



4.11 Floodplains

A floodplain is defined as the area around a stream or river that frequently floods during heavy rain. The 100-year floodplain was analyzed for this project using an interim version of the Indiana Department of Natural Resources Division of Water Digital Flood Insurance Rate Maps (DFIRM). The purpose of this interim digital data is to provide much of the same information the paper Federal Emergency Management Agency (FEMA) FIRM.

The 100-floodplain is the area around the streams and rivers that will be under water whenever the 100-year storm occurs. Floodplains are composed of two general areas (see Figure 4.11.42). The first area is the floodway, which is the channel of a river or stream and those portions of the floodplain adjoining the channel which are reasonably required to efficiently carry and discharge the peak flow of the regulatory flood (100-year flood) of any river or stream. The second area is the remaining area of the floodplain, which is often referred to as “backwater.” This “backwater” area is essentially a holding area providing storage of floodwater. One-hundred-year floodplains in the vicinity of the project can be found along the Yellow River, Pleasant and Riddles Lakes, Hoffman Ditch, Philips Ditch and an unnamed depressional area on the south side of South Bend.

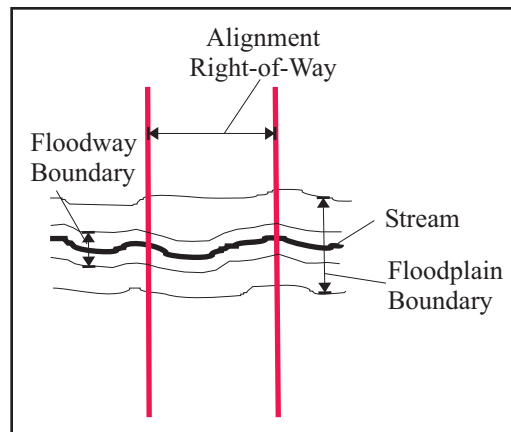


Figure 4.11.42: Floodplain diagram



4.12 Wetlands

Wetlands are considered “waters of the U.S.” and are described in the *Corps of Engineers Wetland Delineation Manual (1987)*. Wetland boundaries are delineated using three criteria: (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. For an area to be identified as a wetland, it must display all three of these criteria.

Wetlands cover about 813,000 acres (4% - 5% of total area) of Indiana. Wetlands are an important natural resource because they support rich biological communities. Because of their functions and values, there are several federal and state laws that regulate activities that affect wetlands. The major laws protecting wetlands include the Federal Clean Water Act, the River and Harbors Act and Indiana’s Flood Control Act.

Wetland ecosystems provide a transition zone from aquatic habitat to upland habitat. There are many different types of wetlands. The four types of wetlands identified from the National Wetlands Inventory (NWI) maps for the DEIS include emergent wetlands, scrub/shrub wetlands, forested wetlands and aquatic bed wetlands. Unconsolidated bottom areas are identified on the NWI maps, but rarely meet all three wetland criteria. Wetland areas were calculated using NWI maps for comparison purposes in the DEIS. Wetlands within the Preferred Alternative G-Es, were delineated using the guidelines in the *Corps of Engineers Wetland Delineation Manual (1987)*. Detailed results of this delineation can be found in the “Waters of the U.S.” Verification Report for the US 31 Improvement Project (Plymouth to South Bend), DRAFT Revised on May 2, 2005.

Wetlands represent about 4% - 5% of Indiana; however, they harbor an unusually large concentration of our wildlife and plants. “For example, 900 species of wildlife in the United States require wetland habitats at some stage in their life cycle, with an even greater number using wetlands periodically. Representatives from almost all avian groups use wetlands to some extent and one-third of North American bird species rely directly on wetlands for some resource.” (Hammer, 1992)

Due to the diversity of habitats possible in these transition environments, the Nation’s wetlands are estimated to contain 190 species of amphibians, 270 species of birds and over 5,000 species of plants. Many wetlands are identified as critical habitats under provisions of the Endangered Species Act, with 26% of the plants and 45% of the animals listed as threatened or endangered either directly or indirectly dependent on wetlands for survival (Hammer, 1992).

Wetland, habitat and trophic guilds were developed for all reasonable resident and migrant species occurring in Indiana based on a literature review and on field experience (Appendix G). This database of mammals, birds, reptiles, amphibians and fishes occurring in Indiana includes a sample size of 606 species based on guild rankings. Of these 606 vertebrates, approximately 73% are fully or partially wetland dependent. In addition, 93 of 120 (78%) of the threatened and endangered species (TES) (including watch list species) are wetland dependent. Such high occurrences of TES species for wetlands show the value and importance of wetland habitats to Indiana’s biota.

Wetlands along riverbanks (riparian wetlands) are receiving more attention because of their valuable role in helping to stabilize banks. One of the benefits of riparian wetlands is that they act as natural flood control or buffering for downstream areas by slowing the flow of floodwater and reducing peak flows on main rivers (Mitch and Gooselink, 1986).

Some wetlands may function as groundwater recharge areas, allowing water to seep slowly into and replenish underlying aquifers. Other wetlands represent discharge areas for surfacing groundwaters. Both may occur within close proximity depending upon local and regional patterns of ground water distribution (Hammer, 1992). The following is a short description of different types of wetlands that were identified in this FEIS.