Lake Mohave, Arizona–Nevada, is a mainstem lower Colorado River reservoir that serves as critical habitat for endangered razorback sucker *Xyrauchen texanus* and bonytail *Gila elegans* (U.S. Fish and Wildlife Service 1994). Since the reservoir was enclosed in 1951, no recruitment by either species has been documented (Mueller 2006), and their continued existence is linked to stocking programs (Mueller and Marsh 2002, Marsh et al. 2003). Early stocking endeavors released hundreds of thousands of juvenile fish into the reservoir (Minckley and Thorson 2007, Schooley and Marsh 2007), but those efforts were not successful at stabilizing or reversing population declines resulting from predation by nonnative fish (Marsh and Brooks 1989, Johnson et al. 1993, Marsh and Pacey 2005).

Striped bass *Morone saxatilis* first appeared in Lake Mohave in 1981, and numbers surged after 1983, when excess water was released from Lake Mead via the spillway tunnels on Hoover Dam (Minckley and Marsh 2009). Over 3 decades, the reservoir developed into a fishery for trophy striped bass, producing individuals in excess of 25 kg. Striped bass have been implicated in declines of native fish in Lake Mohave, particularly of repatriated razorback sucker (Karam et al. 2008). Because of predation concerns, size-at-release of stocked fish has been incrementally increased in attempts to bolster populations (Marsh et al. 2005).
on 6 November 2008 (Fig. 1). The transmitter had been implanted in a male adult repatriate (50 cm TL, 1.3 kg) that was telemetered a maximum distance of 5 km from the release site over a 6-day poststocking period before contact with the fish was lost.

Information regarding the second episode was obtained during an interview on 21 March 2009 at the Willow Beach, Arizona, fish-cleaning station. There an angler reported that during late 2007 he harvested a striped bass (>13 kg) within 1.6 km of Willow Beach (Fig. 1) that contained numerous razorback sucker in its stomach. Supporting photographs (date-stamped 18 December 2007) provided by the angler revealed that the fish removed from the stomach of the striped bass were actually bonytail (Fig. 2). While the origin of those fish is not known, it is highly probable that they originated from a large-batch stocking of bonytail (n = 1636, average TL = 25 cm) at Willow Beach National Fish Hatchery on 13 December 2007.

These observations are important for 2 reasons. In the case of razorback sucker, questions remained as to whether adult repatriates of the current recommended stocking size (≥50 cm TL) are immune to predation by striped bass, which is the only piscivore in the reservoir with a gape large enough to ingest fish of that size.
The observation of predation implies that these fish are vulnerable. Survival of adult razorback sucker is difficult to quantify without the benefit of several years of releases and corresponding mark-recapture data, but it should be noted that even the largest razorback sucker repatriates currently being released into Lake Mohave are vulnerable to predation by large striped bass.

As for bonytail, 23,770 subadult and adult PIT-tagged hatchery individuals have been repatriated into the reservoir since 1995. Since then, only 8 repatriates have been recaptured, the last of which occurred in 2005. A large striped bass which had consumed multiple bonytail was caught in the vicinity of a recent batch stocking, indicating that bonytail are also susceptible to striped bass predation.

The Lake Mohave striped bass fishery may be hindering native-fish recovery efforts. Although it is well documented that early life stages of native fish are vulnerable to predation (Marsh and Langhorst 1988, Mueller and Marsh 2002), it also appears that striped bass feed on some of the largest repatriates that are currently stocked into the reservoir. In order to reach recovery goals, substantial efforts should be made to create and manage additional off-channel backwater habitats that are free of piscivorous nonnative fish (Minckley et al. 2003, Mueller 2006).

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LITERATURE CITED


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