



Missouri River Publications, 2006-2011

Columbia Environmental Research Center

2011

King, T.L., Eackles, M.S., and Chapman, D.C., 2011, Tools for assessing kinship, population structure, phylogeography, and interspecific hybridization in Asian carps invasive to the Mississippi River, USA: Isolation and characterization of novel tetranucleotide microsatellite DNA loci in silver carp *Hypophthalmichthys molitrix*. Conservation Genetics Resources.

Tracy-Smith, E., Galat, D., and Jacobson, R.B., 2011, Effects of flow dynamics on the aquatic-terrestrial transition zone (ATTZ) of Lower Missouri River sandbars with implications for selected biota: River Research and Applications, p. 51.

2010

Braaten, P.J., Fuller, D.B., Lott, R.D., Ruggles, M.P., Holm, R.J. 2010. Spatial distribution of drifting pallid sturgeon larvae in the Missouri River inferred from two net designs and multiple sampling locations. North American Journal of Fisheries Management 30:1062-1074.

Bryan, J.L., Wildhaber M.L., and Gladish, D.W. , 2010, Power to Detect Trends in Missouri River Fish Populations within the Habitat Assessment Monitoring Program: USGS OFR 2010-1011, 42 p., <http://pubs.er.usgs.gov/usgspubs/ofr/ofr20101011>.

Bryan, J.L., Wildhaber M.L., Gladish, D.W., Holan, S., and Ellerseick, M., 2010, The power to detect trends in Missouri River fish populations within the Pallid Sturgeon Population Assessment Program: USGS OFR 2010-1020, 414 p., <http://pubs.usgs.gov/of/2010/1020/>

Caitlin, D., Jacobson, R.B., Sherfy, M.H., Anteau, M.J., Felio, J., Fraser, J.D., Lott, C., Shaffer, T.L., and Stucker, J., 2010, Discussion of "Natural Hydrograph of the Missouri River near Sioux City and the Least Tern and Piping Plover" by Donald Jorgensen: Journal of Hydrologic Engineering, v. 15, no. 12, p. 1076-1078.

Candrl, J., Papoulias, D.M., Tillitt, D.E., 2010, A minimally invasive method for extraction of sturgeon oocytes. North American Journal of Aquaculture. 72: 184-187.

DeLonay, A.J., Jacobson, R.B., Papoulias, D.M., Wildhaber, M.L., Chojnacki, K.A., Pherigo, E.K., Bergthold, C.L., and Mestl, G.E., 2010, Ecological requirements for pallid sturgeon reproduction and recruitment in the Lower Missouri River: Annual report 2009: USGS OFR 2010-1215, 64 p. <http://pubs.er.usgs.gov/publication/ofr20101215>

DeLonay, A.J., 2010, The Pallid Sturgeon: scientific investigations help understand recovery needs: USGS Fact Sheet 2010-3024, 4 p., <http://pubs.usgs.gov/fs/2010/3024>.

Jacobson, R.B., 2010, River-corridor habitat dynamics: USGS Fact Sheet 2010-3022, 2 p., <http://pubs.usgs.gov/fs/2010/3022>.

Jacobson, R.B., Elliott, C.M., and Huhmann, B.L., 2010, Development of a Channel Classification to Evaluate Potential for Cottonwood Restoration, Lower Segments of the Middle Missouri River, South Dakota and Nebraska USGS SIR 2010-5208, 38 p. <http://pubs.usgs.gov/sir/2010/5208>

Wildhaber, M.L., 2010, Modeling climate change and sturgeon populations in the Missouri River: USGS Fact Sheet 2010-3019, 2 p., <http://pubs.usgs.gov/fs/2010/3019>.

2009

Braaten, P.J., Fuller, D.B., Lott, R.D., and Jordan, G.R., 2009, An estimate of the historic population size of adult pallid sturgeon in the upper Missouri River basin, Montana and North Dakota: Journal of Applied Ichthyology 25 (s2), p. 2-7.

Braaten, P.J., Fuller, D.B., and Lott, R.D., 2009. Spawning migrations and reproductive dynamics of paddlefish in the upper Missouri River basin, Montana

and North Dakota. Pages 103-122 in Paukert, C., and Scholten, G., eds. Paddlefish management, propagation, and conservation in the 21st century—building from 20 years of research and management. American Fisheries Society, Symposium 66, Bethesda, MD.

Chapman, D.C. and Deters, J.E., 2009, Effect of water hardness and dissolved-solid concentration on hatching success and egg size in bighead carp, *Transactions of the American Fisheries Society*, 138(6): p. 1226-1231.

DeLonay, A.J., Jacobson, R.B., Papoulias, D.M., Simpkins, D.G., Wildhaber, M.L., Reuter, J.M., Bonnot, T.W., Chojnacki, K.A., Korschgen, C.E., Mestl, G.E., and Mac, M.J., 2009, Ecological requirements for pallid sturgeon reproduction and recruitment in the Lower Missouri River: A research synthesis 2005–08: USGS SIR 2009–5201, 59 p., <http://pubs.usgs.gov/sir/2009/5201>.

Elliott, C.M., Huhmann, B.L., and Jacobson, R.B., 2009, Geomorphic classification of the Lower Platte River, Nebraska: USGS SIR 2009-5198, 29 p., <http://pubs.usgs.gov/sir/2009/5198>.

Elliott, C.M., Reuter, J.M., and Jacobson, R.B., 2009, Channel morphodynamics in four reaches of the Lower Missouri River, 2006-07: USGS SIR 2009–5074, 258 p., <http://pubs.usgs.gov/sir/2009/5074>.

Guy, C.S., Braaten, P.J., Herzog, D.P., 2009, Warmwater fish in rivers, in Bonar, S.A., Hubert, W.A., and Willis, D.W., eds, Standard methods for sampling North American freshwater fishes: Bethesda, MD, American Fisheries Society, p. 59–84.

Holan, S.H., Davis, G.M., Wildhaber, M.L., DeLonay, A.J., and Papoulias, D.M., 2009, Hierarchical Bayesian Markov switching models with application to predicting spawning success of shovelnose sturgeon: *Applied Statistics*, v. 58, no. 1, p. 47–64.

Jacobson, R.B., Blevins, D.W., and Bitner, C.J., 2009, Sediment regime constraints on river restoration—an example from the Lower Missouri River, in James, A., Rathburn, S., and Whittecar, R., eds., *Management and Restoration of Fluvial Systems with Broad Historical Changes and Human Impacts*: Denver, CO, Geological Society of America, p. 42.

Jacobson, R.B., Johnson III, H.E., and Dietsch, B.J., 2009, Hydrodynamic simulations of physical aquatic habitat availability for pallid sturgeon in the Lower Missouri River, at Yankton, South Dakota, Kenslers Bend, Nebraska, Little Sioux, Iowa, and Miami, Missouri, 2006-07: USGS SIR 2009-5058, 55 p., <http://pubs.usgs.gov/sir/2009/5058>.

Jamieson, E., Rennie, C.D., and Jacobson, R.B., 2009,

Evaluation of flow structure and bed load velocity in the vicinity of a submerged wing dike in a large sand bed river, in 33rd IAHR 2009 Congress: Water Engineering for a Sustainable Environment, Vancouver, BC, p. 1-8.

Li, S. F., Xu, J. W., Yang, Q. L., Wang, C. H., Chen, Q., Chapman, D. C., and Lu, G., 2009, A comparison of complete mitochondrial genomes of silver carp *Hypophthalmichthys molitrix* and bighead carp *Hypophthalmichthys nobilis*: implications for their taxonomic relationship and phylogeny. *Journal of Fish Biology* 74:1787–1803.

Reuter, J.M., Jacobson, R.B., Elliott, C.M., and DeLonay, A.J., 2009, Assessment of Lower Missouri River physical aquatic habitat and its use by adult sturgeon (Genus *Scaphirhynchus*) 2005–07: USGS SIR 2009-5121, 81 p., <http://pubs.usgs.gov/sir/2009/5121>.

2008

Arab, A., Wildhaber, M.L., Wikle, C.K., and Stoner, C.N., 2008, Zero-inflated modeling catch per unit area resulting from multiple gears: application to channel catfish and shovelnose sturgeon in the Missouri River: *North American Journal of Fisheries Management* v. 28, p. 1044-1058.

Braaten, P.J., Fuller, D.B., Holte, L.D., Lott, R.D., Viste, W., Brandt, T.F., and Legare, R.G., 2008, Drift dynamics of larval pallid sturgeon and shovelnose sturgeon in a natural side channel of the Upper Missouri River, Montana: *North American Journal of Fisheries Management*, v. 28, p. 808-826.

Braaten, P.J., 2008, Pallid sturgeon research in the Upper Missouri River basin of Montana and North Dakota: *Fisheries and Aquatics Bulletin: Volume VIII, Issue 2, Summer/Fall 2008*.

Heuser, J.L., 2008, Understanding pallid sturgeon in the Big Muddy: U. S. Fish and Wildlife Service Endangered Species Bulletin 33 (3), Fall, 64 pp., p. 33-35.

Jacobson, R.B., 2008, Analysis of pulsed flow modification alternatives, Lower Missouri River, 2005: USGS OFR 2008-1113, <http://pubs.usgs.gov/of/2008/1113/>

Jacobson, R.B. and Galat, D.L., 2008, Design of a naturalized flow regime—an example from the Lower Missouri River, USA: *Ecohydrology*, v. 1, p. 81-104.

Reuter, J.M., Jacobson, R.B., Elliott, C.M., Johnson, H.E., and DeLonay, A.J., 2008, Hydraulic and substrate maps of reaches used by sturgeon (genus *Scaphirhynchus*) in the Lower Missouri River, 2005–07: USGS Data Series 386, 442 p. <http://pubs.usgs.gov/>

ds/386.

Wildhaber, M.L., 2008, The role of reproductive behavior in the conservation of fishes—examples from the Great Plains riverine fishes: *American Currents* 34(1):16-23 (reprinted from *The Conservation Behaviorist* 4(1):p.15-19).

2007

Bajer, P.B. and Wildhaber, M.L., 2007, Population viability analysis of Lower Missouri River shovelnose sturgeon with initial application to the pallid sturgeon: *Journal of Applied Ichthyology* 23(4), p. 457–464.

Braaten, P.J. and Fuller, D.B., 2007, Growth rates of young-of-year shovelnose sturgeon in the Upper Missouri River: *Journal of Applied Ichthyology*, v. 23, p. 506-515.

Braaten, P.J., Fuller, D.B., and McClenning, N.D., 2007, Diet composition of larval and young-of-year shovelnose sturgeon in the Upper Missouri River: *Journal of Applied Ichthyology*, v. 23, p. 516-520.

Bryan, J.L., Wildhaber, M.L., Papoulias, D.M., DeLonay, A.J., Tillitt, D.E., and Annis, M.L., 2007, Estimation of gonad volume, fecundity, and reproductive stage of shovelnose sturgeon using sonography and endoscopy with application to the endangered pallid sturgeon: *Journal of Applied Ichthyology*, v. 23, p. 411-419.

DeLonay, A.J., Papoulias, D.M., Wildhaber, M.L., Annis, M.L., Bryan, J.L., Griffith, S.A., Holan, S.H., and Tillitt, D.E., 2007, Use of behavioral and physiological indicators to evaluate *Scaphirhynchus* sturgeon spawning success: *Journal of Applied Ichthyology*, v. 23, p. 428-435.

Echols, K.R., Brumbaugh, W.G., Orazio, C.E., May, T.W., Poulton, B.C., and Peterman, P.H., 2007, Distribution of pesticides, PAHs, PCBs, and bioavailable metals in depositional sediments of the Lower Missouri River, USA: *Arc Environ Contam Toxicol*.

Gaeuman, D. and Jacobson, R.B., 2007, Field assessment of alternative bed-load transport estimators: *Journal of Hydraulic Engineering*, v. 133, no. 12, p. 1319-1328.

Gaeuman, D. and Jacobson, R.B., 2007, Quantifying fluid and bed dynamics for characterizing benthic physical habitat in large rivers: *Journal of Applied Ichthyology*, v. 23, p. 359-364.

Jacobson, R.B., Chojnacki, K.A., and Reuter, J.M., 2007, Land Capability Potential Index (LCPI) for the Lower Missouri River Valley: USGS OFR 2007-1192,

19 p.

Kolar, C.S., Chapman, D.C., Courtenay, W.R., Housel, C.M., Williams, J.D., and Jennings, D.P., 2007, Bigheaded carps—a biological synopsis and environmental risk assessment: *American Fisheries Society Special Publication* 33, 208 p.

Korschgen, C.E., 2007, Factors affecting the reproduction, recruitment, habitat, and population dynamics of pallid sturgeon and shovelnose sturgeon in the Missouri River: USGS OFR 2007-1262, 280 p.

Laustrop, M.S., Jacobson, R.B., and Simpkins, D.G., 2007, Distribution of potential spawning habitat for sturgeon in the Lower Missouri River, 2003–06: USGS OFR 2007-1192, 26 p.

U.S. Geological Survey, 2007, Sturgeon research update—confirmed pallid sturgeon spawning in the Missouri River, 2007: USGS Fact Sheet 2007-3053, 4 p.

Wildhaber, M.L., DeLonay, A.J., Papoulias, D.M., Galat, D.L., Jacobson, R., Simpkins, D.G., Braaten, P.J., Korschgen, C.E., and Mac, M.J., 2007, A conceptual life-history model for pallid and shovelnose sturgeon: USGS Circular 1315, 18 p.

Wildhaber, M.L., Papoulias, D.M., DeLonay, A.J., Tillitt, D.E., Bryan, J.L., and Annis, M.L., 2007, Physical and hormonal examination of Missouri River shovelnose sturgeon reproductive stage—a reference guide: *Journal of Applied Ichthyology*, v. 23, p. 382-401.

2006

Chapman, D.C., ed., 2006, Early development of four cyprinids native to the Yangtze River, China: USGS Data Series 239, 51 p.

Chojnacki, K., Tracy–Smith, E., Clark, S., DeLonay, A., and Henke, C., 2006, Integrating data collection and management for fisheries research: USGS Fisheries and Aquatics Bulletin, v. 5, no. 3, p. 5.

Elliott, C.M. and Jacobson, R.B., 2006, Geomorphic classification and assessment of channel dynamics in the Missouri National Recreational River, South Dakota and Nebraska: USGS Scientific Investigations Report 2006-5313, 66 p.

Elliott, C.M., Jacobson, R.B. and Chojnacki, K.A., 2006, Hydroacoustic mapping to define sedimentation rates and characterize lentic habitats in DeSoto Lake, DeSoto National Wildlife Refuge: USGS OFR 2006-1254, 29p.

Gaeuman, D. and Jacobson, R.B., 2006, Acoustic bed velocity and bed load dynamics in a large sand bed

river: *Journal Geophysical Research*, v. 111, 14 p.

Jacobson, R.B. and Galat, D.L., 2006, Flow and form in rehabilitation of large-river ecosystems: An example from the Lower Missouri River: *Geomorphology*, v. 77, no. 3-4, p. 249-269.

Jacobson, R.B., ed., 2006, Science to support adaptive habitat management Overton Bottoms North Unit, Big Muddy National Fish and Wildlife Refuge, MO: USGS SIR 2006-5086, 116 p.

Johnson, H.E., Jacobson, R.B., and DeLonay, A.J., 2006, Hydroecological modeling of the Lower Missouri River: Proceedings of the Third Federal Interagency Hydrologic Modeling Conference, Reno, Nev., April 2–6, 2006: Subcommittee on Hydrology of the Interagency Advisory Committee on Water Information, ISBN 0–9779007–0–3.

Korschgen, C., 2006, Missouri River sturgeon, *Fisheries and Aquatics Bulletin*, v. 5, no. 2, p. 4–5.

Papoulias, D.M., Chapman, D.C., and Tillitt, D.E., 2006, Reproductive condition and occurrence of intersex in bighead carp and silver carp in the Missouri River: *Hydrobiologia* 571; p. 355-360.

Wildhaber, M.L., Papoulias, D.M., DeLonay, A.J., Tillitt, D.E., Bryan, J.L., and Annis, M.L., 2006, Development of methods to determine the reproductive status of pallid sturgeon in the Lower Missouri River: USGS Final Science Support Program Report, 88 p.

Upcoming

Bonnot, T.W., Wildhaber, M.L., Millspaugh, J.J., DeLonay, A.J., Jacobson, R.B., and Bryan, J.L., in press, Discrete choice modeling of shovelnose sturgeon habitat selection in the Lower Missouri River. *Journal of Applied Ichthyology*.

Braaten, P.J., Fuller, D.B., Lott, R.D., Ruggles, M.P., Brandt, T.F., Legare, R.G., and Holm, R.J., accepted, An experimental test and models of drift and dispersal processes of pallid sturgeon (*Scaphirhynchus albus*) free embryos in the Missouri River. *Environmental Biology of Fishes*.

Chapman, D.C. and Hoff, M.H., eds, in press. *Invasive Asian Carps of North America*. American Fisheries Society Special Publication.

Jacobson, R.B., and Berkley, J., in press, Conceptualizing and communicating ecological river restoration, in Simon, A., Bennet, S., Castro, J., and Thorne, C.R., eds., *The Scientific Basis for Stream Restoration in Dynamic Fluvial Systems: Deterministic Approaches, Analyses and Tools*: AGU Geophysical Monograph.

Jacobson, R.B., Janke, T., and Skold, J., submitted, Geomorphic and hydrologic considerations in restoration of river-floodplain connectivity and vegetation communities, Lower Missouri River, *Wetland Ecology and Management*.

Little, E.E., Calfee, R.D., Fabacher, D.L., and Sanders, L., in press, Fright reaction and avoidance induced by exposure to conspecific skin extracts in invasive bighead and silver carp. In Chapman, D.C. and Hoff, M.H., eds., *Invasive Asian Carps of North America*. American Fisheries Society Special Publication.

Orazio, C.E., Chapman, D.C., May, T.W., Meadows, J.C., Walther, M.J., Deters, J.E., Echols, K.R., and Dierenfeld, E.S., in press, Evaluation of environmental contaminants and elements in bigheaded carps of the Missouri River at Easley, Missouri USA. In Chapman, D.C. and Hoff, M.H., editors. *Invasive Asian Carps of North America*. American Fisheries Society Special Publication.

Papoulias, D.M., DeLonay, A.J., Annis, M.L., Wildhaber, M.L., and Tillitt, D.E., in press, Characterization of environmental cues for initiation of reproductive cycling and spawning of shovelnose sturgeon *Scaphirhynchus platyrhynchus* in the Lower Missouri River. *Journal of Applied Ichthyology*.

Wildhaber, M.L., DeLonay, A.J., Papoulias, D.M., Galat, D.L., Jacobson, R.B., Simpkins, D.G., Braaten, P.J., Korschgen, C.E., and Mac, M.J., in press, Identifying structural elements needed for development of a predictive life-history model for pallid and shovelnose sturgeon. *Journal of Applied Ichthyology*.

Wildhaber, M.L., Gladish, D.W., and Arab, A., in review, Distribution and habitat use of the Missouri River and Lower Yellowstone River benthic fishes from 1996 to 1998: a baseline for fish community recovery. *Rivers Research and Application*.

Wildhaber, M.L., Holan, S.H., Bryan, J.L., Gladish, D.W., and Ellerseick, M.R., in press, Assessing power of large river fish monitoring programs to detect population changes: the Missouri River sturgeon example. *Journal of Applied Ichthyology*.

Wildhaber, M.L., Holan, S.H., Davis, G.M., Gladish, D.W., DeLonay, A.J., Papoulias, D.M., and Sommerhauser, D.K., in press, Spawning migration and predicting spawning success of shovelnose sturgeon in the Lower Missouri River. *Journal of Applied Ichthyology*.