Virgin Spinedace *(Lepidomeda mollispinis)*

Species Status Statement.

Distribution

Virgin spinedace occupies all major tributaries of the Virgin River, including Beaver Dam Wash, Santa Clara River, Moody Wash, Magotsu Creek, Quail Creek, Leeds Creek, Ash Creek, La Verkin Creek, North Creek, East Fork of the Virgin River, Shunes Creek, and the North Fork of the Virgin River. Virgin spinedace also occupies suitable habitat in the mainstem Virgin River, from the East Fork confluence downstream to near the Quail Creek Diversion (QCD), and Timpoweap Canyon downstream from the QCD.

Table 1. Utah counties currently occupied by this species.

Virgin Spinedace
KANE
WASHINGTON

Abundance and Trends

By 1994, threats to the species had eliminated Virgin spinedace from approximately 40% of its historic distribution (Addley and Hardy 1993, Valdez et al. 1991). Since then however, targeted conservation actions have resulted in significant recovery of Virgin spinedace. Populations again occupy the Virgin River mainstem below the QCD, the Santa Clara River below Gunlock Reservoir, upper Beaver Dam Wash, Quail Creek, and Leeds Creek. In lower Ash Creek the species has been extirpated due to dewatering and flow depletion; however, conservation actions have restored Virgin spinedace populations in upper Ash Creek.

Managers complete annual population monitoring throughout Virgin River basin tributaries. Virgin spinedace populations are cyclical and driven largely by the water year. Long-term population monitoring results confirm that Virgin spinedace populations are currently stable throughout the Virgin River basin.

Statement of Habitat Needs and Threats to the Species.

Habitat Needs

Virgin spinedace habitat consists of clear, cool, swift streams that have interspersed pools, runs, and riffles (Lentsch et al. 1995). In faster-flowing reaches, these fish prefer shear zones between high and low velocities containing cover (Lentsch et al. 1995). In stiller waters, they likely prefer pools with cover elements such as undercut banks, boulders, debris, or emergent vegetation (Lentsch et al. 1995).

Threats to the Species

Primary threats to Virgin spinedace include habitat loss, fragmentation, and degradation. Mechanisms include flow depletion and dewatering caused by stream diversion, prolonged drought, fire and associated ash runoff, and invasive aquatic species including non-native fish, invertebrates, plants, and pathogens (USFWS 2008; Huizinga and Fridell 2012). In addition, intensive urban development within the range of the species will continue to threaten the Virgin spinedace and require intensive long-term management.

Table 2. Summary of a Utah threat assessment and prioritization completed in 2014. This assessment applies to the species' entire distribution within Utah. For species that also occur elsewhere, this assessment applies only to the portion of their distribution within Utah. The full threat assessment provides more information including lower-ranked threats, crucial data gaps, methods, and definitions (UDWR 2015; Salafsky et al. 2008).

Virgin Spinedace
Very High
Agricultural / Municipal / Industrial Water Usage
Droughts
Increasing Stream Temperatures
Invasive Wildlife Species - Non-native
Storms and Flooding
High
Commercial and Industrial Areas
Earthquakes
Housing and Urban Areas
Improper Grazing (current)
Inappropriate Fire Frequency and Intensity
Invasive Plant Species – Non-native
Presence of Diversions
Roads – Transportation Network
Sediment Transport Imbalance
Water Allocation Policies
Medium
Channelization / Bank Alteration (direct, intentional)
Dam / Reservoir Operation
Small Isolated Populations
OHV Motorized Recreation
Problematic Plant Species – Native Wetland
Thermal Alteration of Water (e.g., by power plant)

Rationale for Designation.

The Virgin Spinedace Conservation Agreement and Strategy (VSCAS) was developed in 1995 in accordance with the Endangered Species Act (ESA) to improve conditions that had resulted in the decline of Virgin spinedace. The VSCAS has been instrumental in facilitating the restoration of this species throughout the Virgin River basin. However, the numerous threats outlined above, as well as potential unforeseen future threats, will continue to require cooperative management to ensure persistence of the species. Existing partnerships will remain critical to ensure continued persistence of the species.

The November 20, 2012 petition to list Virgin spinedace as threatened or endangered under the ESA is currently under review by the U.S. Fish and Wildlife Service, and any protections or conservation designations provided for the species will emphasize Utah's enduring commitment to its conservation. Measures to conserve Virgin spinedace would also benefit Virgin River chub, woundfin, flannelmouth sucker, and desert sucker.

Economic Impacts of Sensitive Species Designation.

Sensitive species designation is intended to facilitate management of this species, which is required to prevent Endangered Species Act listing and lessen related economic impacts. If Virgin spinedace were listed under the ESA, it would add to the cost of mitigating water development, urban and industrial development, and nonnative species introductions in the Virgin River basin in Kane and Washington Counties.

Literature Cited.

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