

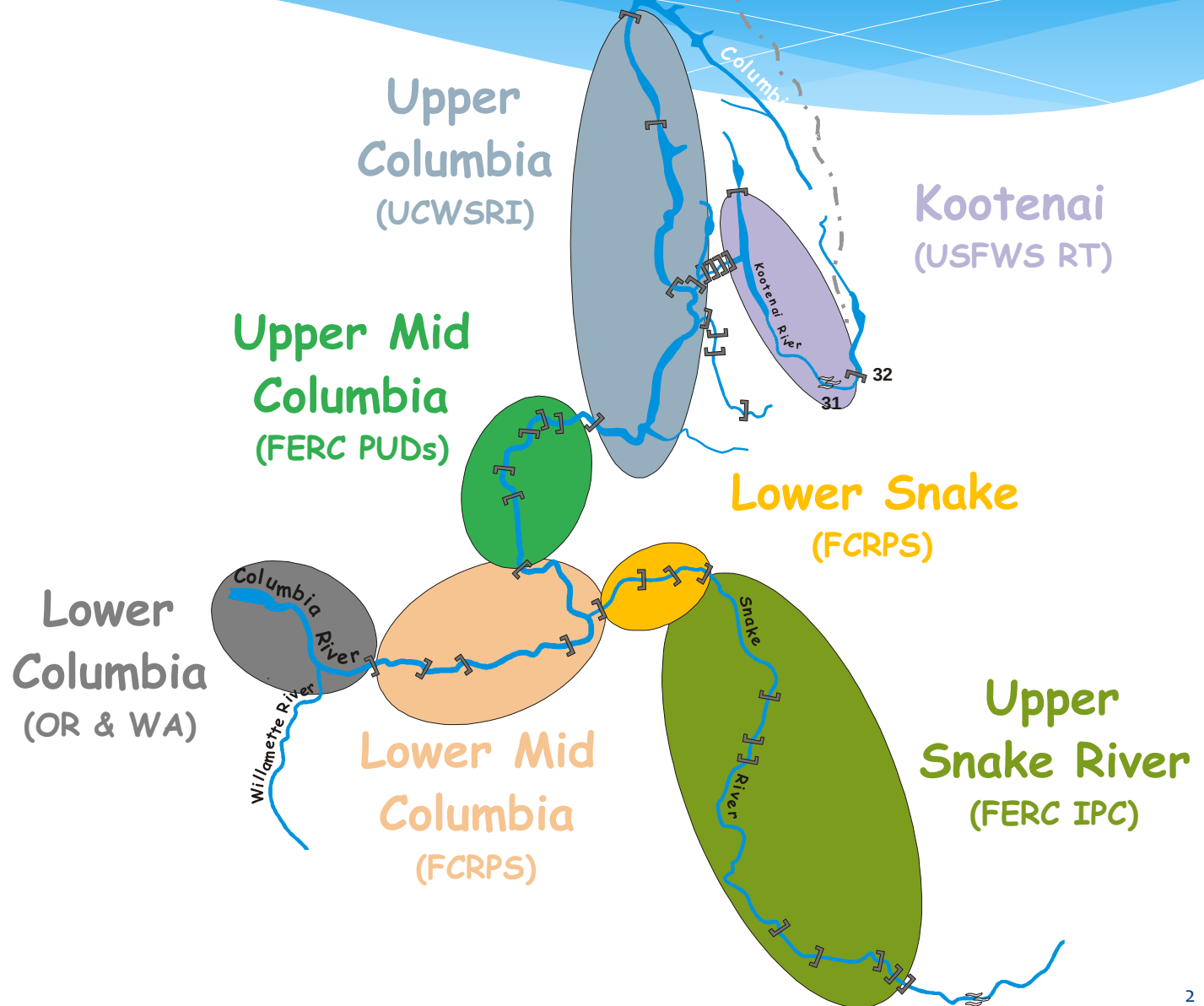


Pacific States Marine Fisheries Commission
69th Annual Meeting
Portland, OR – September 2016

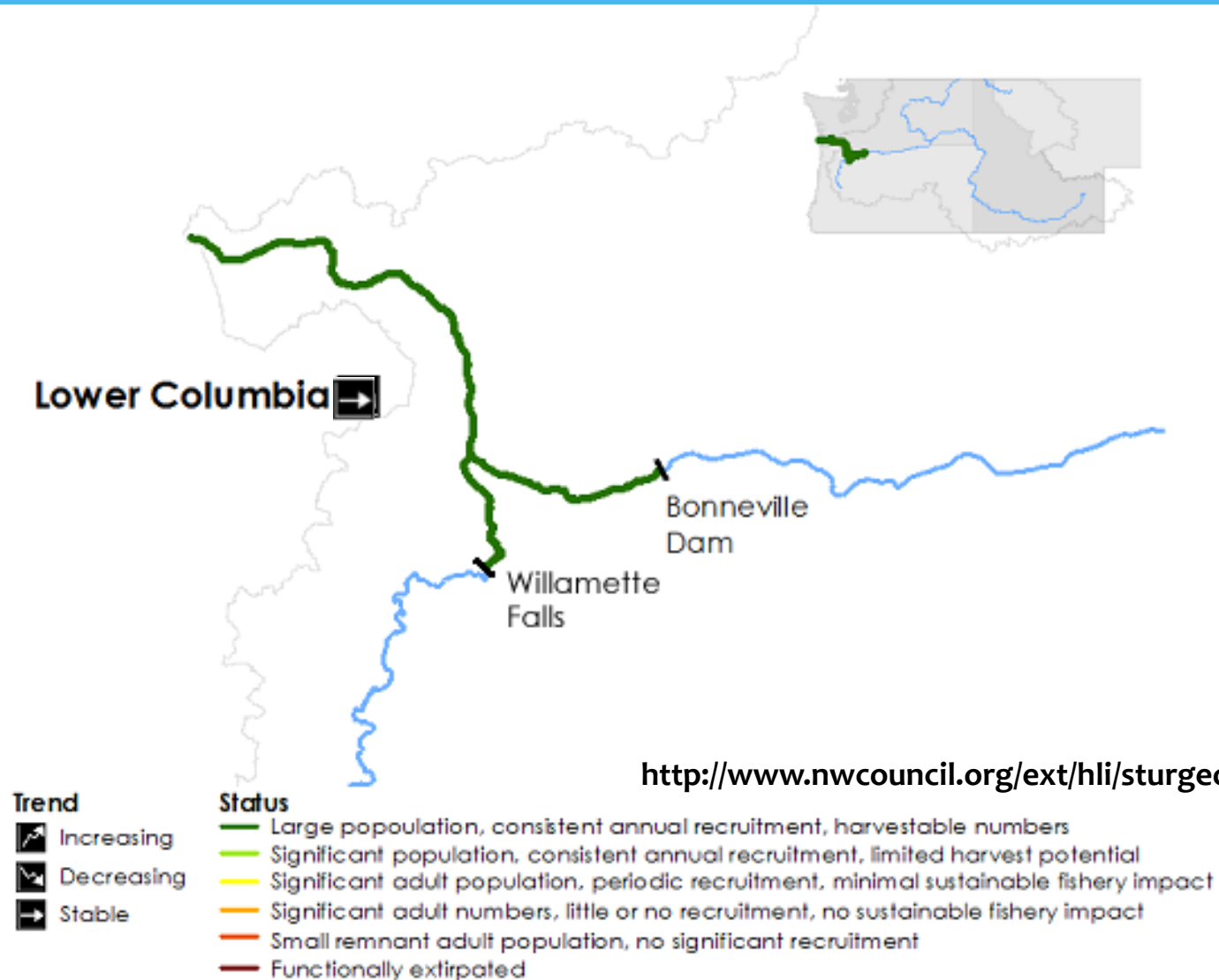
Columbia River White Sturgeon Update

Tucker Jones
Ocean Salmon and Columbia River Program Manager

Columbia River White Sturgeon

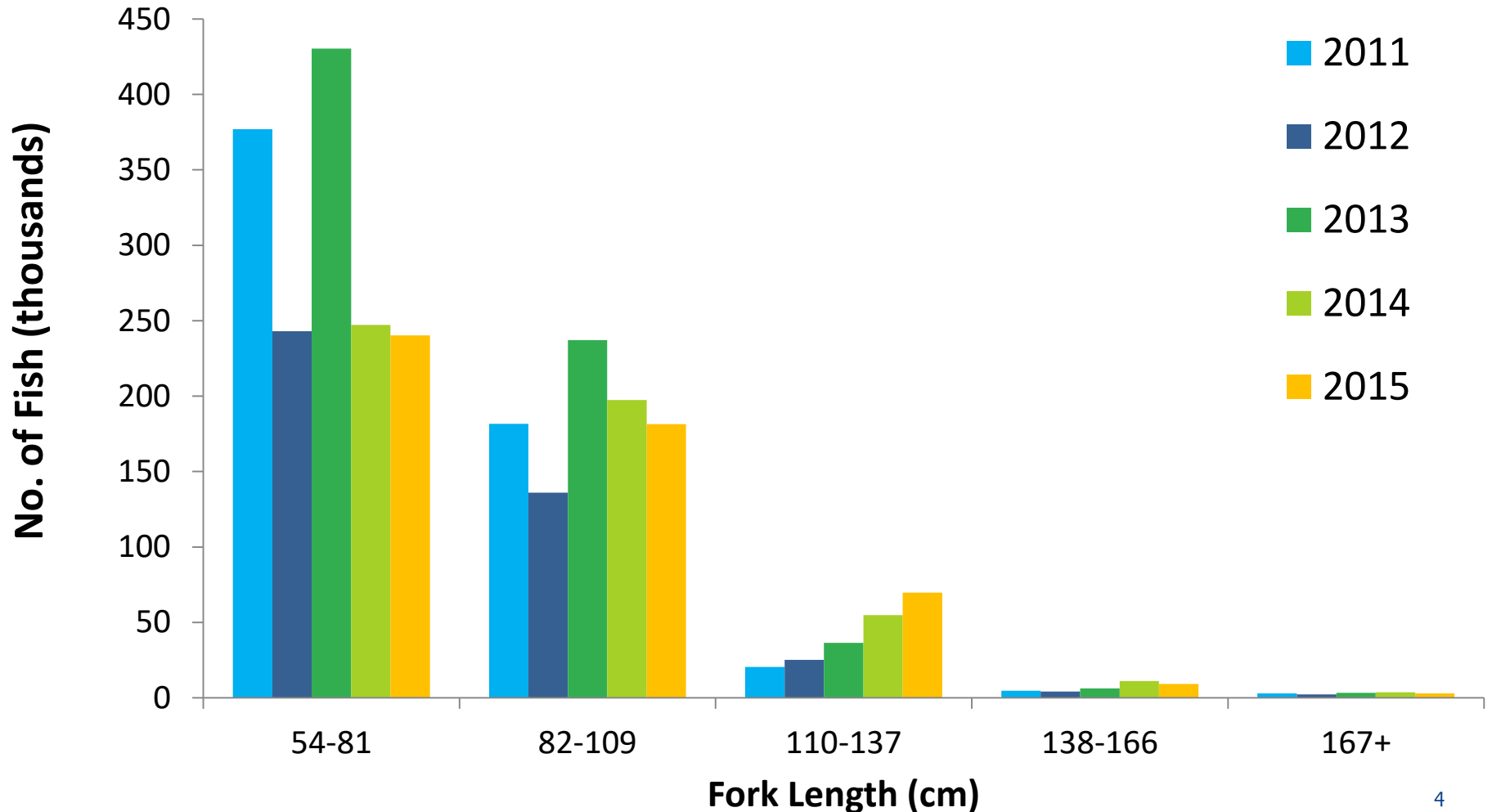


Lower Columbia River Status

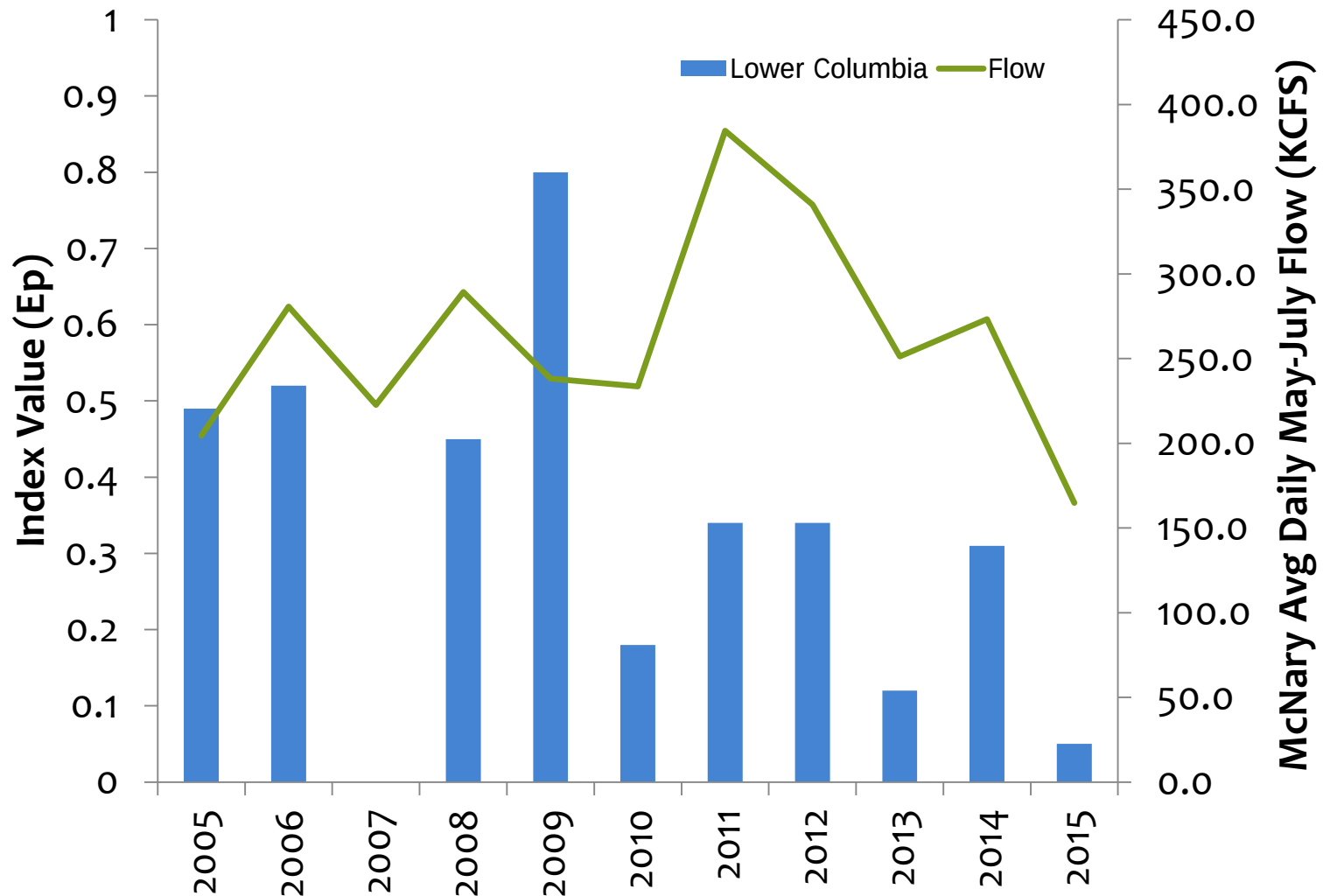


LCR white sturgeon abundance

Abundance by size category by year

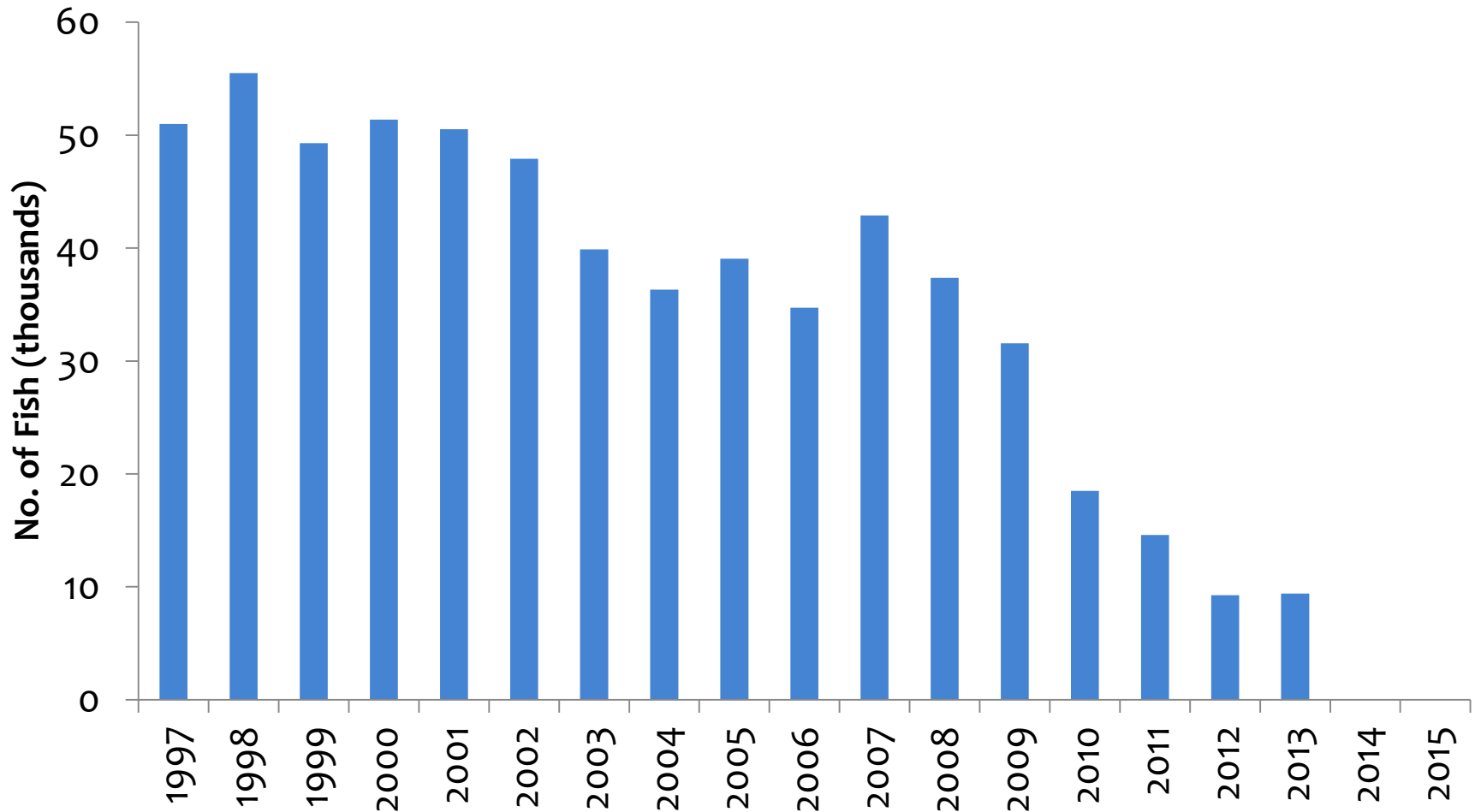


LCR white sturgeon productivity

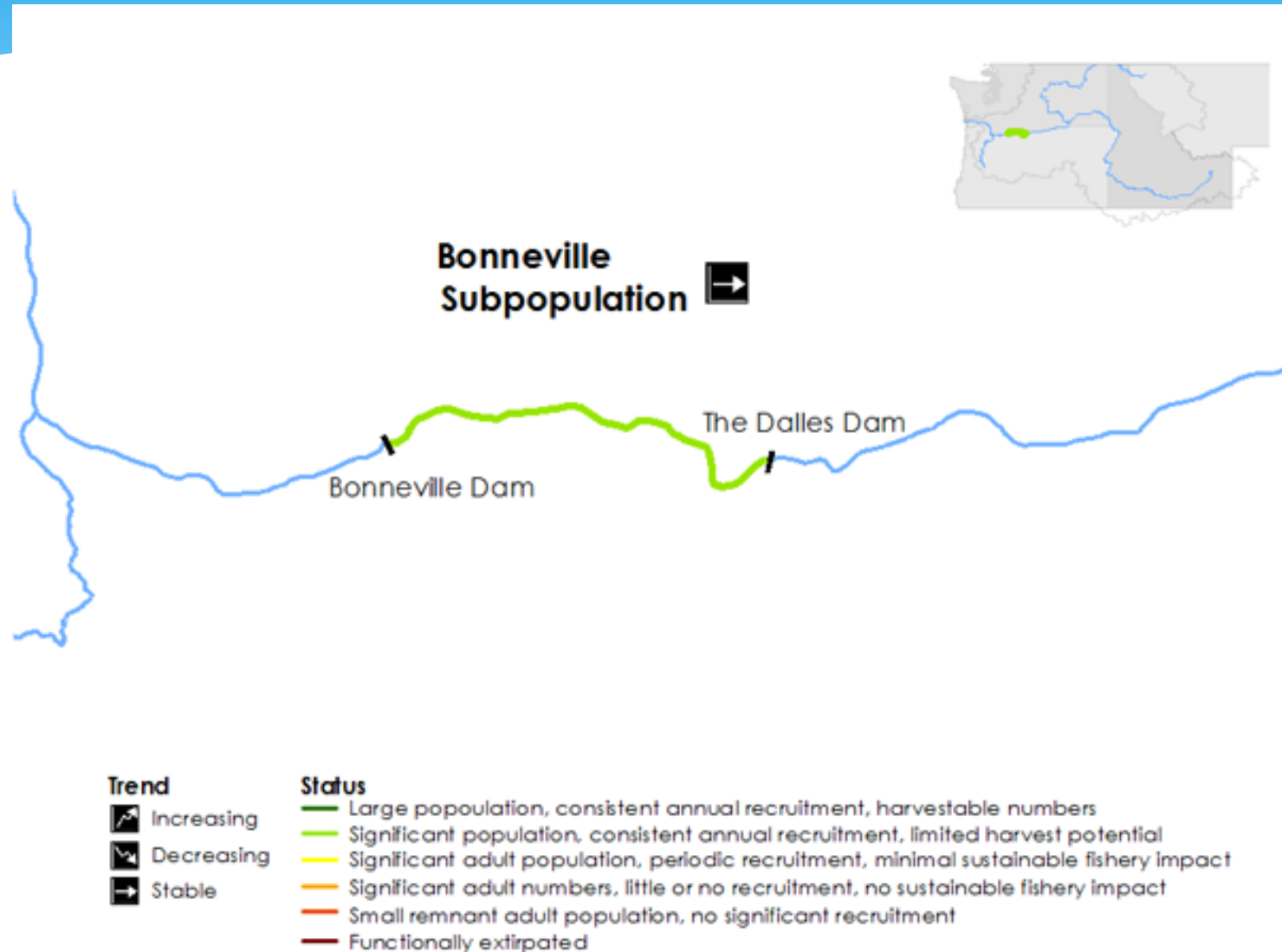


LCR white sturgeon harvest

Combined Recreational and Commercial Harvest

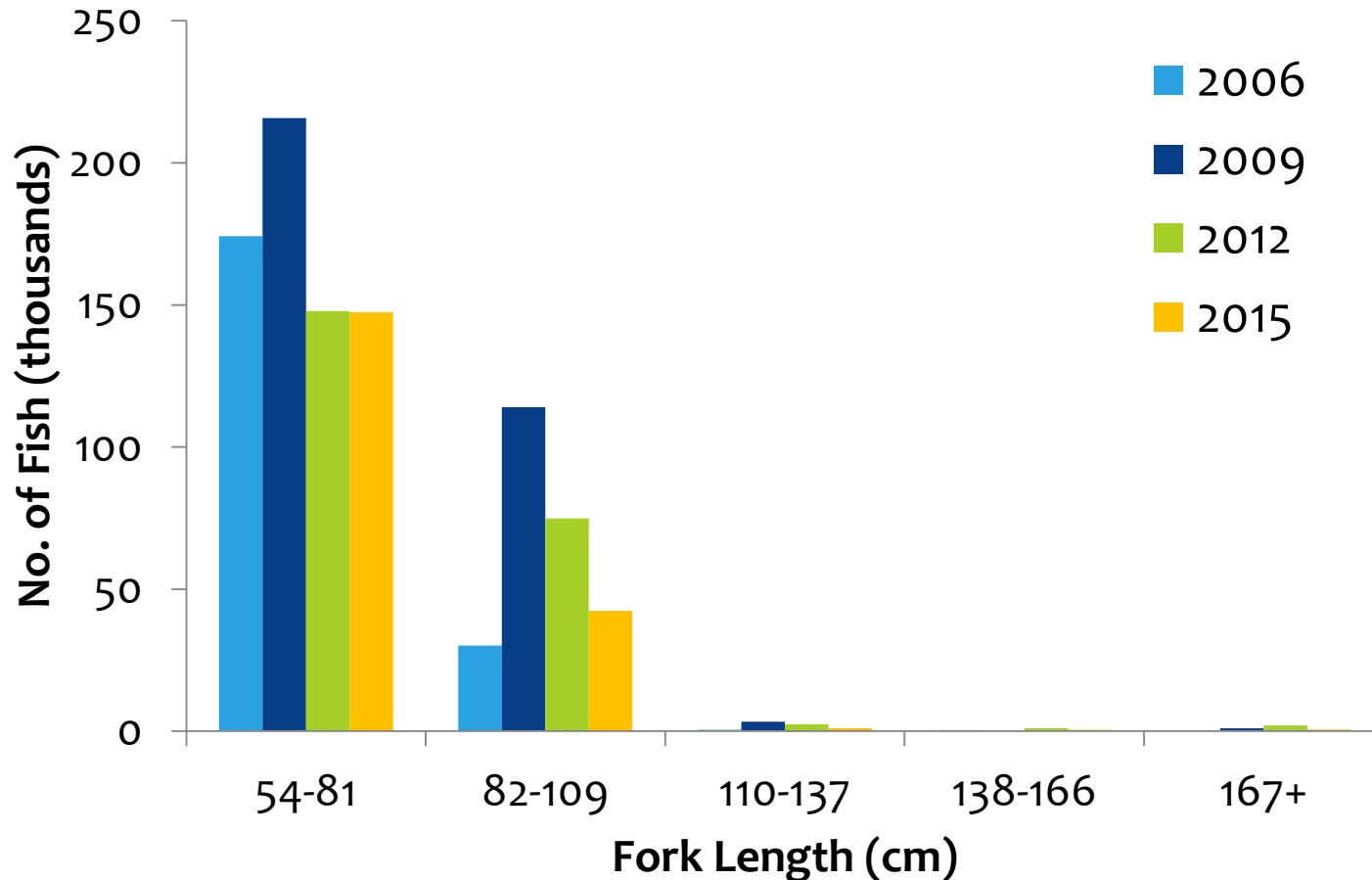


Bonneville Reservoir Status

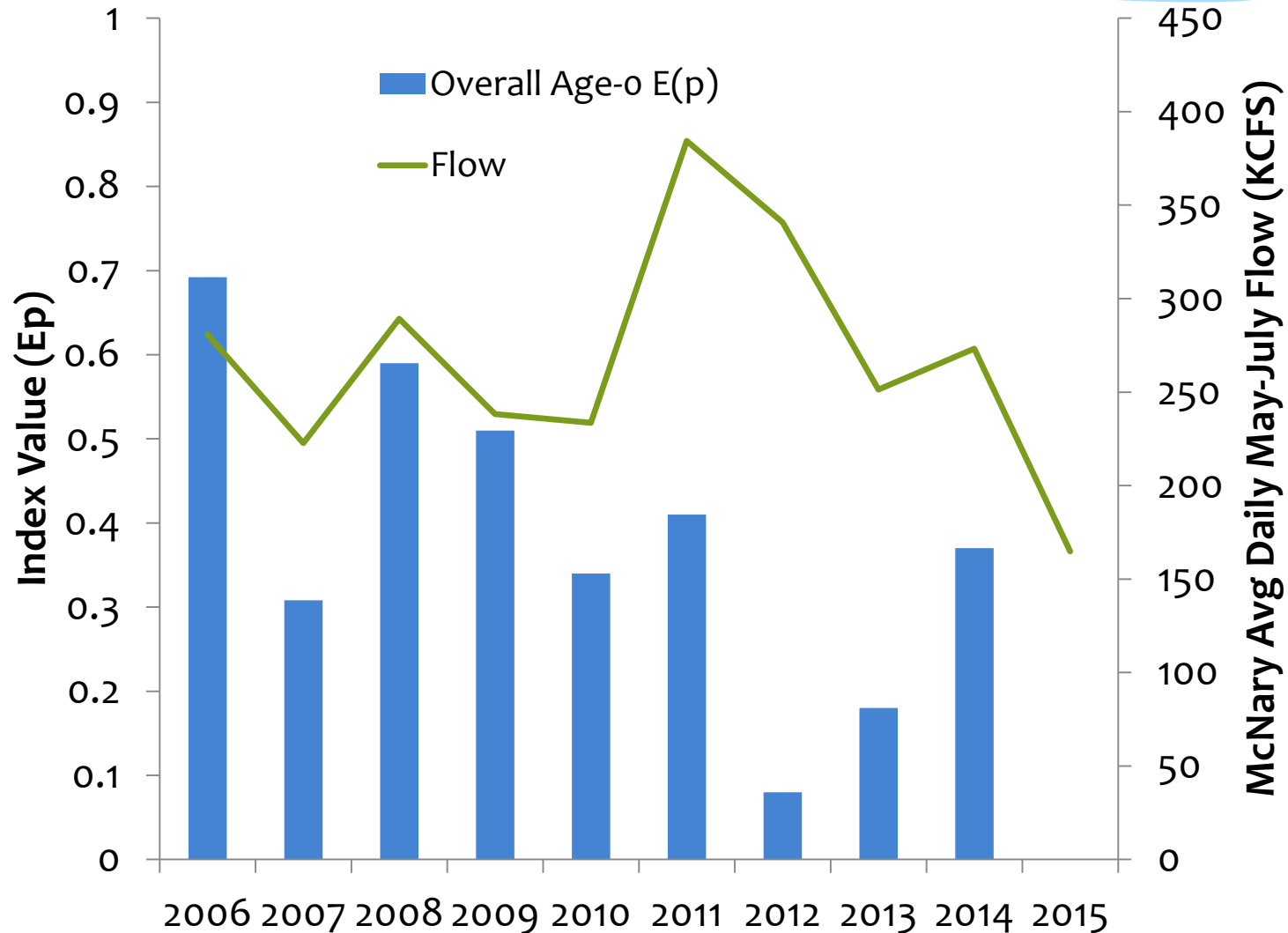


BON white sturgeon abundance

Abundance by size category by year

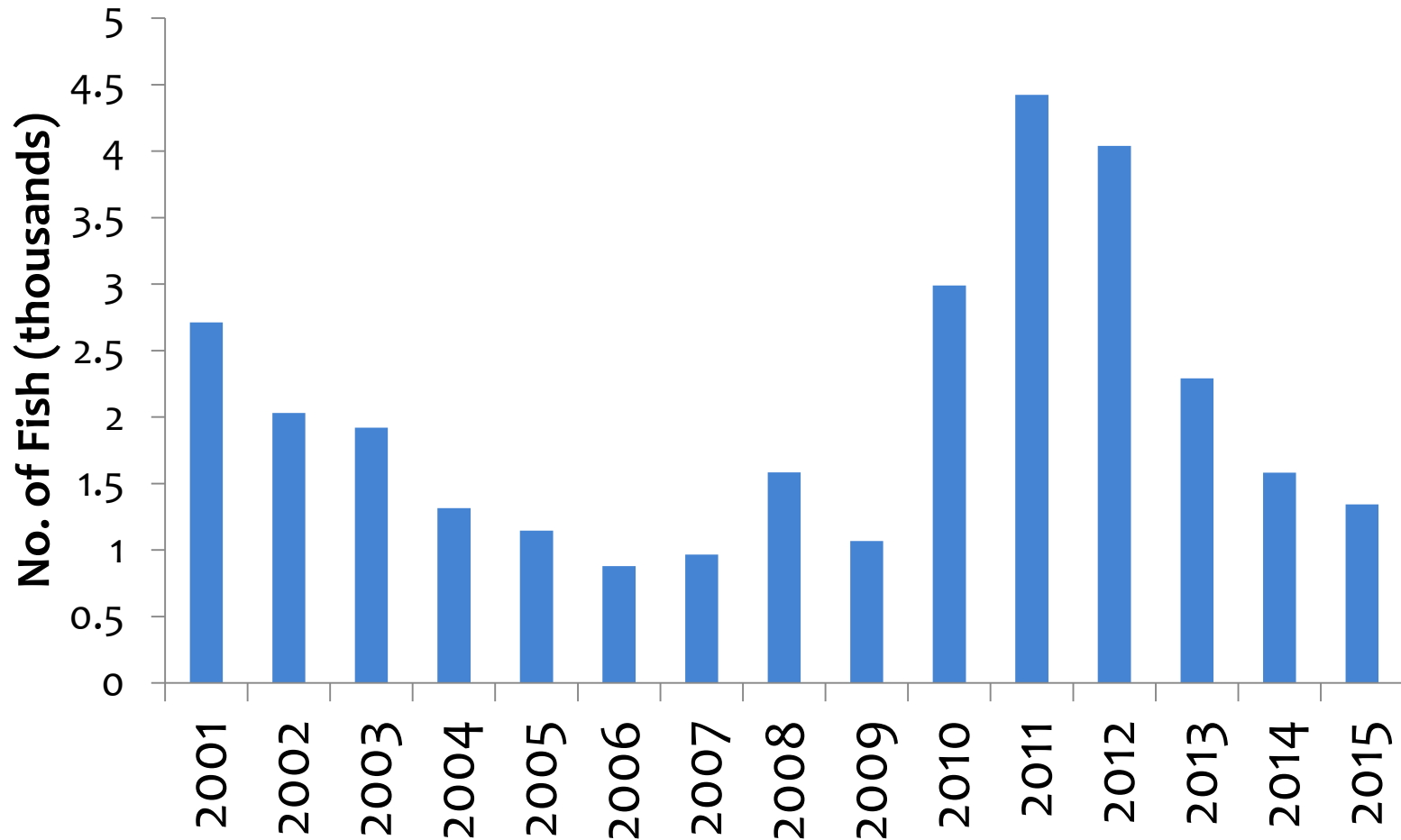


BON white sturgeon productivity

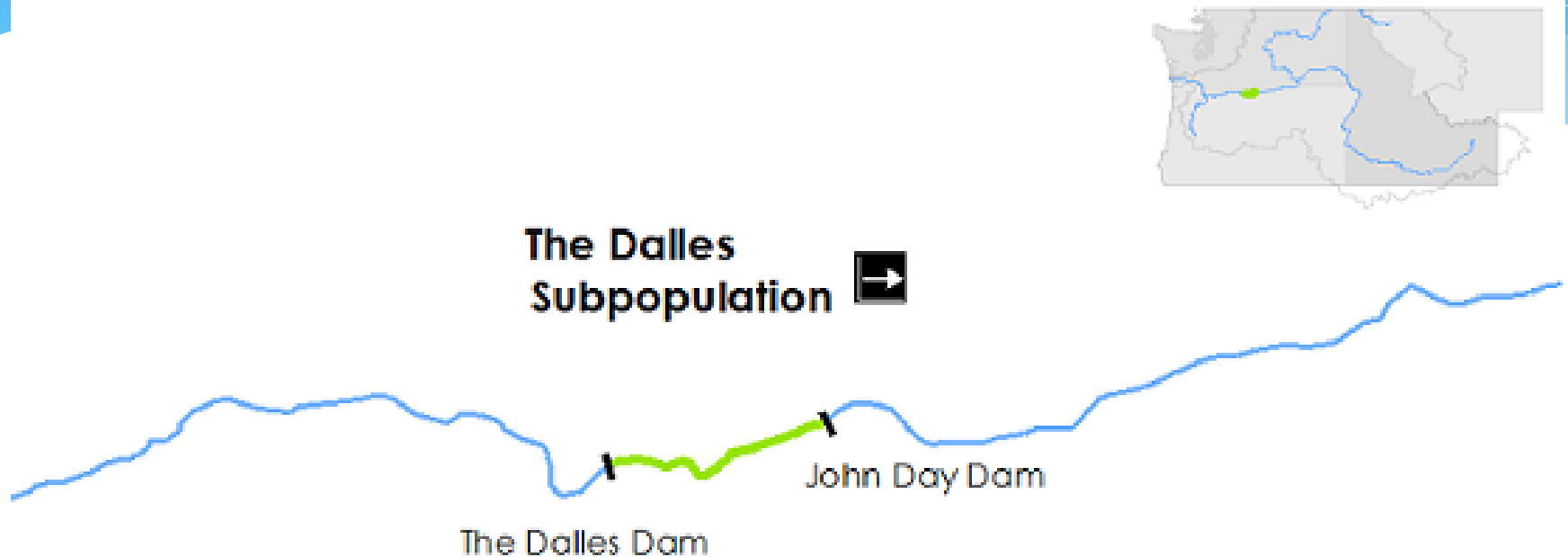


BON white sturgeon harvest

Combined Recreational and Tribal Commercial Harvest



The Dalles Reservoir Status



Trend

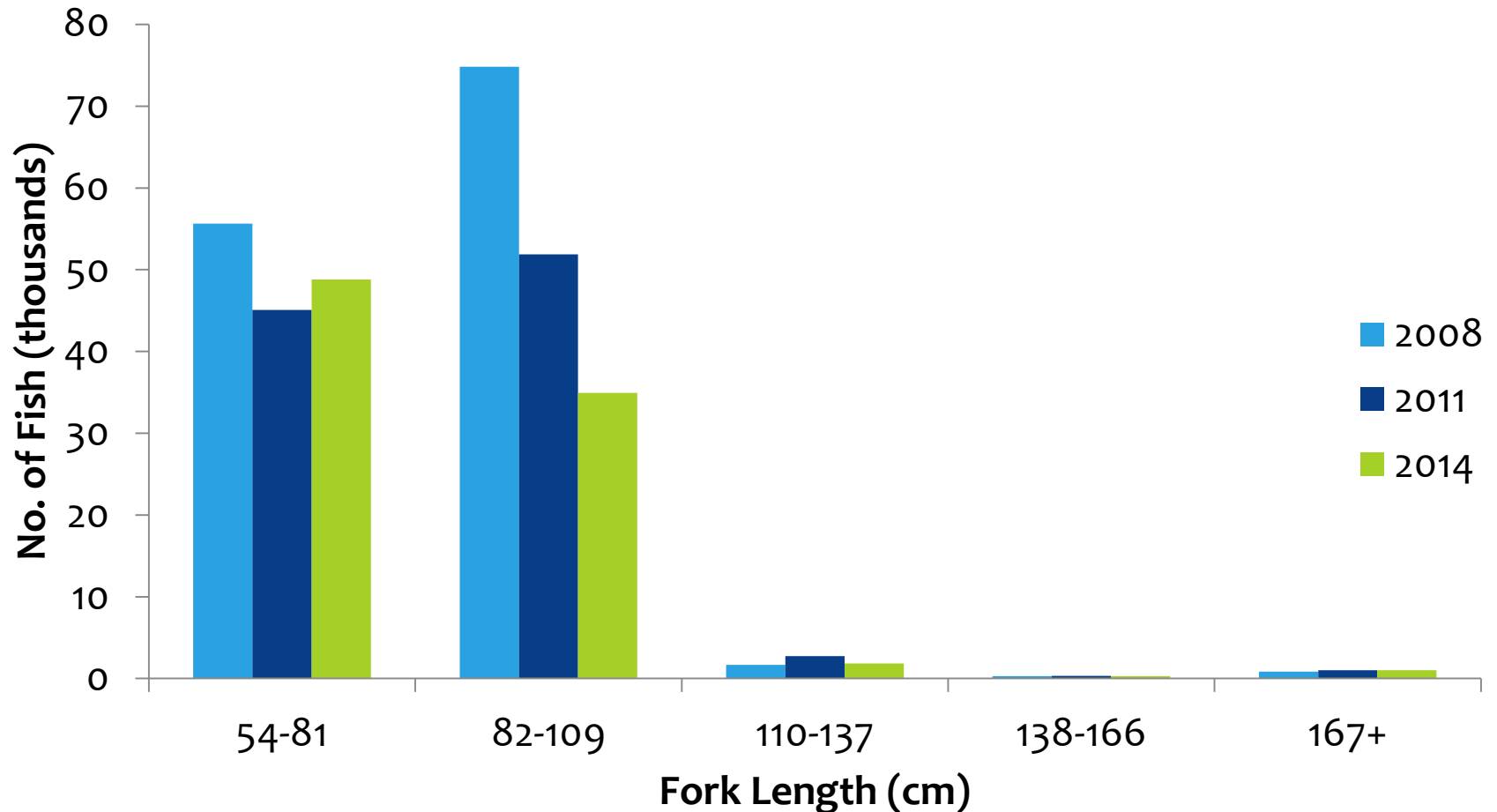
- Increasing
- Decreasing
- Stable

Status

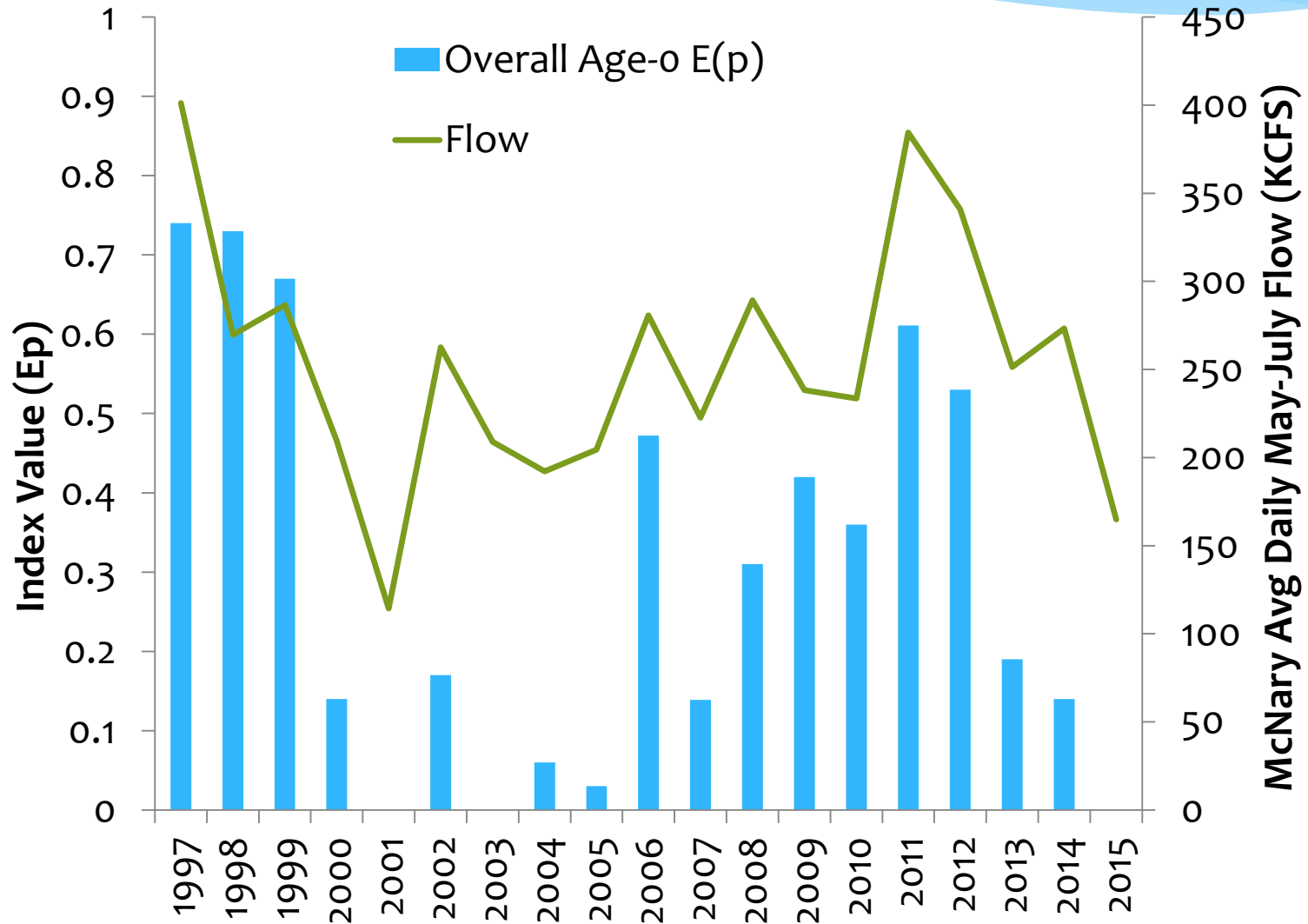
- Large population, consistent annual recruitment, harvestable numbers
- Significant population, consistent annual recruitment, limited harvest potential
- Significant adult population, periodic recruitment, minimal sustainable fishery impact
- Significant adult numbers, little or no recruitment, no sustainable fishery impact
- Small remnant adult population, no significant recruitment
- Functionally extirpated

TDS white sturgeon abundance

Abundance by size category by year

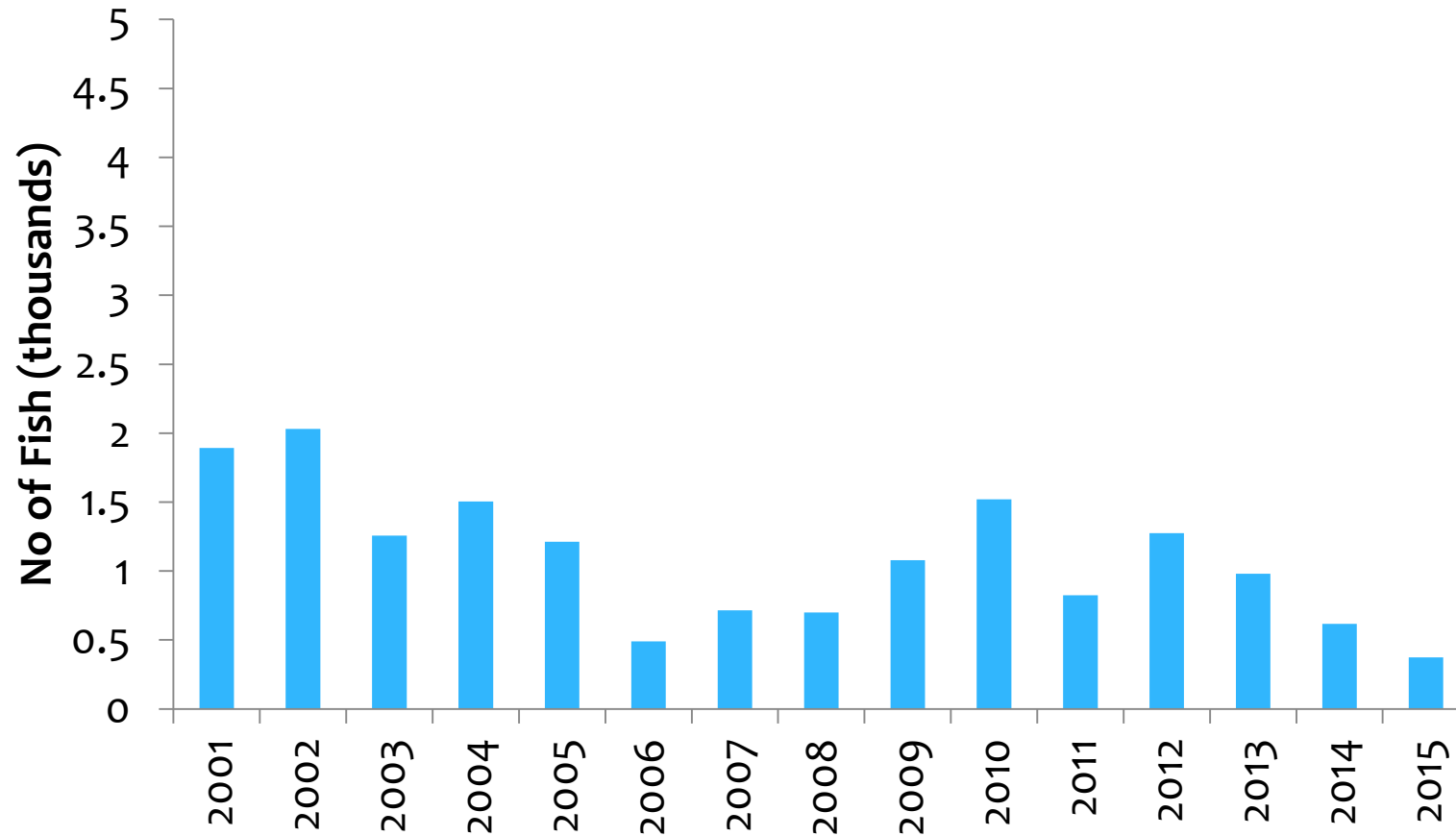


TDS white sturgeon productivity

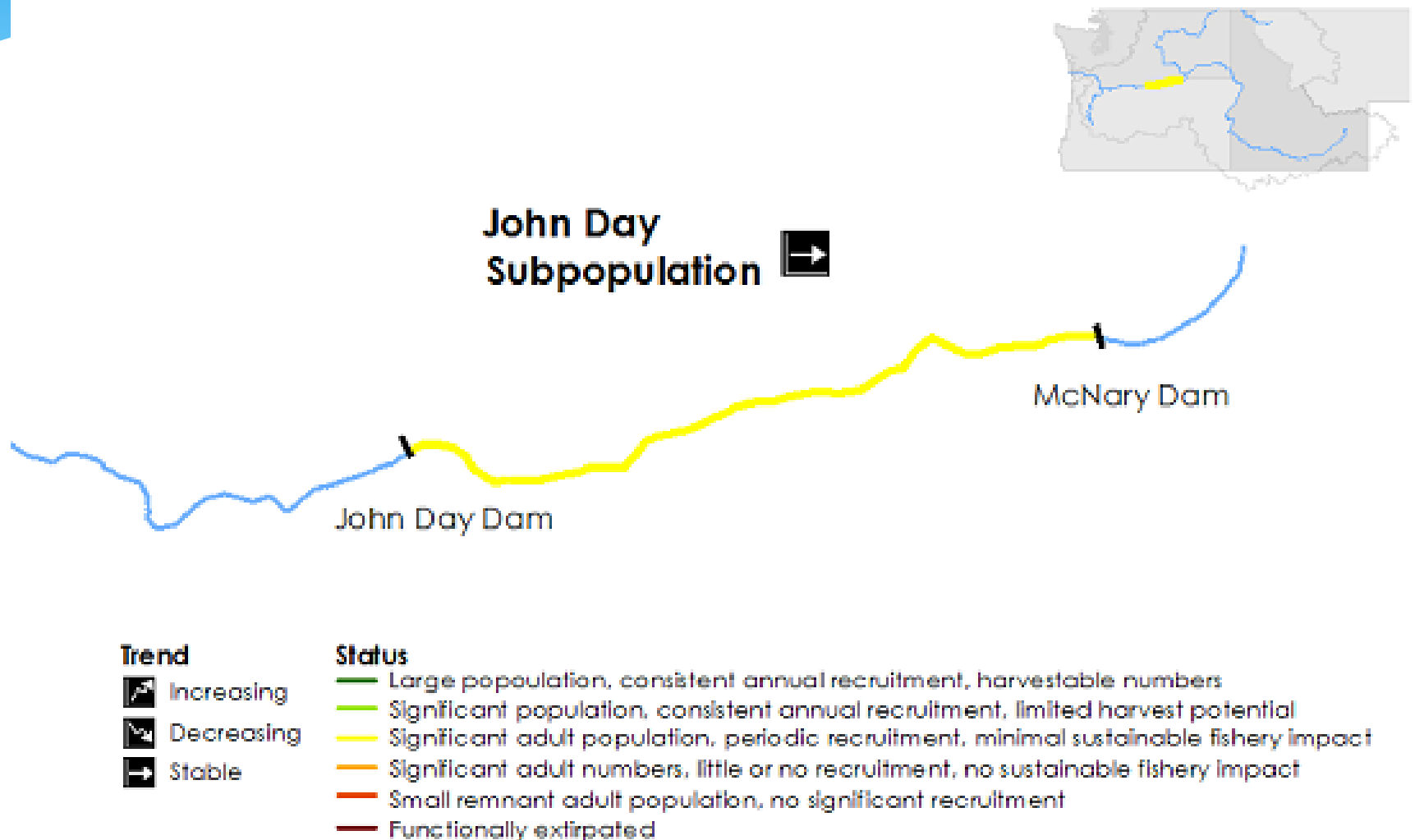


TDS white sturgeon harvest

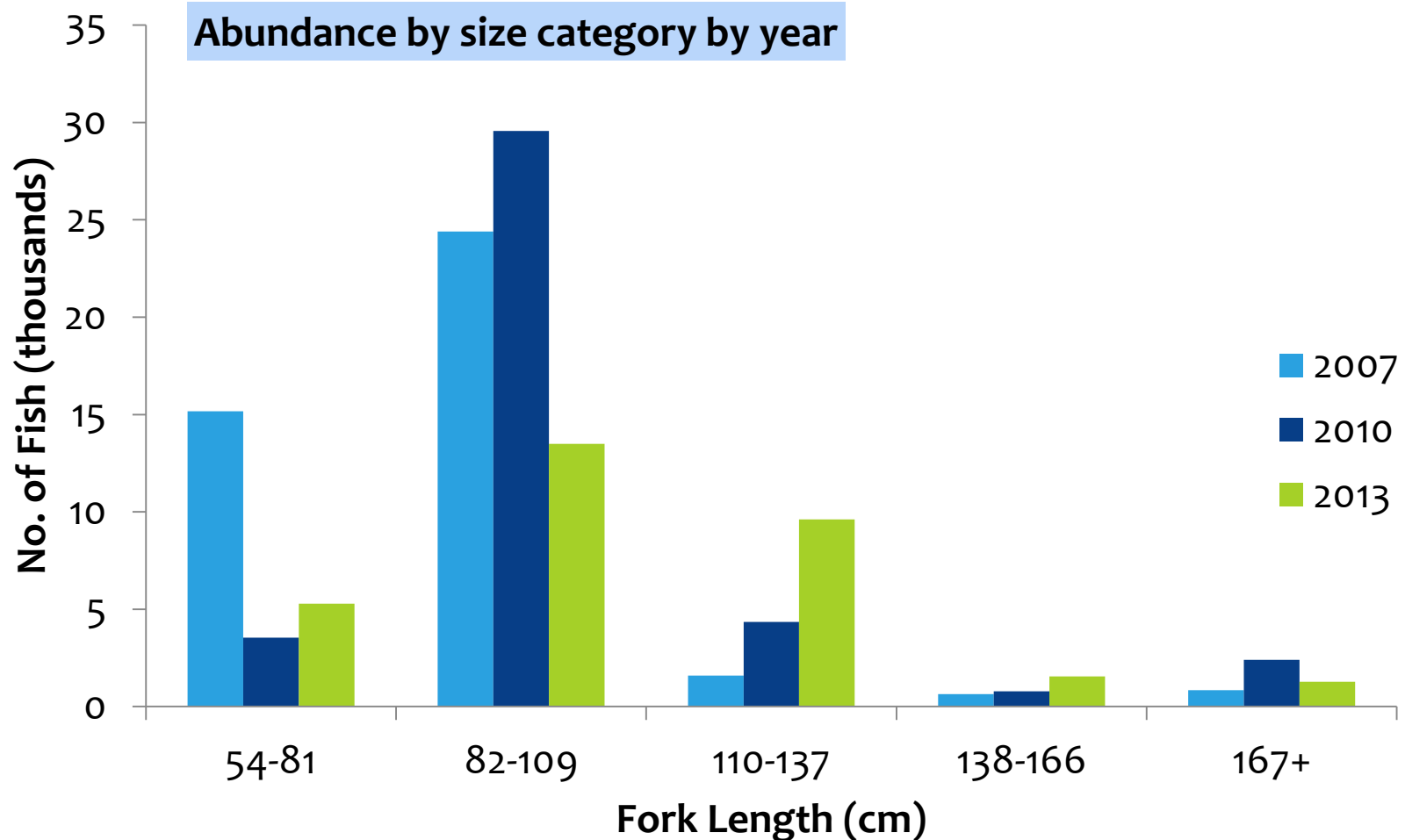
Combined Recreational and Tribal Commercial Harvest



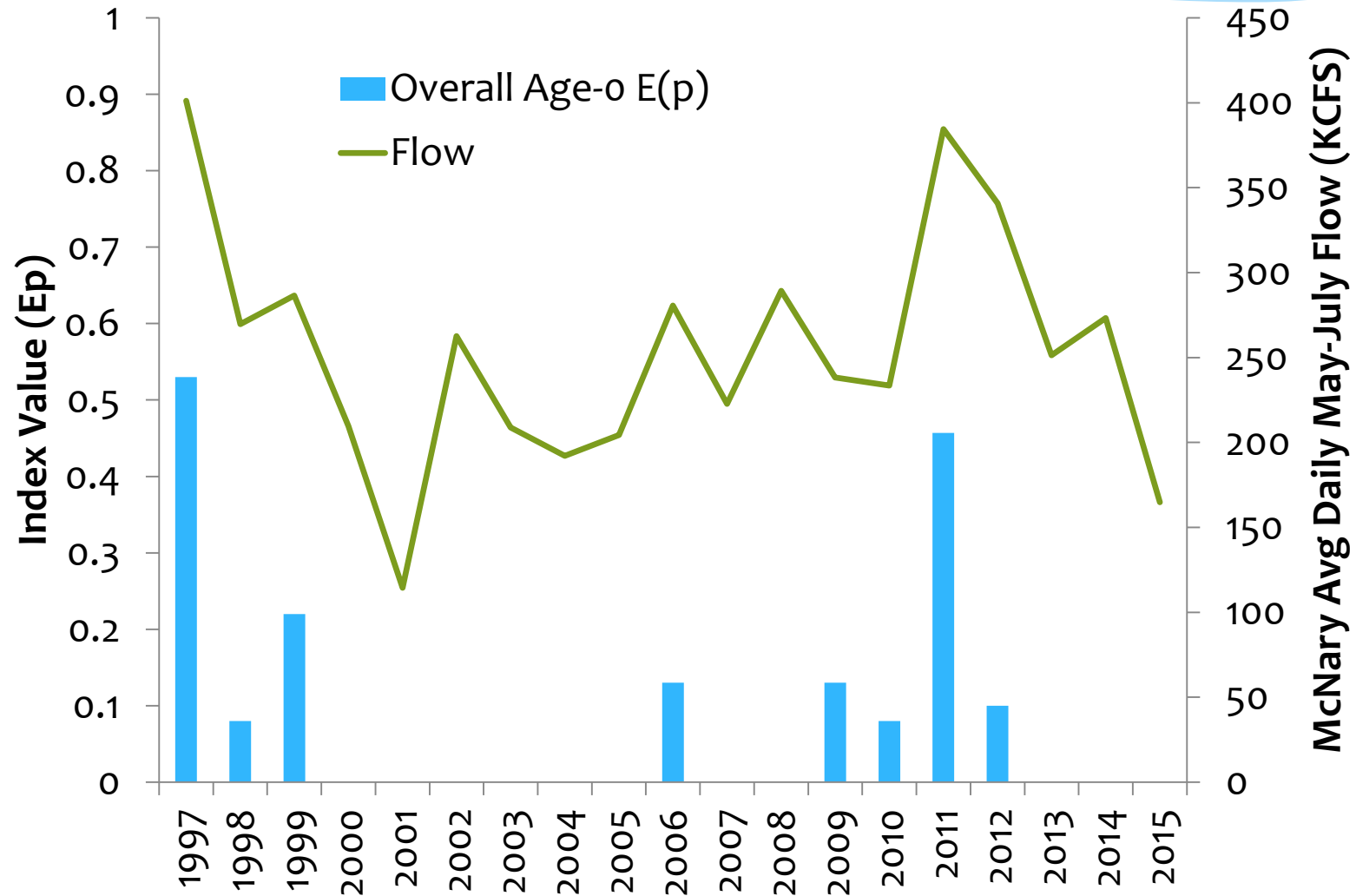
John Day Reservoir Status



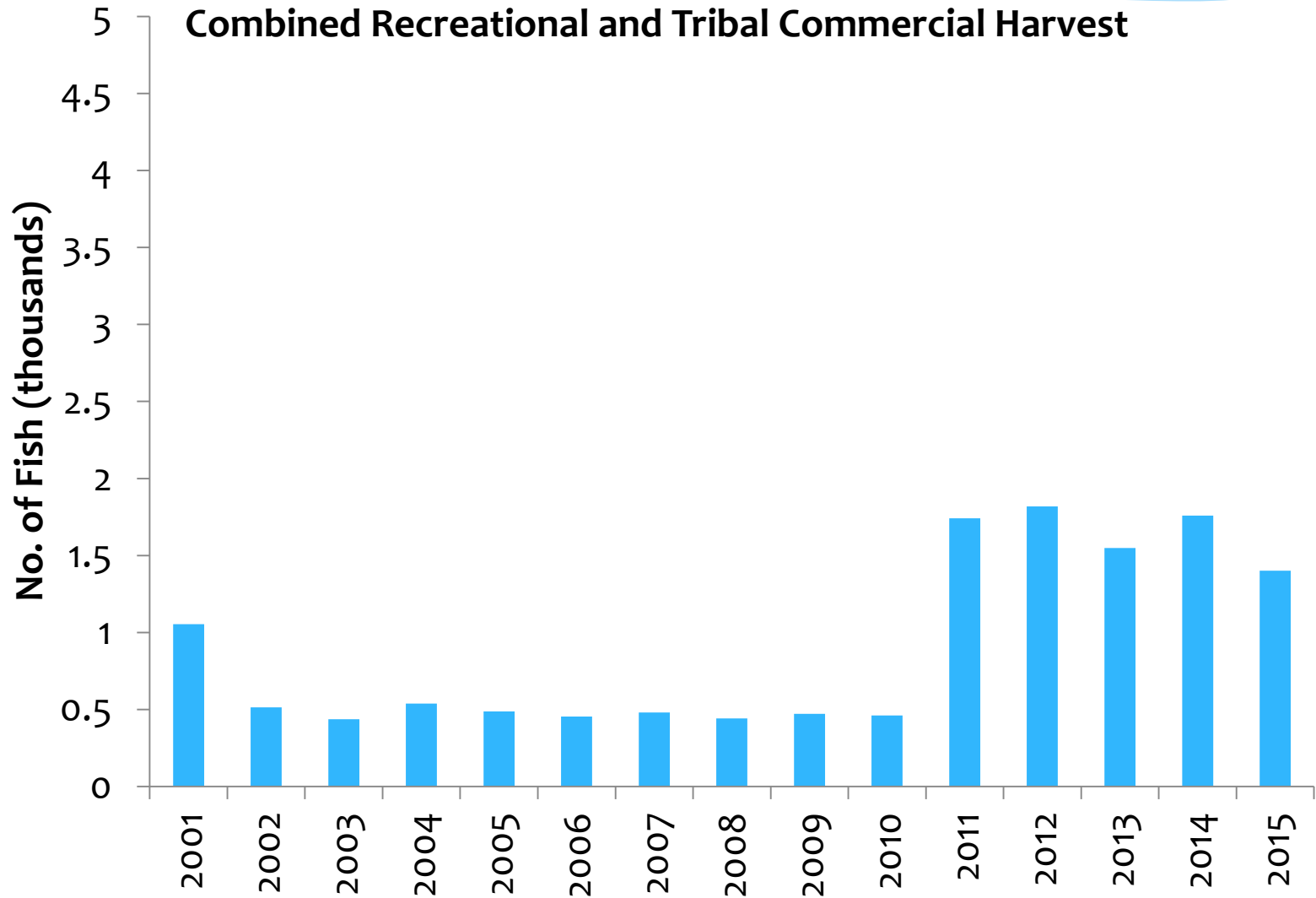
JDY white sturgeon abundance



JDY white sturgeon productivity



JDY white sturgeon harvest

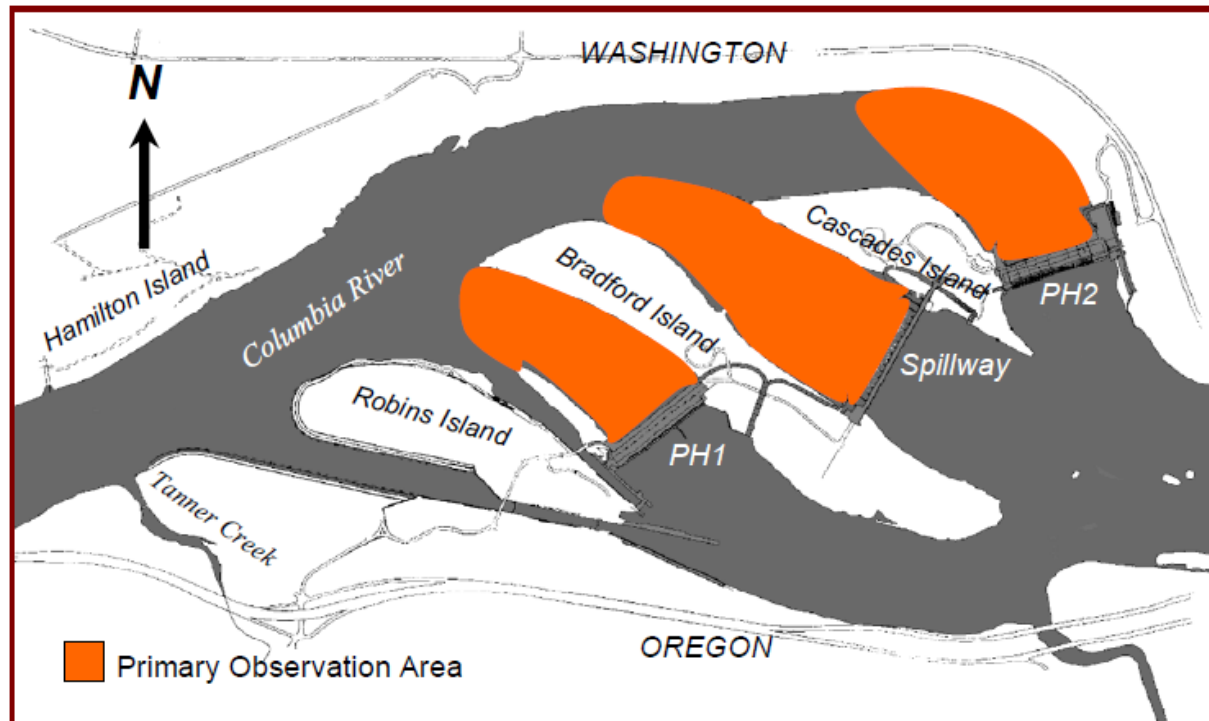


Predation by Steller sea lions



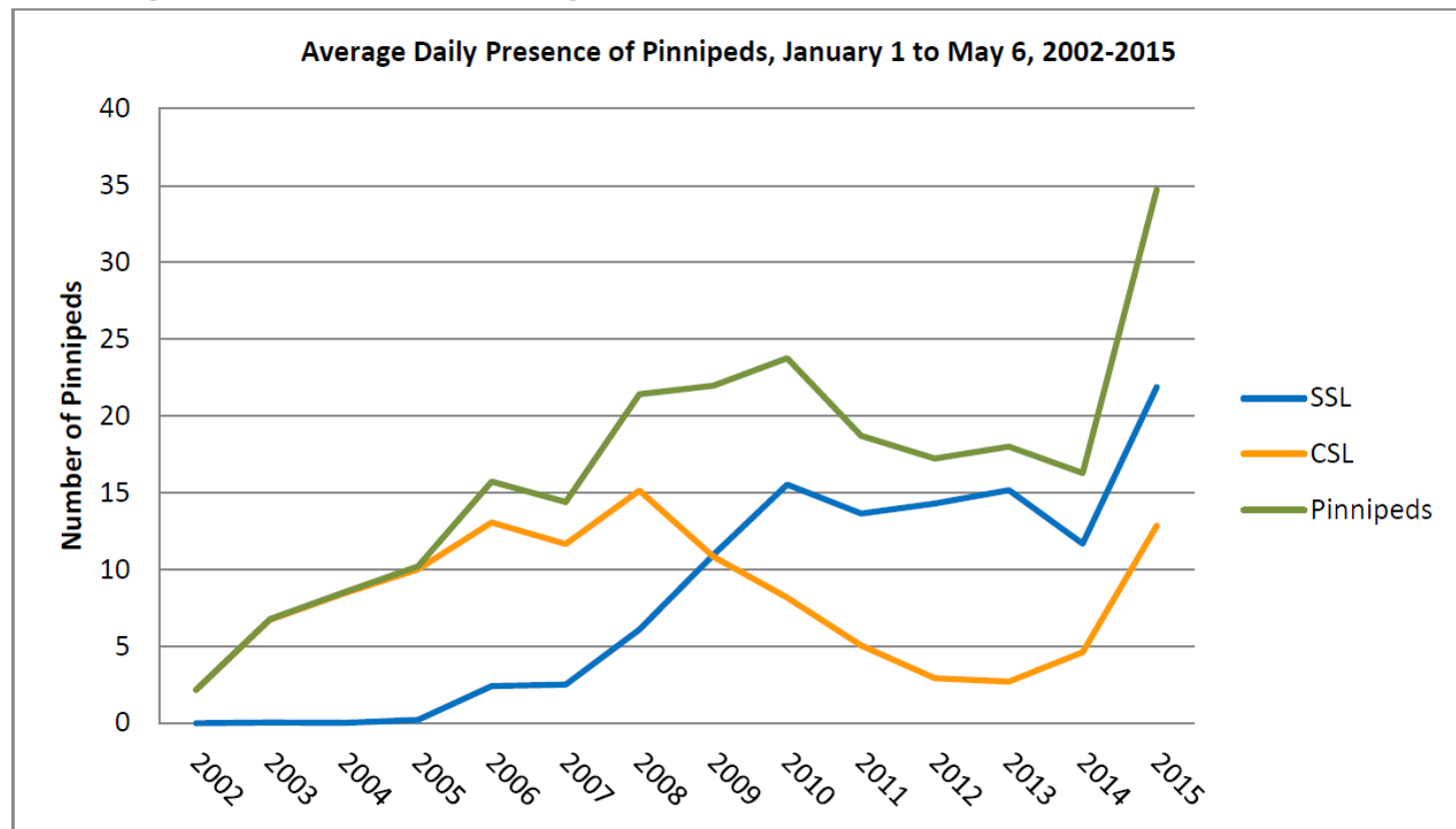
Sea lion predation

- * The 2000 FCRPS BiOp required USACE to evaluate marine mammal predation in the tailrace of Bonneville Dam
- * Since 2002 the ACE has monitored pinniped activity during the 1 January – 31 May salmon passage season



Sea lion predation

- * Sea Lion presence grew and by 2005 a hazing program was initiated
- * With the arrival that year of the larger Steller Sea Lion, sturgeon were being deliberately targeted



Sea lion predation

- * Seasonal consumption within the observation area grew to thousands of sturgeon
- * The States conducted their own observations downriver of the Corps' observation area for several miles
- * At the peak, the states estimated that Sea Lions consumed over 10,000 sturgeon in one season throughout the 145 miles of the lower Columbia River

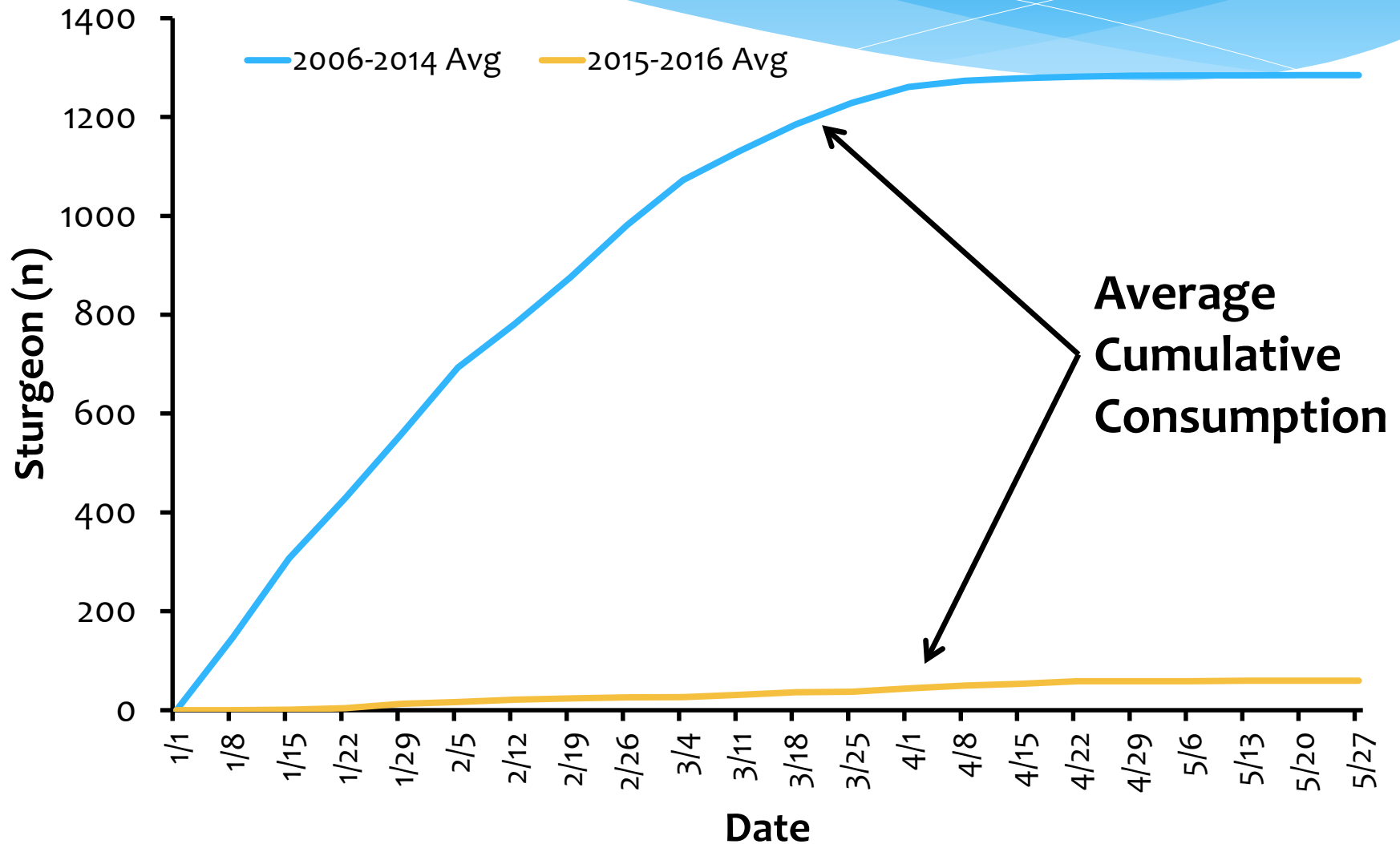
Year	Total Hours Observed	Observed Sturgeon Catch	Expanded Sturgeon Consumption Estimate	Adjusted Sturgeon Consumption Estimate
2005	1,108	1	N/A	N/A
2006	3,647	265	315	413
2007	4,433	360	467	664
2008	5,131	606	792	1,139
2009	3,455	758	1,241	1,710
2010	3,609	1,100	1,879	2,172
2011	3,315	1,353	2,178	3,003
2012	3,404	1,342	2,227	2,498
2013	3,247	314	552	635
2014	2,947	79	127	147

Sea lion predation

- * What is the current pinniped population status?

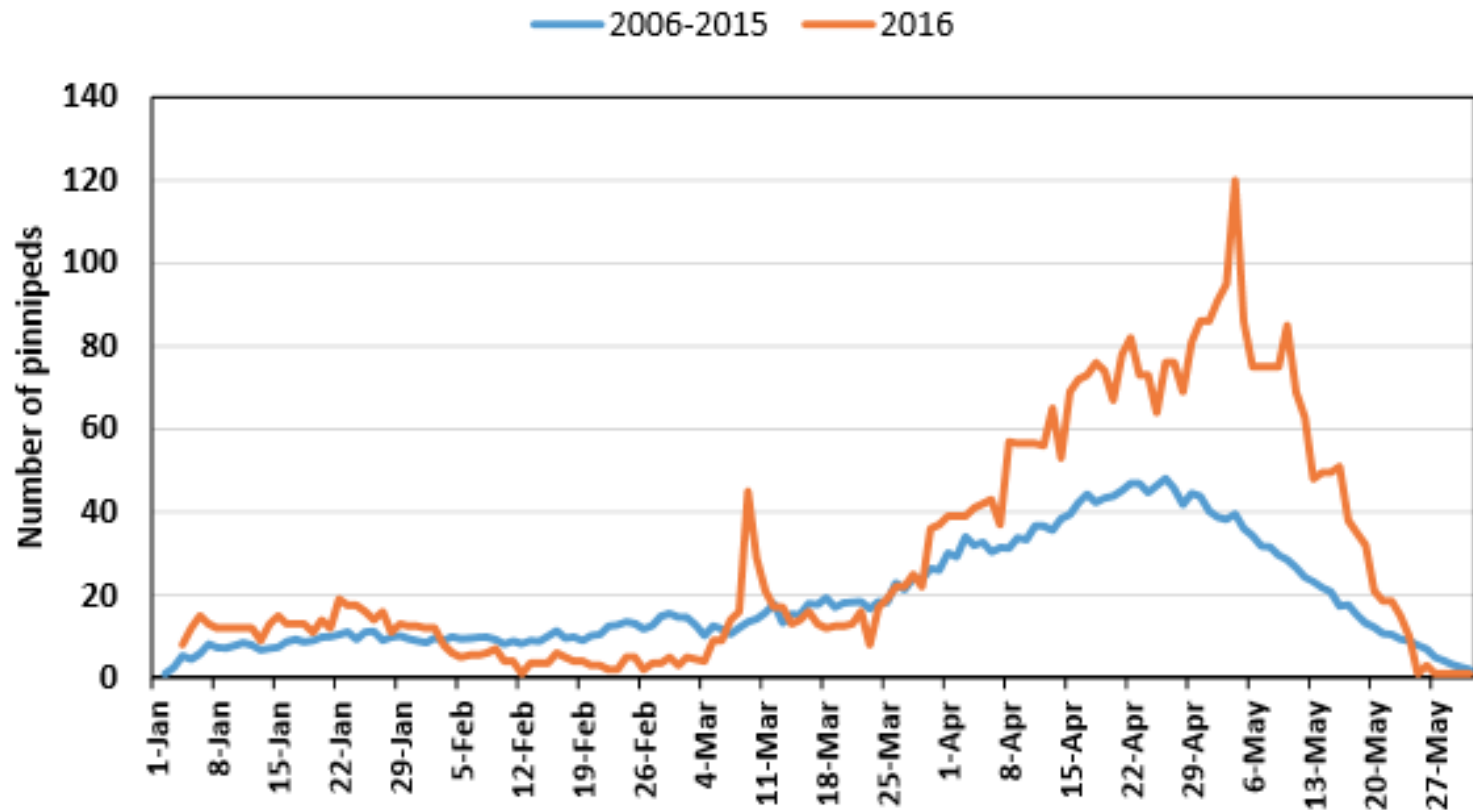


Sea lion predation – Bonneville Dam



Sea lion predation

- * At the same time pinniped numbers at Bonneville have continued to increase



Data courtesy of USACE Portland District; 2016 data is preliminary pending final report

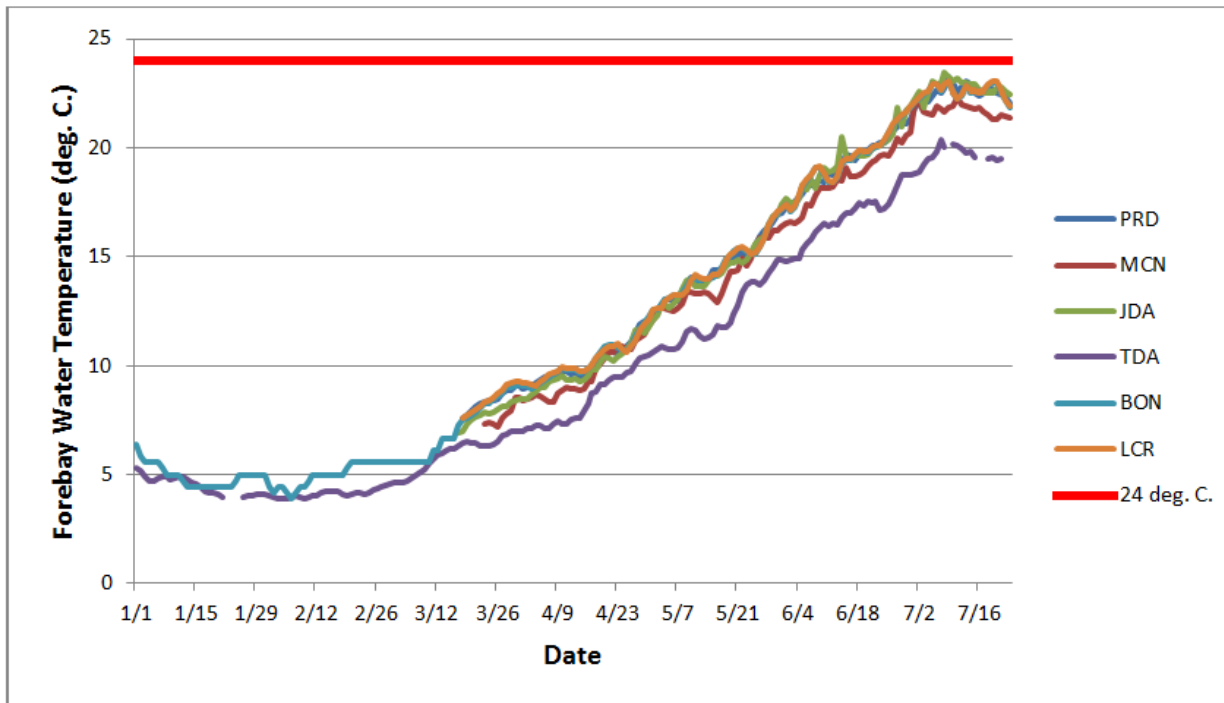
Summer mortality events

- * Unexplained die-offs occurred in 2013 and 2015 in the impounded Columbia River
 - * 2013 The Dalles Pool (Columbia River) 25 fish
 - * 2015 The Dalles, John Day, and McNary Pools (Col. R.) 169 fish



Summer mortality events

- * The scenarios are similar
 - * High and rapidly increasing water temperatures
 - * Poor spawning conditions
 - * Abundant sockeye in-river
 - * Die-off almost exclusively sexually mature fish



Summer mortality events

- * What did we do in 2015?
 - * Shut down catch and release fisheries
 - * Validated public sightings with fish staff or enforcement officer conducting routine carcass surveys
 - * Examined carcasses for cause of death
 - * Monitor water temperatures during tagging operations
 - * Collected blood samples to analyze stress hormones



Summer mortality events

- * What do we need to do?
 - * Have a plan for future events
 - * Establish a regular monitoring program for water temperature and dissolved oxygen levels
 - * Temperature, stress and pathology research



Illegal harvest (aka poaching)

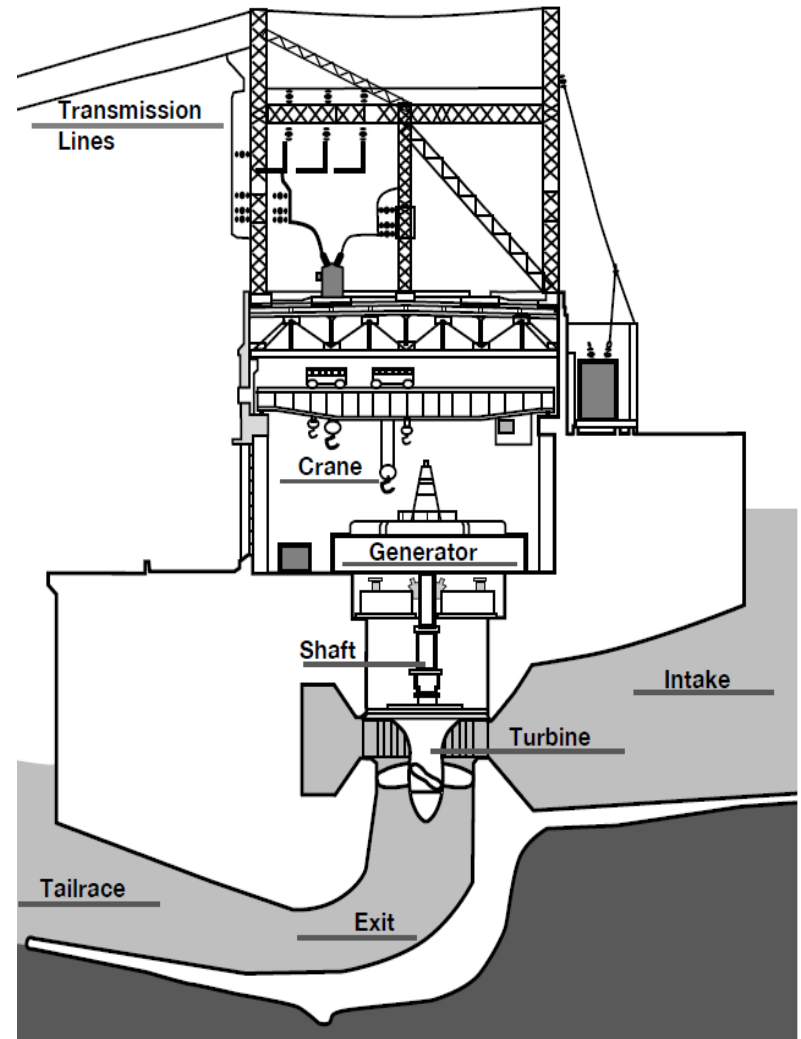


Image courtesy of MacGregor Campbell, OPB



Direct hydrosystem interactions

- * Sturgeon enter turbine draft tubes, penstocks and other orifices
- * Without proper deterrence fish can be exposed to blade strikes, blunt force injuries or barometric trauma
- * Fish are vulnerable during dewatering activities
 - * Proper dewatering protocol
 - * Problem recognition
 - * Slow-roll at startup



Thanks



Washington Department
of Fish & Wildlife



