

**PUBLIC SCOPING REPORT FOR THE  
EXPANDED NON-NATIVE AQUATIC SPECIES MANAGEMENT PLAN  
ENVIRONMENTAL ASSESSMENT**

**Prepared by**

**Environmental Science Division  
Argonne National Laboratory  
Argonne, Illinois**

**for**

**National Park Service  
Intermountain Region  
Denver, Colorado**

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## **1 INTRODUCTION**

Public scoping is a phase of the National Environmental Policy Act (NEPA) process, and is intended to give the public the chance to provide input on actions proposed by federal agencies that could affect the environment. The primary objectives of scoping are to conduct an open and thorough process, to hear and understand the opinions of all interested parties, and to afford the public opportunities to provide input. Public scoping for the Expanded Non-Native Aquatic Species Management Plan Environmental Assessment (EA) gave interested parties the opportunity to comment and provide early ideas about:

- The resources or issues to be evaluated in the EA,
- The alternatives to be included in the EA, and
- Concerns or observations regarding non-native aquatic species and other resources that could be affected by the proposed action.

This report presents a summary of the issues raised during the scoping process. The report also includes summary statistics of participants.

### **1.1 BACKGROUND**

In 2013, the NPS completed the Comprehensive Fish Management Plan (CFMP). The intent of that effort was to provide guidance for managing fish within the Colorado River and its tributaries from Glen Canyon Dam to Lake Mead. Since the completion of the CFMP and the 2016 Long Term Experimental and Management Plan (LTEMP) for Glen Canyon Dam operations, increases in potentially harmful non-native fish have been documented. The Expanded Non-Native Aquatic Species Management Plan (Plan) is intended to address this concern. The NPS is coordinating development of the Plan and EA with the Bureau of Reclamation (Reclamation), the Arizona Game and Fish Department (AGFD), the U.S. Fish and Wildlife Service (FWS) and other federal and non-federal cooperating agencies and traditionally associated tribes.

## 1.2 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the proposed action is to provide additional tools beyond what is available under the CFMP and the LTEMP, in order to allow the NPS to prevent, control, minimize or eradicate potentially harmful non-native aquatic species, or the risk associated with their presence or expansion, in the action area. The need for this action is due to the increase of green sunfish (*Lepomis cyanellus*), brown trout (*Salmo trutta*), and potential expansion or invasion of other harmful non-native aquatic species that threaten downstream native aquatic species including listed species or the Lees Ferry recreational rainbow trout fishery. These non-native species have become an increasing threat due to changing conditions since the completion of the 2013 NPS CFMP and the 2016 LTEMP. Existing measures may be inadequate to address potentially harmful non-native aquatic species.

## 2 SCOPING PROCESS

### 2.1 APPROACH

The scoping period began on November 15, 2017, with NPS's publication of a newsletter describing the proposed action and preliminary draft alternatives. The NPS set a 30-day scoping period scheduled to end on December 14, 2017 (30 days). In the newsletter, and an associated press release, the public was invited to submit comments on the project via the project web-site ([https://parkplanning.nps.gov/Expanded\\_Nonnative](https://parkplanning.nps.gov/Expanded_Nonnative)) and by standard mail. Requests to extend the scoping period were received, and the comment period was extended to January 5, 2018 (52 days).

Three open-house-style public meetings and one Web-based meeting were held during the scoping period. At the public meetings, the public could view posters describing aspects of the scoping process and project, discuss issues, and ask questions of technical experts and project managers. A brief overview of the project was also presented at the start of each meeting. Computer stations were available for meeting participants to browse the project Web site and submit electronic comments. Paper comment forms also were available for attendees to submit comments at the meeting or to take with them for later use. There were 56 members of the public who attended these meetings, which were held in the following locations (number of public attending each in parentheses):

- Page, Arizona—December 6, 2017 (10)
- Flagstaff, Arizona—December 7, 2017 (15)
- Phoenix, Arizona—December 12, 2017 (31)

The Web-based meeting was held on November 28, 2017. For this meeting, the public was able to watch, via the Internet, a live overview presentation of the EA, and ask questions of technical experts and managers. Sixteen members of the public participated in this meeting.

Prior to the public scoping meetings, NPS established a Web site for the EA ([https://parkplanning.nps.gov/Expanded\\_Nonnative](https://parkplanning.nps.gov/Expanded_Nonnative)) that provided background information about the project, information on public involvement, other supporting materials, and a link to the project's online comment form. The project Web site was used to disseminate information about the public scoping meetings, including locations, times, meeting format, and presentation materials. The public also was notified of the meetings by a press release.

All comment documents received from the public and Cooperating Agencies were evaluated. Most documents included more than one comment, and all discrete comments within each submitted document were identified. Comments were categorized based on content and organized based on similarity into comment concerns. Comment concerns extracted from comment documents are summarized in Section 3 of this report. These comments were considered by NPS in developing the final scope of the EA.

## 2.2 SCOPING STATISTICS

A total of 427 comment documents (online comment submittals, filled comment forms, and letters) were received from individuals, recreational groups, environmental groups, power customers or organizations, federal and state government agencies, and other organizations, and provided scoping comments on the Plan and EA. Ninety-six percent of the comments were submitted using the online comment submission system. Comments were received from individuals or organizations from 27 states; 71% of the comments were from Arizona, 7% from California, 5% from Utah, 3% from Colorado, and 2% from Nevada (Table 1). Table 2 lists the names of organizations that provided official comments. Table 3 provides summary information on commenter affiliations. Most comments came from members of fish clubs or organizations.

The majority of comments (approximately 80%) expressed opposition to the removal of trout, especially mechanical removal of brown trout in the Glen Canyon reach using electrofishing. Some commenters were opposed to removal of trout in general, regardless of method or location. A common reason for opposition to mechanical removal was the potential to harm the local economy related to recreational fishing. About 21% of comments expressed opposition to the proposed action overall (i.e., actions to control or remove non-native fish). About 4% of the comments indicated a desire to increase the scoping period or the number of public meetings. The NPS subsequently extended the scoping period and added a scoping meeting in Phoenix, Arizona.

Fifty-five letters were received in March 2018 after the close of the scoping period. One of these letters encouraged consideration in the EA of AGFD's recent plan to stock rainbow trout in the Lees Ferry fishery. The remaining 54 letters focused on support for the introduction of Colorado pikeminnow (*Ptychocheilus lucius*) in the Glen Canyon reach. Because of the date of arrival, these comments are not presented in the summary below, but are consistent with the comment in favor of introduction of Colorado pikeminnow and other native fish presented in Section 3.1.4.

**TABLE 1. Comments Received from the Public According to State of Residence**

State/Country	Number	Percent
Arizona	303	71.0
California	29	6.8
Utah	21	4.9
Colorado	13	3.0
Nevada	10	2.3
New Mexico	8	1.9
Washington	6	1.4
Texas	5	1.2
All other states	32	7.5

Arizona State Representative Bob Thorpe sent a letter to the Department of Interior Secretary Ryan Zinke on March 14, 2018. In this letter, Representative Thorpe expressed opposition to “long-term intensive electro-fishing” because of the impact on the rainbow trout fishery and local economy.

### 3 SUMMARY OF SCOPING COMMENTS

A summary of issues raised in comments provided during the public scoping period are presented in the following sections, each of which focuses on a specific comment concern. Representative quotes, presented verbatim from submitted comments, are provided for each comment concern. The number of commenters and corresponding percent of commenters is also provided for each comment concern. Comment concerns within sections are listed in decreasing order of frequency.

#### 3.1 COMMENTS RELATED TO CONTROL METHODS

##### 3.1.1 Mechanical Removal of Fish

**Number of commenters:** 346

**Percent of commenters:** 81

Most comments were related to mechanical removal of fish. About 80% of the commenters (341) and a large proportion of the categorized comments expressed opposition to mechanical removal of trout, especially removal of brown trout in the Glen Canyon reach using electrofishing. Comments pertaining to mechanical removal fell into the following subcategories:

**TABLE 2. Organizations that Provided Scoping Comments on the Expanded Non-Native Aquatic Species Management Plan EA**

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Organization
Arizona Council of Trout Unlimited
Arizona Fly Fishing Adventures
Arizona Flycasters Club
Arizona Game and Fish Department
Arizona Sportsmen for Wildlife Conservation
Arizona Wildlife Federation
Colorado River Board of California
Baja Anglers
Colorado River Energy Distributors Association
Desert Fly Casters
Desert Mountain Anglers
Bureau of Reclamation, Upper CO Office
Eastern Arizona Counties Organization
Friends of Luna Lake
Glen Canyon Dam Adaptive Management Program Recreational Angling
Gila Trout Chapter of Trout Unlimited
Gilbert Fly-Fishing Programs
Hey Boy II Charters
International Federation of Fly Fishers
Kelly Outfitters at Lees Ferry
Lees Ferry Anglers
Mo Henrys Outfitters
National Parks Conservation Association
Northern Arizona Guide Service
Northern Arizona Fly Casters
Payson Fly Casters Club
Pueblo of Zuni
Sedona Fly Fishing Adventures
Sierra Club Grand Canyon Chapter
Southern Nevada Water Authority
Sun City Grand Fishing Club
Sun City Grand Hooked on Fishing
Sun Lakes Fly Fishing Club
Trout Unlimited
Upper Colorado River Commission
U.S. Fish and Wildlife Service
White Mountain Lakes Foundation
Zane Grey Chapter of Trout Unlimited

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**TABLE 3. Commenter Affiliations**

Organization	Number	Percent <sup>a</sup>
Trout Unlimited	13	23
Fly Fishing Organizations (Various)	28	19
Other Fishing Clubs (Various)	12	21
Other Organizations and Businesses	4	7
Grand Canyon Trust	3	0.7

<sup>a</sup> Percent values do not add to 100; approximately 70% of commenters provided an affiliation

- *Opposition to mechanical removal of brown trout using electrofishing.* Comments in this category, which reflected the majority of comments opposed to mechanical removal, specifically opposed using electrofishing to remove brown trout, especially in the Glen Canyon reach,. Some commenters stated that electrofishing proposed in the EA is counter to Secretarial Orders 3347 and 3356 issued by the Secretary of the Interior to expand hunting and fishing. *Opposition to mechanical removal of brown trout.* A subset of the comments for mechanical control specifically opposed applying mechanical controls for brown trout, without specifying a particular method.
- *Opposition to mechanical removal of all trout species.* Comments in this subcategory specifically opposed applying mechanical removal to any trout species, without identifying specific mechanical removal methods.
- *Limit mechanical removal to areas downstream of Lees Ferry.* A number of commenters opposed mechanical removal within the Glen Canyon reach, but identified some level of support or acceptance of mechanical removal actions in areas located downstream of Lees Ferry.
- *Opposition to mechanical removal in the river based on tribal concerns.* The Pueblo of Zuni expressed opposition to mechanical removal as it would involve killing aquatic fauna, which are considered a sacred familial element of Zuni culture. Other traditionally associated tribes also expressed concerns about and opposition to the taking of life in the Canyon.
- *Opposition to mechanical removal in the Glen Canyon reach based on economic impacts.* Some comments focused on the economic benefits that the sport fishing industry brings to the area, especially with respect to recreational trout fishing in the Glen Canyon reach. They pointed out how important this industry is to the local economy, which depends on the influx of people who come to the region for sport fishing. Some were afraid that once people became aware of the mechanical removal and electrofishing efforts at Lees Ferry, the perceived damage it would do to their fishing experience would make them less inclined to come to the area.

A common reason for opposition to mechanical removal actions was the potential to harm the Lees Ferry rainbow trout fishery. One comment argued that the removal of brown trout (and impacts on the rainbow trout fishery at Lees Ferry) contradicts the objectives of the CFMP and LTEMP to continue to provide for a quality fishery in the area. There were some commenters who appeared to oppose mechanical removal in the Glen Canyon reach while potentially supporting removal in areas downstream of the Glen Canyon Reach where there is the greatest potential to interact with humpback chub, but a number of commenters opposed mechanical removal of trout (especially electrofishing) throughout the project area. A few comments supported the idea of mechanical removal of non-native species (with caveats about not harming the Lees Ferry fishery). Some opposition to mechanical removal cited the concerns of the tribes about the loss of life. AGFD provided comments opposing long-term intensive and repeated electrofishing or lethal trapping of fish within the Lees Ferry reach because they thought it would be ineffective for controlling brown trout in the mainstem, had a high potential for increasing physical injury to rainbow trout, could negatively affect the rainbow trout fishery (including economic benefits), and would be an expensive undertaking.

Representative quotes from commenters in opposition to mechanical removal of fish include the following:

- *I am writing to let you know that I am strongly opposed to mechanical / electrofishing removal of brown trout in the Lee's Ferry Glen Canyon area. The reason I am opposed to this proposed management strategy is the undoubted significant collateral damage to the rainbow trout fishery.*
- *Many more rainbow trout would be shocked for each brown trout captured. The focus of mechanical removal would be on shoreline areas that are also prime fishing areas. In addition to direct rainbow trout mortality, there is ample scientific literature that shows that the behavior of salmonids that are subject to electrofishing is affected by the electrofishing, which would impact angler catch rates and satisfaction.*
- *This action would have a catastrophic impact on the quality of the Lee Ferry trout fishery, the welfare of the local community, and the regional economic benefits tied to the fishery.*
- *The Department strongly opposes long-term intensive and repeated electrofishing or lethal trapping of fish within Lees Ferry...*
- *Native American tribes have long objected to mechanical removal efforts below Glen Canyon Dam as an affront to their religious and spiritual beliefs. As such we believe it is unacceptable for the National Park Service to propose mechanical removal as a strategy for managing brown trout in Lees Ferry/Glen Canyon.*
- *The proposed MR in the Lees Ferry trout fishery will move the management of the fishery beyond neglect to determined damage. The damage will be both to the quality and the perception of the fishery. Long-term intensive and repeated electrofishing MR and trapping of all age-classes of harmful nonnatives in the Glen Canyon reach to target*

*brown trout for the purposes of the EA cannot be accomplished without devastating fishing quality in the process. Leaving aside the detrimental effect on rainbow trout from repetitive and intensive electroshocking, the angling environment will be diminished to the point of being barely worth the effort for month(s) at a time while massive attempts are conducted to remove minimal numbers of brown trout further compounding the lost fishing weeks from repeated high flow events. This isn't an esoterically issue that is irrelevant but rather one that strikes at the heart of the economic livelihood of the dependent local community.*

- *Mechanical removal will have varying success outcomes depending on; method details, location, population size and amount of effort. More information regarding this method should be analyzed during this current planning effort. We are supportive of mechanical removal if conditions warrant the necessity for such an action. Detailing under what conditions this method will be used is important for analysis of impacts and creating success criteria.*
- *It also appears that this EA disregards Secretary Orders 3347 and 3356. Intensive, repeated electro shocking in this blue-ribbon trout fishery will severely impact this designated blue-ribbon trout fishery which is in direct conflict with those orders.*
- *These mechanical removal efforts on brown trout 61 river miles upstream from the Lower Colorado River (LCR) and the resident humpback chub in the LCR area make no sense, when there is no evidence that these brown trout are migrating down to the LCR confluence and posing a risk to the humpback chubs. We support efforts to manage brown trout in the LCR confluence area and Marble Canyon, but are strongly opposed to any mechanical removal efforts in the Lees Ferry area.*

Only a few commenters supported mechanical removal of non-native species (5 commenters [1%]), particularly brown trout. Commenters stated that all strategies should be considered and evaluated as management tools in the EA. AGFD identified support for the use of mechanical controls in small backwaters when deemed necessary and applicable. FWS comments identified a need for analysis of mechanical removal in the EA based on methods, location, population size, and amount of effort.

Representative quotes from commenters in support of mechanical control of fish include the following:

- *Electrofishing upstream of Lees Ferry should also be considered, rather than waiting for fish to emigrate downstream, since electrofishing in Glen Canyon National Recreation Area would have less impact on the wilderness values of Grand Canyon National Park, and might be more effective at removing trout.*
- *... while some stakeholders might insist that mechanical removal be dropped for consideration at this time, to do so is against the NEPA process and pre-decisional; it is critical to evaluate and do the analysis.*

Several commenters (13 commenters, 3%) mentioned that removing brown trout from Marble Canyon is not but should be included in the EA. They identified this as the area where mechanical removal should be considered, rather than in Lees Ferry, because it is closer to the humpback chub population.

- *Marble Canyon, the sixty river miles between Lees Ferry and native fish at the Little Colorado River, is ignored. No actions are proposed in Marble Canyon to address present or future and immediate threats to native fish in Marble Canyon or at the Little Colorado River.*
- *Lees Ferry is more than 60 river miles upstream of the Little Colorado River confluence, the area of concern related to the endanger humpback chub and other aquatic species impacted by the present of brown trout. Doesn't it also make more sense to remove brown trout from Marble Canyon, the river section between Lee's Ferry and the LCR confluence?*
- *The stretch of the Colorado River down stream from Lees Ferry is Marble Canyon. No action to remove brown trout or nonnative fish has been proposed. Yet this area is much closer to the main habitat of native fish. This makes zero sense and compromises the integrity of the EA's objective and proposed actions and goals.*

### 3.1.2 Physical Controls

**Number of commenters:** 1

**Percent of commenters:** <1

AGFD commented that they strongly support the use of physical habitat alteration and modification at the sloughs at river mile (RM) -12 and in small backwater areas as a means of limiting the suitability of water temperatures and reproduction for warmwater non-native fish. They expressed concerns that barriers or other exclusion devices would probably not be effective for eliminating non-native fish. They stated that:

- *The Department strongly supports the alteration and habitat modification of the slough at Lees Ferry (RM -12) and other small backwater areas in order to alter backwater temperatures and limit reproduction of warm-water non-native fish species. We believe that barriers and exclusionary devices will not likely be effective at eliminating non-native fish threats at these locations, as evidenced by green sunfish at the slough in the past few years.*

### 3.1.3 YY Male Fish as Biological Control

**Number of commenters: 6**

**Percent of commenters: 1**

Some commenters (4 commenters, 1%) supported consideration of the use of YY male fish as a potential control method. Representative quotes of commenters that supported the use of YY male fish as a biological control include the following:

- *The Department supports the exploration and development of YY male Brown Trout stocking. This action, although in its infancy and experimental phase, has shown promise in Idaho. Further, the Western Association of Fish and Wildlife Agencies is considering creating a consortium of state resources to further this research. We feel Lees Ferry may be a water where this research could be utilized in the future.*
- *Although in the experimental phase, the use of yy males to skew sex ratios may show to have long-term management efficiency's but may take longer to complete than other actions such as mechanical removal. Because of the possible benefit of this method we suggest examining this in greater detail and consider it for inclusion under the final preferred alternative and proposed action.*

Recreational fishing representatives for the Glen Canyon Dam Adaptive Management Program (2 commenters, <1%) expressed opposition to the use of YY male brown trout unless the results of the brown trout working group supported such a treatment. Representative quotes of those opposed to the use of YY male brown trout as a biological control include the following:

- *YY trout would still consume non-native fish, and could establish populations (even if they are not reproducing) from fish that emigrate downstream from Lees Ferry to areas not visited by anglers. Therefore NPS should not investigate implementing any kind of new trout stocking program. Increasing the abundance of warm water-tolerant carp below Glen Canyon Dam could cause other negative impacts on warm water tolerant native fishes in tributaries.*
- *We do not support adding YY chromosome brown trout to the system unless results from the brown trout workshop/whitepaper supports doing so as a long-term solution.*

### 3.1.4 Native Species as Biological Control

**Number of commenters: 11**

**Percent of commenters: 3**

Most of the comments received on introduction of native species were in opposition to this potential method of control. Reasons for opposing introduction of these species included the possibility of negative effects on the existing humpback chub population, interference with recreational fishing opportunities, and limiting the ability to implement other controls actions for

addressing green sunfish in the RM -12 slough. If this is considered as an action, it would require careful consideration and collaboration.

Representative quotes of commenters who opposed using the introduction of native species as a biological control include the following:

- *The use of pikeminnow (*Ptychocheilus lucius*) as an alternative element should be dismissed from detailed analysis. It is unreasonable to expect that pikeminnow can be stocked without risk of escapement, and the potential effect on humpback chub is unknown.*
- *We do not believe it is appropriate to introduce the endangered Colorado pikeminnow (CPM) or humpback chub (HBC) into the upper slough at river mile -12 as a means for controlling warm water nonnative fishes (e.g., green sunfish). In general, due to the cold water immediately below in Glen Canyon Dam, Glen Canyon is unsuitable habitat for recovery of CPM or HBC. Assurance would need to be provided that the introduction of HBC or CPM which may escape from the slough into Glen Canyon would not interfere with recreational fishing. We are also concerned that the introduction of HBC or CPM could limit the implementation of other nonnative action that would result in “take” of HBC or CPM (e.g., chemical treatment of the slough).*
- *No ESA listed species (Humpback Chub (HBC), Colorado Pikeminnow (CPM), or any other) should be utilized, placed, translocated or stocked in any section of the Lees Ferry/Glen Canyon/Marble Canyon reaches of the Colorado River for the supposed purpose of controlling non-native species in those reaches.*

One commenter (<1% of commenters) supported consideration of the introduction of Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), or other Endangered Species Act (ESA)-listed native species as a method for controlling non-native species (e.g., for green sunfish control in the RM -12 sloughs). They stated that:

- *We are very supportive of using Colorado pikeminnow or humpback chub as predators of and competitors with green sunfish in the upper slough at RM-12. Increasing the abundance and distribution of native fish will also help boost the resilience of the CRE and benefit these endangered species.*

### 3.1.5 Common Carp as Biological Control

**Number of commenters:** 6

**Percent of commenters:** 1

There were several commenters that expressed opposition to introducing common carp (*Cyprinus carpio*) into habitats as a biological control. These commenters appeared to misunderstand the proposal, and thought that carp would be brought in from outside the basin rather than what the NPS actually proposed to do, i.e., use carp already present in adjacent areas

of the river as biological controls. Reasons for opposition included the potential for escapement or proliferation of carp or other unexpected adverse outcomes.

Representative quotes include the following:

- *Yet the documentation considers introducing common carp, “a non-native,” to the upper slough as a biological control method. ADWR cautions NPS to be circumspect in introducing common carp to the upper slough without more information and thought to future ramifications.*
- *The use of non-native common carp (Cyprinus carpio) as an alternative element should be dismissed from detailed analysis. The peer-reviewed scientific literature contains numerous examples of well-intentioned species introduction efforts that have resulted in undesirable and unexpected outcomes to desirable species. The potentially negative effects that could result to chub from an unintended carp escapement is not a worthwhile risk and is not necessary to meet the purpose and need of this EA.*
- *The idea of relocating an invasive species (common carp) to assist with a problem seems ill-advised. How does relocation to a warmer and seemingly more hospitable location for them make sense? It seems to create conditions where in addition to green sunfish, you have to manage for carp proliferation and escapement.*

### 3.1.6 Chemical Controls

**Number of commenters:** 4

**Percent of commenters:** 1

There were few commenters that directly commented on the use of chemical control measures. No new chemical control methods were identified or suggested in comments.

Two commenters (<1% of commenters) expressed support for the ability to apply chemical control in some situations, but only if appropriate monitoring and mitigation measures were applied or there was public discussion about when and where the use is appropriate. A representative quote in support of the use of chemical controls follows:

- *Open communication with the public is essential, particularly before implementing some of the more aggressive measures of fish population control, such as the chemical killing of fish. Yes, you should have access to all the tools you desire, but how and when you use them should be open to public discussion.*

There were two commenters (<1% of commenters) that specifically opposed the use of chemical controls. The Pueblo of Zuni expressed opposition to chemical controls as it would involve killing aquatic fauna, which are considered a sacred familial element of Zuni culture. One commenter expressed concerns that the use of chemical treatments in the Lees Ferry area could harm macroinvertebrates that serve as a food source for the rainbow trout fishery.

Representative quotes from commenters opposed to the use of chemical controls include the following:

- *In Alternative B under chemical controls I am concerned about the impact on aquatic macro-invertebrates in an already depleted food base situation. What evidence do you have that chemical controls will not adversely impact an already depleted food source?*
- *[Following a list that includes use of chemical controls]... All of the above listed tools under consideration involve killing aquatic fauna and flora which is reprehensible to Zuni sensibilities.*

### 3.1.7 Fishing or Take Changes

**Number of commenters:** 23

**Percent of commenters:** 5

Most commenters on this topic (23 commenters, 5%) were in favor of using fishing and take changes to control non-native fish. Some commenters suggested working with AGFD to modify fishing regulations to encourage anglers to catch and keep more brown trout as a way to control the brown trout population. It was not clear that these commenters recognized that current regulations do not restrict the take of brown trout by anglers in areas downstream of Glen Canyon Dam. A few commenters suggested that there should be regulation changes to require anglers to retain and remove any brown trout captured while fishing. Some of these commenters stated that promoting keep of brown trout by anglers would be a better alternative than electrofishing because it would not have a negative impact on the economy and recreational values of the Lees Ferry fishery. It was stated by a couple of commenters that this approach has been successful in lakes in Yosemite National Park and the Snake River watershed in Wyoming.

Representative quotes of commenters in support of fishing and take changes include the following:

- *There should be a high catch limit (10 or more) or unlimited catch limit on Rainbow Trout and Brown Trout.*
- *If you wish to reduce the number of brown trout, then I suggest you work with the local Fish & Game Department to increase the number of fish which may be captured and removed from the river. It will take longer, but neither the economy nor the river will be harmed.*
- *Let the fishermen at Lee's Ferry reduce the brown trout population. I am suggesting new fishing regulations that require the immediate killing and retention of all brown trout brought to the net.*

Although AGFD expressed support for utilizing anglers to reduce undesired fish populations at Lees Ferry, they expressed opposition to establishing mandatory catch-and-kill regulations. They stated that:

- *The Department [AGFD] does not support mandatory catch-and-kill regulations. There are currently no legal restrictions for take of Brown Trout at Lees Ferry. Mandatory kill regulations are difficult to enforce and are unacceptable for some cultures and religions.*

### 3.1.8 Flow-Related Control Measures

**Number of commenters:** 28

**Percent of commenters:** 7

About 6% of commenters (24) supported the use of flow management as a potential control measure in the EA. Commenters suggested that flows should be used as a means for managing non-native species either by affecting invertebrate production or to control the spawning of trout. It was not necessarily specified that this flow-related management needed to be included as a new control tool in the EA, although some comments did state that flow management controls should be included. Some comments suggested that better managing flows to enhance rainbow trout production could reduce the recruitment of brown trout and some comments supported the use or modification of trout management flows (an experimental flow action under LTEMP) to control brown trout.

Representative quotes from commenters who supported the use of flow-related control measures include the following:

- *Utilize river flows to enhance the production of rainbow trout and sediment deposition (along with stocking of specialized strains of *O. mykiss*) to increase the predation of brown trout eggs.*
- *Why not introduce more food sources and make better effort to regulating water flows and provide the necessary correction for this fishery?*
- *The Bureau of Reclamation that has authority over dam operations isn't included in the EA and therefore potential flow related causes and related corrective actions are not available.*
- *Why isn't there a plan to modify Trout Management Flows to extend to March and April when they may have a negative impact on brown trout and a neutral or positive impact on the rainbow trout fishery.*
- *Why hasn't more emphasis been put on that strategy to shift flows to the Spring been included in this EA?*
- *NPS must consider flow alterations as part of this plan.*

- *If you had any genuine concern for the citizens who love and cherish this fishery, as well as those who depend on it for economic survival, you would discard the current bad ideas and try things like changing the timing of high-flow releases to benefit rainbow trout and native fish v. brown trout, and releasing warmer water from the surface of Lake Powell.*
- *Flow modifications would be a more efficient and productive use of resources, with a more far reaching impact on the problem than the isolated mechanical or chemical controls that are proposed in this plan. Scientific research, experimentation in other river systems, and the expert scientific opinion presented in the whitepaper all agree that flow modifications provide the best potential solution on the largest scale. Complementing flow modifications, smaller scale experiments could be used such as mechanical control of mature brown trout, chemical control in confined areas, etc., but only flow modifications can treat the entire river corridor.*

Four organizations and agencies (1% of commenters) stated that the use of new flow-related control measures should not be proposed as part of the EA since there are already flow-related tools identified under LTEMP. It was stated by a number of commenters that Reclamation has the jurisdiction for managing flows.

Representative quotes from commenters opposed to the use of flow-related control measures include the following:

- *SNWA agrees that changes to the CFMP and LTEMP are outside the scope of this EA. Specifically, the EA should not consider actions that would alter Glen Canyon Dam, modify Glen Canyon Dam operations, alter the forebay temperature of Glen Canyon Dam, or modify the accounting window and triggering criteria for High Flow Experiments.*
- *The Commission [Upper Colorado River Commission] requests that the EA expressly state that changes to current Glen Canyon Dam operations will not be considered in a new management tool.*
- *The Board [California River Board of California] does not believe that the Plan should modify the terms of the LTEMP or direct operations at Glen Canyon Dam in any way and, therefore, encourages NPS to preserve this intent clearly and early in the document.*
- *The EA should not infer operation of the Glen Canyon Dam as a tool to prevent, control, minimize or eradicate potentially harmful non-native aquatic species or the risk associated with their presence or expansion in the action area.*

### 3.1.9 Aquatic Food Base

**Number of commenters:** 10

**Percent of commenters:** 2

Several commenters suggested that they would prefer to see efforts to introduce additional food sources or improve the aquatic invertebrate food base, not as a way to reduce non-native fish, but to improve the trout fishery. One commenter suggested that increasing food availability might reduce competition between native fish and non-native fish.

Representative quotes include the following:

- *Why not introduce more food sources and make better effort to regulating water flows and provide the necessary correction for this fishery?*
- *Perhaps the focus of this study should shift towards a study of the aquatic food base. A healthier food base equals less competition by fish to eat.*

### 3.1.10 Turbidity

**Number of commenters:** 1

**Percent of commenters:** <1

One commenter suggested increasing turbidity in isolated locations to disadvantage non-native species. They stated that:

- *The Colorado River was rich in sediment prior to the closure of Glen Canyon Dam, and its tributaries are prone to flash flood events that move large amounts of sediment in episodic events. Native fish are well adapted to these high sediment lodes, and increasing turbidity could disadvantage non-native species. The option of increasing turbidity in isolated locations should be considered.*

## 3.2 COMMENTS RELATED TO ALTERNATIVES

### 3.2.1 Alternative A (No-Action Alternative)

**Number of commenters:** 5

**Percent of commenters:** 1

A few commenters specifically stated their support for Alternative A, the no-action alternative. They see this as the best and least costly option. All related comments mention brown trout and would like no action in the management of brown trout. One of the commenters mentioned that, after Alternative A, they preferred Alternative D, which includes a restricted set of additional control actions relative to Alternatives B and C.

Representative quotes include the following:

- *In over five years of fishing in the Lees Ferry stretch I have never caught a brown trout, nor have any of the dozens of other anglers with whom I'm acquainted. I would urge that Alternative A be fully and completely pursued before any additional alternatives are entertained.*
- *My recommendation is that you take no action in regard to brown trout. Accept Alternative A as the best option and save resources and efforts.*
- *We encourage you to avoid any electrofishing at Lees Ferry and proceed with Alternative A and take no action in regard to brown trout.*

### 3.2.2 Alternative B

**Number of commenters: 7**

**Percent of commenters: 2**

Four commenters (1% of commenters) specifically stated their support for Alternative B (the proposed action). These commenters want all of the tools included in Alternative B to be available to NPS staff for non-native aquatic species control. Actions should be carefully reviewed and the NPS should choose only those considered least disruptive as part of development of the EA. Another commenter requested Alternative B include consideration of the control of New Zealand mudsnails (*Potamopyrgus antipodarum*), and control of non-native aquatic species in Shinumo Creek. Boat checks at Lees Ferry is another suggestion to prevent the distribution of non-native aquatic species.

Representative quotes include the following:

- *Seeing how this is such a daunting task I believe the NPS should have all the tools at their disposal that will give them the best chance to achieve their goals. Although this might put me at odds with other self-serving fly fisherman at the meeting who only seemed to care about their beloved trout fishery and not the bigger picture, like the environment in general, I am in favor of Alternative B of the Expanded Non-Native Management Plan.*
- *Lees Ferry is the launch point for one of the most prized natural areas in the country - Grand Canyon National Park. As such, boats launching from Lees Ferry should be checked for aquatic non-natives, just as they are at other recreation areas, including Lake Powell within Glen Canyon National Recreation Area.*

Three commenters (1% of commenters) specified opposition to Alternative B. Commenters suggested that the alternative as written currently contains elements that are

unacceptable. For the EA to be successful, these elements need to be resolved, or there will be strong opposition from the angling community. They stated that:

- *Preferred Alternative B, in its present form, has elements that border on unacceptable and have the likely hood of being highly contentious and strongly opposed by the angling community both procedurally and politically. Those elements need to be confronted and resolved for a successful EA.*

### **3.2.3 Inclusion of Decision Trees and Monitoring**

**Number of commenters:** 3

**Percent of commenters:** 1

Several commenters supported inclusion of monitoring activities in each alternative, arguing that monitoring is necessary to quickly detect the presence or population change of non-native species. An additional comment requested the use of decision trees or triggers for sequencing the use of options to initiate mitigation. Both of these elements have been proposed by NPS for inclusion in alternatives.

Representative quotes include the following:

- *Decision trees should be used as part of the EA analysis for sequencing the use of options and monitoring for unacceptable adverse effects that would initiate off ramp or mitigation action.*
- *Given the identification of grass carp in Lake Powell, an element common to all alternatives must include a robust monitoring program to timely identify and address new non-native threats.*

## **3.3 COMMENTS RELATED TO PROJECT OBJECTIVES AND PROCESS**

### **3.3.1 Purpose and Need Statement**

**Number of commenters:** 20

**Percent of commenters:** 5

Several commenters suggested revisions or clarifications to the purpose and need statement for the EA (14 commenters, 3%). The purpose should include non-native species that are not yet identified. A commenter stated the current statement is too vague regarding threatened species, and does not provide enough background for the proposed actions within the alternatives. Several other commenters stated that the removal of brown trout in Glen Canyon will not meet the EA's purpose and need.

Representative quotes include the following:

- *The purpose should be broad enough to cover non-native species that may not currently be identified; yet, the species that are considered threatened by non-native species should be specific; otherwise, an appropriate level of impact analysis is not achievable.*
- *The proposed removal action as a means to control brown trout on the scale and in a setting like Glen Canyon has little to no prospect of attaining the EA's purpose and need objective.*
- *The “Purpose and Need” statements presented to the public in the Parks Newsletter Format and in the one Webinar and three Public Meetings with their limited handout materials conducted in November and December 2017 do Not adequately explain and provide background for the Tentative Alternatives and the proposed component actions identified.*
- *SNWA supports the general scope of the project, including its purpose and need and the issues to be analyzed, and encourages rapid completion of the EA.*

### 3.3.2 Need for Non-Native Aquatic Species Control in the Action Area

**Number of commenters:** 94

**Percent of commenters:** 22

A relative high percentage of commenters (88 commenters, 21%) were opposed to non-native aquatic species control in the Colorado River downstream from Glen Canyon Dam. Some commenters requested that NPS leave Lees Ferry and/or the fish alone. Several commenters stated that control actions are a waste of taxpayer money. Others stated that the presence of the dam altered the Colorado River ecosystem and made non-native aquatic species control a futile effort. Several made the same statement that repeated electrofishing will put a drain on agency budgets and the money should be applied to other priorities.

Representative quotes include the following:

- *The Grand Canyon is a made man environment, cold water river. It should be treated in that manner. The chub is an important species and native fish certainly have an important role in the watershed however they simply have not adapted to the non-native environment, the man made river that exists in the Grand Canyon in this day in age. These adaptive management policies that NPS is putting in place to try to restore the chub are not a logical approach to the problem.*
- *In short, please leave this fishery alone. It's the only world class fishery we have in this state. The die was cast when the dam went up & you will never be able to eradicate all the brown trout. Its just a waste of tax payers dollars.*

- *Are you kidding me. The unintended consequences on this will be astounding. This is wrong on so many levels. Leave the fishery alone!*
- *I don't support the suggestion being made. There is no guarantee that what is being proposed will not have serious repercussions on other fish or plant life. Surely there must be a safer approach to achieve the goal.*
- *The cost for implementing long term intensive and repeated electrofishing would be very high and put a major drain on Department of Interior Agencies budgets which could be used to address other priorities.*
- *The range of proposals are very costly to us as taxpayers and should be avoided.*
- *Please don't mess with the natural evolution of the fish habitat. The human element is always the weakest link in any chain.*

Six commenters (1% of commenters) stated their support for removal of non-native species. They see removal of non-native species and a pro-active approach to discourage the spread of non-natives as the best ways to protect native species. One fisherman commented that the protection of native fish is more important than his recreational sport.

Representative quotes include the following:

- *The brown trout is a non-native, introduced, invasive species. And as an species predator, brown trout damage native species in numerous ways. Please manage our waters with a priority for the native fish species.*
- *Brown trout pose a threat to native fish and should be managed appropriately.*
- *The scoping announcement identified that the Proposed Action “was developed in coordination with cooperating agencies” but that should not be taken to mean that SNWA supports all of the elements of the action. Rather, SNWA supports the general scope of the project, including its purpose and need and the issues to be analyzed, and encourages rapid completion of the EA.*

### **3.3.3 Scientific Basis of Non-Native Aquatic Species Control**

**Number of commenters:** 25

**Percent of commenters:** 6

Commenters questioned the science behind decisions to remove brown trout. They claimed that the causes of an increase in population of brown trout are not addressed in the alternatives under consideration, and the most recent sampling results show a decrease in population. There were also claims that there are insufficient data for making the decision to control brown trout. Many commenters wrote that they are not aware of any scientific data that

mechanical removal, specifically electrofishing, is an effective means to control brown trout. Any uncertainty during analysis and development of alternatives should be avoided.

Representative quotes include the following:

- *In general a wait and see approach should be adopted, at least for the next couple of years, until there are enough brown trout present to generate sufficient data to plan for their control, if indeed control of this desirable angling species is warranted at all.*
- *We are unaware of any scientific data which indicates that electrofishing mechanical removal will be an effective tool for controlling brown trout in the main stem of the Colorado River. In fact, intense, repeated and long term main stem electrofishing throughout the upper Colorado River Basin has been largely ineffective at managing or controlling nonnative fish.*
- *Decisions such as these should be based on sound scientific research and data. Regarding brown trout eradication to maintain healthy fish populations, such information does not exist.*

### 3.3.4 Brown Trout Workshop

**Number of commenters:** 18

**Percent of commenters:** 4

Many commenters referred to the Brown Trout Workshop held by the Glen Canyon Dam Adaptive Management Program in September 2017. Some expressed disappointment that evidence presented at the workshop was not provided as rationale for the EA. Others would like to see workshop results incorporated into the EA, particularly in the development of a preferred alternative. Some wanted the scoping period extended until the results were finalized and available to stakeholders for review and as a way to better inform scoping and the EA. A few commenters included findings presented at the workshop on the causes of an increased brown trout population, such as recent warmer water temperatures and fall HFEs, and effective means of controlling the population that include implementation of trout management flows. According to some commenters, workshop presenters did not recommend electrofishing, found to be ineffective in large rivers. Commenters also cited workshop results on humpback chub populations for focusing brown trout control efforts in Bright Angel Creek and the Little Colorado River confluence, rather than Lees Ferry.

Representative quotes include the following:

- *Include the findings from the final brown trout white paper.*
- *The thirty day public scoping period is hardly adequate with a starting date from the date of public announcement, spread over a holiday period, and without the reviewed final product of the brown trout workshop integrated in to the alternatives.*

- *There is no mention of the scientific evidence shared at the Brown Trout Workshop held in Phoenix, AZ in September, 2017 in providing rationale in the EA.*
- *A review of the Preliminary Brown Trout Study and information provided at the December meeting indicate there are healthy numbers of humpback chub near the Little Colorado River confluence. This area is 60-70 miles from Lees Ferry and it does not seem to make sense to begin brown trout removal at Lees Ferry.*

### 3.3.5 Roles of Agencies and Organizations

**Number of commenters:** 31

**Percent of commenters:** 7

Several commenters requested that NPS work closely with cooperating agencies in development of the EA, specifically Reclamation and AGFD. Many stated that AGFD should have a larger role as an equal authority. Some commenters felt that NPS is exerting authority over AGFD in management of the fishery. Reclamation requested that agency-specific responsibilities for all components of the proposed actions be specified in the EA.

Representative quotes include the following:

- *We encourage you to work with the Bureau of Reclamation to improve habitat for rainbow trout in the river at Lees Ferry and that you coordinate with Arizona Game and Fish to help with their needs to manage the fishery at Lees Ferry.*
- *The EA would benefit from detailed information to clarify action ownership. As the document and action owner, it should be specified what actions will be taken by NPS as opposed to other agencies' actions. As it reads now, it appears there is some overlap with Bureau of Reclamation and Arizona Game and Fish Department actions. Understanding the relationship of among these actions and the expectation of what is proposed in this action will be important for later analyses and coordination. Please detail these relationships and expectations.*
- *The Park Service asserts authority and control over the Colorado River fishery by subordinating the Arizona Game and Fish Department to a cooperating agency role rather than a coequal decisional authority.*
- *Please leave fishing and hunting management to the Arizona Department of Game and Fish and stop overstepping your boundaries.*

### 3.3.6 Scoping Period and Public Involvement

**Number of commenters:** 18

**Percent of commenters:** 4

Commenters requested an extension to the scoping period and an additional open house in Phoenix. These comments were received early in the scoping period, and an extension was granted, together with addition of a public meeting in Phoenix. A few other comments requested that the angling community be consulted and actively participate in the development of the EA.

Representative quotes include the following:

- *We would like the comment period to be extended beyond the holiday period. Many of our members, officers and board members are out of the area and we would like time to meet and discuss this proposal.*
- *We think you should also have a meeting in the Phoenix area. While meetings in Flagstaff and Page are great many of the anglers that come to Lee's Ferry are from the Phoenix Metro area. If you have a meeting in Phoenix it would also allow people from Tucson to attend.*
- *The thirty day public scoping period is hardly adequate with a starting date from the date of public announcement, spread over a holiday period, and without the reviewed final product of the brown trout workshop integrated in to the alternatives.*
- *Please do not move forward with the execution of brown trout in the Lees Ferry fishery without the consultation or a forum for those who will be affected by this move. The brown trout have been coexisting with the other fish of that stretch in what seems to be a healthy habitation. Those who are on that river daily and depend on it's angling for their living should have a say in any matter that will have such a great impact.*

### 3.3.7 Relationship of the Endangered Species Act to the Proposed Action

**Number of commenters:** 8

**Percent of commenters:** 2

Some commenters made reference to the ESA in their comments. Reclamation requested that the EA refer to related actions that are ongoing below the Glen Canyon Dam and are under existing NEPA and ESA compliance. Another commenter pointed out the responsibility of NPS to adhere to the requirements of the ESA. One commenter requested details of the proposed actions in the EA to include possible impacts to endangered species, with additional monitoring. A few commenters acknowledged that while NPS must follow the requirements of the ESA, they do not want to see brown trout removed from Lees Ferry. One commenter stated that the NPS is using the ESA to justify removal and eradication of brown trout from Lees Ferry, and requested

a financial disclosure of public funds spent on restoration of native fish since implementation of the ESA within Arizona.

Representative quotes include the following:

- *The removal of, and eradication of trout is detrimental to the use of this water for both recreation and economic use. The use of the endangered species act to act on these two purposes is petty and transparent.*
- *Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical . . .*

### 3.3.8 Pre-Dam Conditions

**Number of commenters:** 1

**Percent of commenters:** <1

One commenter mentioned that any discussion of pre-dam vs. post-dam conditions is out of scope. They stated:

- *Any mention or consideration of pre- vs. post-dam conditions is inherently out of scope.*

### 3.3.9 Impacts to Hydropower

**Number of commenters:** 1

**Percent of commenters:** <1

One commenter requested that the EA assess impacts to the Glen Canyon Dam hydropower resource. They added that the analysis should be conducted by WAPA in addition to other hydropower subject matter experts within Reclamation and cooperating agencies. They stated:

- *In response to the Newsletter's request for input on "Resource and other impacts that should be considered", impacts to the Glen Canyon Dam hydropower resource should be assessed during the NEPA impacts analysis phase of the EA. Impacts analysis should be conducted by WAPA, in consultation with the hydropower subject matter expert cooperating agencies and Reclamation. Given the involvement of the USGS/Grand Canyon Monitoring and Research Center in the EA, resources available through Projects J and N of the Triennial Work Plan and Budget should be considered and utilized as part of the hydropower impact assessment portion of the EA.*