



EXPANDED NON-NATIVE AQUATIC SPECIES MANAGEMENT PLAN ENVIRONMENTAL ASSESSMENT

Welcome to the Public Scoping Meetings for the Expanded Non-Native Aquatic Species Management Plan Environmental Assessment!

The National Park Service requests your input on the scope of the Non-native Aquatic Species Management Plan EA. Your participation is vital to the planning process.

Please sign in at the registration desk, pick up handouts, and use one of our options for providing substantive comments here. You can also provide comments online at one of the computer stations.

Public Scoping Meeting Agenda

6 pm to 8:30 pm

- ▶ Open house
- ▶ Presentation
- ▶ Questions and answers
- ▶ Open house





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PROJECT BACKGROUND

Several recent plans identified and evaluated threats posed by non-native aquatic species and proposed means to control those species. However, since completion of these plans, increases in potentially harmful non-native species have been documented and there is a need to expand non-native aquatic species control tools to potentially more areas and more species to provide for long-term management of these species.

Comprehensive Fish Management Plan EA (2013)

- ▶ Provides guidance for managing fish within the Colorado River and tributaries from Glen Canyon Dam to Lake Mead

Glen Canyon Dam Long-Term Experimental and Management Plan (LTEMP) EIS

- ▶ Provides a framework for adaptively managing Glen Canyon Dam operations over the next 20 years. The LTEMP determined specific options for dam operations, non-flow actions, and appropriate experimental and management actions to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreational Area were established, and minimize impacts on resources within the area impacted by dam operations



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PURPOSE AND NEED

Purpose

- ▶ The purpose of this action is to provide additional tools beyond what is available under the Comprehensive Fish Management Plan (CFMP) and Long-Term Experimental and Management Plan (LTEMP) 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.

Need

- ▶ The need for this action is due to the increase of green sunfish and brown trout, and the 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-natives.

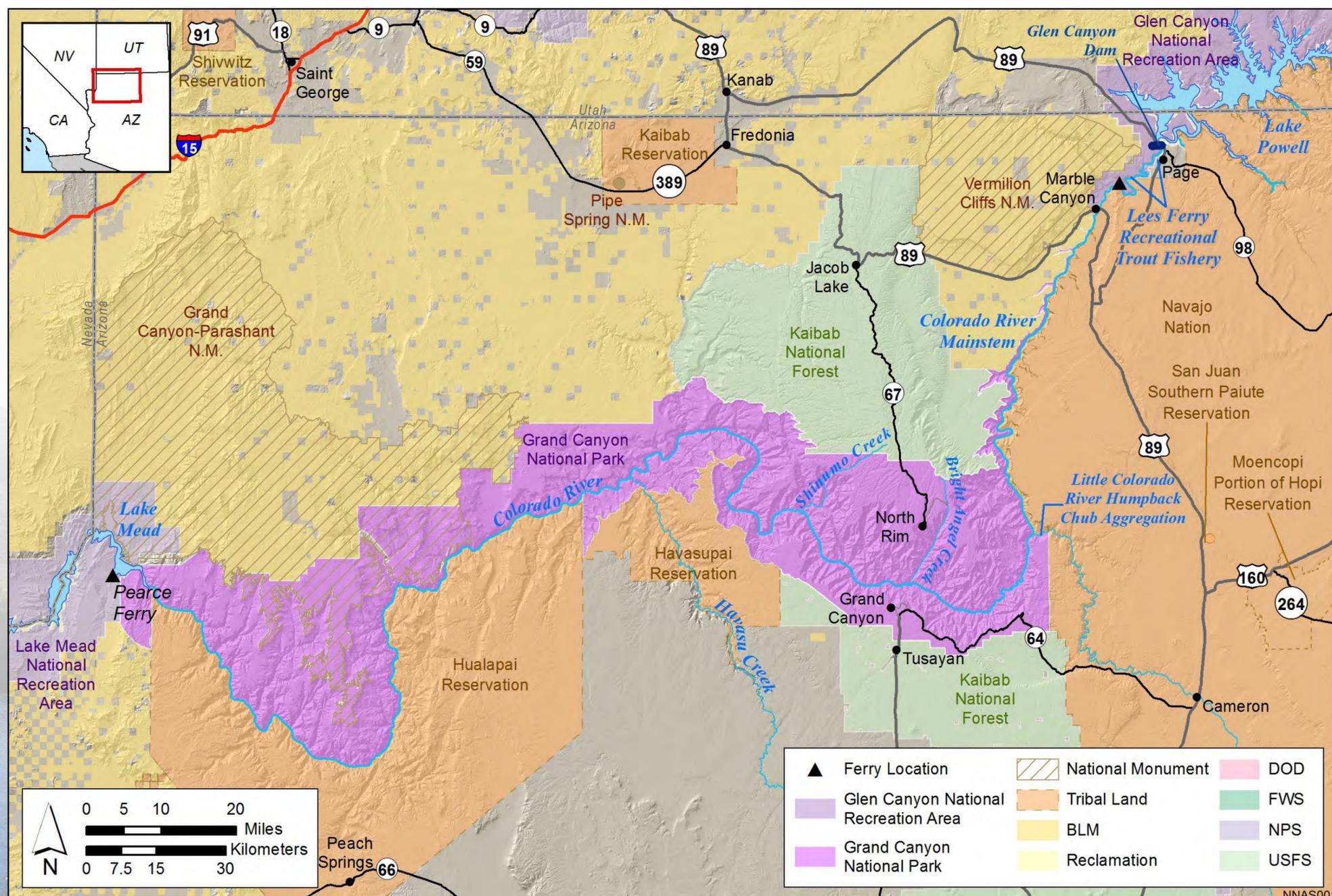




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PROJECT AREA

The project area consists of the Colorado River and its tributaries (primarily Bright Angel, Shinumo, and Havasu Creeks) in Grand Canyon National Park, and the Glen Canyon Reach of the Colorado and Paria Rivers in Glen Canyon National Recreation Area.





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POTENTIALLY HARMFUL NON-NATIVE AQUATIC SPECIES

For the purposes of this plan, potentially harmful non-natives are defined as those fish, aquatic plants, or aquatic invertebrate species that are not native to the action area and that may pose a threat to native species (including aquatic federally or state listed species) or the Lees Ferry recreational rainbow trout fishery.

Species considered for control under the plan include, but are not limited to:

- ▶ **Fish:** Brown trout (*Salmo trutta*), catfish species (Ictaluridae), black bass and sunfish species (Centrarchidae), striped bass (*Morone saxatilis*), cichlids (Cichlidae), yellow perch and walleye (Percidae), northern pike (*Esox lucius*), new carp species (Cyprinidae)
- ▶ **Invertebrates:** Asian clam (*Corbicula fluminea*), quagga mussel (*Dreissena bugensis*), rusty crayfish (*Orconectes rusticus*)
- ▶ **Plants:** Didymo (*Didymosphenia geminata*), eurasian watermilfoil (*Myriophyllum spicatum*), hydrilla (*Hydrilla verticillata*)
- ▶ Management of rainbow trout for the purposes of this plan will be consistent with the CFMP and the LTEMP.
- ▶ Common carp (*Cyprinus carpio*) would not be targeted but may be removed incidentally as part of other removal, monitoring, or management efforts targeting other species.



Green sunfish



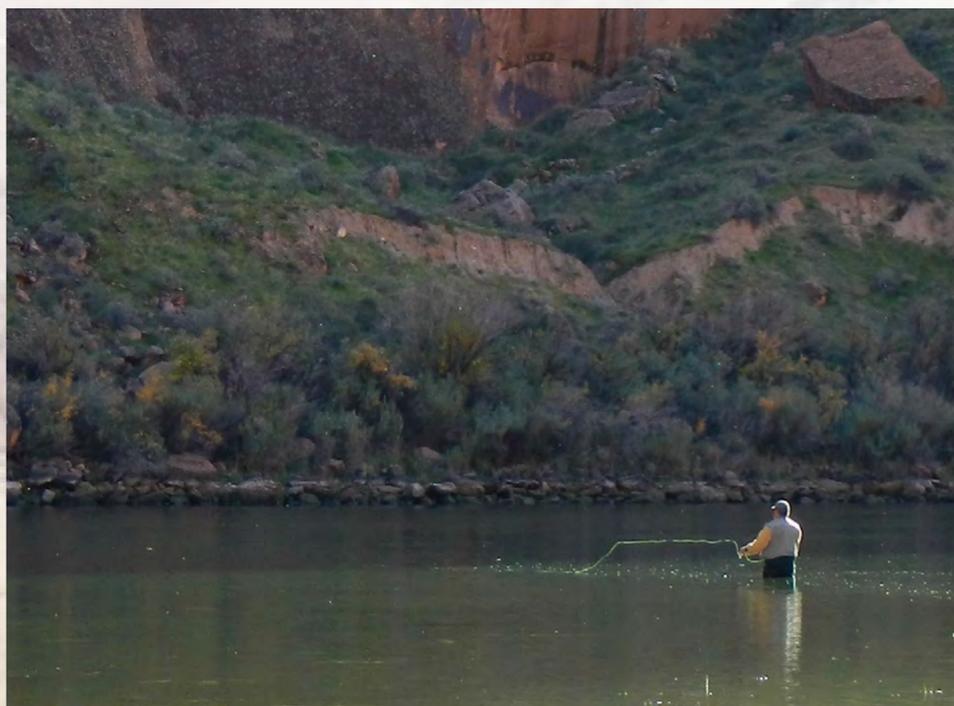
Brown trout



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POTENTIAL ENVIRONMENTAL ISSUES

An issue describes the relationship between actions and environmental resources. Issues are usually problems that either the current situation has caused, or that any of the proposed options might cause, but they may be questions, concerns, problems, or other relationships, including beneficial ones.



For the Expanded Non-Native Aquatic Species Management Plan EA, the NPS has identified potential issues related to the following resources:

- ▶ Geology, soils, and vegetation
- ▶ Wildlife and species of concern
- ▶ Fish, amphibians, and aquatic invertebrates
- ▶ Water resources, floodplains, and wetlands
- ▶ Cultural and ethnographic resources
- ▶ Tribal perspectives on resources
- ▶ Socioeconomics and environmental justice
- ▶ Human health and safety
- ▶ Visitor use and experience
- ▶ Wilderness
- ▶ Soundscapes

NPS will use public input gathered through the scoping process to determine which issues to carry forward in the EA.



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POTENTIAL NON-NATIVE AQUATIC SPECIES CONTROL ACTIONS

NPS is considering the following control actions for analysis in the EA.

Mechanical controls: physically remove non-native aquatic species from habitats.

- ▶ Long-term intensive and repeated electrofishing and trapping
- ▶ Mechanical disruption of spawning beds
- ▶ Concussive devices in small backwaters
- ▶ Dredging or harvesting on non-native plants

Physical controls: prevent habitat use by non-native aquatic species

- ▶ Long-term fish barriers such as weirs, exclusion screens, and nets that inhibit passage into small backwaters and limited tributary areas

- ▶ Pumps and above-ground piping to deliver cooler water to keep backwater areas below warmwater fish spawning temperatures
- ▶ Covering small areas to increase temperature, lower dissolved oxygen, or reduce sunlight
- ▶ Location-specific modifications to RM -12 sloughs

Biological controls: introduce organisms to control populations of non-native aquatic species

- ▶ YY male brown trout or other non-native species to reduce breeding success over time by creating a skewed sex ratio
- ▶ Introduce humpback chub or Colorado pikeminnow to the upper slough at RM -12 to prey on and compete with non-natives
- ▶ Move local non-native common carp to the upper slough to overwhelm non-natives



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POTENTIAL NON-NATIVE AQUATIC SPECIES CONTROL ACTIONS (CONT.)

Fishing or take changes: change harvest rates to increase removal of non-native aquatic species

- ▶ Bounty system, tournaments or other incentives for anglers to catch specific non-natives.
- ▶ Coordination between federal and state agencies to explore education and/or catch-and-keep regulations for non-natives.

Chemical controls: limited application of chemicals to control populations of non-native aquatic species

- ▶ Rapid response in limited number of years and in limited areas.
- ▶ For fishery renovation purposes prior to native species translocations or introductions only in tributary locations that have a natural barrier, such as Bright Angel Creek above Split Rock Falls or Shinumo Creek.

- ▶ As a last resort method to address potentially harmful non-natives in backwaters, low velocity areas, or sloughs, and prevent their distribution downstream after other methods have failed.
- ▶ For fish, only rotenone, other registered piscicides, or experimental chemicals allowed under federal and state regulations, such as ammonia, would be used.
- ▶ For plants or invertebrates, only approved chemicals would be used.





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PROPOSED ACTION AND PRELIMINARY DRAFT ALTERNATIVES

We are soliciting input on initial alternative concepts during public scoping. Four preliminary draft alternatives have been identified for consideration in the EA.

	ALTERNATIVE A (NO-ACTION)	ALTERNATIVE B PROPOSED ACTION (MOST EXPANDED CONTROL METHODS)	ALTERNATIVE C (MODERATELY EXPANDED CONTROL METHODS)	ALTERNATIVE D (LEAST EXPANDED CONTROL METHODS)
Mechanical Controls	Allowed under CFMP for rapid response, targeting all non-natives and locations, and for comprehensive brown trout control in GCNP; under LTEMP as a long-term response for trout control in the LCR reach	Potential use of all control methods that are being considered	More selective mechanical removal of brown trout in Glen Canyon Reach, does not include concussive options	Similar to Alternative A, but plant harvesting/dredging could occur
Physical Controls	Operation of weir at Bright Angel Creek	Potential use of all control methods that are being considered	Similar to Alternative B, but RM-12 options do not include channelization, underground piping or filling upper slough	Same as Alternative C
Biological Controls	None	Potential use of all control methods that are being considered	RM-12 options do not include using common carp, or Colorado pikeminnow introduction in upper slough	None
Chemical Controls	None	Potential use of all control methods that are being considered	Same as Alternative B	None
Fishing/Take Changes	None	Potential use of all control methods that are being considered	Same as Alternative B	Same as Alternative B



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GETTING INVOLVED IN THE EA PROCESS

You can provide comments on the scope of the Expanded Non-Native Aquatic Species Management Plan EA, comment on the EA when it is published, attend public meetings, and read related documents.

We are particularly interested in your input on:

- ▶ Information about the project area that the NPS should consider during the analysis
- ▶ Information about how you use the project area and how the project might affect that use
- ▶ Other projects or activities that might affect or be affected by the project
- ▶ Resources and other impacts that should be considered
- ▶ Other ideas, studies, data, or alternative ways of meeting project objectives

Scoping is the earliest, but not the last, opportunity for you to provide input on the EA.

- ▶ You will be invited to participate in public meetings and provide comments on the EA when it is published.
- ▶ Periodic updates and new information will be provided on NPS's Planning, Environment, and Public Comment (PEPC) system (http://parkplanning.nps.gov/Expanded_Nonnative) throughout the project.





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EA SCHEDULE

WHEN	ACTIVITY
Nov. 15, 2017 – Jan. 5, 2018	Public scoping period
Nov. 28, 2017	Public scoping webinar
Dec. 6, 2017	Public scoping meeting in Page, AZ
Dec. 7, 2017	Public scoping meeting in Flagstaff, AZ
Dec. 12, 2017	Public scoping meeting in Phoenix, AZ
Winter 2017/2018	NPS reviews public comments, develops alternatives, analyzes impacts, and writes EA
Spring/Summer 2018	EA available for 30-day public review and comment Public meeting
Summer 2018	NPS reviews and analyzes comments, completes consultation with tribes and USFWS
Fall 2018	NPS issues decision document, as appropriate