COLUMBIA BASIN
FISH AND WILDLIFE
AUTHORITY

Development of Fish and Wildlife Program Amendments

Joint Technical Committees and Members Advisory Group
Amendment Strategy Workshop

July 24-25, 2007

Member Directives to Technical Committees

- Define/clarify terms (i.e., focal populations, biological objectives, strategies, limiting factors, and causative factors)
- Confirm population level biological objectives
- Ensure priorities of all F&W plans are captured
- Validate current limiting factors including out-of-basin effects
- Review and build on strategies and actions necessary to reduce the limiting factors

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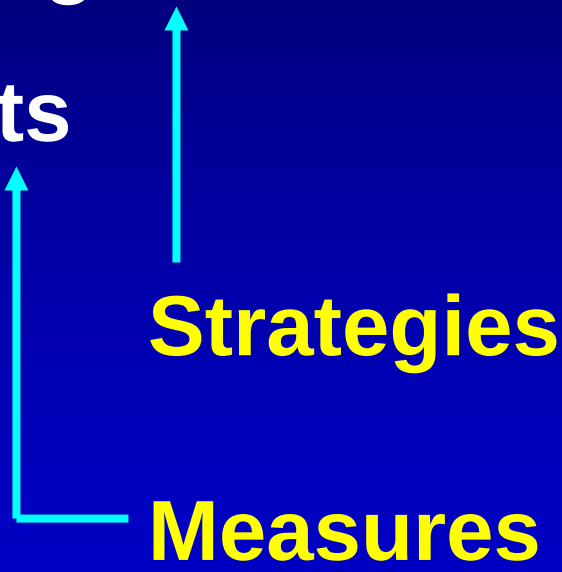
Definitions: Terms

Biological Objectives

Limiting Factors

Threats



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Information Confirmed

Anadromous Fish

Province	Subbasin	Focal Species (Populations)	Objectives	Limiting Factors	Threats
1/7	14/36	251/261	189/261	163/261	163/261

Resident Fish

Province	Subbasin	Focal Species	Objectives	Limiting Factors	Threats
8/11	45/49	103/115	103/115	103/115	103/115

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Example:
Lower John Day River Steelhead

Biological Objectives:

- **Minimum abundance threshold of 2,250 naturally produced adults (*TRT*)**
- **Improve population status to viable (*draft recovery plan*)**
- **7,450 naturally produced adult and jack returns to the mouth of the John Day River by 2030 (*subbasin plan*)**

Population Viability Matrix

Spatial Structure/Diversity
(Risk of extinction)

Abundance/Productivity
(Risk of extinction)

	Very Low	Low	Moderate	High
Very Low (<1%)	Highly Viable	Highly Viable	Viable	Maintained
Low (<5%)	Viable	Viable	Viable	Maintained
Moderate (<25%)	Maintained	Maintained	Maintained	High Risk
High	High Risk	High Risk	High Risk	High Risk

Example:
Lower John Day River Steelhead

Status:

- **Part of Middle Columbia River Steelhead DPS listed as Threatened**
- **Population status (viable):**
  "Maintained" (moderate risk of extinction)
- **Returns (2,250-7,450):**
  10 year range = 563–6,257
  10 year mean = 1,800

Example:
Lower John Day River Steelhead

Limiting Factors:

- **Physical habitat quality/quantity**
  - **-habitat diversity and large woody debris**
- **Water quantity**
  - **-low base flows in summer**
- **Water quality**
  - **-high temperatures**
- **Population traits**
  - **-genetic effects from straying hatchery steelhead**

Example:
Lower John Day River Steelhead

Limiting Factor:

Physical habitat quality/quantity

Threat:

Current land use practices

- -Agriculture and grazing practices
- -Stream channelization
- -Diking

Example:
Lower John Day River Steelhead

Strategy: → **Limiting Factor**

- **Restore floodplain connectivity and function**

Measures: → **Threats**

- **Reconnect side channels and off-channel habitats to stream channels**
- **Restore wet meadows**
- **Reconnect floodplain to channel**

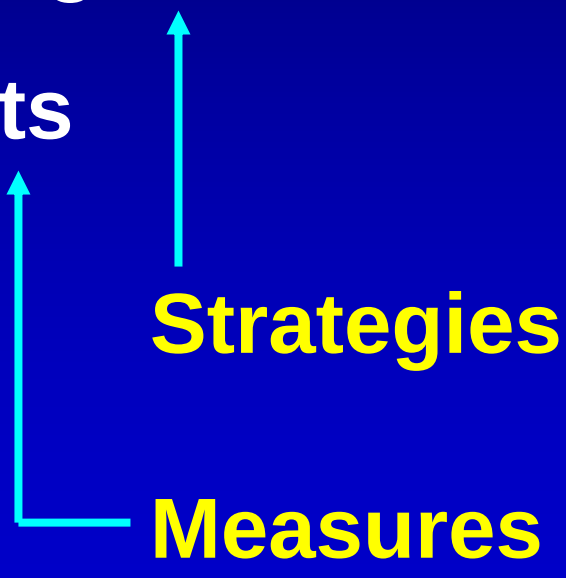
Example Summary

Biological Objectives

Current Status

Limiting Factors

Threats



Example:
Bull Trout: Lake Pend Oreille Core Area

Biological Objectives:

- **2,500 adults among at least 6 local populations with >100 adults**

Example:
Bull Trout: Lake Pend Oreille Core Area

Status:

Redd Counts at Annual Index Sites:

2006 = 1,256 redds

5 year range = 781 – 1,256

5 year mean = 940 redds

Example:
Bull Trout: Lake Pend Oreille Core Area

Limiting Factors:

- **Physical habitat quality/quantity**
  - **spawning and rearing habitat**

- **Competition**
  - **introduced species**

Example:
Bull Trout: Lake Pend Oreille Core Area

Limiting Factor:

Competition

Threat:

Introduced species

- lake trout

Example:
Bull Trout: Lake Pend Oreille Core Area

Strategy: → **Limiting Factor**

- **Remove non-native competition**

Measures: → **Threats**

- **Increase removal efficiency by providing bounties for lake trout**
- **Increase removal efficiency by liberalizing bag limits for lake trout**

Example:
Lake Pend Oreille Kokanee

Biological Objectives:

- **Annual harvest averaging 300,000 fish with a catch rate of 1.5 fish/hr by 2015**

Example:
Lake Pend Oreille Kokanee

Limiting Factors:

- **Physical habitat quality/quantity**
  - **availability of spawning and rearing habitat**

- **Predation**
  - **introduced species**

Example:
Lake Pend Oreille Kokanee

Limiting Factor:

Predation

Threat:

Introduced species

- rainbow trout
- lake trout

Example:
Lake Pend Oreille Kokanee

Status:

- **Harvest prohibited**

- **Population estimate:**
  - **2006 = 9.87 million (0.04 million adults)**
  - **5 year range = 4.15 – 10.42 million**
  - **5 year mean = 7.18 million**

Example:
Lake Pend Oreille Kokanee

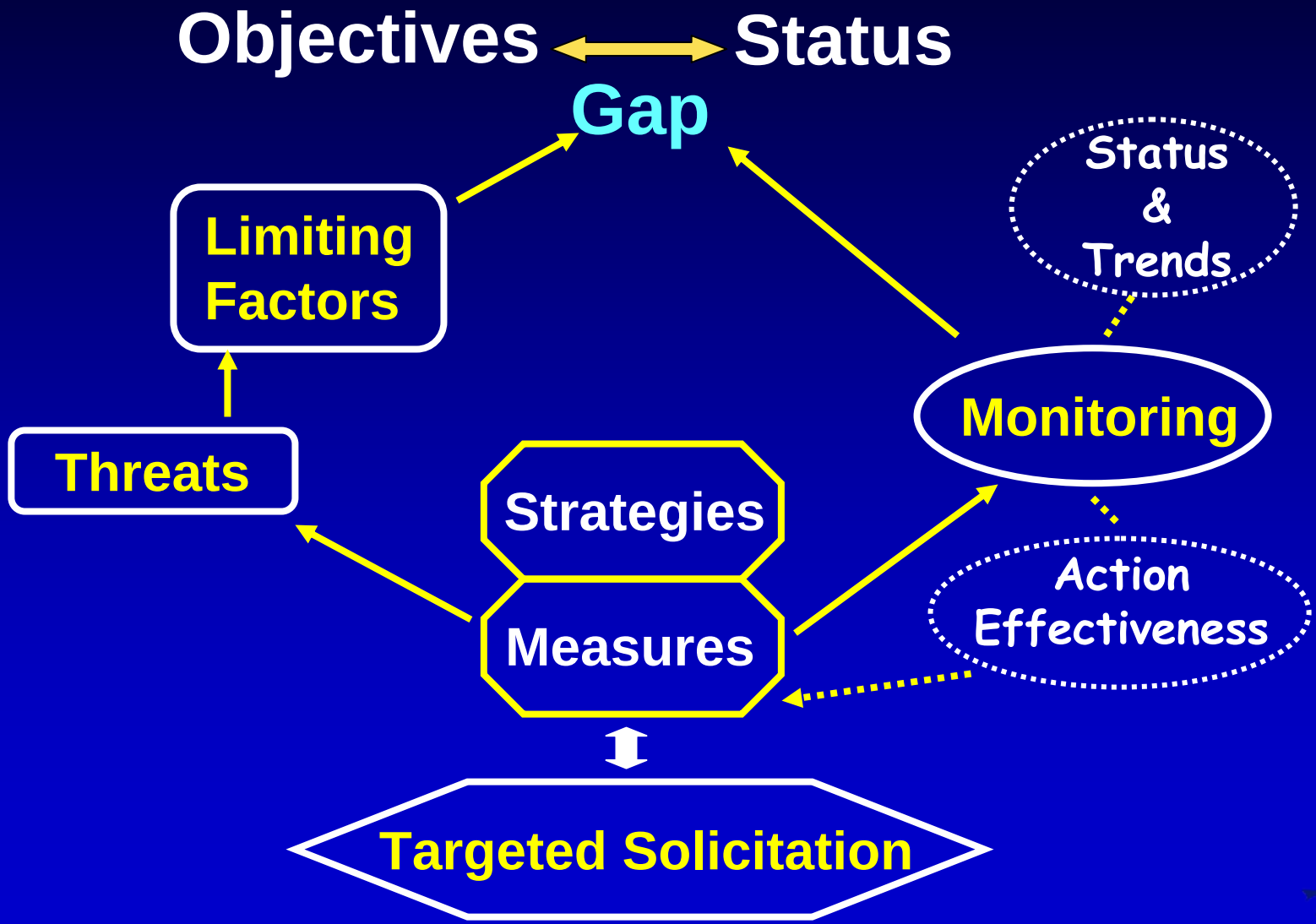
Strategy: → **Limiting Factor**

- **Remove non-native predators**

Measures: → **Threats**

- **Increase removal efficiency by providing bounties for non-native trout**
- **Increase removal efficiency by liberalizing bag limits for non-native fish**

From Objectives to Solicitation



Member Directive to MAG

- Link subbasin population objectives to regional Program goals
  - Identify BPA's obligations

MAG asked technical committees to explore

Objectives

Not Listed

Steelhead

Subbasin (MPG):

John Day

Province/DPS:

Columbia Plateau/Mid Columbia

Populations:

Lower

Middle Fork

North Fork

South Fork

Upper

MPGs:

Yakima

Walla Walla/Umatilla

John Day

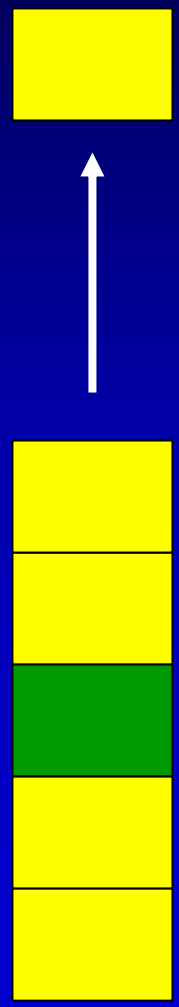
Cascades Eastern Slope

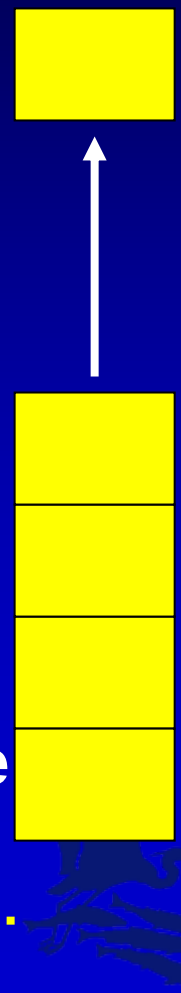
Deschutes

Rock Creek

Fifteenmile

Klickitat





Objectives

Bull Trout

Subbasin (RU, RSU):

Clark Fork (RU)

Upper Clark Fork (RSU)

Populations (CA):

Lake Pend Oreille

Province:

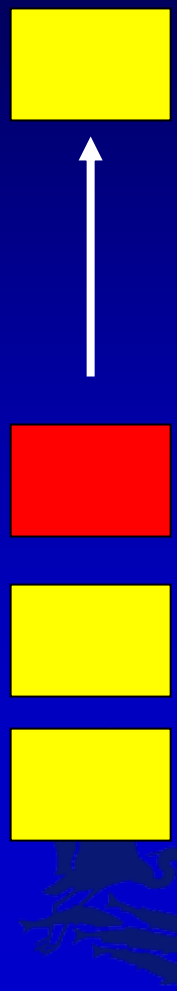
Intermountain

Recovery Unit:

Northeast Washington River Basins

Clark Fork

Coeur d'Alene Lake



Objectives

Kokanee

Subbasin:

Lake Pend Oreille

Populations:

Lake Pend Oreille

Province:

Intermountain

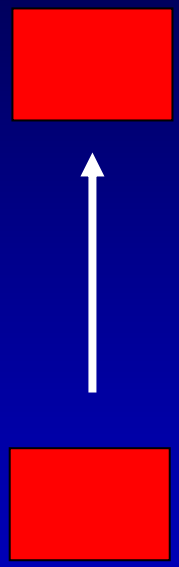
Populations:

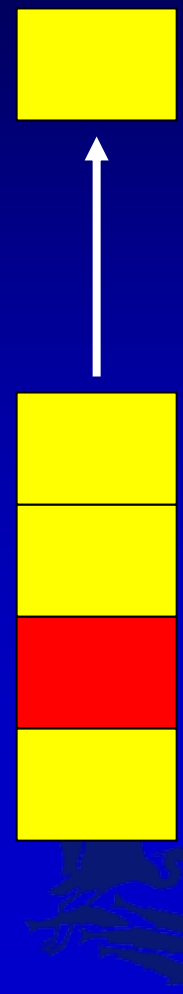
Lake Roosevelt

San Poil River

Lake Pend O’reille

Spokane River





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Definitions: Context is Important

- These definitions are for amendments to the Council's Fish and Wildlife Program
- Consistent with Subbasin Plans
- Amendment process is a planning exercise, not necessarily an analytical exercise
- Terminology is similar to other planning processes, but may vary

Definitions: Biological Objective

The desirable condition or state that one is attempting to achieve through a course of action. Objectives for species may have two components: (1) biological performance, describing responses of populations or aggregate populations/communities, and/or (2) environmental characteristics, which describe conditions needed to achieve biological performance. Biological objectives are intended to be measurable and should have spatial and temporal components.

Definitions: Strategy

An approach to achieve biological objectives by addressing limiting factors or threats.

Definitions: Measure

Specific action to be taken to contribute to achieving biological objectives

Definitions: Limiting Factor

Environmental (biotic and abiotic) condition that prevents a population from reaching its established biological objective. If removed, the target population would be expected to expand.

Definitions: Threat

Activity or condition (e.g., legacy) that contributes to or causes one or more limiting factors.