

Comparison of stream assessments on four parts of Sonoita Creek between 2014 and 2018

by Andy Gould, 3/27/19

Volunteers of the Friends of Sonoita Creek, trained in Rapid Stream Riparian Assessment (RSRA) by Dr. Pete Stacey, have conducted surveys using this method on four different portions of Sonoita Creek at various times between 2014 and 2018. Areas surveyed have been:

- The Nature Conservancy (TNC) Patagonia Sonoita Creek Preserve
- Two portions of Sonoita Creek in Patagonia Lake State Park (PLSP) – Upper and Lower
- A portion of the creek on State Trust land below the Patagonia Lake Dam.

The Nature Conservancy (TNC) Patagonia Sonoita Creek Preserve

Sonoita Creek begins flowing above ground in this preserve and has been protected from cattle grazing for over fifty years. Of the four areas studied it has the best soil integrity and the best overall score for Hydrogeomorphology (physical structure of the stream bed). It also has the best overall scores for riparian vegetation and wildlife habitat. On a scale from one to five with five being the best, this area scored 3.4 overall. Unfortunately the stream was already quite entrenched before it became protected from cattle so floodwaters no longer spread out and soak in as they once did.

Patagonia Lake State Park (PLSP) – Upper Sonoita Creek

Sonoita Creek in Patagonia Lake State Park above the lake has never been protected from cattle grazing on the surrounding State Trust land. As a result of cattle and massive monsoon flooding the streambed is being severely eroded. The floodplain is being undercut by a feature called a headcut that funnels the floodwater into an entrenched channel rather than allowing it to spread out and soak in. Just in the past ten years this headcut has moved upstream about a mile from the east end of the lake to its present location about halfway from the lake to the Circle Z fence. This headcut is the major reason for the difference in scores between the upper portion of the creek and the lower.

The upper part of Sonoita Creek had the best shading and the best overall score for aquatic habitat. Shade is vital for animal life in the stream. This portion has the least entrenchment and no unstable banks. As wildlife habitat it ranks best, slightly above TNC. While it is still accessible to and grazed by cows, they seem to prefer the lower part of the creek closer to the lake. On the five-point scale it scores 3.3, just below TNC.

Patagonia Lake State Park (PLSP) – Lower Sonoita Creek

Scores on the part of the creek below the headcut are very similar to those on the creek below the dam. Both areas show considerable damage due to grazing cattle. Neither of these areas is as good as TNC or the upper part of the creek in the Park. They both score 2.7 on the five point scale.

Below the Patagonia Lake Dam

Scores on this part of the creek are similar to those in the park below the headcut. The dam might provide some protection from extreme flooding were it not for a spillway allowing the lake to overflow. Evidence of flooding in the form of extensive gravel banks and logjams is obvious here.

For a complete set of scores from these surveys contact Andy Gould at gould226@hotmail.com