Red Shiner (*Cyprinella lutrensis*)

The body of the red shiner is highly compressed; it's snout is blunt and the mouth terminal. Color is tan to olivaceous dorsally, laterally silvery and usually whitish beneath. Males in breeding condition caudal and all lower fins reddened. Body pale top intense blue, with prominent, purplish crescents on body directly behind opercles. Top of head red; sides of head rosy to yellowish-pink (Minckley 1973).

This minnow is one of the most widespread and ubiquitous fishes of the western part of the Mississippi River Basin, thriving under conditions of intermittency, high turbidities, high temperatures. In Arizona, the red shiner has spread to most waters at lower elevations (below about 1,500 meters) except where excluded by physical barriers such as dams or waterfalls, and even has moved into and through the Grand Canyon of the Colorado River system (Minckley 1973).

The origin of most introduced red shiner populations can be attributed to bait bucket releases; however, initial introduction is often followed by the species' rapid multiplication, dispersal, and aggressive colonization (Nico and Fuller 2006). In northern California, red shiners were introduced as forage. Hubbs (1954) reported this species as established in the lower Colorado River Basin by 1953. He attributed the source of the introductions to escapes from the Arizona Fish Farms in Ehrenburg, Arizona. By 1963, it had reached upstream to south-central Arizona and by the late 1970s, had spread eastward by natural dispersal and transfer as baitfish to enter New Mexico.

Reproduction by red shiners is usually in calm water, and less often in riffles over boulders or fine gravel bottoms. Spawning activities have been noted adjacent to or over logs, boulders, submerged roots, aquatic plants, brush, and even on open gravel bottoms of aquaria and over the nests of sunfishes (Minckley 1973).

Red shiners are omnivorous. In lakes, they feed upon plankton and aquatic insect larvae, the latter presumably taken from along the shores where schools of the minnow tend to concentrate in summer. In streams, algae, invertebrates (aquatic and terrestrial) and young of other fishes have been found in shiners' stomachs (Minckley 1973).

Some believe that this fish has contributed significantly to the declines of native fish populations in the Southwest (Rinne and Fletcher 1994). The threatened, native spikedace disappeared simultaneously in the same, progressively upstream direction in the Gila River basin, presumably through interactions with the invading red shiner and in response to impacts of water development (Douglas et al 1994). The tolerance of red shiner to turbidity, its high critical thermal maximum, and the characteristic low faunal diversity of western streams may play an important role in the interactions or potential competition between spikedace and red shiners (Rinne 1991).

The high incidence of fish larvae ingested by red shiners suggest that this species may be an important predator on native fishes in the Colorado River system. Because red shiner occupy nursery habitats used by young native fishes, including Colorado squawfish and razorback sucker, predation by red shiner may have a significant effect on survival of larval fish (Ruppert et al. 1993). Also, red shiner has been described as an opportunistic drift feeder and therefore may prey on drifting fish larvae.

Work Cited

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