
SPATIAL DRIFT DYNAMICS OF SHOVELNOSE STURGEON AND PALLID STURGEON PRELARVAE IN THE TRANSITION ZONE OF FT. PECK RESERVOIR

Steven H. Ranney and Christopher S. Guy, U.S. Geological Survey, Montana Cooperative Fishery Research Unit, Montana State University, P.O. Box 173460, Bozeman, Montana 59717 Steven.Ranney@Montana.edu

Patrick J. Braaten, U.S. Geological Survey, Columbia Environmental Research Center, Fort Peck Project Office, Fort Peck, Montana 59223

David B. Fuller, Montana Department of Fish, Wildlife and Parks, Fort Peck Fisheries Office, Fort Peck, Montana 59223

Molly A. Webb and Kevin M. Kappenman, USDI Fish and Wildlife Service, Bozeman Fish Technology Center, 4050 Bridger Canyon Road, Bozeman, Montana 59715 Molly_Webb@fws.gov

William M. Gardner, Montana Fish, Wildlife and Parks, Lewistown Area Resource Office, 215 W Aztec Drive, Lewistown, MT 59457 BGardner@mt.gov

Habitats in reservoir headwaters may cause high mortality of sturgeon prelarvae. Short inter-reservoir reaches export drifting prelarvae from hatch locations into reservoirs. However, flooded vegetation could entrain prelarvae. We used 2 day post hatch (dph) shovelnose sturgeon (*Scaphirhynchus platyrhynchus*) and 1-dph pallid sturgeon (*Scaphirhynchus albus*) to determine the spatial dynamics of drifting prelarvae. We released 220,000 2-dph shovelnose sturgeon 4 km upstream of Ft. Peck Reservoir and 135,000 1-dph pallid sturgeon 2.5 km upstream of the reservoir the following day. We recaptured shovelnose sturgeon prelarvae with nets deployed along three transects of the transition zone and within the headwaters of the reservoir. We sampled 5148.2 m³ of water and recaptured 323 prelarval shovelnose sturgeon for a recapture rate of 0.14 percent. Fifty-nine percent of recaptured prelarvae were recaptured from the thalweg, 12 percent from the flooded vegetation-main channel interface, 9 percent from the channel border, and 19 percent from the zero-velocity area of Ft. Peck Reservoir. We recaptured pallid sturgeon prelarvae with nets deployed along one transect of the transition zone and within the headwaters of the reservoir. We sampled 6608.5 m³ of water and recaptured 397 pallid sturgeon prelarvae for a recapture rate of 0.29 percent. Twenty-one percent of prelarvae were recaptured within the thalweg, 0.25 percent were recaptured along the channel margins, and 79 percent from the zero-velocity area of Ft. Peck Reservoir. Although recapture rates were low, the majority of prelarvae were captured in the thalweg and transported to the headwaters of Ft. Peck Reservoir. The drift dynamics observed in this study provide a springboard for further research.