

Nemacolin BDA

Nemacolin BDA covers the floodplain of the Monongahela River downstream of the village of Nemacolin and across the river from the village of Gates. The southern part of the BDA shows the effects of the region's past and is covered by numerous mine spoils and industrial complexes. Most of the floodplain except for that in the southern part of the BDA is covered in a mature forest that is considered a floodplain forest (sycamore-river birch floodplain forest/silver maple forest). While the canopy is full and maturing, the understory is not well-structured and shows little stratification. The herbaceous layer has a depressed diversity and both the understory and herbaceous layer are heavily populated with exotic invasive species. Dominant canopy species include sycamore (*Platanus occidentalis*), silver maple (*Acer saccharinum*), boxelder (*Acer negundo*), and black willow (*Salix nigra*). Understory species include spicebush (*Lindera benzoin*), green ash (*Fraxinus pennsylvanica*), and black cherry (*Prunus serotina*). On the riverbank, alder (*Alnus serrulata*) can be found. The herbaceous composition is dependent on location in the floodplain. Typically growing on these levees are plants like wingstem (*Verbesina alternifolia*), reed grass (*Phalaris arundinacea*), sunflower (*Helianthus strumosus*), beggar's ticks (*Bidens frondosa*), and jumpseed (*Polygonum virginianum*). Two Pennsylvania plant species of special concern; **river oats** (*Chasmanthium latifolium*) and **blue mistflower** (*Eupatorium coelestinum*) are part of the herbaceous layer within this site. These plants as well as many of the other species associated with the floodplain levees, require a regular flood regime and increased light conditions. A sandy shoal on the Greene County side of the river is home to another plant species of special concern; **broad-leafed water milfoil** (*Myriophyllum heterophyllum*).

Threats and Stresses

Core Habitat Area: Exotic invasive species, fragmentation, and altered flood regimes represent the primary threats to the integrity of the habitats along the Monongahela River. In particular, one population of river oats is on a riverbank directly downhill from an abandoned strip mine and rail line, an area especially vulnerable to invasion by exotic plants.

Supporting Landscape: Due to the county's topography and use of the river as a transportation corridor, the floodplains have been used and transformed through the years. Those points most accessible to the river are often loading points for barges and processing facilities, many of which are derelict brownfields. Habitat left between these disturbed areas, in which this BDA is located, suffered the effects of being reduced to small woodlots, logging, and higher levels of the river created by the lock and dam system. The abundance of disturbance has proved to be fertile ground for invasive species. So far, in Greene County, most of the Monongahela River floodplain has been spared the worst affects of exotic species invasions. One species, Japanese knotweed (*Polygonum cuspidatum*) is present in high density in the Point Marion area and stands to seriously impact the diversity present in these floodplains, though little was found during surveys of the Greene County side of the Monongahela River. The Fayette County Natural Inventory revealed the infestations of this species already occurring on the Youghiogheny River and the Washington County Natural Heritage Inventory found the species along the Monongahela River. This section of River is a prime candidate for knotweed establishment.

Recommendations

Core Habitat Area: Monitoring of these special plant species as well as the habitats that they are a part of would be a good step in the conservation of this area. Also, river hydrology is important to maintaining these areas and consideration of the effect of alteration of river processes through dams and locks and dredging should be considered as part of the larger river management picture.

Supporting Landscape: Allowing the floodplains and river shore to revert to a more natural condition, restoring a larger riparian buffer and remediation of brownfields may allow some protection to the natural communities from invasive species and other direct disturbances. Monitoring for and early response to the establishment of invasive species like Japanese knotweed will be key to preserving this area of habitat. The General Recommendations section (pg. 119) of the Greene CNHI discusses management practices in greater detail.