

Glen Canyon Dam Adaptive Management Work Group
Agenda Item Form
May 22, 2018 Webinar

Agenda Item

Proposed USFWS downlisting of HBC from Endangered to Threatened

Purpose of Agenda Item

To inform attendees of the process the U.S. Fish and Wildlife Service recently completed that led to a decision to propose downlisting the Humpback chub and revision of the species recovery plan.

Action Requested

Information item only; while we will answer questions, no action is requested.

Presenter

Tom Chart, Director, Upper Colorado River Endangered Fish Recovery Program, U.S. Fish and Wildlife Service

Previous Action Taken

N/A

Relevant Science

Please see the following for relevant research or monitoring on this subject: [Species Status Assessment for the Humpback Chub \(*Gila cypha*\)](#) and the associated [Humpback Chub 5-Year Review](#).

Summary of Presentation and Background Information

The presenter will review the following topics:

- Contents of a Species Status Assessment (SSA): the species' needs, current condition, and future condition.
- The process the USFWS used to develop the SSA: working with a recovery team, peer review, and inter-regional review / concurrence.
- The SSA as a foundation for a variety of USFWS decisions: in this case, the 5-year review which communicated Regional Director Noreen Walsh's decision to pursue reclassification of the species from endangered to threatened and the intention to revise the species recovery plan.
- Next steps: a) timeline for developing a proposed (and ultimately a final) rule for Federal Register publication and the associated public review, b) reclassification presents the opportunity to develop an ESA 4(d) rule; however, the USFWS is not considering anything specifically at this time, and c) timeline for revision of the species recovery plan to identify measurable and objective recovery criteria, and time and costs necessary to delist the species.
- Discussion of whether reclassification of the species causes any change to existing ESA Section 7 documents, e.g. Biological Opinions: no, because a threatened species receives full protection under the ESA and therefore does not require re-consultation.



Humpback Chub *Gila cypha* SSA & 5-year Review

Tom Chart and Kevin McAbee

Upper Colorado River
Endangered Fish Recovery Program





Species Status Assessment

U.S. Fish and Wildlife Service's Improved Endangered Species Act Assessment Process

Spend More Time on Science

Useful for Multiple Decisions/Programs

Improve Transparency & Consistency

Distinct Science and Policy

Increase Conservation through Collaboration

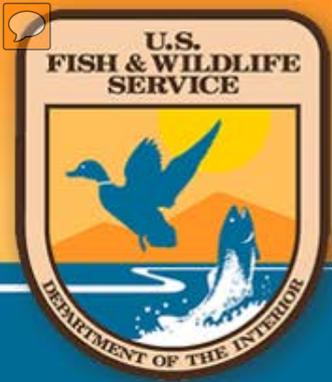
Cope with Synergistic Factors

Improve Forecasting

Species Status Assessment Report for the Texas Hornshell Version 1.0

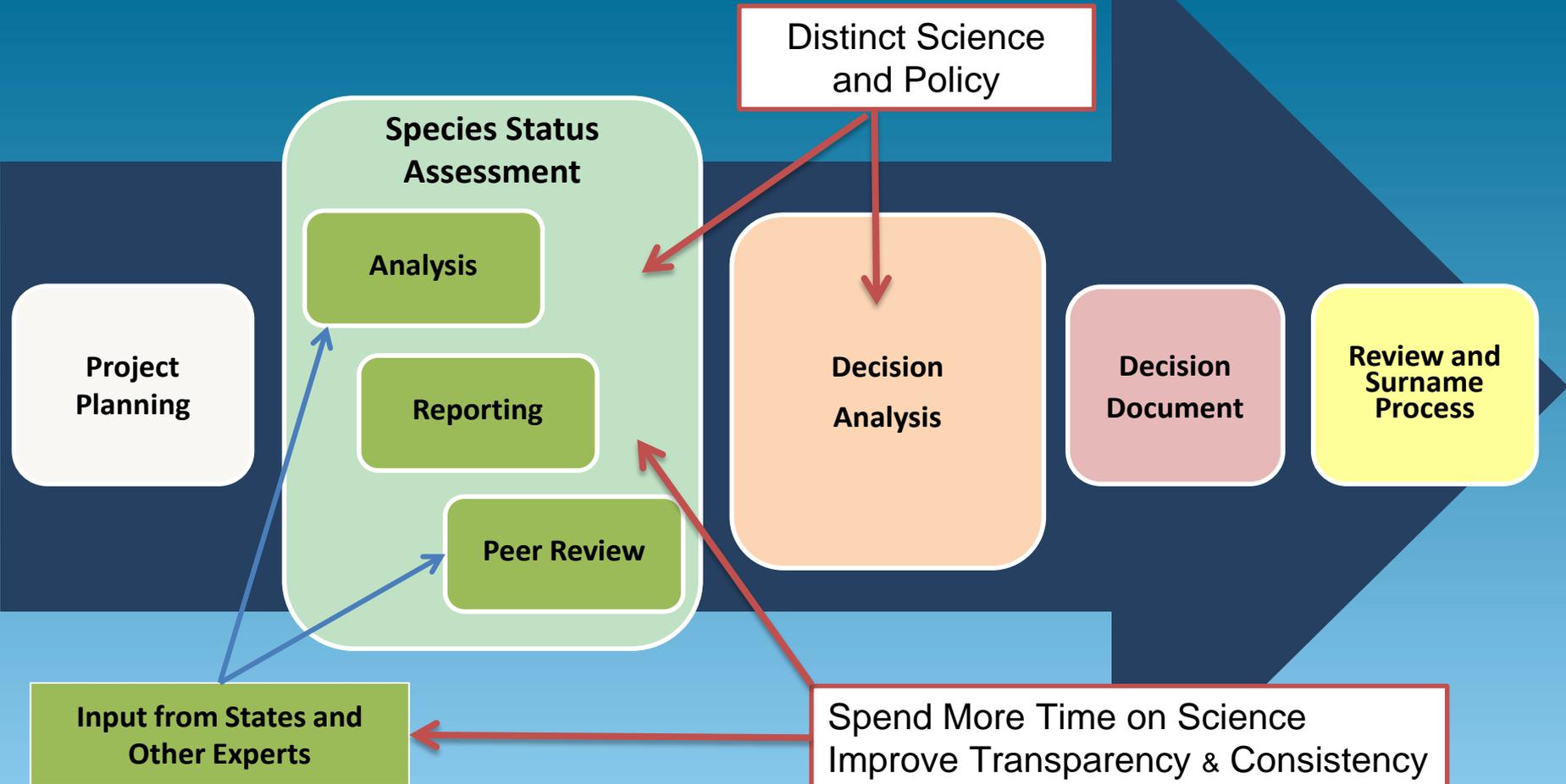


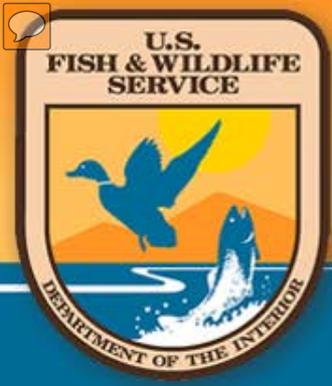
Adult Texas hornshell from the Black River, New Mexico. Photo by Joel Lusk, U.S. Fish and Wildlife Service.



Species Status Assessment

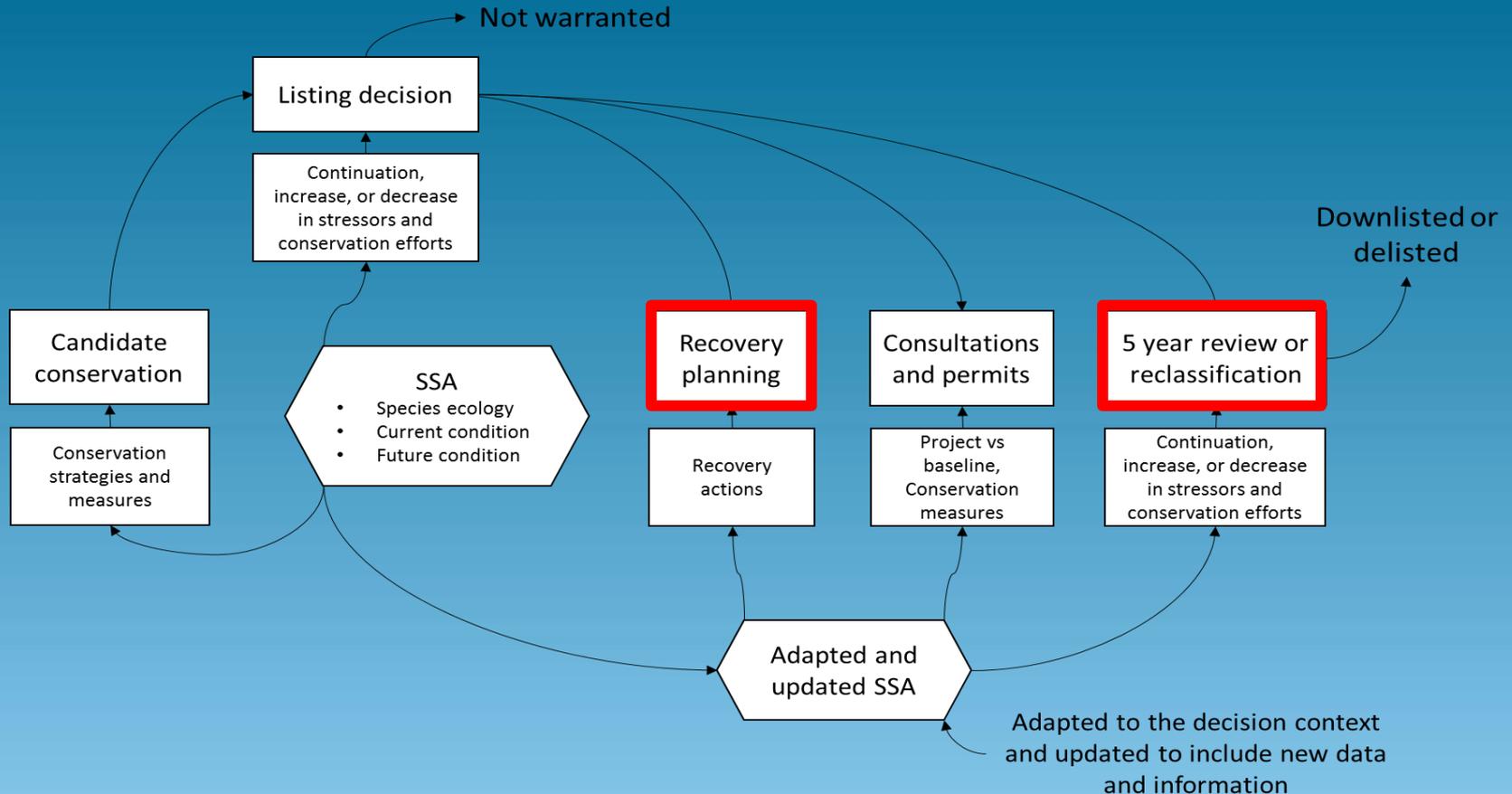
SSA Work Flow

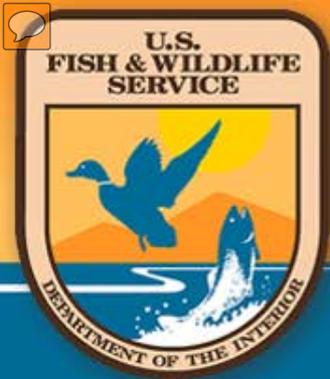




Species Status Assessment

Useful for Multiple decisions/programs





Species Status Assessment

Viability is the ability of a species to sustain populations in the wild beyond a biologically meaningful time frame.

Resiliency – the ability of the populations to withstand stochasticity

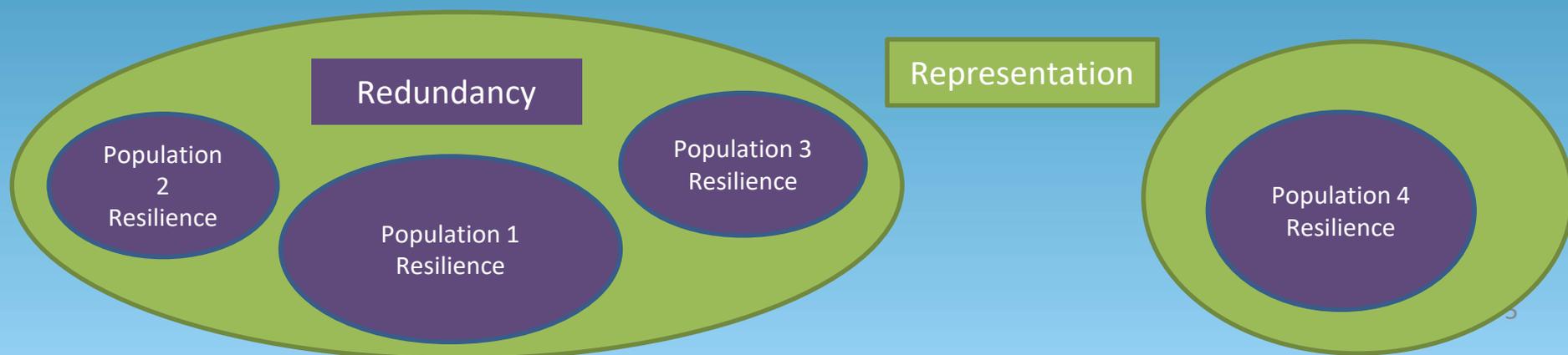
> *Population health, abundance, growth rate, etc.*

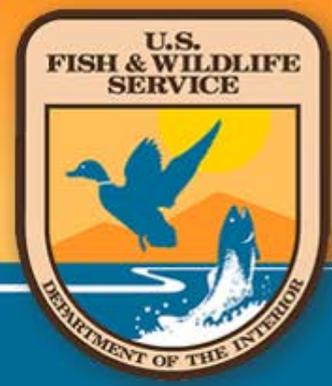
Redundancy – the ability of the species to withstand catastrophic events

> *Number and distribution of populations*

Representation – the ability of the species to adapt to changing environmental conditions

> *Genetic and ecological diversity*





Species Status Assessment

SSA has 3 Stages:

SPECIES NEEDS



Current Availability
or Condition of those
Needs

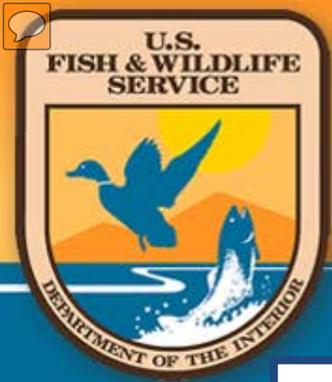
CURRENT SPECIES' CONDITION



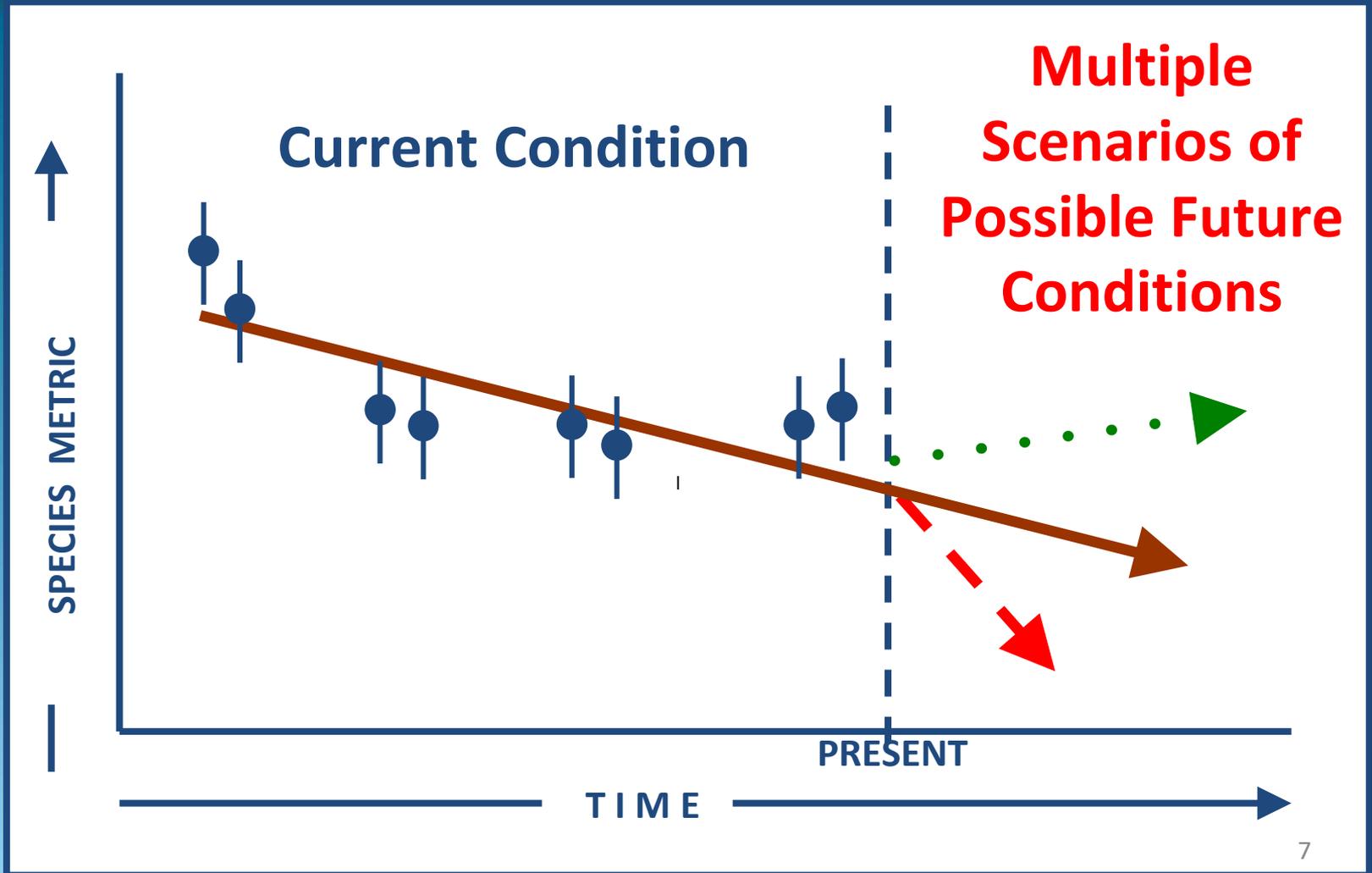
Future Availability
or Condition of those
Needs

FUTURE SPECIES' CONDITION





Future Conditions





Humpback Chub SSA

- Initiated November 2015
- 8 drafts
- Final Draft November 2017
- Published March 2018

U.S. Fish and Wildlife Service

Species Status Assessment for the Humpback Chub (*Gila cypha*)



Fish Illustration © Joseph R. Tomelleri

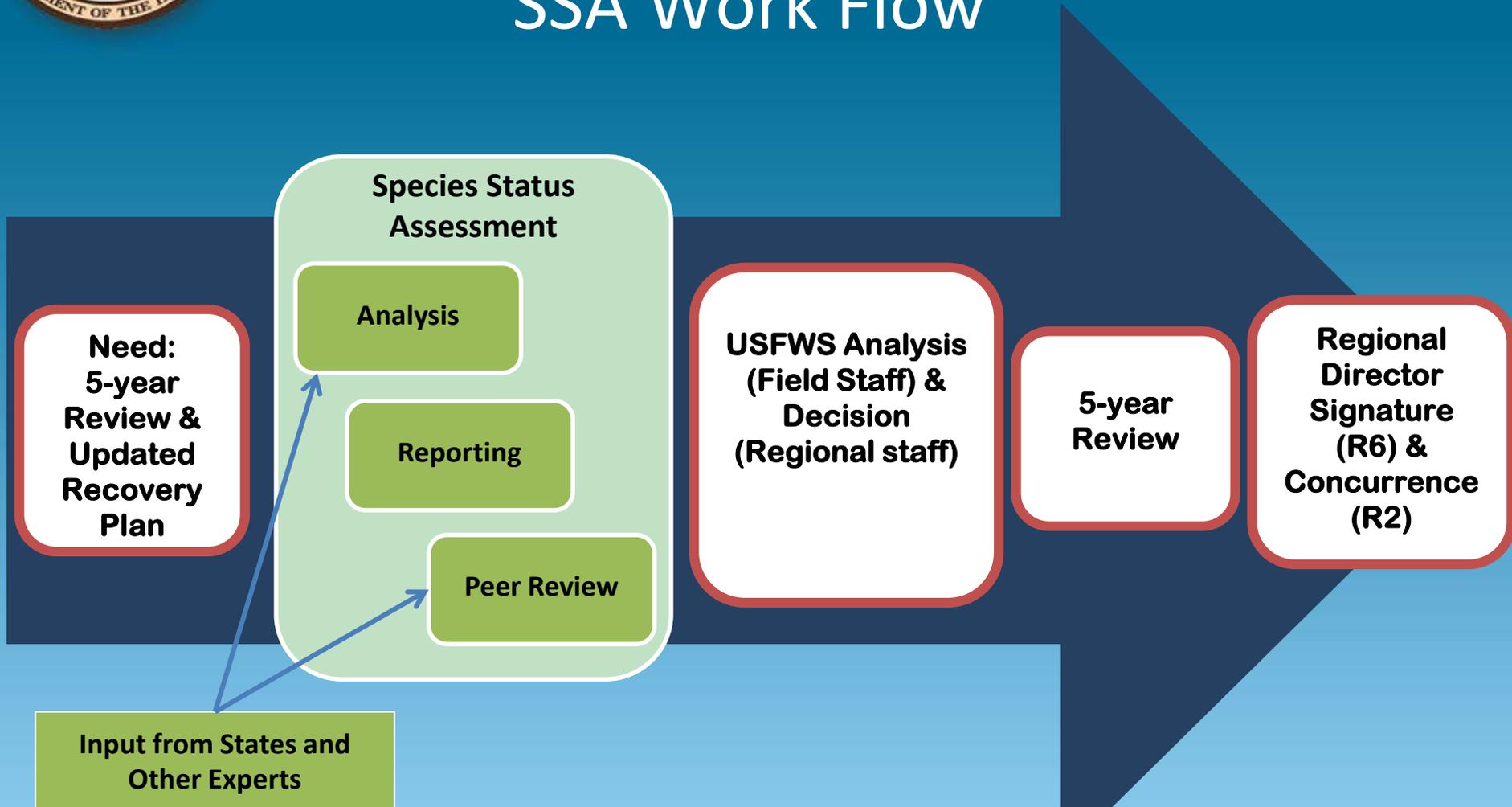


U.S. Fish and Wildlife Service
Mountain-Prairie Region (6)
Denver, CO



Humpback Chub SSA

SSA Work Flow





Humpback Chub SSA

Input from States and Other Experts

Species Status Assessment

Analysis

Reporting

Peer Review

Recovery Team Leader:

Richard Valdez, Ph.D. (SWCA, Environmental Consultants)

Science Advisory Subgroup:

Shane Capron (Western Area Power Administration)
Katherine Creighton (Utah Division of Wildlife Resources)
David Rogowski, Ph.D. replaced Bill Stewart (Arizona Game and Fish Department)
Melissa Trammell (National Park Service)
Scott Vanderkooi (USGS, Grand Canyon Monitoring and Research Center)
Kirk Young / Randy Van Haverbeke (U.S. Fish and Wildlife Service, Region 2)

Nov 2015 to Nov 2017

Implementation Subgroup:

Rob Billerbeck (National Park Service)
Julie Carter (Arizona Game and Fish Department)
Leslie James (Colorado River Energy Distributors Association)
Lynn Jeka (Western Area Power Administration)
Michelle Garrison replaced Ted Kowalski (Colorado Water Conservation Board)
Henry Maddux (Utah Department of Natural Resources)
Don Ostler (Upper Colorado River Commission)
Tom Pitts (Water Consult)
Brent Uilenberg (U.S. Bureau of Reclamation)
Robert Wigington (The Nature Conservancy)
Kim Yazzie (Navajo Nation Department of Fish and Wildlife)
To be announced (Pueblo of Zuni)

Mid 2016 to Mid 2017

Peer Reviewers:

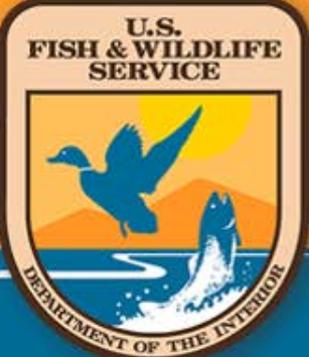
Paul Badame (Utah Division of Wildlife Resources)
Brian Healy (NPS, Grand Canyon National Park)
Craig Paukert, Ph.D. (Missouri Cooperative Fish and Wildlife Research Unit)

Early 2018

Additional Review, Advice, and Comment:

Bill Pine, Ph.D. (University of Florida, Gainesville)
Sarah Rinkevich (U.S. Fish and Wildlife Service, Region 2)
Jessica Gwinn (U.S. Fish and Wildlife Service, Region 2)
Shaula Hedwall (U.S. Fish and Wildlife Service, Region 2)
Marjorie Nelson (U.S. Fish and Wildlife Service, Region 6)
Travis Francis (U.S. Fish and Wildlife Service, Region 6)
Chuck Minckley (U.S. Fish and Wildlife Service, Region 2, retired)
Peggy Roefer (Colorado River Commission)
Dale Ryden (U.S. Fish and Wildlife Service, Region 6)
George Weekley (U.S. Fish and Wildlife Service, Region 6)
Craig Hansen (U.S. Fish and Wildlife Service, Region 6)

Mid 2016 to Mid 2017



Humpback Chub SSA

SSA has 3 Stages:

SPECIES NEEDS



Chapter 3

+
-
Current Availability
or Condition of those
Needs

CURRENT SPECIES' CONDITION



Chapter 4

+
-
Future Availability
or Condition of those
Needs

FUTURE SPECIES' CONDITION



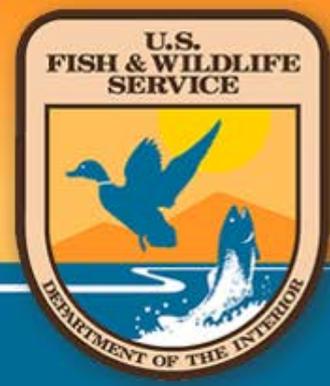
Chapter 5

U.S. Fish and Wildlife Service

Species Status Assessment
for the
Humpback Chub (*Gila cypha*)

Fish Illustration © Joseph R. Tomfelin

U.S. Fish and Wildlife Service
Mountain-Prairie Region (6)
Denver, CO

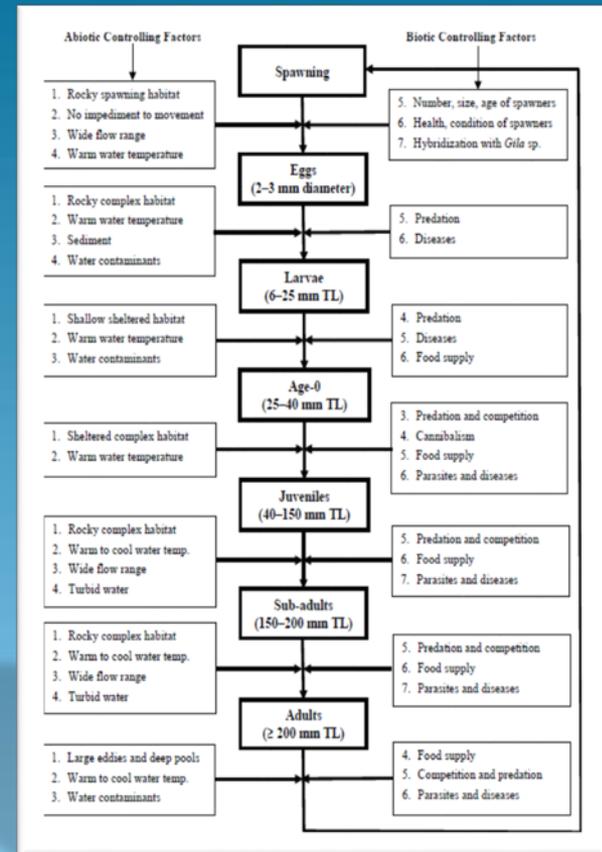


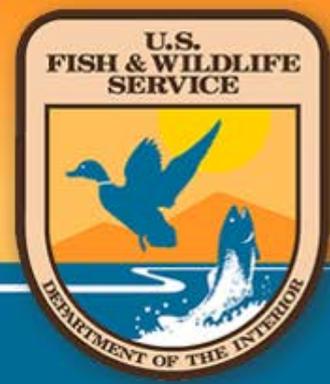
Humpback Chub Species Needs

Ch. 3

Primary Resource Categories

1. Diverse rocky canyon river habitat
2. Suitable river flow and temperature
3. Adequate and reliable food supply
4. Habitat with few nonnative predators and competitors
5. Suitable water quality
6. Unimpeded range and connectivity
7. Persistent populations
8. High genetic diversity





Humpback Chub Populations

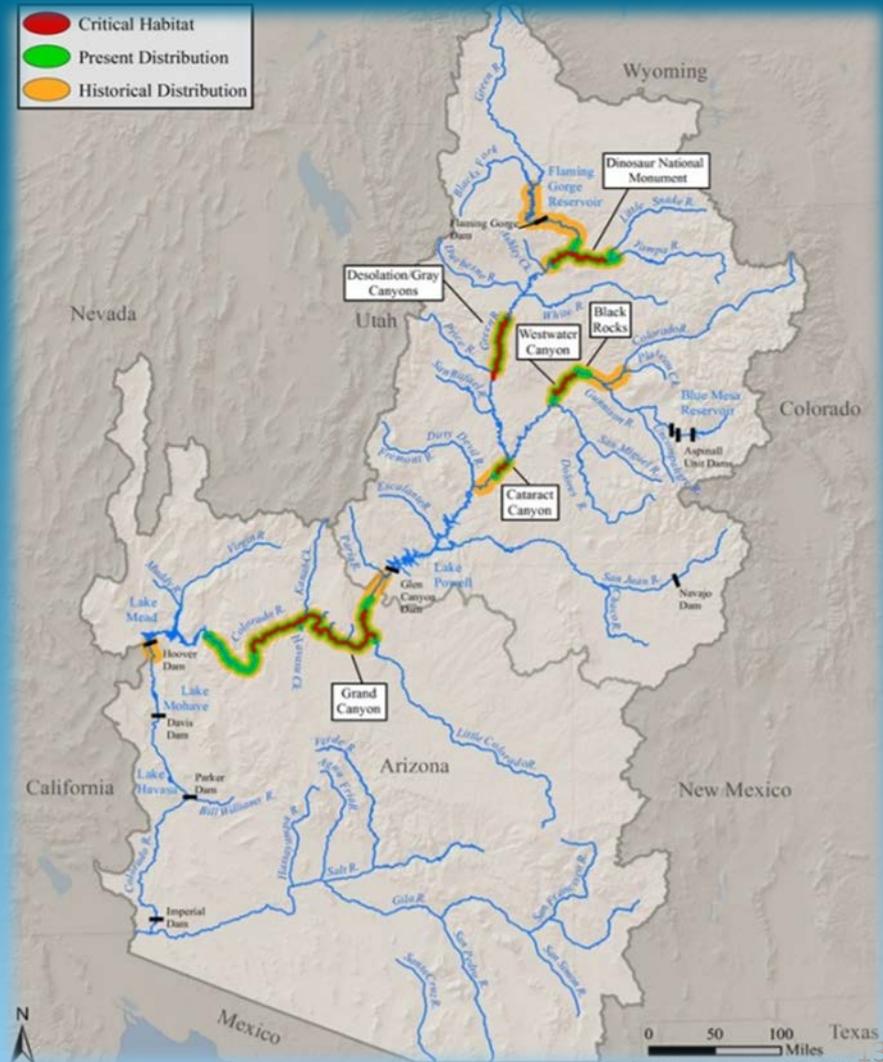
Ch. 2.2

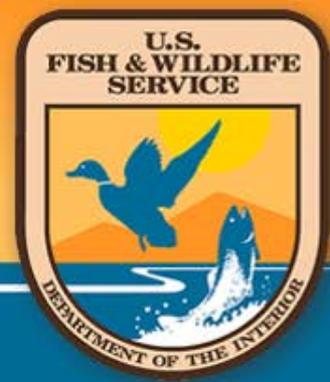
Upper Basin

- Blacks Rocks
- Westwater Canyon
- Desolation / Gray canyons
- Cataract Canyon
- Dinosaur NM (extirpated)

Lower Basin

- Grand Canyon
 - Core Little Colorado River
 - Mainstem aggregations
 - Havasu Creek translocation
 - Western Grand Canyon





Current Resource Conditions

Ch. 4.3

Resource Category	Upper Basin					Lower Basin
	Black Rocks	Westwater Canyon	Desolation/ Gray canyons	Cataract Canyon	Dinosaur National Monument	Grand Canyon
	Extant				Extirpated	Extant
1. Diverse rocky canyon river habitat	Green	Green	Green	Green	Green	Green
2a. Suitable flow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2b. Suitable temperature	Green	Green	Green	Green	Green	Green
3. Adequate and reliable food supply	Green	Green	Green	Green	Green	Orange
4. Habitat with few nonnative predators and competitors	Green	Green	Yellow	Green	Yellow	Yellow
5. Suitable water quality	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6. Unimpeded range and connectivity	Green	Green	Green	Green	Green	Green
7. Persistent populations	Green	Green	Yellow	Yellow	Red	Green
8. High genetic diversity	Green	Green	Green	Green	Red	Green

Table 7: Please refer to SSA for detailed information



Status of Upper Basin Demographics

Ch. 4.5

- Blacks Rocks & Westwater Canyon
 - Declines through 2007;
 - Apparent subsequent stabilization
- Desolation / Gray canyons
 - Unclear abundance estimates trend
 - Point estimates decline but CI overlap
 - CPUE apparently stable over ~30 years
- Cataract Canyon
 - Persistent at low abundance; CPUE variable
- Dinosaur National Monument
 - Extirpated but potential for translocations



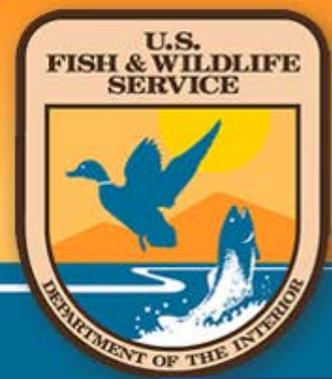


Status of Lower Basin Demographics

Ch. 4.5

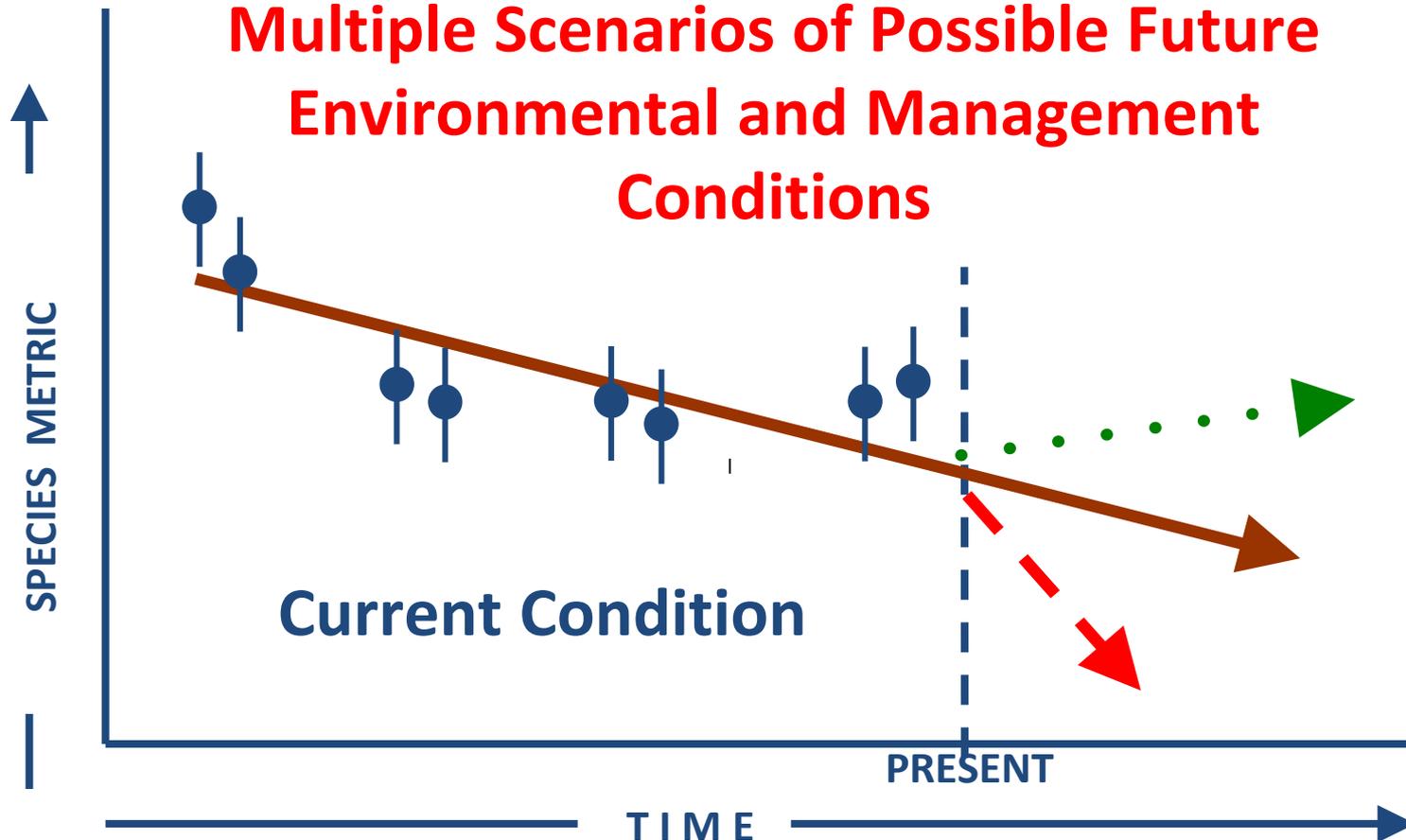
- Grand Canyon
 - Core population ~11,500 adults
 - stable since 2008
 - growth in 2000s
 - Mainstem: ~250 adults
 - several hundred younger
 - reproduction in western GC
 - Successful translocation efforts
 - LCR and Havasu





Future Conditions

Multiple Scenarios of Possible Future Environmental and Management Conditions





Future Conditions

Ch. 5

- Biologically Meaningful Timeframe: 16-years
- Risks and Uncertainties
 - Reduced Water Availability
 - Predation and Competition by Nonnative Fish
 - Nonnative fish colonization of Humpback Chub habitats
 - Population Trajectory Uncertainties
 - Still Declining vs Recently Stabilizing
 - Efficacy and Intensity of Management Actions
 - Are Programs doing enough or appropriate actions?





Future Conditions

Ch. 5.3

Three potential future scenarios created by FWS and evaluated by the Science Advisors

- S1: Environmental Stressors Increase and New or Discretionary Extralegal Actions are Eliminated
(Upper Basin Recovery Program ends in 2023)
- S2: Legally Mandated Management Actions and Additional Adaptive Management Actions Occur, but are not fully effective
- S3: Legally Mandated Management Actions and Adaptive Management Actions Occur, and Are Effective

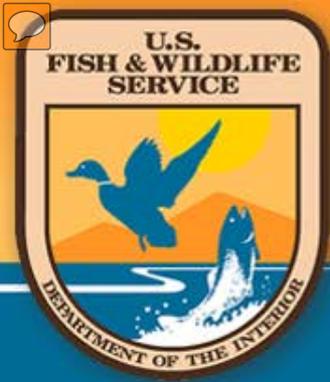


Future Conditions

Tables 16, 17, & 18: Please refer to SSA for more details

Ch. 5.3

Resource	Scenario 1:						Scenario 2:						Scenario 3:					
	Details Found in Table 16						Details Found in Table 17						Details Found in Table 18					
	BR	WW	DG	CC	DNM	GC	BR	WW	DG	CC	DNM	GC	BR	WW	DG	CC	DNM	GC
1.Canyon	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
2a.Flow	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Green	Green	Green	Green	Yellow	Yellow
2b.Temp	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
3.Food	Green	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Green	Green
4.NNF	Red	Yellow	Red	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Green	Green	Yellow	Green	Yellow	Yellow
5. Water Quality	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6.Range & conn	Green	Green	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Green	Yellow	Green
7.Persist. Pops	Red	Red	Red	Red	Red	Green	Yellow	Yellow	Yellow	Yellow	Red	Green	Green	Green	Green	Green	Yellow	Green
8.Genetic	Red	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Green	Green	Green	Green	Green	Yellow	Green



Viability

Ch. 6

		Resiliency	Redundancy	Representation
Upper Basin	S1	Red	Red	Red
	S2	Yellow	Orange	Yellow
	S3	Light Green	Light Green	Light Green
Lower Basin	S1	Orange	Yellow	Light Green
	S2	Light Green	Light Green	Light Green
	S3	Green	Green	Green

- Viability is more tenuous in the upper basin than in the lower basin

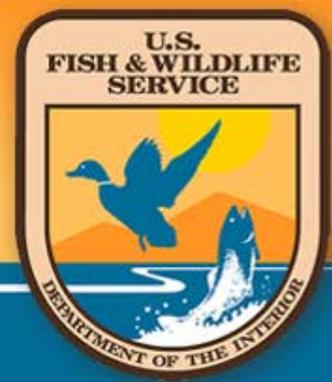


Viability

Ch. 6

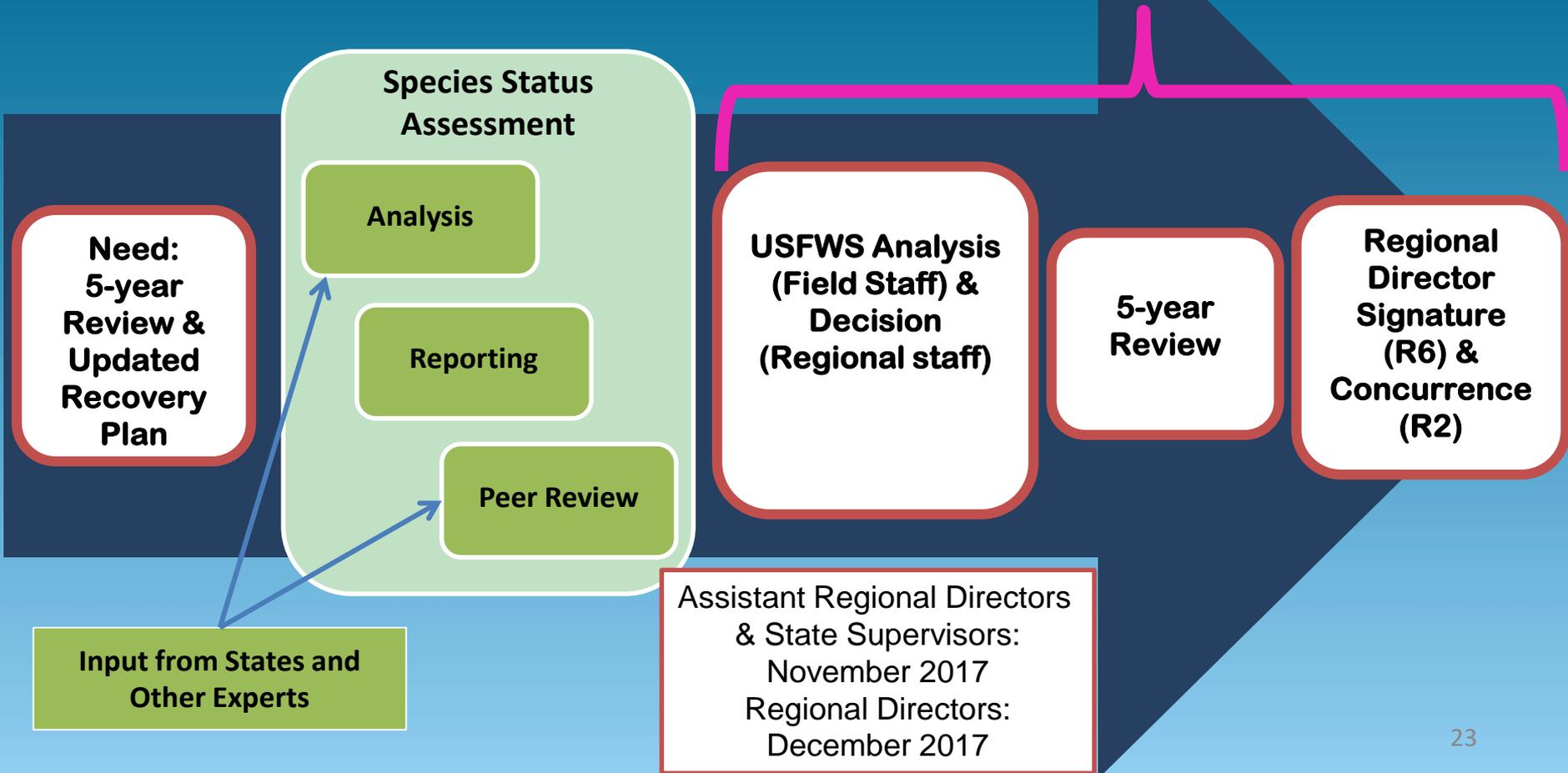
		Resiliency	Redundancy	Representation
Upper Basin	S1	Red	Red	Red
	S2	Yellow	Orange	Yellow
	S3	Light Green	Light Green	Light Green
Lower Basin	S1	Orange	Yellow	Light Green
	S2	Light Green	Light Green	Light Green
	S3	Green	Green	Green

- Viability is more tenuous in the upper basin than in the lower basin
- Under scenarios 2 and 3 the species is fairly well represented and resilient, but redundancy is less certain. Primarily because of the potential to see declines in upper basin populations under scenario 2.
- Uncertainty remains regarding current population trajectories of Humpback Chub, densities of nonnative predators in the upper basin, and risk associated with future conditions throughout the basin.



Humpback Chub SSA

SSA Work Flow

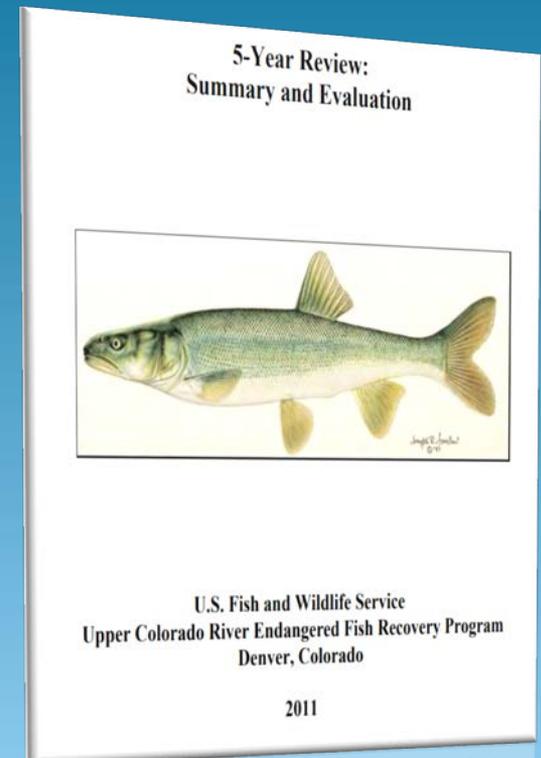


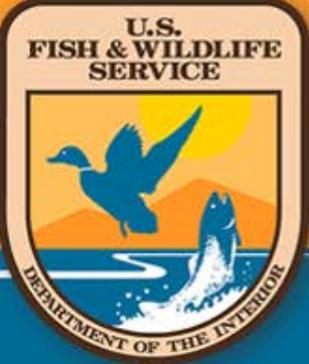


5-year Review

The U.S. Fish and Wildlife Service is required to review the status of each federally listed species every five years.

- Endangered Species:** A species in danger of extinction throughout all or a significant portion of its range
- Threatened Species:** species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
- The key statutory difference between a threatened species and an endangered species is the timing of when a species may be in danger of extinction, either now (endangered species) or in the foreseeable future (threatened species).**





Humpback Chub

5-year Review

Humpback Chub
(Gila cypha)

5-Year Review:
Summary and Evaluation

U.S. Fish and Wildlife Service
Mountain-Prairie Region
Lakewood, Colorado

Signed March 19, 2018

Review Conducted By:

REGIONAL OFFICE APPROVAL:

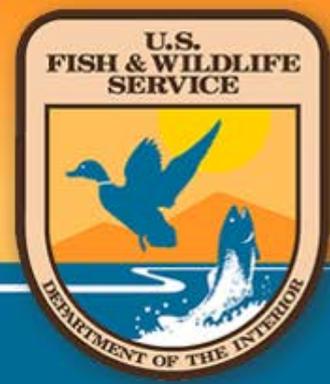
The Regional Director or the Assistant Regional Director, if authority has been delegated to the Assistant Regional Director, must sign all 5-year reviews.

Lead Regional Director, U.S. Fish and Wildlife Service

Approve *Neven E Walsh* Date *3/19/2018*

The Lead Region must ensure that other regions within the range of the species have been provided adequate opportunity to review and comment prior to the review's completion. Written concurrence from other regions is required.





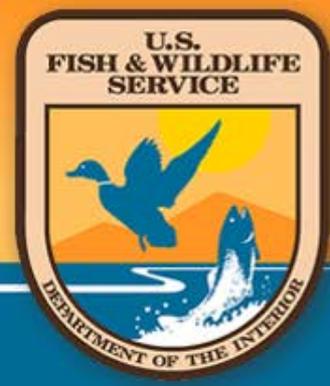
Summary Current Condition

Redundancy, Representation & Resiliency

- Independent population locations
- Large, stable lower basin population
- Multiple upper basin populations
- Genetic diversity protected
- Some populations have recently declined / extirpated
- Individuals
 - Long life span
 - Inhabit arduous habitats
- Populations
 - Persist at low abundance
 - Rebound after declines
 - Establish from translocations

Resource Category	Upper Basin					Lower Basin
	Black Becks	Westside Canyon	Shoshone Gray Canyon	Cataract Canyon	Shower National Monument	Grand Canyon
Climate rocky canyon river habitat	Green	Green	Green	Green	Green	Green
Variable flow	Green	Green	Green	Green	Green	Green
Variable temperature	Green	Green	Green	Green	Green	Green
Adapted and robust food supply	Green	Green	Green	Green	Green	Green
Habitat with low sediment loadings and concentrations	Green	Green	Green	Green	Green	Green
Variable water quality	Green	Green	Green	Green	Green	Green
Unimpacted large and intact populations	Green	Green	Green	Green	Green	Green
Translocated populations	Green	Green	Green	Green	Green	Red

Resources in fair to good condition



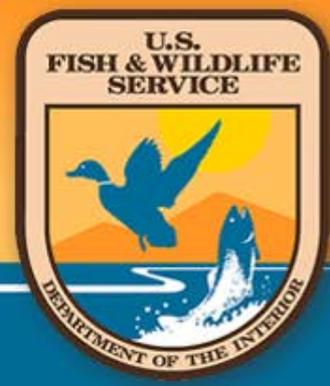
Humpback Chub

5-year Review

- ❑ **Endangered Species:** A species in danger of extinction throughout all or a significant portion of its range – (NOW)

Humpback chub

- Current resource conditions are fair to good and support the species;
- Near term extirpation risk of multiple populations is low;
- Resilient, large core population in the lower basin & multiple populations in the upper basin decrease the risk to the species from stochastic & catastrophic events
- Therefore, FWS concludes that the Humpback chub does not meet the definition of an endangered species.



Humpback Chub

5-year Review

- ❑ **Threatened Species:** species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

		Resiliency	Redundancy	Representation
Upper Basin	S1	Red	Red	Red
	S2	Yellow	Orange	Yellow
	S3	Light Green	Light Green	Light Green
Lower Basin	S1	Orange	Yellow	Light Green
	S2	Light Green	Light Green	Light Green
	S3	Green	Green	Green

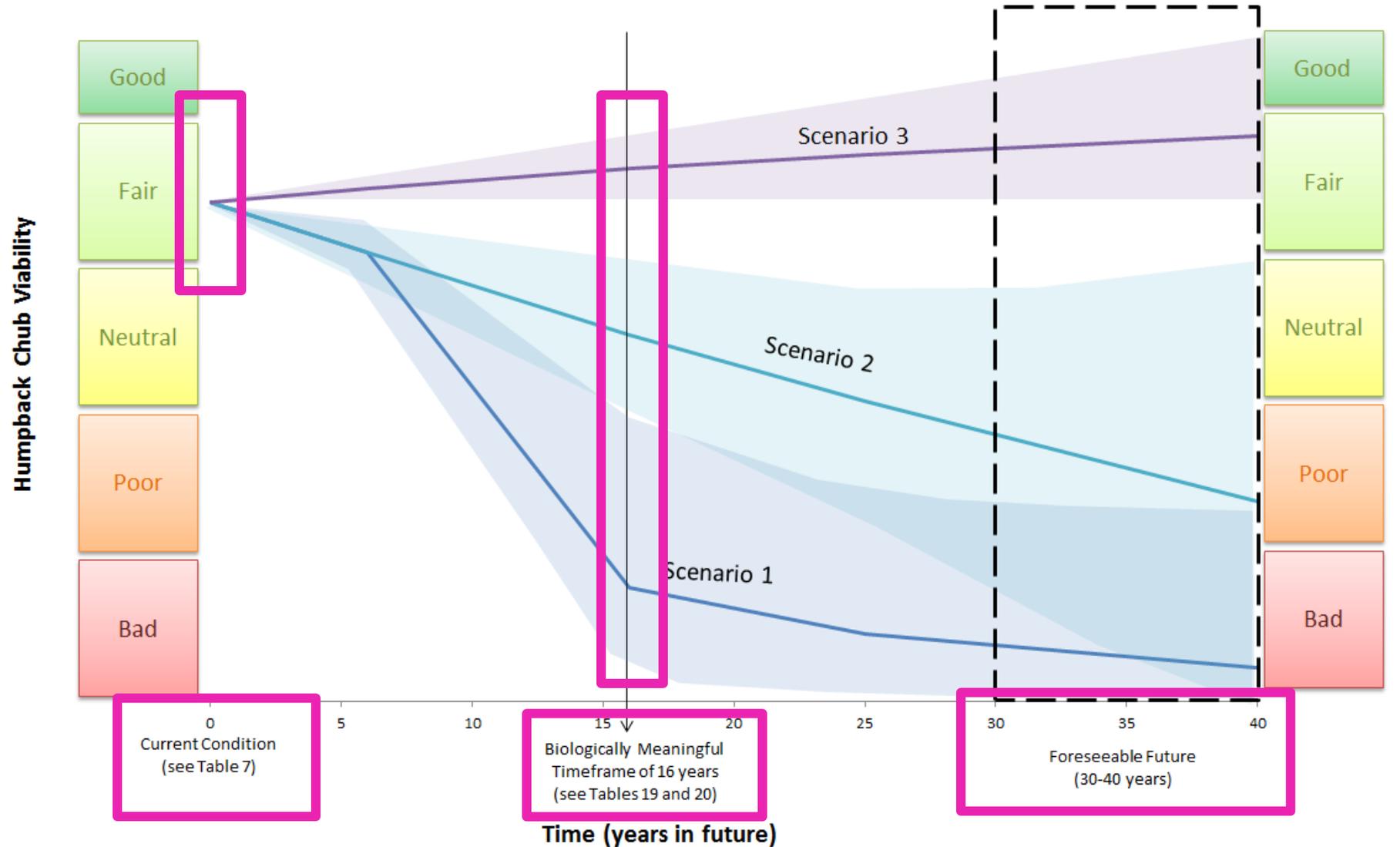
SSA used a 16-year Biologically Meaningful Timeframe

USFWS determined that 16 years was not an adequate foreseeable future and requested more information



Additional Viability Analysis

Appendix C





Humpback Chub

5-year Review

- ❑ **Threatened Species:** species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Humpback chub

- Projected viability declines substantially under scenario 1 within 16 years;
- Projected viability declines gradually under scenario 2 within 40 years;
- Even with the projected viability of the species under scenario 3, there is risk to the species under scenarios 1 and 2 in 16 and 40 years.

- The species could become endangered within the foreseeable future
- Therefore, FWS concludes that the Humpback chub meets the definition of a "threatened" species.



Humpback Chub

5-year Review

U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW
Humpback Chub (*Gila cypha*)

Current Classification: Endangered

Recommendation resulting from the 5-Year Review:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

Appropriate Listing/Reclassification Priority Number, if applicable: 2C

Review Conducted By:

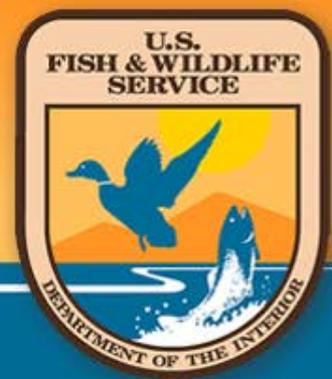
REGIONAL OFFICE APPROVAL:

The Regional Director or the Assistant Regional Director, if authority has been delegated to the Assistant Regional Director, must sign all 5-year reviews.

Lead Regional Director, U.S. Fish and Wildlife Service

Approve Neven E Walsh Date 3/19/2018

The Lead Region must ensure that other regions within the range of the species have been provided adequate opportunity to review and comment prior to the review's completion. Written concurrence from other regions is required.



What does this mean?

- We all should celebrate this success
- Humpback chub conservation is succeeding
- Conservation actions need to continue to further protect the species viability into the future



- This is a recommendation to change status
 - No change in ESA listing status *yet*
- 5-year Review also recommended revising the recovery plan





Next Steps

Regional Director Walsh and the USFWS are committed to follow through on the recommendations

- Status change is a federal rulemaking
 1. *Proposed rule* to classify humpback chub as threatened
 2. Receive public comments on proposed rule
 3. Final Rule considers public comments and all information
- Reconvene the recovery team for a revised recovery plan
 - If reclassified, recovery plan would only include de-listing criteria



Thank You – Questions?



Tom_Chart@fws.gov; (303) 236-9885
Kevin_McAbee@fws.gov; (303) 236-9887