

COMPATIBILITY DETERMINATION

Use: Motorized and Non-motorized Recreational Boating

Refuge Name: Havasu National Wildlife Refuge (NWR or Refuge)

Establishing and Acquisition Authorities:

Havasu NWR, originally known as Havasu Lake NWR, was established by Executive Order 8647 on January 22, 1941.

Refuge Purpose:

On January 22, 1941, President Franklin Roosevelt signed Executive Order No. 8647, which established the Refuge. The order stated that 37,870 acres would be set apart for use by the Department of the Interior as a refuge and breeding grounds for migratory birds and other wildlife. Additional lands totaling 2,757 acres were subsequently added on February 11, 1949, per Public Land Order 559.

National Wildlife Refuge System Mission:

The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Uses of Refuges that the U.S. Fish and Wildlife Service reasonably may anticipate to conflict with pursuing the maintenance of the ecological integrity of the Refuge System are contrary to fulfilling the National Wildlife Refuge System mission and are therefore not compatible. The National Wildlife Refuge System Improvement Act of 1997, which amended the National Wildlife Refuge System Administration Act, defines wildlife-dependent recreation as a use of a refuge involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

Description of Use:

a) What is the use?

Both motorized and non-motorized recreational boating occur on Havasu NWR. Although boating is not one of the priority public uses defined by the National Wildlife Refuge System Improvement Act of 1997, some boating activities can support wildlife-dependent recreational uses, including fishing, hunting, wildlife observation, photography, environmental education, and interpretation. Boats currently used on the Refuge range from high-powered jet boats to non-motorized canoes and kayaks.

b) Where is the use conducted?

Boating occurs throughout the Refuge in the main channel of the lower Colorado River, in the backwaters of the lower Colorado River and within the 4,000-acre Topock Marsh, a manmade impoundment. See attached map.

c) When is the use conducted?

Boating occurs year-round on the Refuge. However, water releases from upstream Davis Dam on the lower Colorado River are minimal during the winter months. This in turn leads to lower water levels in the main channel, backwaters, and Topock Marsh making them less attractive to boating. Generally speaking, the majority of recreational boating use occurs between Memorial Day and Labor Day. The Refuge estimates that they host between 2,000,000 and 3,000,000 visitors annually. Lake Havasu is the most utilized boating lake in Arizona. The National Recreation Lake Study Commission stated in their 1999 publication (*Reservoirs of Opportunity*) that Lake Havasu attracts 50,000 boaters on holiday weekends (BLM 2006).

d) How is the use conducted?

Currently, boaters participate in several different recreational activities on Havasu NWR including sightseeing/pleasure trips, fishing, hunting, waterskiing, wakeboarding, and tubing. Existing regulations are identified in Attachment A. Background Information Regarding Recreational Boating on Havasu NWR.

Based on the analysis within this Compatibility Determination, the Refuge proposes to limit boating to activities that support the priority public uses – hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation. The following restrictions pertain to watercraft on waters under Refuge jurisdiction:

- motors must be 30 hp or less in Topock Marsh
- all watercraft must travel at no-wake speed in Topock Marsh
- in other areas of the Refuge, all watercraft must travel at no-wake speeds as indicated by signs and regulatory buoys
- personal watercraft (PWC, as defined by State law) will continue to be prohibited in Topock Marsh and in Refuge backwaters as indicated by signs and buoys
- waterskiing, tubing, wakeboarding, or other recreational-towed devices will be prohibited on the Refuge as identified by the regulatory buoy lines (which currently starts at the Interstate 40 bridge and runs south) and will be extended to the southern Refuge boundary

The above restrictions will ensure protection of Refuge visitors as well as wildlife and their habitats in support of the Refuge purposes and the Refuge System mission.

e) Why is this use being proposed?

Per national policy, a Refuge Manager will not expand, renew, or extend an existing use of a National Wildlife Refuge, unless the Refuge Manager has determined that the use is a compatible use (16 U.S.C. 668dd-668ee). Boating can provide opportunities to engage in wildlife observation and wildlife photography and can provide access for hunting and fishing opportunities. These activities are all considered priority wildlife-dependent recreational uses of the Refuge System, as stipulated in the National Wildlife Refuge System Improvement Act of 1997. The Refuge offers the unique opportunity to utilize boating to support wildlife-dependent recreational uses in safe and undeveloped surroundings. While the primary role of Topock Marsh and the backwater areas of the

lower Colorado River are to provide habitat for migratory birds and other wildlife, they also provide a quality visitor experience within serene surroundings.

Recreational boating is an existing use on the Refuge and is being re-evaluated consistent with 603 FW 2, which states the Service will "...reevaluate compatibility determinations for all existing uses other than wildlife-dependent recreational uses when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use, or at least every 10 years, whichever is earlier. Additionally, a Refuge Manager always may reevaluate the compatibility of a use at any time."

Attachment A. Background Information Regarding Recreational Boating on Havasu NWR provides further information about the history of boating on the Refuge.

Availability of Resources:

Recreational boating is managed by Refuge staff and is primarily enforced by federal wildlife officers on Refuge lands. Additional law enforcement staff may be needed as the number of boats on the lower Colorado River continues to increase. The Refuge proposes to continue enforcement of Refuge regulations through use of signs, buoys and patrol. Additionally, the Refuge will maintain existing boat ramps for both motorized and non-motorized watercraft. Any new improvements to the existing boating program will require additional resources. These improvements will be prioritized and considered as resources become available. The Refuge will actively seek partnerships and volunteers to secure resources, including funding and labor, to maintain buoys, signage, and other facilities associated with boating on the Refuge.

Anticipated Impacts of the Use:

Short- and Long-term Impacts:

Recreational boating (both motorized and non-motorized) has the potential to adversely impact the Refuge's habitats and wildlife. Refuge staff and volunteers have observed general disturbance such as flushing of birds as well as nest disturbance, bird strikes, and habitat destruction from motorized boating. Boats interact with the aquatic environment through a variety of mechanisms, including emissions, turbulence from propulsion, wakes, and noise. Each of these mechanisms may cause impacts to the aquatic environment (Asplund 2000). Use of any motorized boats on the Lower Colorado River may result in an increase in pollutants including emissions and exhaust, negatively impacting the Refuge's air quality. While motorized boats generally have a greater effect on wildlife, even non-motorized boats may alter wildlife use patterns, reduce wildlife use of particular habitats, alter feeding behavior and nutritional status, and cause premature departure by migratory birds from areas (Knight and Cole 1995).

High speed boating has the potential to adversely impact wildlife and habitat through shoreline erosion, bird strikes, vegetation destruction and swamping of floating bird nests by boat wake (Ivey 2004). The wake created by high speed boating can be damaging to the marsh bird species that nest in Refuge backwaters using floating nests (Allen 2008, Weems 2008). A study found when boats travel at or below 5 mph, disturbance to birds was reduced (Huffman 1999). Even though the Refuge currently maintains no-wake zones in the backwaters of the lower Colorado

River and portions of Topock Marsh, there have still been a number of cases where users are not complying with those regulations. From 1986 to 1990, the number of boating citations issued on the Refuge increased from less than 120 to over 200 (U.S. Fish and Wildlife Service 1994). Since 2012, there were 712 documented boating violations on Havasu NWR related to operating a boat outside of Refuge and State regulations.

Boating may have an impact on listed species located on the Refuge. Refuge riparian and wetland habitat provides crucial foraging, breeding, loafing, and nesting habitat for a wide variety of migratory birds, including several species listed as threatened or endangered pursuant to the Endangered Species Act. The endangered Ridgway's rail is found in Refuge marshes and lower Colorado River backwaters while the endangered Southwestern willow flycatcher occurs in riparian areas of the Refuge. The endangered razorback sucker, once historically found throughout the Colorado River, exists on the Refuge. The adults are associated with areas of strong currents and backwaters, moving into the shallows for breeding. The endangered bonytail chub, once historically found in many states including Arizona, California, Colorado, New Mexico, Utah, and Wyoming, prefer backwaters with rocky or muddy bottoms and flowing pools on the Refuge.

Boat use on the Refuge may also cause increased spread of non-native fauna such as quagga mussels that can lead to habitat degradation. Quagga mussels can be inadvertently transported by watercraft from one area to another causing tremendous modifications and disruptions in freshwater ecosystems. Currently, these mussels can be found in the lower Colorado River and Topock Marsh. The Refuge is working cooperatively with other agencies to educate visitors about quagga mussels and the need to thoroughly clean watercraft to avoid transporting this invasive species.

Other environmental effects may be observed at sites where boat launching occurs. Concrete boat ramps are often impacted by littering. Currently there are graveled boat launches for non-motorized boats. Due to difficulty defining the boundaries of gravel launches, the Refuge has observed impacts including vegetation trampling and compacting of soils in areas surrounding the launch sites. The Refuge will improve these unpaved boat ramps as funding permits to facilitate priority public uses like wildlife observation and fishing. Improving these areas will help reduce the potential for site-specific adverse impacts, thereby only resulting in short-term minor impacts to habitat, soils and vegetation.

In addition to impacts on wildlife and habitat, there are potential conflicts between the various boating user groups that occur on the Refuge. The wakes created by motorized boaters traveling alongside non-motorized boaters at a high speed may represent a significant safety risk to non-motorized boaters (American Canoe Association 2004). Wakes generated by high speed motorized boaters in narrow channels and backwaters cannot readily dissipate. These wakes could swamp or capsize non-motorized boats. In order to drive responsibly, previous studies have indicated that waterskiing boats should allow a safety area of at least 100 feet on either side of their boat (Bostian 2005). Where side channels and backwaters within the Refuge are less than 250 feet wide, a high-speed boat may not be able to safely share the waterway with a non-motorized craft.

The noise associated with motorized boats will also directly impact the human environment by disturbing visitors enjoying wildlife-dependent activities on the Refuge such as wildlife observation, wildlife photography, environmental education, interpretation, hunting, and fishing. Visitors to National Wildlife Refuges and other natural areas are typically seeking a natural experience and their wildlife observation experience would be diminished by noise created by motorized boats. Previous monitoring has indicated that many non-motorized boaters find power boats to be obtrusive and disruptive of their experience (Pinto 2002).

Boating activities, at non-wake causing speeds, may result in some long-term beneficial impacts to the human environment. By participating in these activities, visitors are more supportive of the Refuge System's priority uses (wildlife observation, wildlife photography, hunting, fishing, environmental education, and interpretation). These activities may increase the viewers' understanding and appreciation of fish and wildlife, their habitat needs and the role of the Refuge System in conservation.

Cumulative Impacts:

The surrounding area, south of the Refuge on Lake Havasu and north of the Refuge in the river channel, provide ample opportunities for multiple boating activities including waterskiing, wakeboarding, and tubing. The Lake Havasu reservoir is approximately 19,300 acres in size and open to these activities, while only approximately 700 acres (3.6% of the total acres) of the reservoir are on the Refuge. A boating capacity study of Lake Havasu in 1999 concluded that the safe boating capacity for Lake Havasu is 1,250 boats and that number has already been exceeded. Through the use of no-wake zones in sensitive areas or areas with public safety concerns and by limiting the types of recreational boating to those that support the priority wildlife-dependent recreational uses, there are no anticipated adverse cumulative impacts resulting from boating with the stipulations below. Ultimately, this activity will expand visitor opportunities on the Refuge which may result in beneficial cumulative impacts on the human environment. Offering a variety of public use opportunities on the Refuge will increase public awareness about conservation and the Refuge System, thus supporting the Service's overall mission and the Refuge purpose.

Public Review and Comment:

This Draft Compatibility Determination is being made available for public review and comment from April 12 to May 12, 2016. A copy of the draft compatibility determination can be found at <http://www.fws.gov/refuge/havasu/>. Comments will be accepted through close of business on May 12, 2016. Please send written comments to:

U.S. Fish and Wildlife Service
Havasu National Wildlife Refuge
Attn: **Draft Recreational Boating CD**
317 Mesquite Avenue
Needles, CA 92363
Attn: Boating CD Comments

Comments may also be emailed to: Havasu_Boating_Comments@fws.gov

The Service is also holding public meetings to provide an opportunity to learn more about the purpose of the Refuge and to provide oral comments. Both meetings will be held on May 3, 2016, at the Avi Resort and Casino. The Resort is located at 10000 Aha Macav Parkway, in Laughlin, Nevada. The first meeting will take place from 1 to 3pm in the afternoon and the second meeting will be held from 6 to 8pm that evening.

Determination (check one below):

Use is Not Compatible

Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

The Refuge will implement the following stipulations to ensure that recreational boating remains a compatible use:

1. All watercraft will travel at no-wake speeds as defined by state law on waters under the Refuge's jurisdiction, including backwaters and areas defined by signs and buoys.
2. From the northern regulatory buoy line at Interstate 40 to the south end of the Refuge, the following restrictions will apply:
 - No Personal watercraft (PWC, as defined by State law) in backwaters as indicated by signs and buoys.
 - No waterskiing, tubing, wakeboarding, or other recreational-towed devices.
3. Only boats with motors of 30 hp or less will be permitted in Topock Marsh
4. All watercraft must travel at no-wake speeds in Topock Marsh
5. Personal watercraft (PWC, as defined by State law) will remain prohibited in Topock Marsh and in lower Colorado River backwaters within Havasu NWR as indicated by signs and buoys.
6. All motorized watercraft will remain prohibited in all three Mesquite Bay areas as indicated by signs or regulatory buoys.
7. The use of all air-thrust boats and/or air-cooled propulsion engines, including floating aircraft will remain prohibited on waters under the Refuge's jurisdiction.
8. Overnight boat mooring and shore anchoring, unless actively fishing as defined by State regulations will remain prohibited on waters under the Refuge's jurisdiction.
9. The Refuge will continue to manage access through enforcement of Refuge regulations, signage, and public education and outreach consistent with the purpose of the Refuge and responsibilities of visitors.
10. Temporary access restrictions may be used to protect sensitive natural resources from harmful effects.
11. Additionally, the Refuge will conduct periodic reviews of existing waterway conditions and evaluate the need for additional restrictions to provide for public safety and to protect wildlife and habitat.

Justification:

Boating can support priority public uses such as fishing, hunting, wildlife observation, wildlife photography, environmental education, and interpretation. As described in the Anticipated Impacts of Use section, motorized boating activities that do not support priority public uses,

including, but not necessarily limited to, waterskiing, wakeboarding, wake surfing, tubing, and other tow-behind devices, can cause conflict with priority public uses and have the potential to adversely impact biological resources. These activities will be prohibited on waters under the Refuge's jurisdiction (as defined under the Stipulations section) for public safety and protection of wildlife and habitat. Opportunities for non-wildlife dependent recreation can be found within the local area outside of the Refuge boundary. As provided in this document, boating restrictions for both motorized and non-motorized activities would ensure protection of wildlife and habitat while providing safe, quality public use opportunities. Through this Compatibility Determination process, Havasu NWR has determined that boating, in accordance with the stipulations, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the Refuge because:

- Activities as proposed will enhance wildlife-dependent recreational uses particularly hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation.
- Activities as proposed will reduce negative impacts to habitat by reducing vegetation destruction and shoreline erosion that may be caused by high-wake activities.
- Activities as proposed will protect migratory birds that nest on the Refuge, such as, Western and Clark's grebe whose nests float on the water's surface.
- Activities as proposed will improve safety for Refuge visitors.

Signature: Refuge Manager _____
(Signature and Date)

Concurrence: Regional Chief _____
(Signature and Date)

Mandatory 10-year Re-Evaluation Date: 2026

References:

- Allen, Joseph H., G.L. Nuechterlein, and D. Buitron. 2008. Bulrush Mediation Effects on Wave Action: Implications for Over-water Nesting Birds. *Waterbirds: The International Journal of Waterbird Biology*, Vol. 31, No. 3, pp. 411-416.
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- Bureau of Land Management. 2006. *Lake Havasu Field Office Planning Area Proposed Resource Management Plan and Final Environmental Impact Statement*. Lake Havasu City, AZ.
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- Ivey, Gary L. 2004. *Conservation Assessment and Management Plan for Breeding Western and Clark's Grebes in California*. Corvallis, OR.
- Knight, R.L. and D.N. Cole. 1995. Wildlife responses to recreationists. in *Wildlife and Recreationists* (R.L. Knight and K.J. Gutzwiller, eds.). Island Press, Covelo, California.
- Pinto, A. 2002. A case study of the nature of conflict between boaters on the lower Salmon River in Idaho. Master's Thesis. The University of Idaho. May 2002.
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- Weems, Renee and K. Robison. 2008. Under Pressure. *Outdoor California*, pp. 21-25.

Attachment A. Background Information Regarding Recreational Boating on Havasu NWR

Recreational boating has been a historic use of Havasu National Wildlife Refuge (Refuge) prior to the establishment of the Refuge. Regulations were established to prohibit waterskiing in key areas of the Refuge in the late 1970s. The Refuge implemented the no-wake regulations in backwaters in 1987. Due to continual wake violations in Refuge backwaters, a prohibition of personal watercraft in these areas was established in 1992.

In 1990 the U.S. Fish and Wildlife Service (Service) began a Comprehensive Management Plan (CMP) for the lower Colorado River refuges (U.S. Fish and Wildlife Service 1994). The CMP was complete in 1994. The CMP was the forerunner to the Comprehensive Conservation Plan. The CMP describes the desired future conditions of a refuge and provides long-range guidance and management direction to achieve refuge purposes; help fulfill the National Wildlife Refuge System (Refuge System) mission; maintain, and where appropriate, restore the ecological integrity of each refuge and the Refuge System; help achieve the goals of the National Wilderness Preservation System; and meet other mandates. The CMP discusses issues such as river recreation impacts both within and outside the boundaries of the four National Wildlife Refuges located along the Colorado River. The CMP specifically addressed boating in the following goals and objectives:

- Goal #12 is to reduce levels of non-wildlife oriented recreation on the River channel that runs through the lower Colorado River refuges, to eliminate all non-wildlife oriented recreation that is not compatible, to increase the quality experience related to natural values by all River visitors, and to raise public awareness of the lower Colorado River ecosystem values.
- Objective #2 under Goal #12 is to protect wildlife resources by implementing the appropriate zoning policy for sensitive areas of the Refuges, especially those pertaining to endangered species. Each Refuge Manager will review existing Refuge zoning regulations and implement zones that take into account Refuge purposes and the proximity to other jurisdictions that are more conducive to the non-wildlife oriented uses (i.e., waterskiing areas, jet skiing areas).

Additionally, the CMP provided a list of secondary uses not planned to occur at any of the lower Colorado River National Wildlife Refuges because they do not conform to uses which could be, in a regulated manner, “compatible” with the purposes of the Refuge, or they have been determined to be harmful to Refuge resources. Waterskiing was specifically included on this list.

The following are existing boating prohibitions found in 50 CFR 32.22 for Havasu NWR that apply to the Refuge as a whole:

- The Refuge prohibits the use of all air-thrust boats and/or air-cooled propulsion engines, including floating aircraft.
- The Refuge prohibits overnight boat mooring and shore anchoring unless actively fishing as defined by State regulations.

The following existing boating restrictions in 50 CFR 32.22 applies only on Topock Marsh:

- The Refuge closes designated portions to all entry from October 1 through the last day of the waterfowl hunt season (including the State junior waterfowl hunt).
- The Refuge closes designated portions to all entry from April 1 through August 31. These areas are indicated in Refuge brochures and identified by buoys or signs.
- The Refuge prohibits personal watercraft (PWC), as defined by State law, in this area.

The following boating restrictions from 50 CFR 32.22 apply to all waters of the Colorado River within Havasu NWR from the south regulatory buoy line to the north regulatory buoy line at Interstate 40 (approximately 17 miles [27.2 km]).

- Personal watercraft (PWC, as defined by State law) are prohibited as indicated by signs and buoys in all backwaters.
- The Refuge limits watercraft speed as indicated by signs or regulatory buoys to no-wake (as defined by State law) in all backwaters.
- The Refuge prohibits waterskiing, tubing, wakeboarding, or other recreational-towed devices.

Lastly, the following boating restrictions apply to the Mesquite Bay areas of Lake Havasu:

- The Refuge prohibits entry of all motorized watercraft in all three bays as indicated by signs or regulatory buoys.

In May 2015, to address public safety concerns, an approximately one-half mile section of Refuge backwater was added to the existing 17-mile zone described above through a minor expansion of the existing regulatory buoy line. Due to the absence of controversy related to environmental impacts, National Environmental Policy Act (NEPA) compliance for the modification of the restricted boating area was completed through a categorical exclusion, as provided for by 516 DM Chapter 8 [8.5.(A).2 ... public safety efforts ... which do not involve new construction or major additions to existing facilities]. This change was made pursuant to 50 CFR 25.21 (e), which states that, “In the event of a threat or emergency endangering the health and safety of the public or property or to protect the resources of the area, the Refuge Manager may close or curtail refuge uses of all or any part of an opened area to public access and use in accordance with the provisions in § 25.31, without advance notice.” Following the minor expansion of the existing regulatory buoy line, local waterskiing, wakeboarding, tubing, and other recreational towed-device enthusiasts requested that the Refuge repeal the decision, since these uses have occurred in this area in the past. Individuals requesting this repeal have indicated they believe the minor buoy expansion prevents them from using the only safe location available on Lake Havasu for their recreational activities.

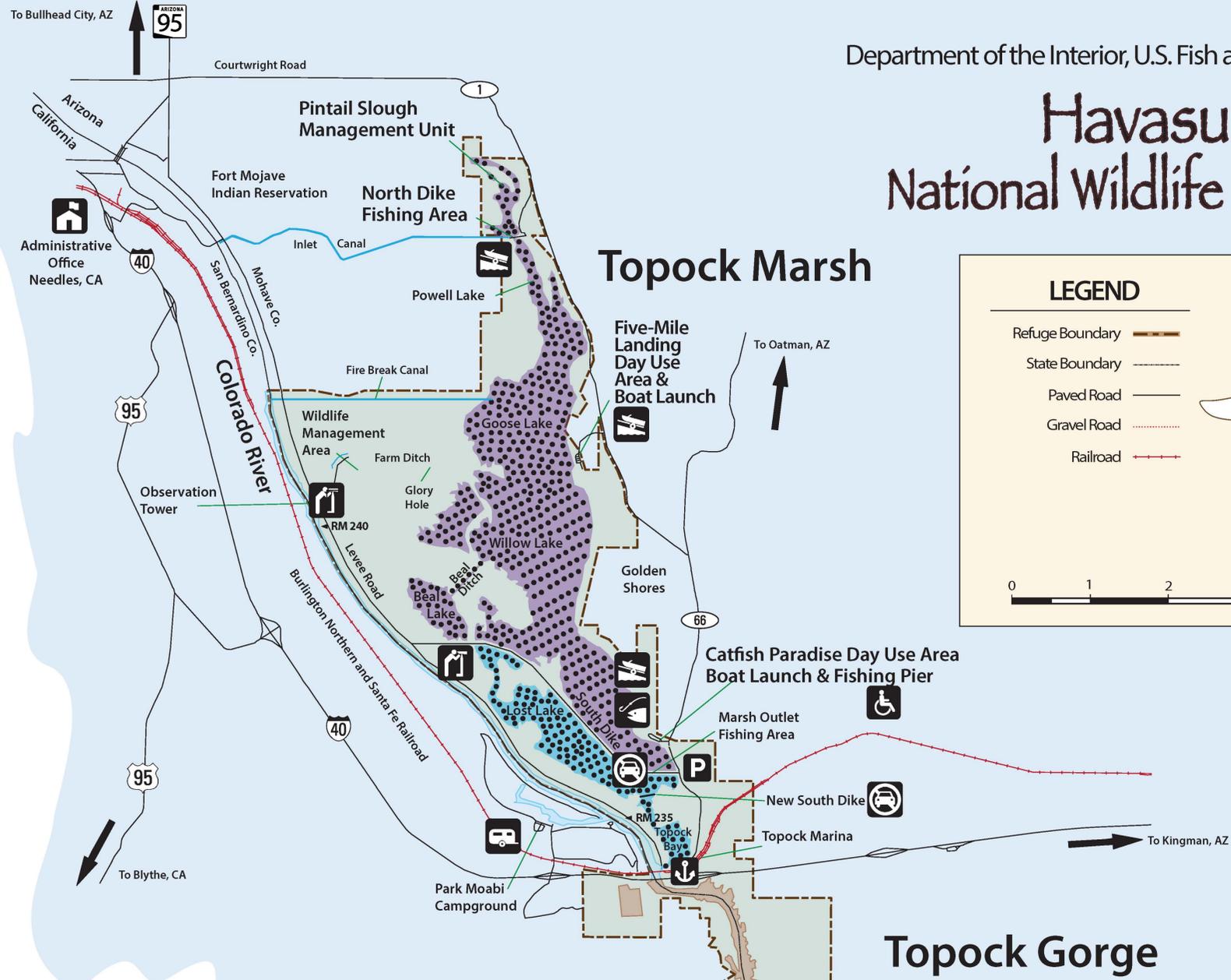
Additional members of the public have expressed their support for this decision, as it creates a safer environment for visitors to engage in non-motorized boating activities and decreases disturbance to nesting areas for marsh and waterbird species. In November 2015, the President of Anglers United contacted the Refuge and requested extension of the existing no-wake zone approximately two miles along the Arizona shoreline from the south regulatory buoy line southward to Mesquite Bay South. Anglers United have indicated they believe that the additional no-wake zone will provide a safer recreational opportunity for non-motorized boaters and will help to protect a spawning area for fish and other aquatic species.

Havasu National Wildlife Refuge

Topock Marsh

LEGEND

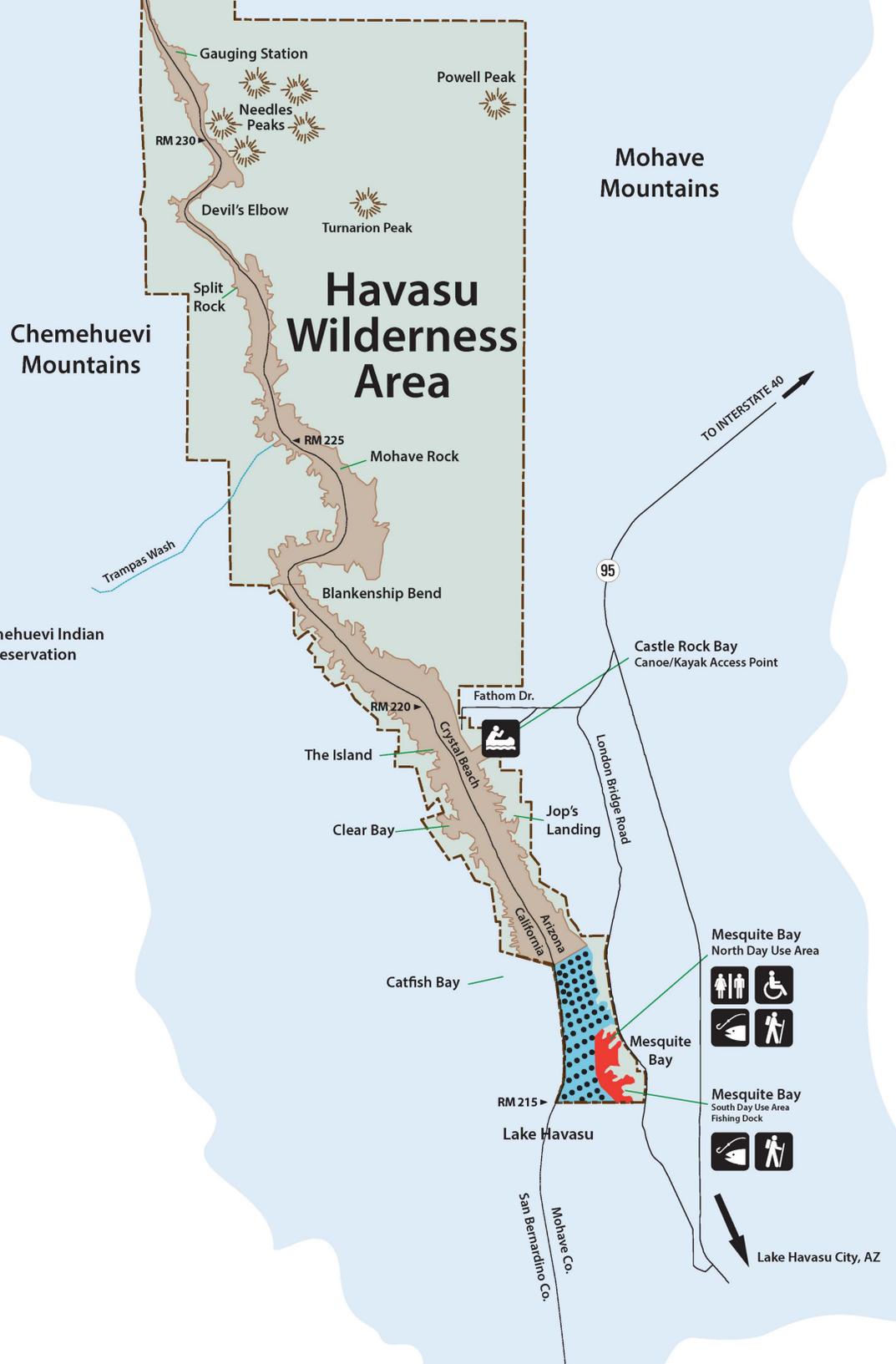
- Refuge Boundary
- State Boundary
- Paved Road
- Gravel Road
- Railroad



Topock Gorge

Recreational Boating

- Topock Marsh** (Purple oval): Motorized and non-motorized boating allowed. Personal watercraft prohibited.
- Mesquite Bay Areas** (Red oval): All motorized boats prohibited.
- Existing Regulatory Buoy Lines** (Light blue oval): No personal watercraft and no wake in backwaters as indicated by signs and buoys. Waterskiing and other towed-devices prohibited as indicated by signs and buoys.
- Proposed Changes on Refuge Waterways** (Dotted oval): No-wake speeds as indicated by signs and buoys. Waterskiing and other recreational-towed devices prohibited. No-wake speeds on Topock Marsh. Boats with motors of 30 hp or less permitted on Topock Marsh.



To Bullhead City, AZ



To Oatman, AZ



To Kingman, AZ



TO INTERSTATE 40

Lake Havasu City, AZ