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September 1, 2011

MEMORANDUM

TO: Fish and Wildlife Committee

FROM: Karl Weist

SUBJECT: Presentation on Lower Columbia River White Sturgeon Conservation Plan and 2011-13 Sturgeon Joint State Accord

Tom Rien of the Oregon Department of Fish and Wildlife will update the Committee on the development and implementation of Oregon's Lower Columbia River and Oregon Coast White Sturgeon Conservation Plan. Tom will be joined on the panel by Brad James of the Washington Department of Fish and Wildlife to update the Committee on the Joint State Accord on Lower Columbia River sturgeon.

Attached please find the June 2011 Oregon Fish and Wildlife Commission Agenda Item Summary of the Lower Columbia River and Oregon Coast White Sturgeon Conservation Plan. The plan was formally adopted by the Commission on August 5, 2011. The final draft is posted at:

http://www.dfw.state.or.us/fish/CRP/docs/lower_columbia_sturgeon/Draft_Plan_August.pdf

Also, please find attached the 2001-2013 Sturgeon Joint State Accord.

Agenda Item Summary

BACKGROUND

Over the past 25 years the Oregon Department of Fish and Wildlife (Department) and its cooperators (Washington Department of Fish and Wildlife, U.S. Geological Survey, Columbia River Inter-tribal Fish Commission, and the National Oceanic and Atmospheric Administration) have monitored the status of and conducted research to determine factors affecting the productivity of white sturgeon in the lower and mid Columbia and lower Snake rivers. Based on this work, staff has determined that the lower Columbia River population segment is not at a conservation risk, although it is currently less abundant than it has been over the last 10-15 years, and as such can not currently support the levels of commercial and recreational harvest that have occurred in the past.

The recent trend in the abundance of white sturgeon in the lower Columbia River has raised concerns about the long-term health of the population segment. Threats to white sturgeon populations in the Columbia Basin are numerous and include sea lion predation, altered seasonal river discharge and thermal regimes, loss of suitable habitat for spawning and rearing, habitat fragmentation, restricted passage at dams, and contaminants. These factors combined with the species longevity and delayed maturation (up to 25 years) make white sturgeon slow to recover from low population abundances and vulnerable to reduced recruitment and over-harvest.

Because white sturgeon is an iconic species in the Pacific Northwest and its population segment in the lower Columbia River has historically supported important and high-profile commercial and recreational fisheries, it is a conservation priority for the State of Oregon.

Department staff has been working with the Washington Department of Fish and Wildlife, regional white sturgeon experts, stakeholders and the public to develop a conservation plan under the Native Fish Conservation Policy. A draft of the plan for the population segment downstream from Bonneville Dam is complete and is currently under review by the Independent Multidisciplinary Science Team. The plan provides a framework to manage and conserve the species ensuring a healthy, viable and productive population into the future while providing sustainable harvest opportunities and other ecological and societal benefits. It synthesizes pertinent white sturgeon information from current monitoring efforts and available scientific literature. It is also consistent with the Oregon Plan for Salmon and Watersheds, and the Lower Columbia River Conservation and Recovery Plan. The major elements of the plan are described below in the form of six

key questions under the “Issue” section.

**PUBLIC
INVOLVEMENT**

- Nine meetings of the White Sturgeon Technical Advisory Committee: November 24, 2008 to April 8, 2010.
- Four meetings of the Columbia River Recreational Fisheries Advisory Group: June 9, October 26, and December 16, 2010 and January 11, 2011.
- Meeting with the Washington Department of Fish and Wildlife and Washington charter boat fishers: September 21, 2010.
- Four meetings with the Columbia River Commercial Fisheries Advisory Group: October 26 and December 16, 2010 and January 11 and May 3, 2011.
- Five meetings with the Columbia River White Sturgeon Conservation Plan Stakeholder Group: December 1 and December 14, 2010 and January 4, January 24, and February 22, 2011.
- Four public meetings: December 6, 7, 8 and 9, 2010.
- Meeting with Salmon for All: December 14, 2010.
- Meeting with the Northwest Sportfishing Industry Association: December 15, 2010.
- Meeting with the Northwest Guides: January 20, 2011.

ISSUE

Provide Direction on the *Lower Columbia River White Sturgeon Conservation Plan – Public Review Draft*

ANALYSIS

The *Lower Columbia River White Sturgeon Conservation Plan* is intended to attain a healthy and harvestable state and avoid serious depletion of the population segment by establishing benchmarks for measurable biological attributes that correspond to a desired status and a conservation status. These attributes are defined for various life stages of white sturgeon.

The primary biological attributes are:

1. Abundance: number of individuals at each life stage.
2. Distribution: where and when individuals at various life stages are found throughout their historic range.
3. Diversity: the level of genetic variation within the population segment and how that variation is expressed throughout the life history.

4. Productivity: how well the population segment is able to sustain and/or increase its abundance over time.
5. Habitat: the quantity, quality and distribution of habitat types important to various life stages.
6. Persistence: the likelihood that the population segment will maintain its existence and remain viable over time.

In addition, the plan establishes benchmarks for a set of secondary biological attributes; growth, condition, and survival. While desired status will not be fully attained until all attributes meet or exceed the benchmarks, assessments of the status of the population segment at any given time will rely heavily on measures of abundance at various life-stages.

The plan addresses six key questions:

1. What do we consider to be a healthy and harvestable population (**Desired Status**)?
2. What do we consider thresholds at or below which the population is at some risk of extinction (**Conservation Status**)?
3. What is the current status relative to the conservation thresholds (**Current Status**)?
4. What are the key factors influencing the current population status (**Limiting Factors, Threats, and Constraints**)?
5. What can we do to address these factors in the near-term and in the long-term (**Recommended Management Actions**)?
6. How will we know whether we are making progress toward the desired status (**Action Effectiveness Standards and Research, Monitoring and Evaluation**)?

What follows is a brief summary of how the plan addresses each of these questions.

Desired Status

The plan describes “desired status” benchmarks for all the primary and secondary biological attributes. As described above measures of abundance at various life-stages will be the primary metric used to assess the status of the population segment at any given time. Therefore, the plan establishes benchmarks for the

abundance of adult and sub-adult white sturgeon and for the proportion of the population that is adult, sub-adult and juvenile. For adult and sub-adult white sturgeon, the plan establishes near- and long-term benchmarks. The benchmarks for adults are 9,250 in 3 years and 16,250 in 500 years. For sub-adults, the benchmarks are 257,000 in 3 years and 368,000 in 500 years. With respect to the proportion of the population that is adult, sub-adult and juvenile, the benchmarks are $\leq 1\%$ adults, $\sim 4\%$ sub-adults and $\geq 95\%$ juveniles.

Conservation Status

The abundance-based benchmarks for conservation status represent the abundance levels above which the risk of extinction for the population segment is $< 5\%$. Although total recruitment failures over a full sturgeon generation (25 years) are necessary to pose a significant risk of extinction, the benchmarks in the plan are more conservative and define significant risk as recruitment failure over a 5-year time frame. This approach assures adequate time for a management response.

The “conservation status” abundance benchmark for adults is 3,900. For sub-adults, the benchmark is 31,000. If the three-year running average for abundance of adults and sub-adults is equal to or less than these levels, the risk of extinction is $\geq 5\%$ and conservation actions are warranted to reverse the declining trend. With respect to the proportion of the population that is adult, sub-adult and juvenile, the plan establishes a “conservation status” benchmark only for juveniles because that most reliably indicates a conservation crisis. The benchmark for conservation purposes is $\leq 60\%$ juveniles, which indicates a population with productivity issues.

Current Status

The current abundance of adult and sub-adult white sturgeon in the Columbia River population segment downstream from Bonneville Dam is 11,000 adults and 89,000 sub-adults. The current abundance of adults exceeds the 3-year “desired status” benchmark of 9,250, but not the 500-year benchmark of 16,250. It is almost three times higher than the “conservation status” benchmark of 3,900.

In contrast to the adults, the current abundance of sub-adults is just over one-third of the 3-year “desired status” benchmark of 257,000 and about one-quarter of the 500-year benchmark of 368,000. However, it is almost three times greater than the “conservation status” benchmark of 31,000.

With respect to the proportion of the population that is adult, sub-adult and juvenile, the current population is comprised of approximately 91% juveniles, 8% sub-adults, and 1% adults, similar to the “desired status” benchmarks and well above the

“conservation status” benchmark.

Limiting Factors, Threats, and Constraints

Although the lower Columbia River white sturgeon population segment is healthy and not at risk, its primary biological attributes are less than the “desired status” thresholds. This indicates that critical constraints, limiting factors and threats exist that could compromise its long-term health and the level of harvest it can sustainably support.

Although the plan identifies a number of factors, threats and constraints that are influencing the status of this population segment, several are of particular concern. These include:

1. Pinniped predation. Between January of 2006 and May of 2010, Steller and California sea lion predation on white sturgeon in the vicinity of Bonneville Dam has increased from 442 in 2006 to 2,172 in 2010. Correspondingly, the average size of white sturgeon eaten by pinnipeds has declined, raising concerns about the status of larger, and more reproductively significant, size classes in the population. Predation may be reducing the productivity of the population segment by reducing the number of spawning fish and increasing the level of natural mortality.
2. Changes in the Columbia River hydrograph associated with the construction and operation of the Federal Columbia River Power System (FCRPS). The FCRPS has reduced spring freshets by more than 50% and increased winter flows by 30%. Large daily and hourly fluctuations in flows in the Bonneville Dam tailrace repeatedly dewater shallow-water habitats used by sturgeon to incubate their eggs and rear their young. These changes may be reducing the productivity of the population segment by reducing the amount of spawning and rearing habitat and, ultimately the annual recruitment of young.
3. Overharvest. Current assessments indicate that this population segment cannot persist if, over an extended period of time, the annual exploitation rate exceeds 29%. Since 1996, commercial and recreational fisheries have been managed to an annual exploitation rate of 22.5%, which was designed to allow the population to grow. However, increases in sea lion predation since 2000 have increased the natural mortality affecting the population segment. As a result, assessments indicate that to grow the population, the annual exploitation rate should be no more than 16%. Under the current joint state accord for managing this population segment, the exploitation rate in 2011 is expected to be around 22%, but is expected to drop

to about 16% in 2012 and 13% in 2013, as the number of sub-adult fish increase over the next couple of years.

Recommended Management Actions

The plan identifies a number of management actions that address key limiting factors and may significantly improve population status, including:

1. Pinniped management. Remove problem animals, disperse congregations in and near spawning areas and discourage predation throughout the lower Columbia and Willamette rivers.
2. Federal Columbia River Power System. Optimize the configuration and operations to best mimic a natural hydrograph and normative river conditions.
3. Harvest management. Monitor population status annually and adjust harvest guidelines as necessary to maintain exploitation rates at sustainable levels that permit population growth.
4. Water quality. Ensure that total dissolved gas, water temperature and other water quality parameters remain within tolerable levels for various life stages of sturgeon.
5. Law enforcement. Enhance and improve programs to increase compliance, reduce illegal take of sturgeon and protect habitat.
6. Habitat protection. Reduce the impacts of dredging and other in-water work on aquatic habitat and land-use practices on riparian habitat.

In addition, the plan identifies hatchery supplementation as a potential management action if the preponderance of evidence indicates that a persistent declining trend in recruitment exists and it is either causing serious depletion of the population segment or is preventing attainment of the desired status.

Action Effectiveness Standards and Research, Monitoring and Evaluation

Adaptive Management. Because of uncertainty in how various life stages of white sturgeon will respond to the management actions in the plan, an adaptive management framework and process that revisits current status when new information becomes available is essential. The plan describes a “feedback loop” in which managers (1) develop a course of action, (2) implement the course of action, (3) assess the course of action relative to the “desired” and “conservation” status benchmarks, (4) react, modify,

and re-implement the course of action using information gathered, and (5) re-assess adapted course of action. Assessments will determine whether the population segment (1) is on track to reach desired status, (2) is not changing from the current status and therefore is neither fully harvestable nor at the conservation level, or (3) is trending below a healthy level or toward conservation status. This process will be implemented by a Lower Columbia River White Sturgeon Technical Management Team, made up of fisheries managers and sturgeon experts.

Research Monitoring and Evaluation. The plan describes a full suite of monitoring and research needs to assess metrics associated with each biological attribute. Key programs include:

1. Fisheries monitoring. Monitoring commercial and recreational fisheries enables managers to estimate harvest levels and catch rates as well as collect biological data from catches that aid in population assessments.
2. Population assessments: The Department annually samples various life stages of sturgeon using a variety of gear-types to assess population structure (adult, sub-adult and juvenile fish abundance), status and trends.
3. Pinniped predation monitoring. The plan calls for an expansion of pinniped predation monitoring because pinniped predation is known to occur prior to and after the periods currently monitored and in areas other than the vicinity of Bonneville Dam, where current monitoring programs occur. An expanded program would also include investigating feeding ecology and modeling the impact of pinniped predation and pinniped removals on lower Columbia River white sturgeon population dynamics.

OPTIONS

Provide comments and/or guidance to staff about the *Lower Columbia River White Sturgeon Conservation Plan*.

**STAFF
RECOMMENDATION**

N/A



Joint State Accord on 2011-2013 Columbia River Sturgeon Fishery Management



The Oregon Department of Fish and Wildlife (ODFW) and the Washington Department of Fish and Wildlife (WDFW) agree on the following management measures for sturgeon fisheries in the Columbia River and in Washington and Oregon waters where Columbia River origin fish may be found. These fishery regulations shall be in effect in Oregon and Washington boundary waters upstream from McNary Dam, in the lower Columbia River and its tributaries, in Puget Sound and its tributaries, in marine areas, and in coastal basins. Sturgeon fisheries between Bonneville and McNary dams will be managed under agreements negotiated by *U.S. v Oregon* parties.

MANAGEMENT PRINCIPLES

- Provide regulatory protection to safeguard the spawning-size segment of the population and ensure adequate recruitment of this segment in subsequent years.
- Regulate the combined recreational and commercial harvest rate for the legal-size segment of the population to increase abundance of all age classes.
- Maintain concurrent Washington and Oregon regulations in the Columbia River.
- Maintain viable and diverse recreational and commercial fishing opportunities.
- Manage the harvest of sturgeon in fisheries outside the mainstem lower Columbia River consistent with lower Columbia River sturgeon conservation and management needs.
- Limit incidental impacts of fisheries directed at white sturgeon on other species needing conservation protection.

HARVEST MANAGEMENT OBJECTIVES

Harvest Guideline Downstream from Bonneville Dam

- The harvest guideline for white sturgeon fisheries in 2011-2013 will be a maximum of 17,000 legal-sized individuals or a 22.5% harvest rate on the legal-size segment of the population, whichever is less. This number is based on current stock assessments and is intended to provide population growth.
- A harvest guideline will be set annually to meet conservation objectives. It will be based on the most current biological information and stock status assessments and will reflect any changes in regulations (e.g. slot-limit). The guideline will not increase above these maximums while this accord is in effect. Also, unlike in previous accords, fish not harvested in a given year will not be added to the guidelines in subsequent years.

Fishery Allocation Downstream from Bonneville Dam

- The harvestable number of white sturgeon in the Columbia River downstream from Bonneville Dam will be allocated 80% to recreational fisheries and 20% to commercial fisheries in 2011. In each year, fish not harvested in recreational fisheries will not be allocated to the commercial fishery or vice versa.
- The recreational fisheries share used to plan retention seasons downstream from Bonneville Dam will be managed to annually provide 60% of the harvest to the area downstream of the Wauna power line and 40% of the harvest to the area upstream. The harvest share between recreational fisheries upstream and downstream from the Wauna power line will be flexible and may be adjusted in-season to meet pre-

season expectations for retention seasons. In-season adjustments to the retention seasons will be based on assessments of effort levels, fishing conditions and catch rates, as described under the “Recreational Fishery Regulations” section below.

- The harvest guideline used to plan retention seasons for the recreational fishery downstream from the Wauna power line will be no more than 6,800 fish. This guideline is calculated by adjusting the share for this fishery (8,160) to account for the differences in the minimum size (41-inch fork length). As described above, in-season adjustments to the guideline may be made if fishery performance differs from pre-season expectations.
- The harvest guideline used to plan retention seasons for recreational fisheries upstream from the Wauna power line will be no more than 5,440 fish. The Columbia River share of the guideline will be 3,410 fish and the Willamette River share of the guideline will be 2,030 fish. The Willamette will be managed under a separate harvest cap of 2,550 fish, which includes a baseline level of 520 fish. As described above, in-season adjustments to the guideline may be made if fishery performance differs from pre-season expectations.
- The harvest guideline for the Columbia River commercial fishery will be no more than 3,400 fish.
- The shares of harvestable fish assigned to each fishery, as described above, are in effect for 2011, during which they will be reviewed in a public process and may be modified for 2012 and 2013.

Fishery	Maximum Harvest Guideline Used to Plan Retention Seasons
Recreational fishery downstream from Wauna (8,160 adjusted to account for difference in minimum size)	6,800
Recreational fishery upstream from Wauna	3,410
Willamette River recreational fishery (includes 520 baseline level)	2,550
Commercial fishery	3,400
Total harvest guideline (17,000 adjusted to account for difference in minimum size in the recreational fishery downstream from Wauna and to include 520 Willamette baseline level)	16,160

Recreational Fishery Objectives

- Minimize emergency in-season action.
- Manage catches between the fisheries upstream and downstream from the Wauna power line to meet pre-season expectations for retention seasons and provide a diverse array of sturgeon fishing opportunity.
- Maintain fishery monitoring and management capabilities.
- Reduce fishing-related mortality of sturgeon in the spawning-size segment of the population.

Recreational Fishery Regulations

These regulations are in effect for 2011, during which they will be reviewed in a public process and may be modified for 2012 and 2013.

- Size limit: 38 inches-54 inches fork length. More restrictive size limits may be used to manage within specific areas (e.g. the size limit for the fishery downstream from the Wauna power line after April 30 is 41-54 inches fork length).
- Catch limits: 1 per day and 5 per year. More restrictive annual catch limits may be used to decrease catch rates and extend retention opportunity. Catch and release fishing is allowed after retention of the daily or annual catch limit, except in the sturgeon spawning sanctuary on the Columbia River

downstream from Bonneville Dam and in the sturgeon spawning sanctuary on the Willamette River downstream from Willamette Falls, where no fishing is allowed from May 1 through August 31.

- Hook requirement: One single-point barbless hook.
- Retention Seasons: Modify as necessary so that harvest is no greater than the prescribed recreational fisheries guideline. Different season structures may be used for areas upstream and downstream from the Wauna power line, and in the lower Willamette River, to accomplish specific fishery objectives. If harvest guidelines have not been met, retention seasons may be extended beyond those initially set in Joint State Hearings if the level of fishing effort, catch rates, fishing conditions (river conditions and weather) or other relevant factors haven't met expectations.
- Miscellaneous regulations: Maintain the miscellaneous regulations as described for sturgeon recreational fisheries in Oregon and Washington regulation pamphlets.
- Spawning Sanctuaries: Close the Columbia River from the upper end of Skamania Island upstream to Bonneville Dam, and the Willamette River from the I-205 Bridge upstream to Willamette Falls to angling for sturgeon from May 1 through August 31 to protect sturgeon in the spawning-size segment of the population.
- Incidental Handle of Sturgeon in the Spawning-Size Segment of the Population: Minimize the handle of sturgeon in the spawning-size segment of the population during times and/or in areas associated with spawning. Because incidental handle outside these sanctuaries may still occur, fishers who encounter sturgeon in the spawning-size segment of the population will be encouraged, and in certain cases required, to implement the following precautions to reduce impacts on this segment of the population:
 - Minimize handling time by using proper gear and techniques to land fish quickly. The intent is to limit handling stress which may improve reproductive success and reduce mortality. The states will post these protocols and the purpose of these measures on informational signs at boat launches used by participants in fisheries that have a higher encounter rate of sturgeon in the spawning-size segment of the population.
 - Do not remove the fish totally or in part from the water (OR and WA regulation).
- Recreational fishery from McNary Dam upstream to the Oregon-Washington border: Allow retention from February 1 through July 31 annually, with a 43-54-inch fork-length size limit in effect.

Commercial Fishery Objectives

- Optimize economic value.
- Spread harvest opportunity throughout the year.
- Maintain fishery monitoring and management capabilities.
- Minimize handling time and stress of sturgeon in the spawning-size segment of the population.

Commercial Fishery Regulations

These regulations are in effect for 2011, during which they will be reviewed in a public process and may be modified for 2012 and 2013.

- Size limit: 43 inches-54 inches fork length.
- Landing limits: Landing limits per vessel per fishing period may be implemented as necessary to spread harvest opportunity and optimize economic value.
- Seasons: Allow sturgeon fishing outside salmon fishing seasons as necessary to optimize economic benefit, consistent with conservation objectives for white sturgeon and other species. Allocate the commercial share of white sturgeon among seasons annually in coordination with the Columbia River Commercial Fishery Advisory Group.
- Miscellaneous regulations: Maintain the miscellaneous regulations in effect for the commercial harvest of sturgeon since 1996.

FISHERY AND POPULATION MONITORING MEASURES

The following programs are a high priority within the two agencies and will be continued.

- Statistical creel survey of the Columbia River recreational fishery.
- Statistical creel survey of the Willamette recreational fishery (expanded as needed to cover months not previously sampled).
- Sampling of the Columbia River commercial fishery (including daily catch estimates).
- Tagging to estimate abundance and/or size distribution of the white sturgeon population.
- Summer setline sampling from the estuary upstream to Bonneville Dam.
- Young-of-the-year surveys.
- Carcass surveys and autopsies downstream from Bonneville Dam.
- Monitoring of marine mammal predation (incidental to other field activities).
- Monitoring of the spawning-size segment of the population, including continuation of efforts to assess and quantify impacts of commercial and recreational fisheries on abundance.

MANAGEMENT OF FISHERIES OUTSIDE THE COLUMBIA RIVER

Harvest of white sturgeon in fisheries outside the mainstem Columbia and Willamette rivers will be managed consistent with lower Columbia River sturgeon conservation and management needs. Management actions include:

- Update management plans for Willapa Bay and Grays Harbor consistent with stock status reviews and population updates.
- Track recreational fisheries harvest in tributaries to the lower Columbia River, Oregon and Washington coastal estuaries and Puget Sound and its tributaries, using estimates generated from Washington catch record cards and Oregon harvest tags.
- Evaluate, and modify as needed, recreational fishery regulations in tributaries to the lower Columbia River, Oregon and Washington coastal estuaries, and Puget Sound and its tributaries.

GREEN STURGEON

Retention of green sturgeon is prohibited in Washington and Oregon recreational and commercial fisheries as a conservation measure consistent with the 2006 listing of the Southern Distinct Population Segment (DPS) of green sturgeon as threatened under the Endangered Species Act (ESA). Washington and Oregon will:

- Continue to work with regional co-managers and NOAA Fisheries to review stock status and management of green sturgeon consistent with the ESA listing.
- Continue research and monitoring efforts designed to estimate abundance, distribution, and habitat use of green sturgeon aggregations in Washington and Oregon coastal estuaries.



Roy Elicker, Director

Oregon Department of Fish & Wildlife

2/28/11

Date



Phil Anderson, Director

Washington Department of Fish & Wildlife

2/28/11

Date

Lower Columbia River White Sturgeon Management



**PRESENTATION TO THE NORTHWEST
POWER AND CONSERVATION COUNCIL
SEPTEMBER 13, 2011**



Tom Rien – ODFW
Pat Frazier – WDFW



Topics

2

❖ Oregon's Conservation Plan

- How the conservation and desired status benchmarks were developed
- How the benchmarks relate to current population status and fisheries management
- Three high profile and significant factors affecting the population and associated remedial measures
- An adaptive management framework for monitoring progress, responding to changes in the population and its habitat, and addressing critical unknowns

❖ Joint State Harvest Management Accord

Conservation Plan Background

3

- **Began in 2008 under the Native Fish Conservation Policy**
- **Worked closely with the Washington Department of Fish and Wildlife**
- **Drew upon expertise of regional sturgeon managers and scientists**
- **Solicited input from fishery advisory groups, stakeholders and the public**
- **Peer-reviewed by the Independent Multi-disciplinary Science Team**

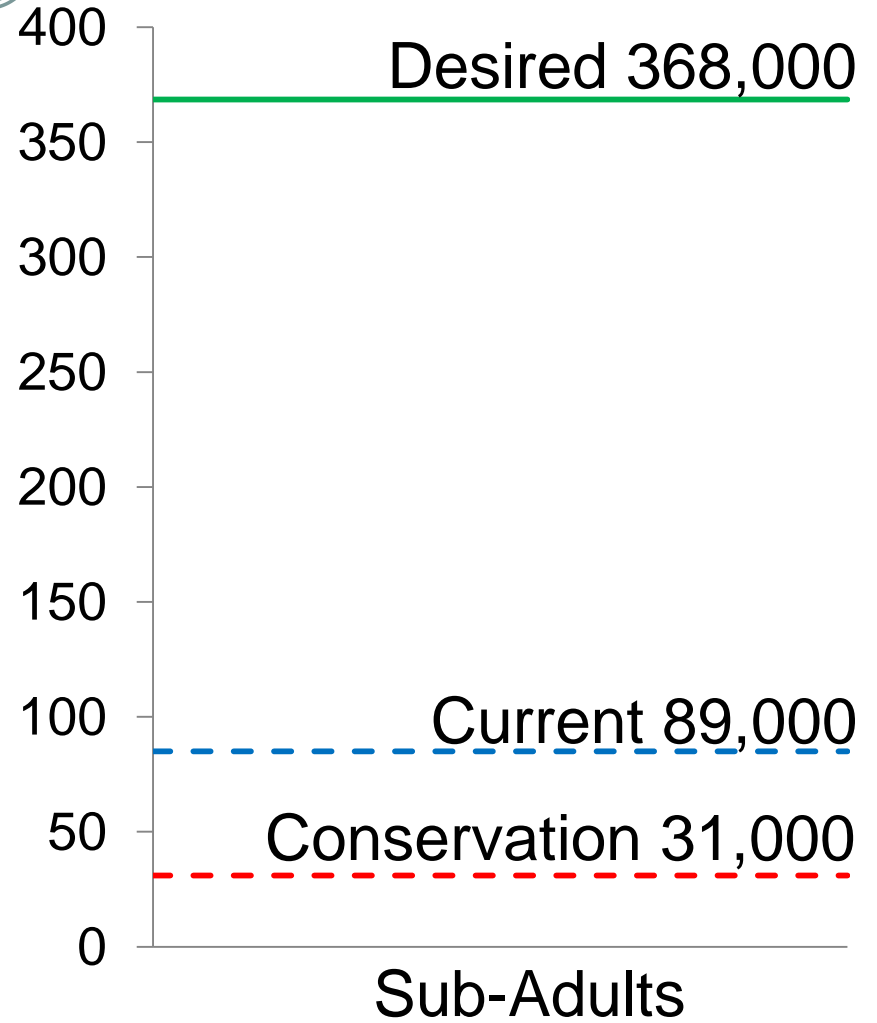
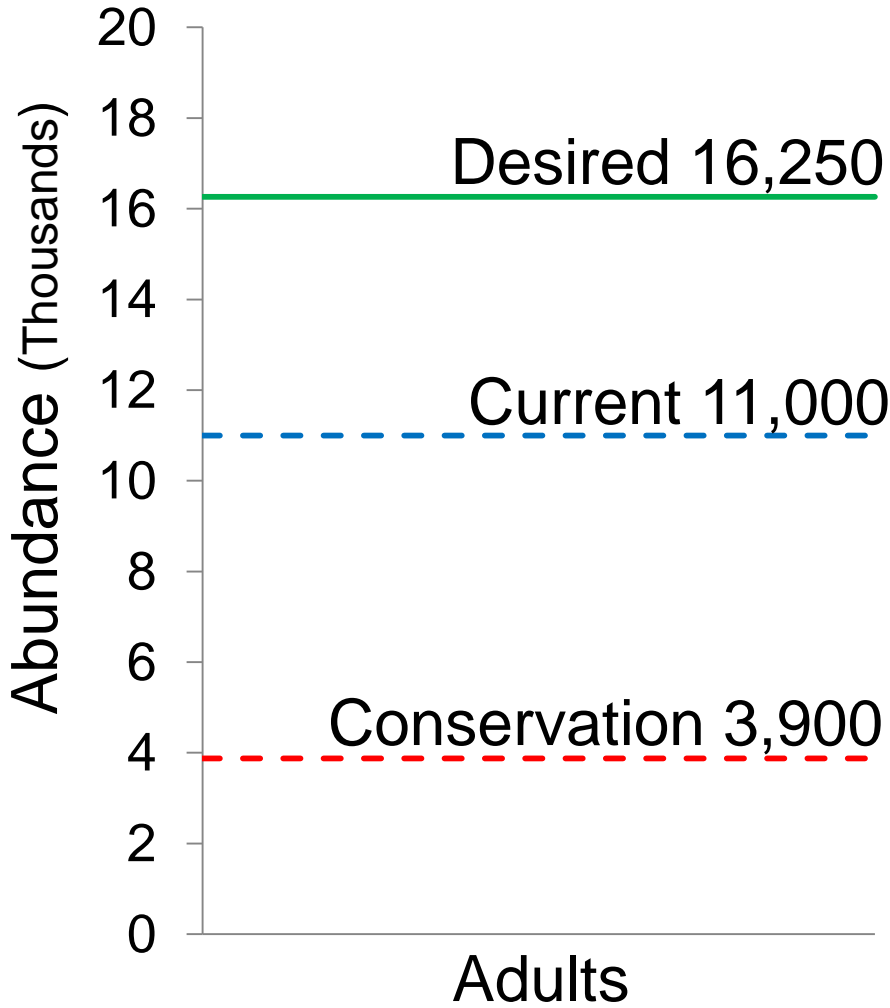
Conservation Plan Background

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- Deals with population segment of Species Management Unit downstream from Bonneville Dam and in Oregon coastal streams
- Provides conservation and management framework
- Is consistent with Lower Columbia River Conservation and Recovery Plan and Oregon Plan for Salmon and Watersheds

Terms

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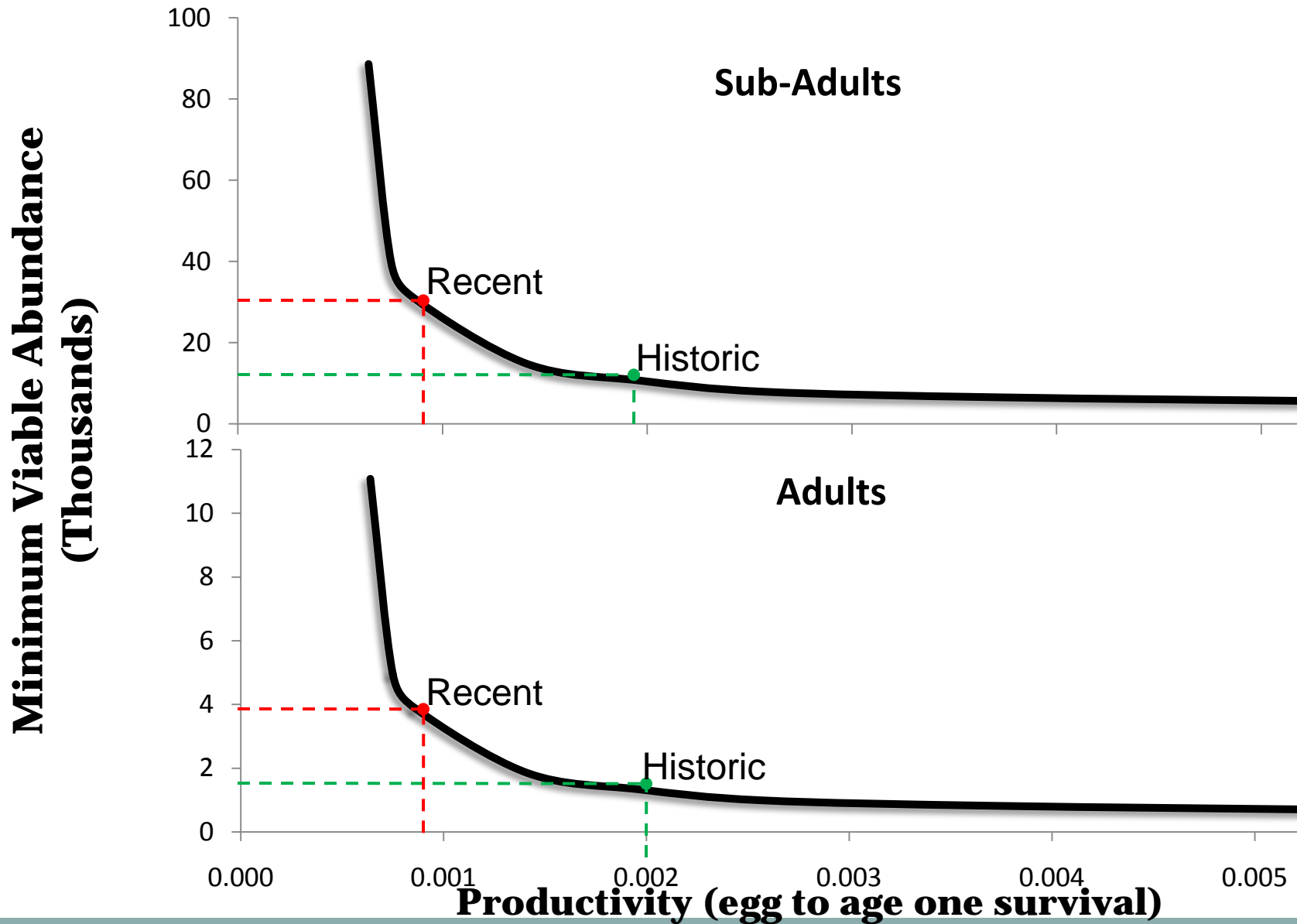


Conservation Status

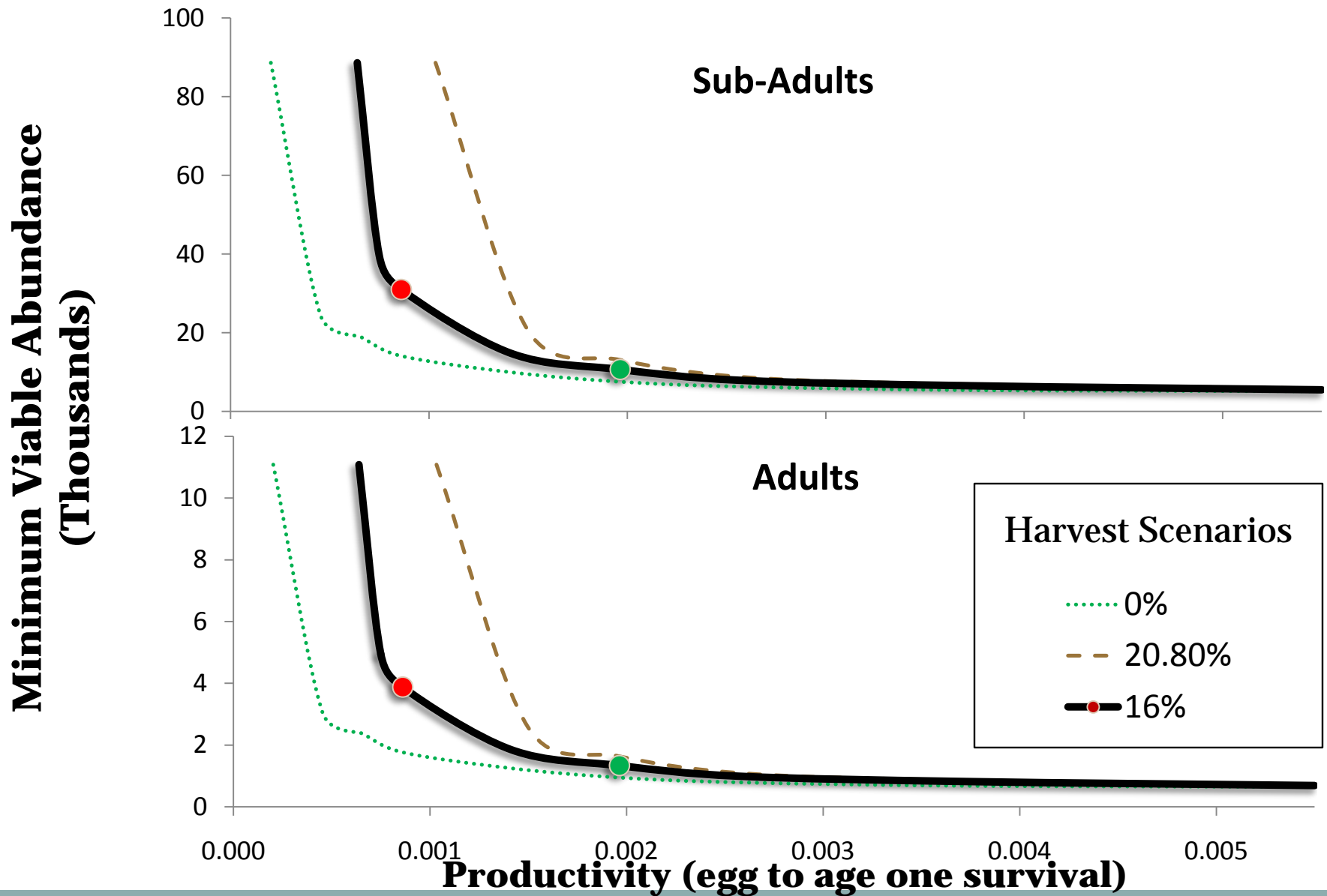
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- Represents a condition that we must avoid because it poses a significant extinction risk
- Described in terms of abundance and productivity
- Assumes recent recruitment rates persist into the future
- Accounts for recent increases in sea lion predation
- Incorporates a 16% harvest rate that is sustainable and assures abundant broodstock

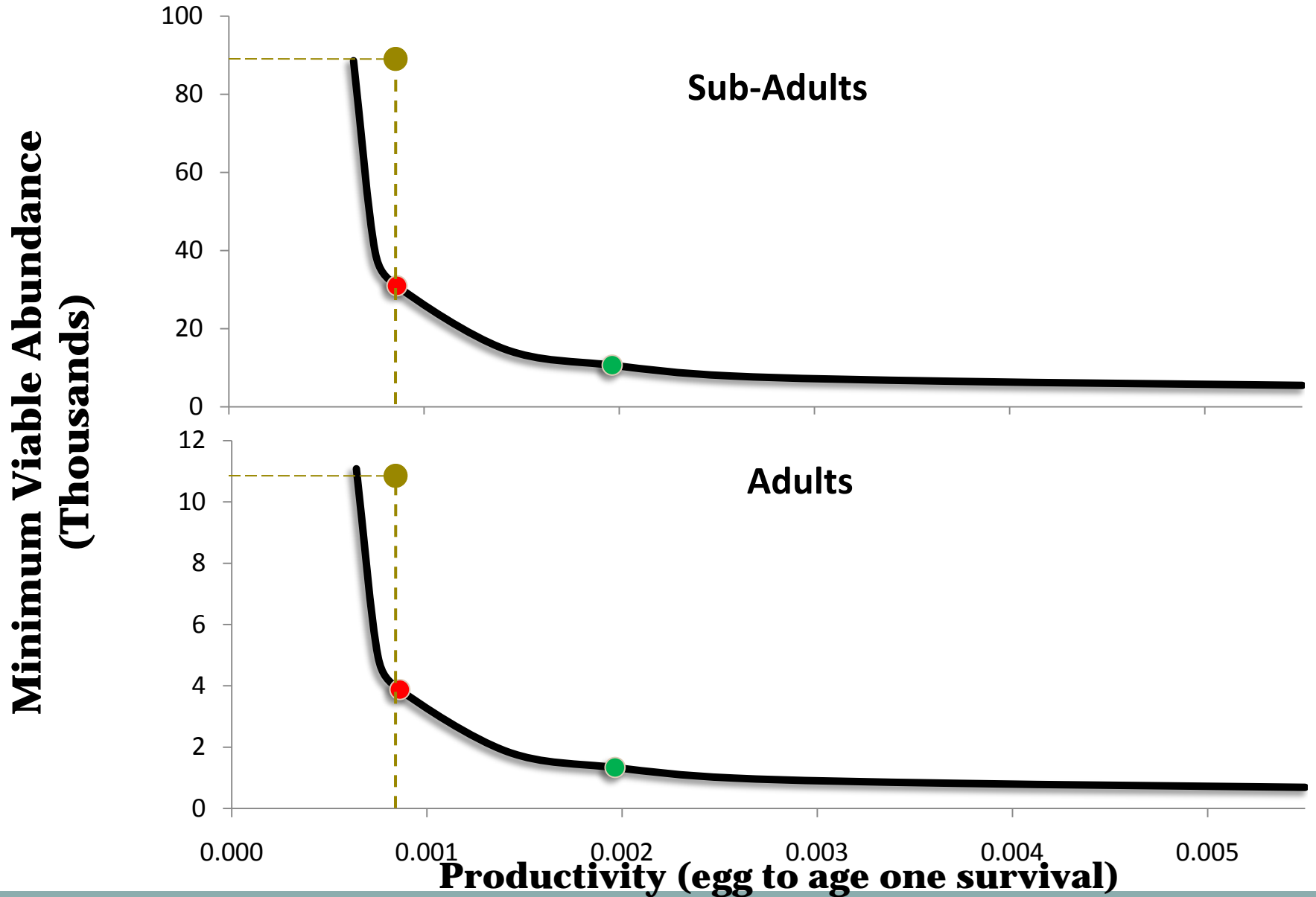
Conservation Status



Conservation Status



Current v Conservation Status



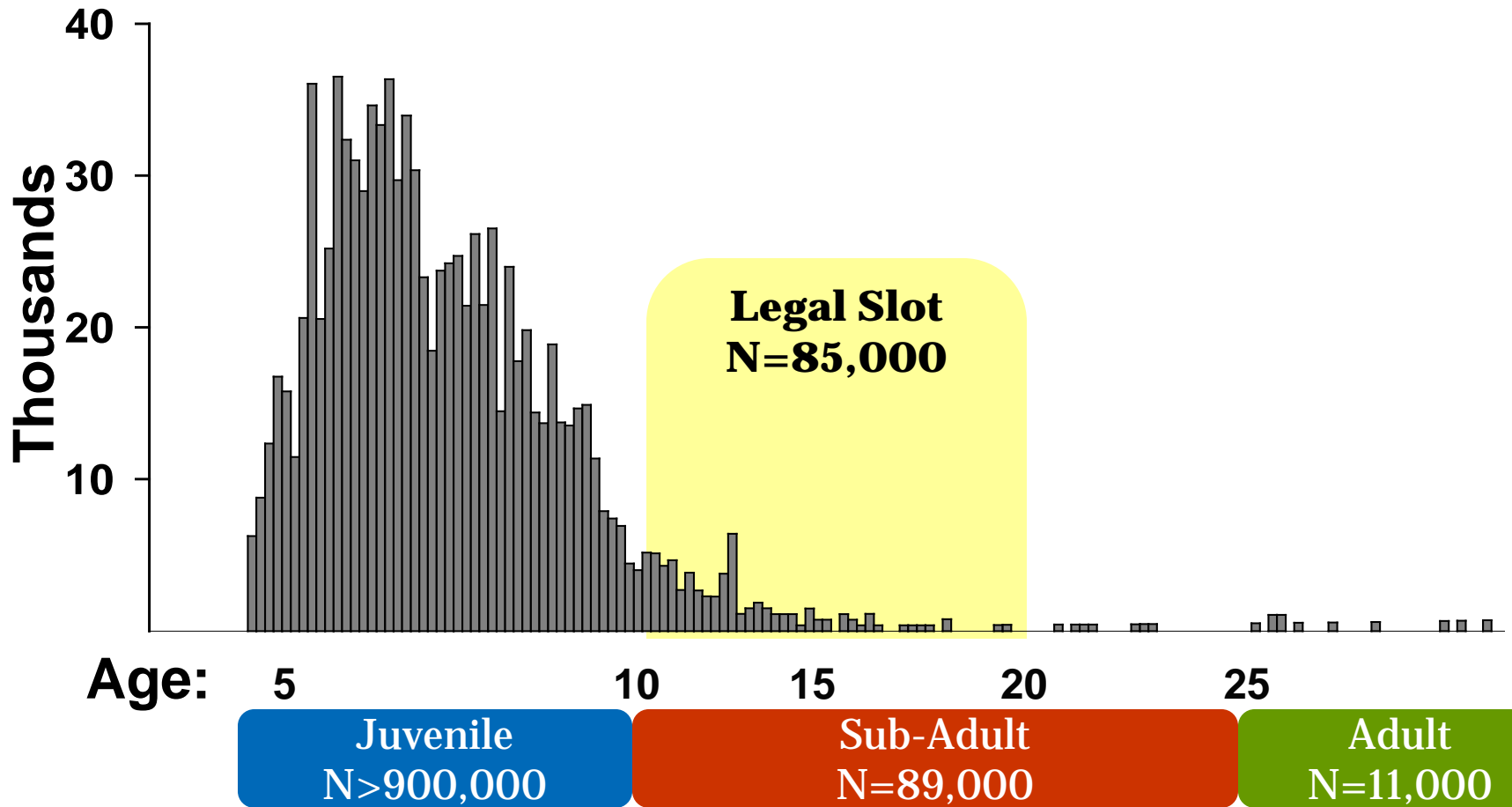
Desired Status

10

- Represents a condition that is “healthy and harvestable”
- Described in terms of abundance, productivity, diversity, distribution and habitat
- Assumes historic recruitment rates persist into the future
- Accounts for recent increases in sea lion predation
- Incorporates a 16% harvest rate that is sustainable and assures abundant broodstock

Current Status

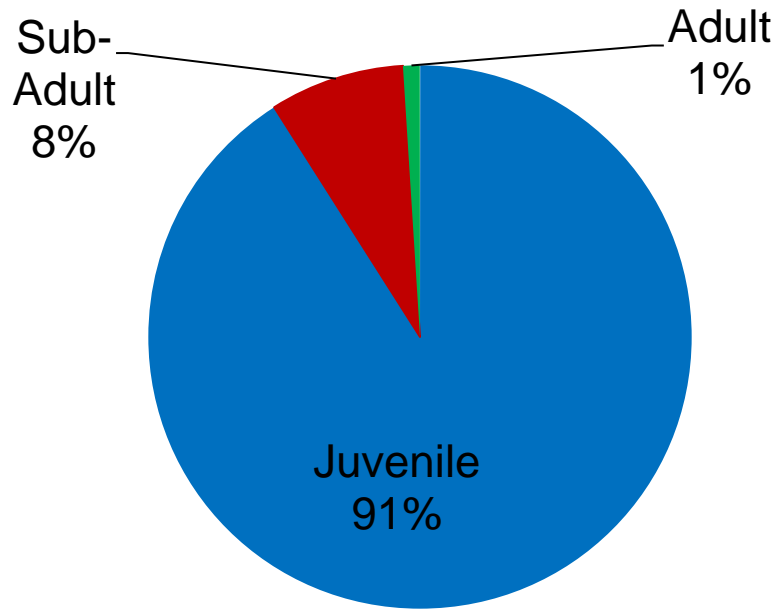
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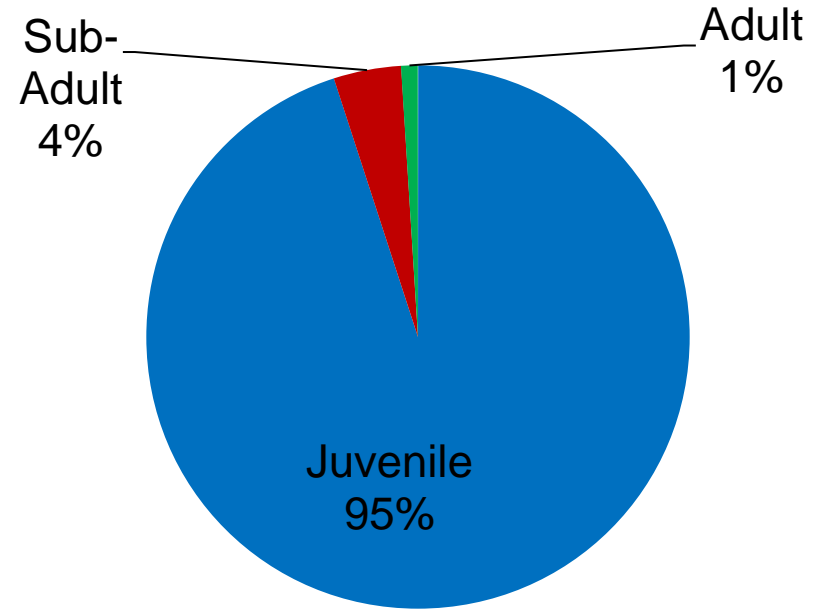
Current v. Desired Status



Current



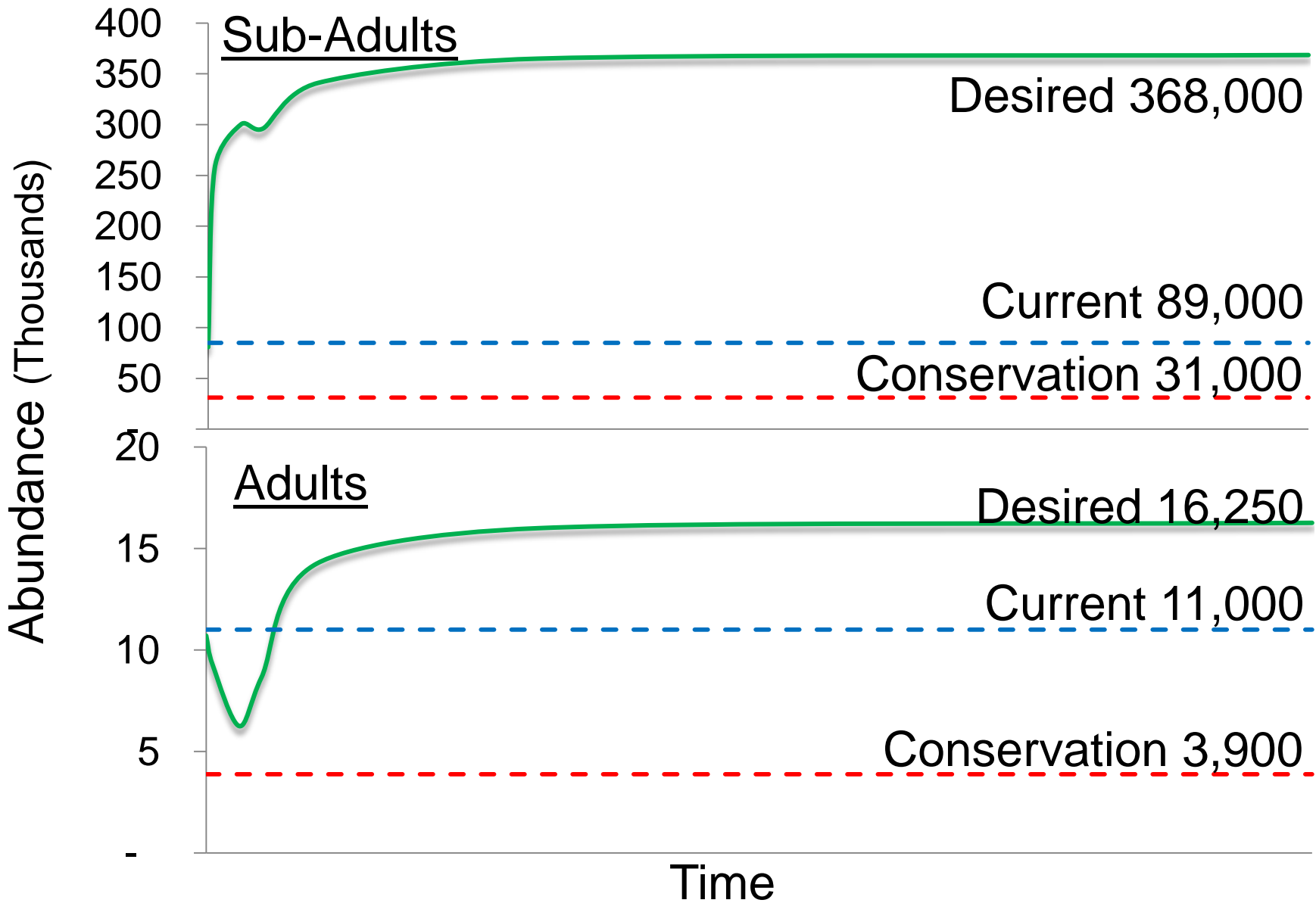
Desired



Current v. Desired Status

Checkpoint	Adults	Sub-Adults	Potential Harvest
2011	11,000	89,000	17,000
2014	9,250	257,000	38,500
2061	14,250	341,000	50,700

Benchmarks for Population Growth



Key Limiting Factors

15

- **Sea Lion Predation**
- **Hydropower System Operation and River Conditions**
- **Overharvest**

Sea Lion Predation

16

- **Why is this important?**
 - Significant increase in past 5 years
 - Major threat to broodstock abundance
 - Total losses unknown
- **What do we intend to do about it?**
 - Continue program of harassment and removals of problem animals
 - Assess extent of predation river-wide

Hydropower System Operation and River Conditions

17

- **Why is this important?**
 - Sturgeon spawn and rear in the mainstem
 - River conditions affect amount and quality of spawning and rearing habitat
 - Strong relationship between water velocity and recruitment
- **What do we intend to do about it?**
 - Continue to advocate for hydropower operations that best mimic a natural hydrograph and normative river conditions

Overharvest

18

- **Why is this important?**
 - Sea lion predation has reduced sustainable harvest rate
 - Recent recruitment has been lower than historic
 - Fisheries management must account for increased predation and lower recruitment
- **What do we intend to do about it?**
 - Reduce harvest rate
 - Continue to monitor populations and fisheries
 - Increase law enforcement

Adaptive Management

19

- **Framework**
 - Take action
 - Assess results v. conservation & desired status benchmarks
 - Make adjustments as necessary
 - Re-assess results
- **Assessments**
 - Population status
 - Fisheries performance
 - Pinniped predation

Adaptive Management

20

Process

- ❑ Convene a Lower Columbia River White Sturgeon Technical Management Team
- ❑ Use a “weight-of-evidence” scheme for assessing the nature and cause of problems and potential remedies
- ❑ Develop a list of feasible remedial measures to address problems
- ❑ Work with policy-makers to implement remedies

Summary:

Current Status vs. Benchmarks

21

- Current status is about three-times greater than **conservation status** for adults and sub-adults
- Current status is about 75% of **desired status** for adults and about 25% for sub-adults
- Current harvest is about one-third of what it would be at **desired status**

Summary: Limiting Factors

22

- **The current sea lion management program benefits white sturgeon**
- **Improvements to hydropower system operations for salmon benefit white sturgeon**
- **Recent changes in fisheries management are consistent with those needed to protect and grow the population**

Summary: Adaptive Management

23

- **Unknowns and uncertainties demand real-time monitoring of and timely responses to changes in population status**
- **Existing population assessment and fisheries monitoring programs are essential to success**
- **Need better understanding of how changes in sea lion predation and potential food sources have affected productivity**

White Sturgeon Harvest Management Accord

24

- Harvest agreement between Oregon and Washington
- Establishes harvest quota based on an exploitation rate that is sustainable and allows the population to grow over time
- Establishes allocation in the Columbia River among fishery types and geographic areas based on public input and policy direction

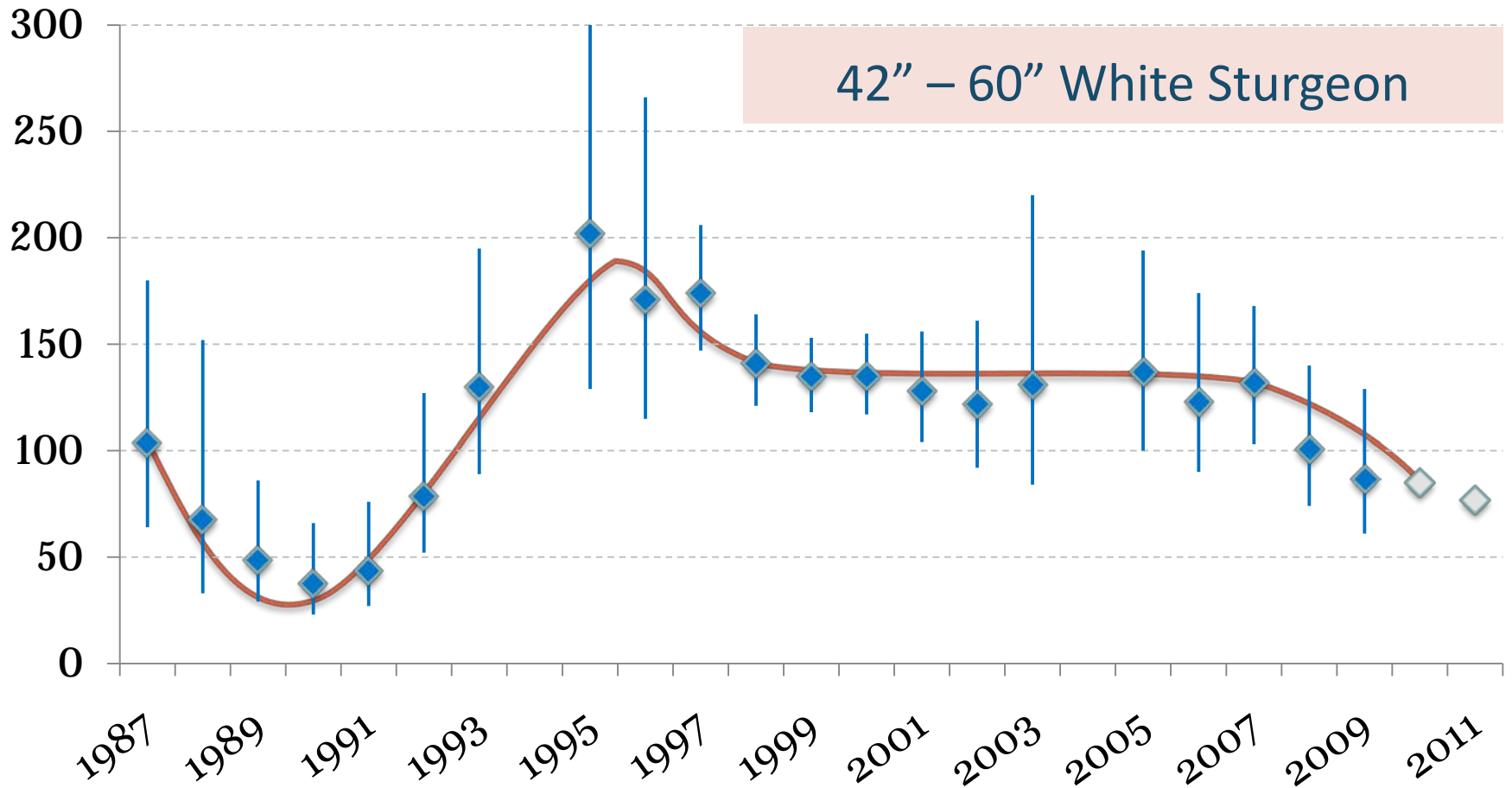


Key Elements of Past Columbia River Sturgeon Management Accords

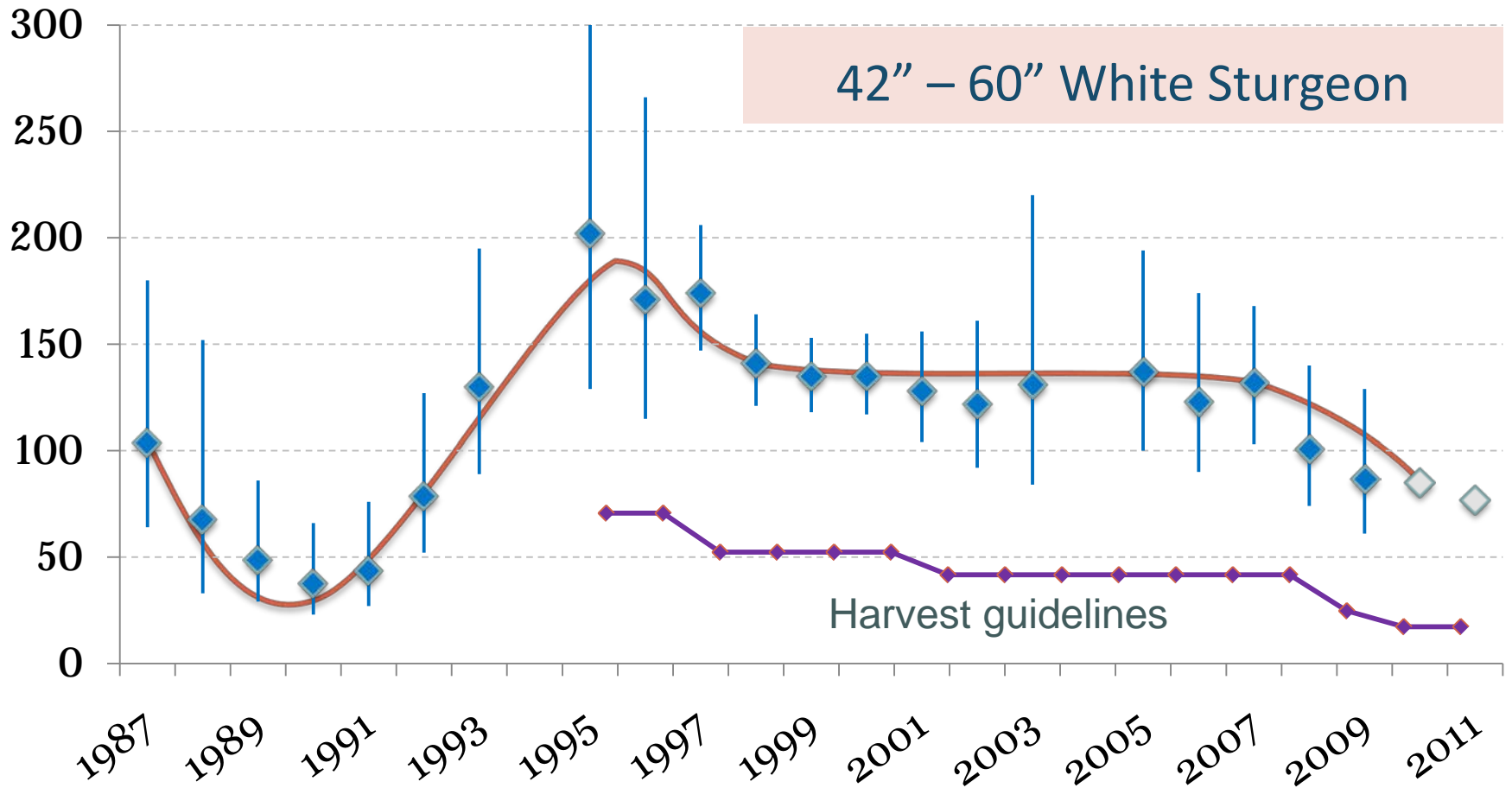
25

- Annual harvest quota: 40,000 (2003-2009)
24,000 (2010)
- Commercial fishery share of quota: 20%
- Sport fisheries share of quota: 80%
 - 60% Below Wauna (Estuary)
 - 40% Above Wauna (including Willamette)

Sub-Adult White Sturgeon Population Trends



Sub-Adult White Sturgeon Population Trends



Changes in 2011

- Harvest guideline based on sustainable exploitation rate at reduced abundance
- Allocation among sport and Commercial fisheries and among areas is a policy decision

	2009	2010	2011
Legal Abundance	87,000	85,000	77,000
Harvest Guideline	40,000	24,000	17,000
Commercial (20%)	8,000	4,800	3,400
Sport (80%)	32,000	19,200	13,600

Questions / Comments

