



Nashville Crayfish Species Status Assessment Overview





Stakeholder Engagement

- SEAFWA nexus
- Stakeholder letters
- MCWA presentation
- Expert review and engagement





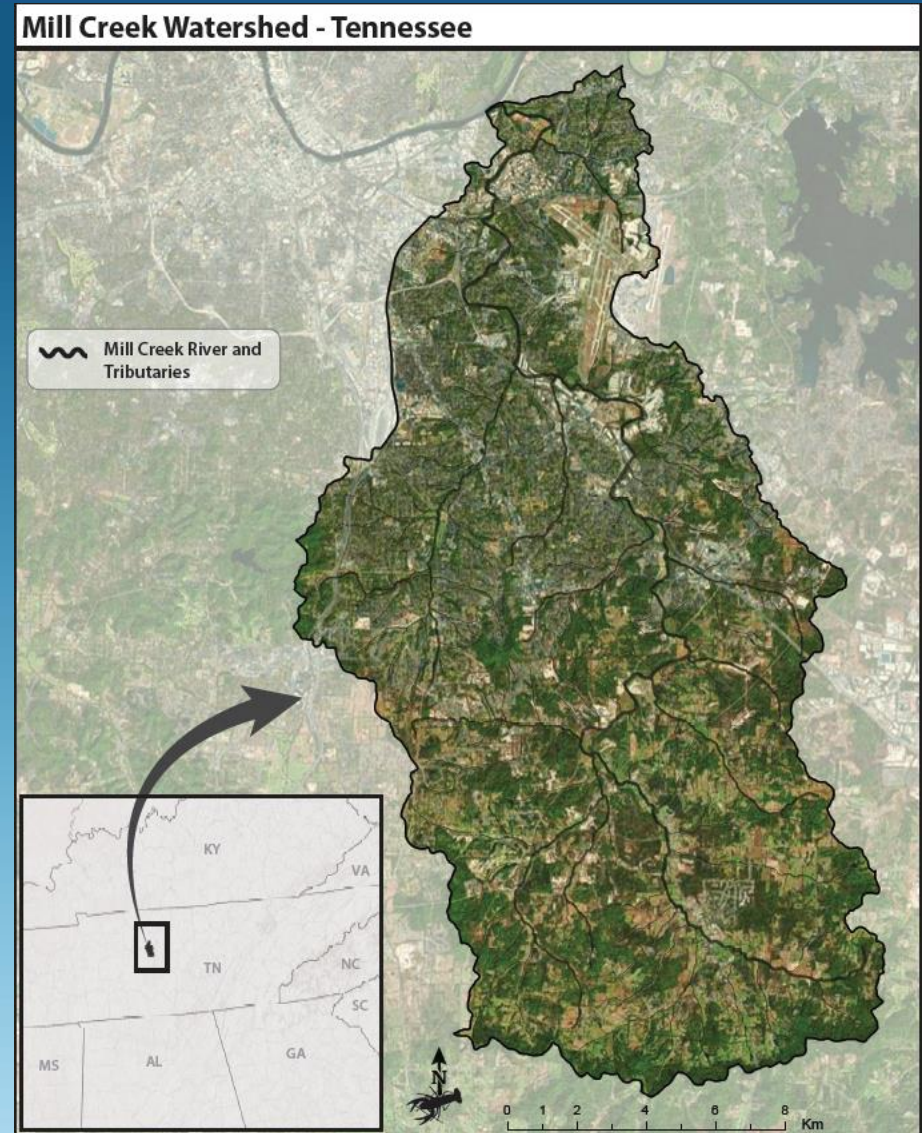
Listing & Recovery History

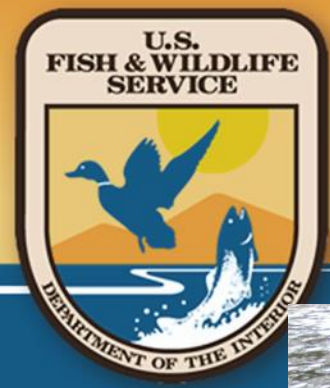
Listing

- 1986: Endangered

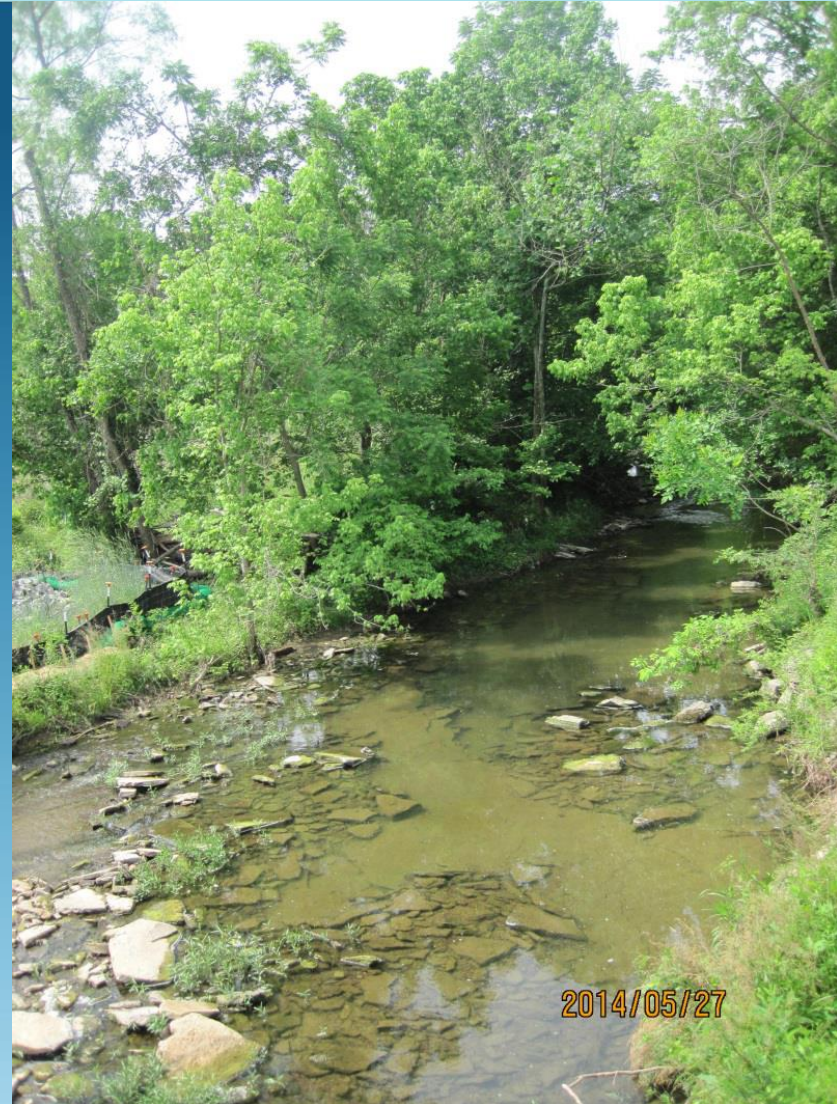
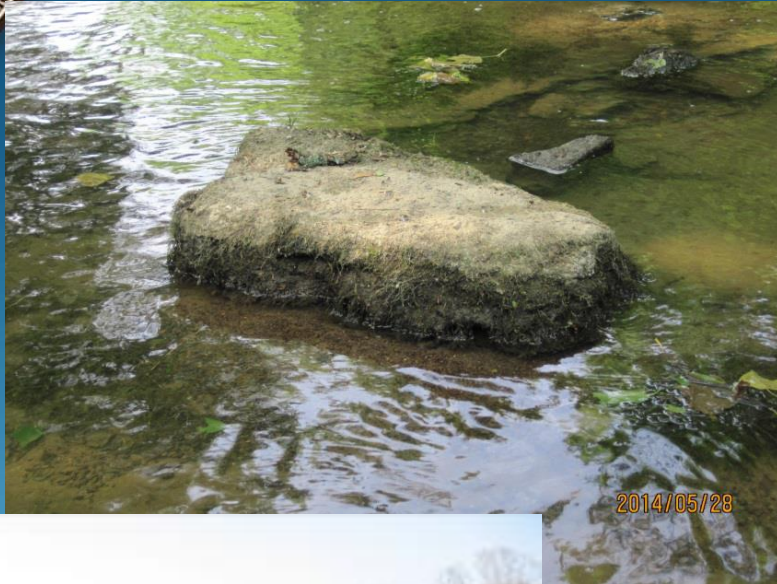
Recovery:

- 1989—Recovery Plan
- 2017—5-year Review





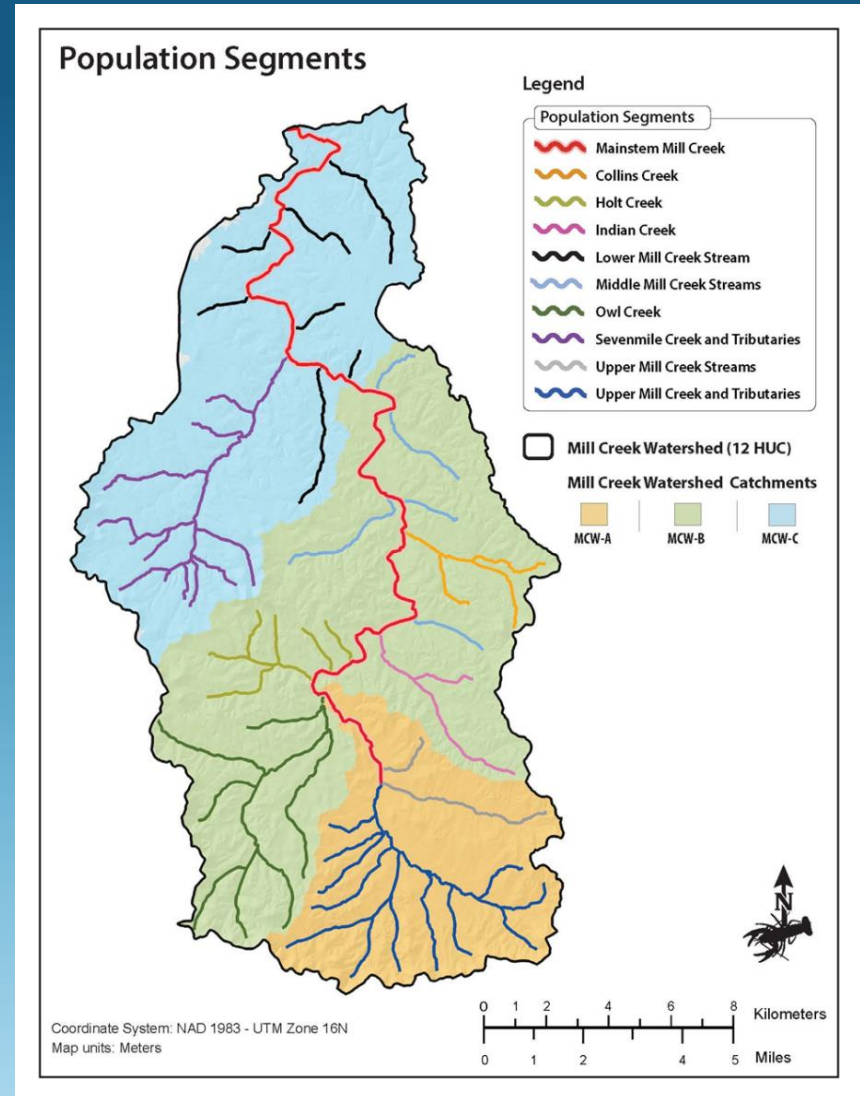
Habitat





Population Segments

- Resilience Rules
- Expert Input
- 3 categories

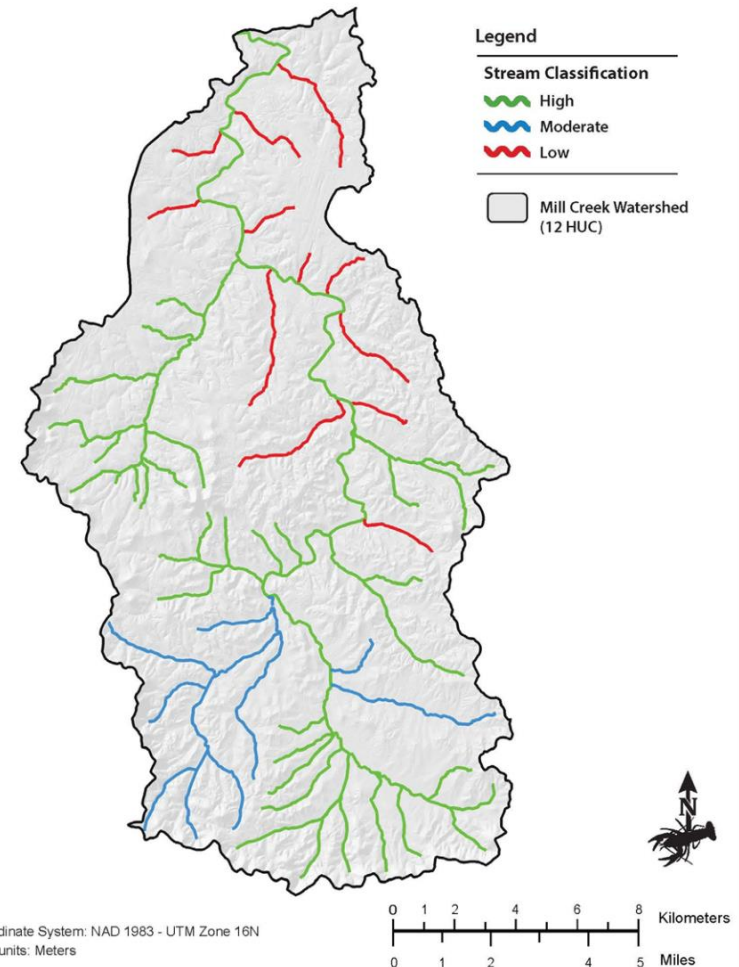




Current Resilience Summary

- 10 population segments
 - 6 High; 2 Moderate; 2 Low
 - High (145 miles); Moderate (20 miles); Low (26.5 miles)

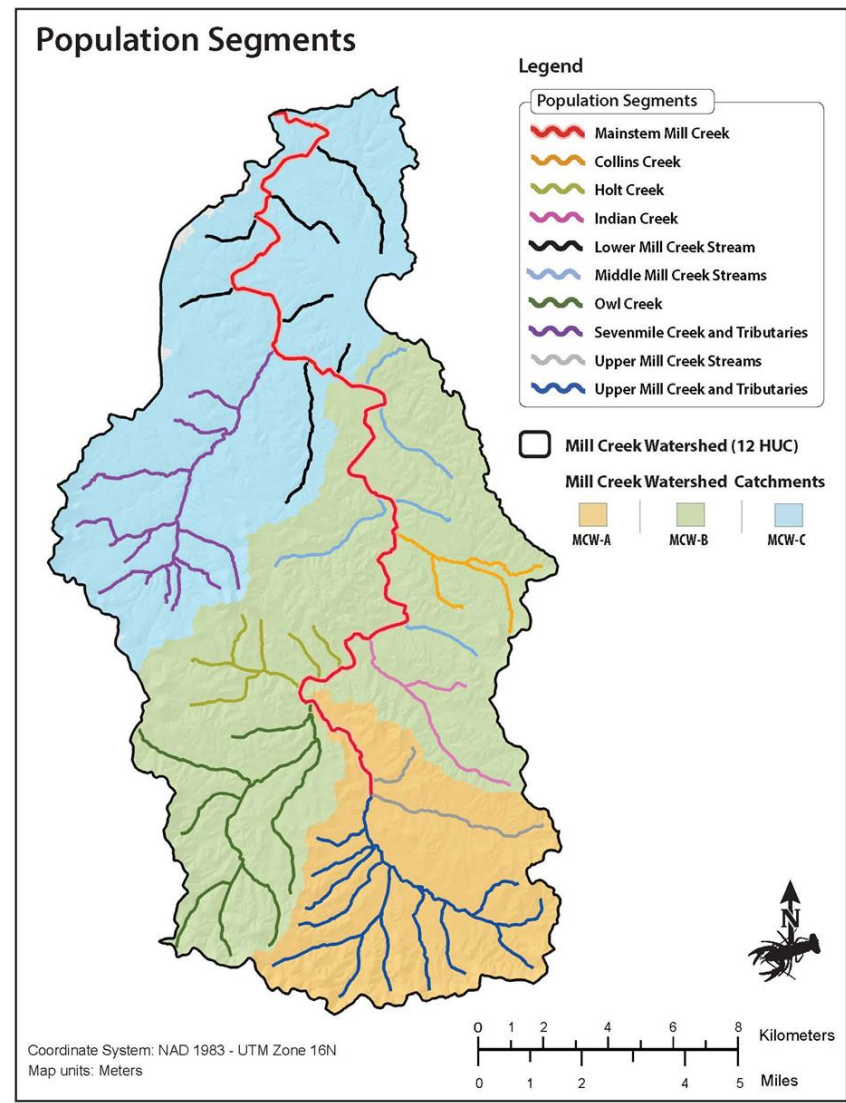
Population Segments - Stream Classification





Representation and Redundancy

- 61.8 miles: southern unit.
 - 49.6 miles high (80%); 12.2 miles low (20%).
- 72.6 miles: central unit.
 - 43.6 miles high (60%); 19.7 miles moderate (27%); 9.3 miles low (13%).
- 57.1 miles: northern unit.
 - 52.1 miles high (91%); 5.0 mile low (9%).



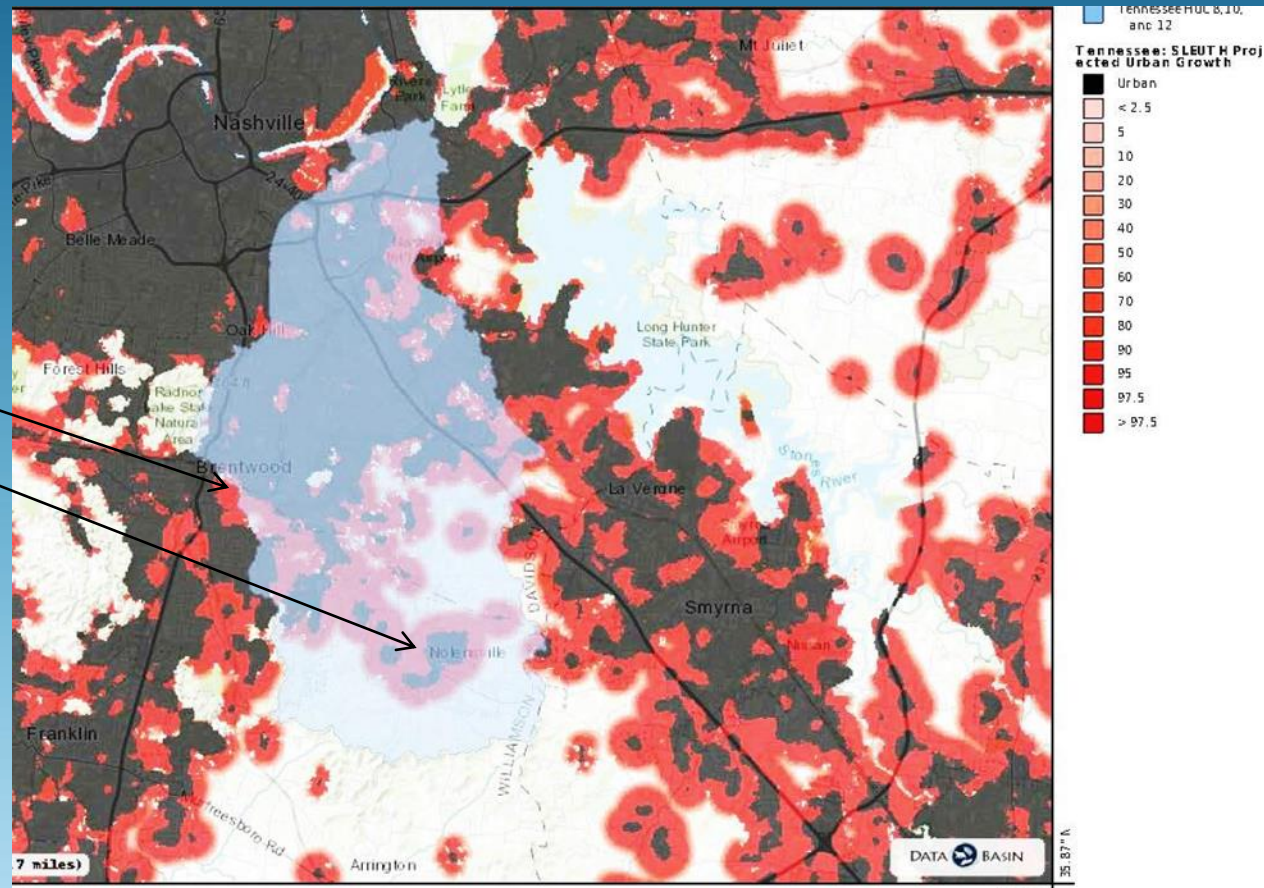


Urban Development

Urban development is our primary proxy for projecting future water quality

Urban development projections out to 2040

Hotspots:
Brentwood
Nolensville





Future Conditions

- Threats: Water quality impairment; spill risk
- Assessed viability to 2040 under 3 scenarios
 - Why 2040? EO scoring; development and population projections; life span
 - Different scenarios represent our uncertainty in the response of crayfish to risk factors
 - Status Quo** = some localized impacts anticipated
 - Worst Case** = effects in high intensity areas are much greater in magnitude
 - Conservation** = targeted conservation ameliorates some of the anticipated effects

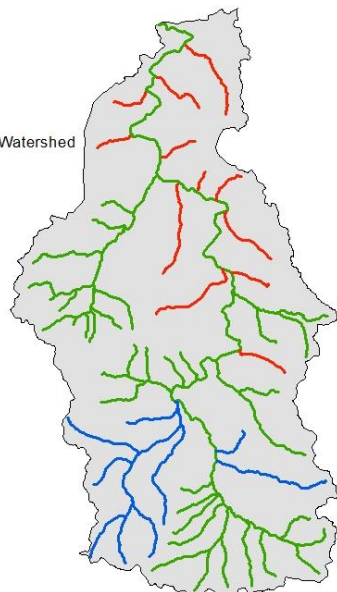


Future Summary

Catchment	Segment	Current	Status Quo	Conservation	Worst Case
Lower, Middle, Upper	Mainstem	High	High	High	Moderate
Lower	Lower Streams	Low	Low	Moderate	Low
Lower	Sevenmile	High	High	High	Moderate
Middle	Indian Creek	High	High	High	High
Middle	Holt Creek	High	High	High	High
Middle	Owl Creek	Moderate	Low	Moderate	Low
Middle	Collins Creek	High	High	High	Moderate
Middle	Middle Streams	Low	Low	Low	Low
Upper	Upper System	High	Moderate	High	Moderate
Upper	Upper Streams	Moderate	Moderate	High	Moderate

Population Resilience

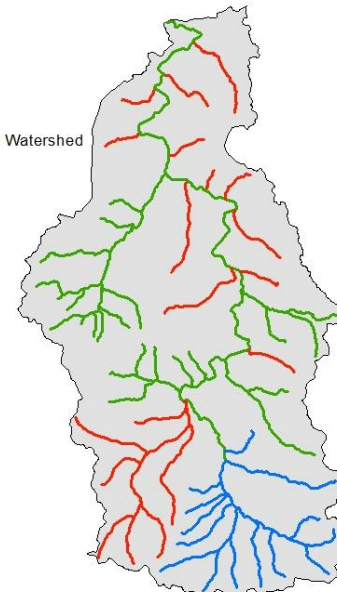
Current



Questions?

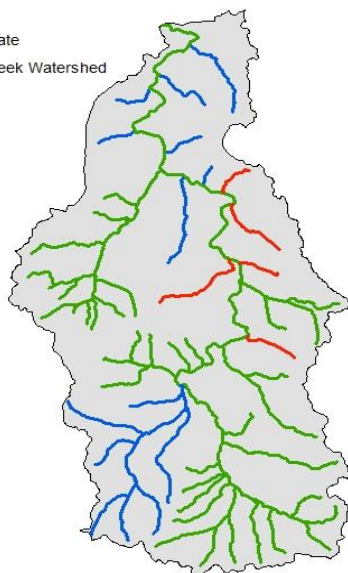
Population Resilience

Status Quo



Population Resilience

Conservation



Population Resilience

Worst Case

