Development of Reference Conditions for Stream Biological Assessment in Iowa

Appendix I. Examples of Wadeable Stream Reference Sites and Impacted Sites

Water Resources Section
Environmental Protection Division
Iowa Department of Natural Resources
Waterman Creek - Reference Stream, Northwest Iowa Loess Prairies Ecoregion (47a). An open canopy stream reach in the level upland area of the watershed.
Waterman Creek - Reference Stream, Northwest Iowa Loess Prairies Ecoregion (47a). A shaded reach located in the more deeply-incised middle segment of the stream where woody riparian vegetation commonly occurs.
Maintenance of Drainage Ditch #2 in the intensively cultivated uplands of the Shell Rock River Watershed - Des Moines Lobe Ecoregion (47b).
East Buttrick Creek - Reference Stream, Des Moines Lobe Ecoregion (47b). Headwater reaches of this stream support the federal endangered fish species, Topeka Shiner (*Notropis topeka*).
Beaver Creek - Test (Impacted) Site, Des Moines Lobe Ecoregion (47b). Cattle grazing impacts to riparian vegetation and stream channel morphology are evident.
White Fox Creek - Reference Site, Des Moines Lobe Ecoregion (47b). A moderate gradient stream segment with frequent pool and riffle sequences.
Coldwater Creek - Reference Stream, Iowan Surface Ecoregion (47c). A moderate gradient stream segment having predominantly riffle and run habitat.
Mud Creek - Impacted Stream, Iowan Surface Ecoregion (47c). Reduction of riparian vegetation and bank destabilization have resulted in a shallow and wide channel, and development of large sediment bars.
Little Cedar River - Reference Stream, Iowan Surface Ecoregion (47c). An example of a large, wadeable stream habitat (surface drainage area = 275 sq.mi.).
Wapsipinicon River - Reference Site, Iowan Surface Ecoregion (47c). A low gradient stream segment having abundant woody riparian vegetation and connected floodplain wetlands.
French Creek - Reference Site, Paleozoic Plateau Ecoregion (52). A moderately-high gradient, coldwater stream that supports a reproducing population of Brown Trout (*Salmo trutta*).
Coon Creek - Paleozoic Plateau Ecoregion (52). Soil erosion from road construction site impacting a designated, high quality coldwater stream.
Paint Creek - Reference Site, Paleozone Plateau Ecoregion (52). A medium-size, “coolwater” stream that flows through a rugged valley of deciduous forest cover.
Pidgeon Creek - Loess Hills and Rolling Prairies Ecoregion (47e). Streams in this ecoregion are turbid from high sediment loads and fine-textured soil particles that remain in suspension for long periods of time.
Jordan Creek - Reference Site, Loess Hills and Rolling Prairies Ecoregion (47e). The stream meanders within the entrenched channel, approximately 10 - 15 feet below the present floodplain.
Channel grade stabilization structure - Willow River, Loess Hills and Rolling Prairies Ecoregion (47e). View from Co. Rd. F32 bridge, Harrison County. Structures are needed to counteract the high rates of channel erosion and “headcutting” that frequently occur in this ecoregion.
East Branch West Nishnabotna River - Reference Site, Loess Hills and Rolling Prairies Ecoregion (47e). A medium-size stream having a sandy bottom, deep meander bends and occasional woody debris snags.
Long Creek - Reference Site, Central Irregular Plains Ecoregion (40). Southern Iowa streams experience large fluctuations in stream flow and frequent changes in channel width and depth.
South Whitebreast Creek - Reference Site, Central Irregular Plains Ecoregion (40).
Soap Creek - Reference Site, Central Irregular Plains Ecoregion (40).
Richland Creek - Reference Site, Southern Iowa Rolling Loess Prairies Ecoregion (47f).
Long Creek - Reference Stream, Southern Iowa Rolling Loess Prairies Ecoregion (47f).
Old Mans Creek - Reference Stream, Southern Iowa Rolling Loess Prairies Ecoregion (47f). Large woody debris provides much needed channel structure and habitat diversity in southern Iowa streams.
Mud Creek - Test (Impacted) Site, Southern Iowa Rolling Loess Prairies Ecoregion (47f). Effluent discharge from City of Durant WWTP.
Sugar Creek - Watershed Assessment Site, Southern Iowa Rolling Loess Prairies Ecoregion (47f). Rock substrates are locally abundant where bedrock outcrops occur in watersheds of this ecoregion.
Rock Creek - Reference Stream, Southern Iowa Rolling Loess Prairies Ecoregion (47f). An open canopy stream segment located in the level uplands of the watershed.
Rock Creek - Reference Site, Southern Iowa Rolling Loess Prairies Ecoregion (47f). A heavily shaded reach located in the middle section of the watershed. Pool and riffle sequences are common in this stream segment.