Santa Clara River
Virgin Spinedace Restoration

VIRGIN RIVER PROGRAM

Conservation efforts implemented by Virgin River Program partners have successfully **restored Virgin Spinedace** populations to the **Santa Clara River** below Gunlock Reservoir

Innovative Solutions for Fish & Water Users

The **Santa Clara River** is a linear oasis running through the arid red-rock desert of southwestern Utah. As the river flows from mountainous headwaters to its confluence with the Virgin River, it brings vital resources to both **human communities** and **natural ecosystems**.

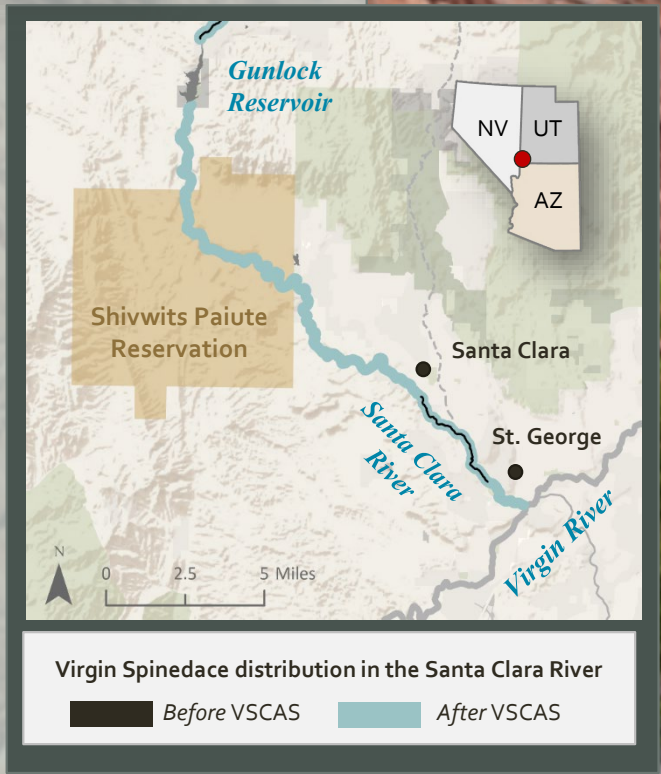
The Virgin Spinedace (*Lepidomeda mollispinis*), a resilient yet imperiled fish, was once prevalent throughout the Virgin River Basin. By 1990, numbers waned, particularly in the Santa Clara River, where **stream drying** resulted in the local **extirpation** of spinedace downstream from Gunlock Reservoir.

In response to dwindling spinedace populations, local, state, tribal, and federal partners created the **Virgin Spinedace Conservation Agreement and Strategy** (VSCAS) in 1995, aiming to remove factors warranting the proposed Endangered Species Act (ESA) listing.

VSCAS partners spearheaded critical projects in the Santa Clara River, including controlling invasive fish species and increasing water delivery efficiency. Above all, **restoring streamflow** was prioritized to re-establish the natural river conditions essential for Virgin Spinedace recovery.

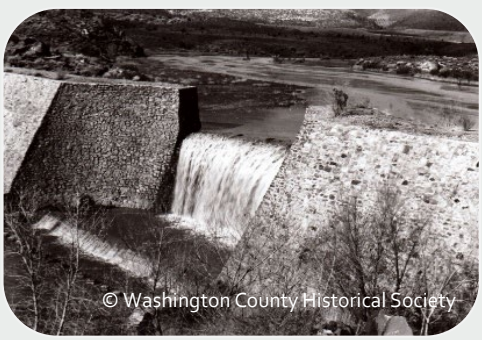
The initiative's **success** is clear. The Virgin Spinedace thrives again in the lower Santa Clara River, from Gunlock Reservoir to the Virgin River. In 1996 and 2021, the U.S. Fish and Wildlife Service (USFWS) recognized the VSCAS's impact, concluding that ESA protection was unnecessary.

This success story exemplifies how **collaborative conservation** sustains both ecological and community health.



TIMELINE:
Virgin Spinedace Restoration in the Santa Clara River

pre-1990	Streamflow reduction caused Virgin Spinedace **extirpation** downstream of Gunlock Reservoir.
1992	U.S. Fish & Wildlife Service (USFWS) was petitioned to list the Virgin Spinedace under the **Endangered Species Act** (ESA).
1992-1994	Local, state, & federal partners developed conservation strategies for Virgin Spinedace in the Santa Clara River.
1995	The **Virgin Spinedace Conservation Agreement & Strategy** was established; ESA listing deemed unnecessary by USFWS.
1998-2001	The **Santa Clara Project** updated antiquated irrigation canals with efficient pressurized pipes, conserving water.
2000	***Shivwits Band*** *of the Paiute Indian Tribe of Utah Water Rights Settlement Act* passed, securing water for the tribe.
2001-2005	Experiments identified the best locations to **release newly-acquired water** & restore perennial streamflow.
2002-2010	Outdated **water diversion structures** were modified or destroyed by floods, allowing upstream fish passage.
2006	**Perennial streamflow** restored to the lower Santa Clara River!
2009-present	Removal efforts conducted to control populations of predatory, **non-native fishes**.
2010	**Virgin Spinedace** translocated to newly restored habitat & established self-sustaining populations in the lower Santa Clara River.
2010-present	Newly established Virgin Spinedace populations **monitored** annually to ensure their persistence in the Santa Clara River.



Winsor Dam

Riparian Habitat


Gunlock Falls

What's Next?

Virgin Spinedace populations will require ongoing active management to ensure conservation gains are not reversed. Priorities include maintaining healthy riparian habitat, native fish populations, and restored flows. Cooperative partnerships will be critical to continued success.

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