

Fishery Resources of South Dakota

Fish diversity and persistence in eastern South Dakota rivers and streams

Jeff Shearer, South Dakota GF&P, Pierre, South Dakota; Charles Berry, U.S. Geological Survey, South Dakota Cooperative Fish & Wildlife Research Unit.

Wednesday, August 11 – 11:10 – 11:30 a.m. International West

ABSTRACT: The variable nature of prairie streams leads to systems predominantly influenced by abiotic controls that foster persistent fish communities with unstable populations. The interannual cycling of wet and dry years provides a temporal scale within which stream flows vary and fish communities must adapt. Following records in minimum and maximum discharge within the James River basin, we examined fish community persistence by comparing historical data with recent surveys. Additionally, we compared fish community persistence over several decades for the Vermillion and Big Sioux River basins. While there have been some extirpations and additions, 85 to 93% of the native fish community in eastern South Dakota has persisted over the past 25 years. The interannual variability in flow regime of the James and other eastern South Dakota rivers has resulted in a fish community capable of tolerating harsh physiochemical conditions. While fish population levels will fluctuate with water levels, fish community persistence should be maintained as long as biotic integrity is preserved.