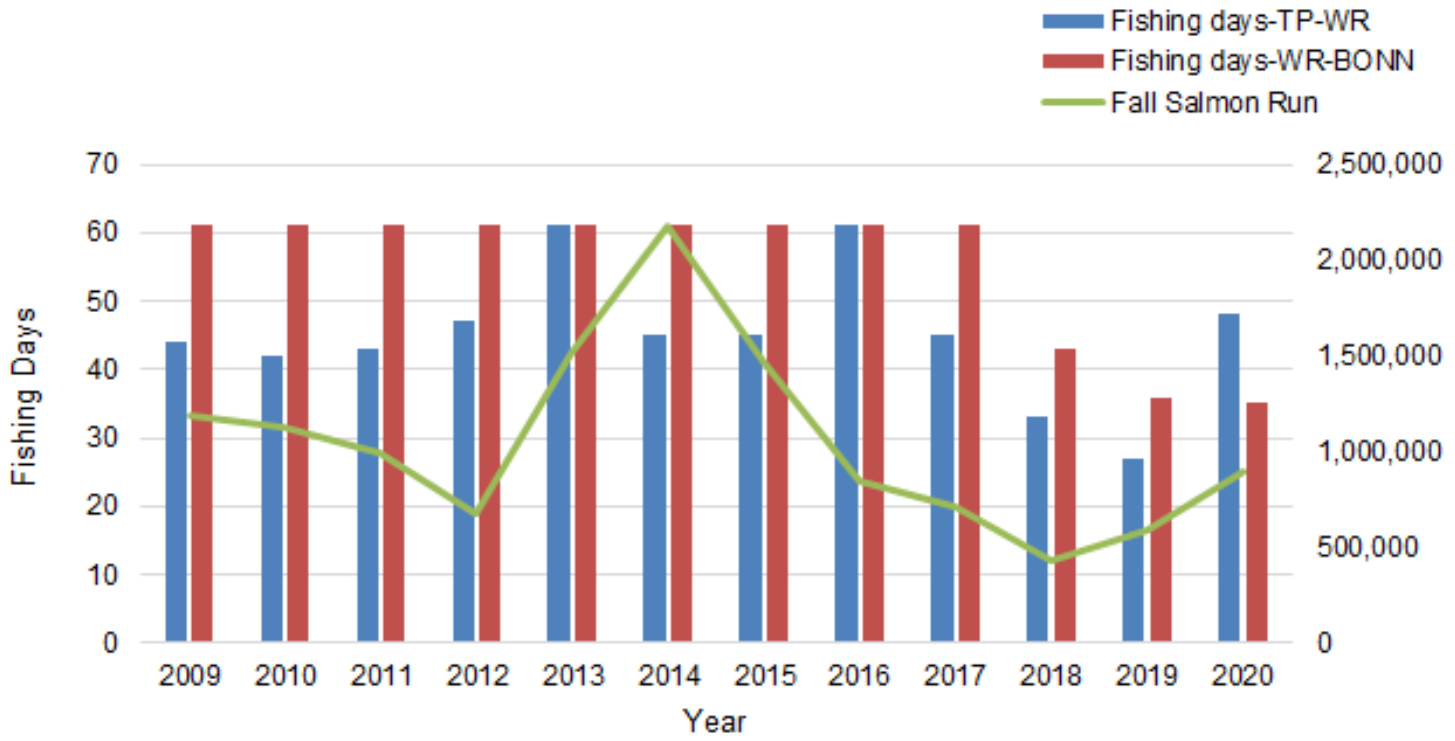


Opportunity (Fishing Days)

Changes in opportunity are also influenced by:

- Run size
- Effort
- Performance – catch rates, reports, social
- Weather
- Fishing regime – e.g., mark-selective, bag limits
- Days offered - weekends versus weekdays

Opportunity: Recreational Example



1 August and September only in TP-WR (Tongue Point to Warrior Rock) and WR-BONN (Warrior Rock to Bonneville Dam)
2 Sub-area closures and one Chinook limit applies most recent years.
3 Mark-selective Chinook regulations for a portion of TP-WR fishery from 2012-2017.

Fishing Pressure Summary

- Fisheries are managed to stay within allowable impact limits and management objectives
- Effort is variable over time, but tracks run size to some degree
- Many factors influence effort, not just run size
- Opportunity is also influenced by many factors, but may also track with run size

Questions?