Conewango Creek BDA

The core of this BDA extends from the mouth of Johnny Run at Russell south to the city of Warren where Conewango Creek empties into the Allegheny River, and east and west along the Allegheny River. Over 15 miles of aquatic and riverine habitats support seventeen species of concern. The sections of Conewango Creek and the Allegheny River contained within this BDA support a rich diversity of aquatic organisms, particularly freshwater mussels and fish, including **creek heelsplitter** (*Lasmigona compressa*), **cylindrical papershell** (*Anodontoides ferussacianus*), **elktoe** (*Alasmidonta marginata*), **Ohio pebblesnail** (*Somatogyrus integra*), **pocketbook** (*Lampsilis ovata*), **round pigtoe** (*Pleurobema sintoxia*), **three-ridge** (*Amblema plicata),* and **wavy-rayed lampmussel** (*Lampsilis fasciola*). Freshwater mussels, primarily found in streams, are filter feeders that spend their adult lives in the substrate of stream or lake bottoms. Because mussels are dependent upon good water quality and physical habitat conditions and an environment that will support populations of host fish, they are considered good indicators of the health of aquatic ecosystems.

Leonard's skipper (*Hesperia leonardus*), a butterfly species of concern, is considered vulnerable in Pennsylvania. It uses moist open meadows and fields, where its host plants are a variety of grasses.

Jerry McWillams

Leonard's skipper (*Hesperia leonardus*), a rare species at Conewango Creek BDA

The aquatic larvae of two dragonfly species of concern, **northern pygmy clubtail** (*Lanthus parvulus*) and **Roger's clubtail** (*Gomphus rogersi*), inhabit this BDA. Dragonflies, as with other members of the Order Odonata, have three stages in their life cycle: egg, nymph, and adult. Dragonflies oviposit their eggs in or near water. The species occurring within this BDA are river-breeding odonates that utilize clear, rapid, rocky streams and rivers with silt-bottomed pools. After the eggs hatch, the nymphs remain in the water through several instars (stages between moltings of the exoskeleton, feeding on small aquatic organisms until they eventually emerge from the water as terrestrial adults.

Three plants of special concern, **broad-leaved water-plantain** (*Alisma triviale*), **small beggar-ticks** (*Bidens discoidea*), and **Tuckerman's panic-grass** (*Panicum tuckermanii*), were found within the BDA. Broad-leaved water-plantain, a Pennsylvania endangered plant species, is rare in shallow water of ditches, lake margins, and stream edges (Rhoads and Block 2000). Its distribution spans from Canada south to New Mexico in the west and to Maryland in the east and is considered critically imperiled in Pennsylvania. Small beggar-ticks (*Bidens discoidea*), a vulnerable plant species of concern, inhabits wet areas including bogs and vernal ponds. It is found from Quebec to Florida and west to Ontario and Texas (NatureServe 2006). The plant is found in several counties throughout Pennsylvania. Tuckerman's panic grass, a Pennsylvania threatened species, inhabits sandy flats (Rhoads and Block 2000) in the New England and Great Lakes region, including northwestern Pennsylvania.

This BDA supports two additional **species of concern** which cannot be named in this report at the request of the jurisdictional agencies overseeing their protection.

Threats and Stresses

The presence of numerous freshwater mussel populations and other aquatic species throughout Conewango Creek and the Allegheny River is indicative of high water quality. Freshwater mussel populations have been declining over the past century throughout North America. This decline has been largely attributed to increased sedimentation, which renders stream bottoms unsuitable as mussel habitat. Erosion, caused in part by deforestation, poor agricultural practices, and destruction of riparian zones, has led to increased silt loads and shifting, unstable stream bottoms. Siltation and contaminants such as heavy metals, pesticides, and acid mine drainage, have long been recognized as threats to mussels (Ortmann 1909; Ellis 1931; cited in Williams et al. 1993). Increases in siltation can also indirectly impact freshwater mussel communities by interfering with host fish – mussel interactions. Increased sedimentation can reduce the abundance, diversity, and reproduction of fish, including the host fish that are necessary for protection and dispersal of virtually all freshwater mussels during their larval stage. The increased turbidity associated with suspended sediment loads also interferes with the visual cues used by both adult mussels and host fish in the transfer of the glochidia or mussel larvae (Box and Mossa 1999). The rare butterfly, dragonfly, and plant species occurring within this BDA are also dependent upon high-quality stream habitat for their continued success.

Conservation Recommendations

In the upstream watershed, timbering and road development or other construction activities should be kept well away from riparian corridors in order to avoid degrading important aquatic and streamside habitat within the tributaries flowing into the Conewango Creek and the Allegheny River. Any planning of future development within the watershed should seek to avoid potential impacts to both the physical character and water quality of these two bodies of water and adjacent habitat.