

LOSS OF NATURAL PERENNIAL FLOW IN ARIZONA'S STREAMS

The Nature Conservancy, Conservation Science Program

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The graphic to the right depicts the digital version of a data set originally compiled by the Arizona Game & Fish Department delineating the loss of natural perennial flow in Arizona's streams.

Historically Perennial = 5,132 miles

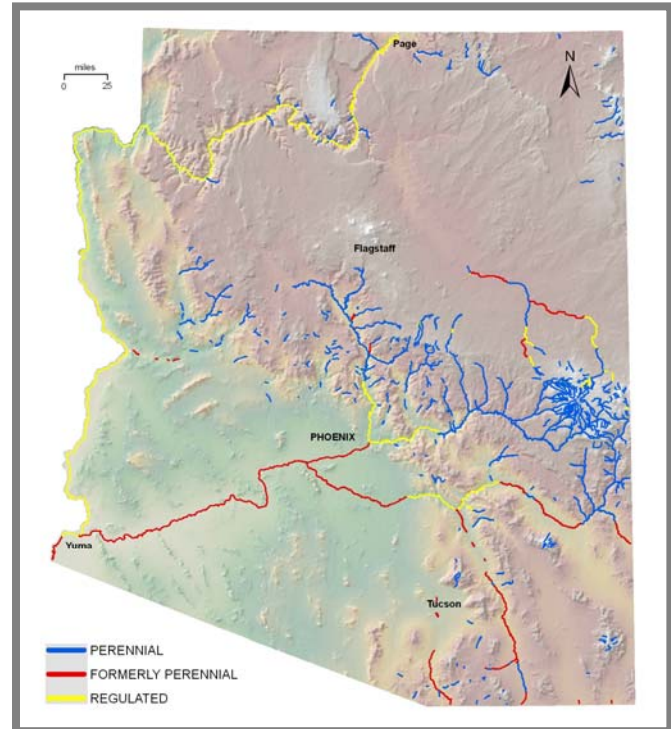
Currently Perennial = 3,323 miles

% Loss of Perennial
Flow State-Wide = 35%

The loss of naturally-flowing perennial reaches has been most profound on Arizona's big rivers – Colorado, Gila, Salt, and Verde – where 91% of free-flowing perennial miles have been lost.

On moderate-sized rivers – San Pedro, Santa Cruz, Little Colorado, White, Black, Blue, San Francisco, and Babocomari – 37% of naturally flowing perennial reaches have been lost.

In the remaining creeks and streams, which consist chiefly of streams draining the White Mountains and small discontinuous perennial flow reaches in other locations, at least 9% of free flowing perennial reaches have been lost.



Figures for loss of perennial flow include formerly perennial reaches that are now dry and reaches that are now regulated, chiefly due to dam construction.

PROJECT SUMMARY

- Data from Brown, Carmony, and Turner's 1981 map, *Drainage Map of Arizona Showing Perennial Streams and Some Important Wetlands*, was digitized to quantify loss of natural perennial flow and determine areas where restoration of flow may be possible. "Formerly perennial" was determined from records of native fish distribution.
- For analytical purposes three flow categories were developed (1) perennial; (2) formerly perennial, now dry; or (3) regulated. All stream reaches were assigned to one category.
- This data set does not consider conversion or degradation of habitat in streams that retain perennial flow, nor is loss of wetlands such as springs, wet meadows, or cienégas documented.
- Data were attributed to EPA's National Hydrography Data Set to facilitate stream-based analyses using a dynamic segmentation protocol; this protocol enables multiple biological, ecological or physical stream-based attributes to be incorporated into the data set.