

Woundfin (*Plagopterus argentissimus*)

Species Status Statement.

Distribution

The historical range of woundfin includes the Virgin River and its tributaries in Utah, Arizona, and Nevada (La Rivers 1994). In the mainstem Virgin River, woundfin ranged from the confluence of the Colorado River upstream to La Verkin Springs in Utah. It is possible that woundfin distribution extended upstream of La Verkin Springs, although no records exist. In addition to the Virgin River mainstem, woundfin also occupied La Verkin Creek. Woundfin may have been present in the Colorado River downstream of the Virgin River confluence and in the Gila River, but it is unclear if its distribution in these rivers was routine, or was only an occasional occurrence.

Currently, the only viable population occurs within a 16.3-mile reach in the upper Virgin River, between La Verkin Springs and Washington Fields Diversion (WFD). Individuals are occasionally found downstream of this reach to the confluence of the Beaver Dam Wash in Arizona, with periodic captures farther downstream into Nevada. The sporadic distribution of woundfin in the lower Virgin River is the result of drift following good reproduction years in the upper Virgin River. Individuals rarely persist or reproduce in the lower Virgin River.

Table 1. Utah counties currently occupied by this species.

Woundfin
WASHINGTON

Abundance and Trends

The decline of woundfin abundance and distribution resulted in its listing as endangered under the ESA in 1970 (USFWS 1994). In the mid to late 1980s, woundfin declined further throughout its range due to the colonization of red shiner. Since this later decline, woundfin have continued to persist only in the upstream reach of critical habitat (La Verkin Springs to WFD). Since monitoring began in 1976, high water years have correlated to high numbers of woundfin. Correspondingly, woundfin persist at low numbers during low water years; however, in 2015, woundfin populations increased despite many consecutive low water years. This increase in numbers is likely the success of ongoing management actions.

Statement of Habitat Needs and Threats to the Species.

Habitat Needs

Critical habitat for woundfin is the 100-year floodplain of the Virgin River from the confluence of La Verkin Creek, Utah to Halfway Wash, Nevada. Woundfin generally prefer runs with sand and cobble substrates (Greger and Deacon 1982; Rinne and Minckley 1991; Hardy et al. 2003). Adults typically live in shallow to deep sandy runs, but use less optimal habitat as necessary. As a result of drift, young (including larval, fry, and juvenile age classes) use low velocity areas that provide cover and are highly productive (e.g., small inflows and shallow slackwater margins). As juveniles grow, they use higher velocity habitats. Adults shift habitat use seasonally, moving from typical run habitat, seeking covered areas in winter (e.g., undercut banks, inundated/submerged vegetation, silt substrate) and thermal refuge areas during summer (e.g., cool water inflows, seeps, pools, springs, tributary mouths, and groundwater recharge areas below riffles). Woundfin also shift habitat use during high clarity or high temperature conditions, moving from preferred habitat to refuge areas with cover.

Protection and restoration of the 100-year floodplain of the Virgin River is important to recovery efforts for woundfin. Re-establishing the natural function of the Virgin River will benefit all native species found within the floodplain with greater success than long-term active management.

Threats to the Species

Many environmental and human induced factors jeopardize the continued persistence of woundfin within its limited distribution. Two of the factors most limiting survival and persistence are tightly related: low stream flows in summer, and high instream temperatures (Deacon and Hardy 1982; Deacon 1988; Hardy et al. 2003). Additional factors include non-native species (i.e., fish, invertebrates, plants), drought, altered streamflow regimes, diversions, decreased turbidity, water management events, and a decline of optimum spawning and rearing habitat (Hardy et al. 2003; USFWS 2008; Huizinga and Fridell 2012). In addition, these stressors and perturbations may be further exacerbated by disease, extreme natural events (e.g., fire), changing climatic trends, and periods of extended drought.

The constrained distribution of woundfin makes the species particularly vulnerable to catastrophic environmental events, and reduces its ability to respond. Populations may be resilient to a single factor, but the simultaneous or cumulative effects of multiple factors may severely impede recovery actions.

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).

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

Rationale for Designation.

In 2002, the Virgin River Resource Management and Recovery Program (Program) was established to coordinate and implement conservation and recovery actions in the Virgin River Basin within Utah as identified in the Virgin River Fishes Recovery Plan (UDNR 2002; USFWS 1994). While the Program has made significant progress over the past decade on woundfin recovery and conservation, the continued persistence of woundfin will require the active management of populations and habitat conditions for the foreseeable future. Washington County continues to experience rapid population growth and increasing demands on the Virgin River system for water development, therefore these factors will be a continuous threat that requires intensive management. Measures to conserve woundfin would also benefit Virgin River chub, Virgin spinedace, 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 reverse Endangered Species Act Listing and lessen related economic impacts. Woundfin is currently listed as endangered under the Endangered Species Act. This listing has resulted in extensive costs to mitigate water development, urban and industrial development, and nonnative species introductions in Washington County. If the species is downlisted or delisted, continued management efforts will be required to mitigate threats and maintain stronger populations.

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