Tidal Schuylkill River Corridor

Immediate Conservation Priority and Notable Significance

Species of concern	Taxa[1]	PNHP Rank[2]		State Legal Status[2]	Last Seen	Quality[3]
		Global	State			
Annual wild rice (*Zizania aquatica*)	P	G5	S3	PR	1984	X?
Peregrine falcon (*Falco peregrinus*)	B	G4	S1	PE	2005	E
River bulrush (*Schoenoplectus fluviatilis*)	P	G5	S3	PR	2007	BC
Salt-marsh water-hemp (*Amaranthus cannabinus*)	P	G5	S3	PR	2007	B

[1] A = Amphibian; B = Bird; C = Community; F = Fish; L = Lepidopteran; O = Odonate; P = Plant; M = Mammal; R= Reptile, U = Unionid (Mussel)
[2] Please refer to Appendix III (pg. 166) for an explanation of PNHP ranks and legal status
[3] Please refer to Appendix IV (pg. 169) for an explanation of quality ranks
[4] This species is not named at the request of the agency overseeing its protection

The northern half of this site is composed of a narrow strip of undeveloped land that runs along the east bank of the Schuylkill River from the south end of Fairmount Park to I-76. Currently, plans are being reviewed for a pedestrian and bike bridge over the railroad tracks below Walnut Street since the tracks preclude safe access to the river. This will greatly improve the safety of access to this site and the river shoreline.

photo source: PNHP

Open land along the DuPont Crescent shoreline on the Schuylkill River, part of the original DuPont chemical complex.

South of this narrow strip are several large areas of derelict or undeveloped land. These areas, while dominated by non-native invasive plants, offer significant areas of greenspace along the river shore and include the DuPont Crescent shoreline and the National Heat and Power property. The Schuylkill River Development Corporation is examining these areas for redevelopment opportunities and is currently working on improvements in the area to facilitate access.

Bartram's Garden, on the west bank of the Schuylkill River south of Grays Ferry Ave, lies at the upstream end of an extensive strip of green, undeveloped land the continues south to the Delaware River. Managed as a farm by the Quaker John Bartram more than 250 years ago, Bartram's Garden is dedicated to preserving the history of the Bartram residence and farm and maintaining the garden and natural habitat on the site. Situated on 45 acres, the garden maintains a botanical collection of both native and non-native plants, a grassland planted with prairie species, and a tidal wetland. The site is open to the public and serves as an educational destination for many children and as a well known local art gallery. The tidal wetland at Bartram's Garden also supports two plant species of concern that are often found on the Schuylkill and Delaware Rivers in areas with tidal flow.

Downstream of Bartram's Garden are several open areas that historically supported industrial complexes. These sites have been cleared of buildings and are being examined for redevelopment opportunities. As redevelopment is examined the inclusion of an appropriate and functional riparian buffer and publicly accessible greenspace should be considered.

Below these old industrial sites, on and around the point of land called Point Breeze, is an extensive scrap yard. The total coverage of land just for used cars in this area is approximately 90 acres. Though the coverage of used cars has been decreasing over the past several years, approximately 20 acres of cars are still within the 100-year floodplain.

Along the southern end of Point Breeze and extending down to the south end of the site is land still actively used by the oil industry. Because of safety concerns PNHP scientists were not able to secure permission to survey within these lands. Within these lands are extensive areas of wetland and forest that are likely influenced by tidal flows and seasonal floods. We assessed these sites using aerial photos and believe they resemble habitat known to support species of concern. If development is planned within these sites we highly recommend that the areas are first surveyed for species of concern and natural habitat.

This entire site is within the tidal reach of the Delaware River and it is not uncommon for the river level to change by 5 feet within one tide cycle (twice each day). Throughout this site the Schuylkill River maintains a tidal connection to the Atlantic Ocean via the Delaware River and Delaware Bay. This connection is facilitated by the fish ladder at the Fairmount Dam; the ladder allows thousands of fish to pass this obstacle every year. However, a very small amount of tidal habitat has been noted along this site. This lack of tidal habitat is caused by the steel and concrete bulkheads that confine the river within this site. These concentrate the flow of the river, precluding the formation of mudflats and preventing the river from reaching potential riparian wetlands.

This portion of the Schuylkill is the proposed location for the Schuylkill River Trail. This trail will eventually connect Pottsville (Schuylkill County) to Fort Mifflin via a continual path along the river.

photo source: PNHP

The created wetland at Bartram's Garden showing a significant area of wetland plants and the plant species of concern, salt-marsh water-hemp (*Amaranthus cannabinus*), in the foreground.

Threats and Disturbances

This stretch of the Schuylkill River is highly disturbed. As one of the first areas in the Commonwealth colonized by Europeans and the heart of Philadelphia industrial production for well over a century, the land has little connection to its pre-colonial condition. In some areas the development along the banks has removed all signs of the original riparian wetlands and floodplain forests.

Despite the proportion of the site is within the 100-year floodplain, the area has been significantly built out. This indicates that the undeveloped natural areas within the 100-year floodplain remain unprotected from future development. Also, these areas are likely dominated by non-native invasive plant and animal species that can colonize the highly disturbed soils.

Having a large number of scrap cars and oil industry tanks and infrastructure within the 100-year floodplain is also highly problematic. During flooding episodes the chance of an uncontrolled release of toxic substances is

greatly increased by their presence. Furthermore, in flooded conditions it becomes much more difficult and expensive to control or mitigate pollution events.
Flooding events along the Schuylkill River are only exacerbated by the confinement of the river within bulkheads, which has greatly altered the river's flow patterns. This confinement, along with inefficiently managed stormwater flows, causes the river to rise more quickly and higher than it would with intact floodplains and a landscape that absorbs rainwater. While significant mudflats exist within this tidal stretch of river, they support little or no vegetation because of recurrent high flow conditions, historic and current pollution, and uncontrolled boat wakes that continually remobilize sediments and wash away colonizing plants.

Conservation and Restoration Recommendations

This portion of the river offers the greatest opportunity within Philadelphia for a significant restoration of natural river and floodplain habitat. There is already a significant area of undeveloped greenspace from Passyunk Avenue (Point Breeze) south to Penrose Avenue. It is very important that this stretch of greenspace be preserved from development.

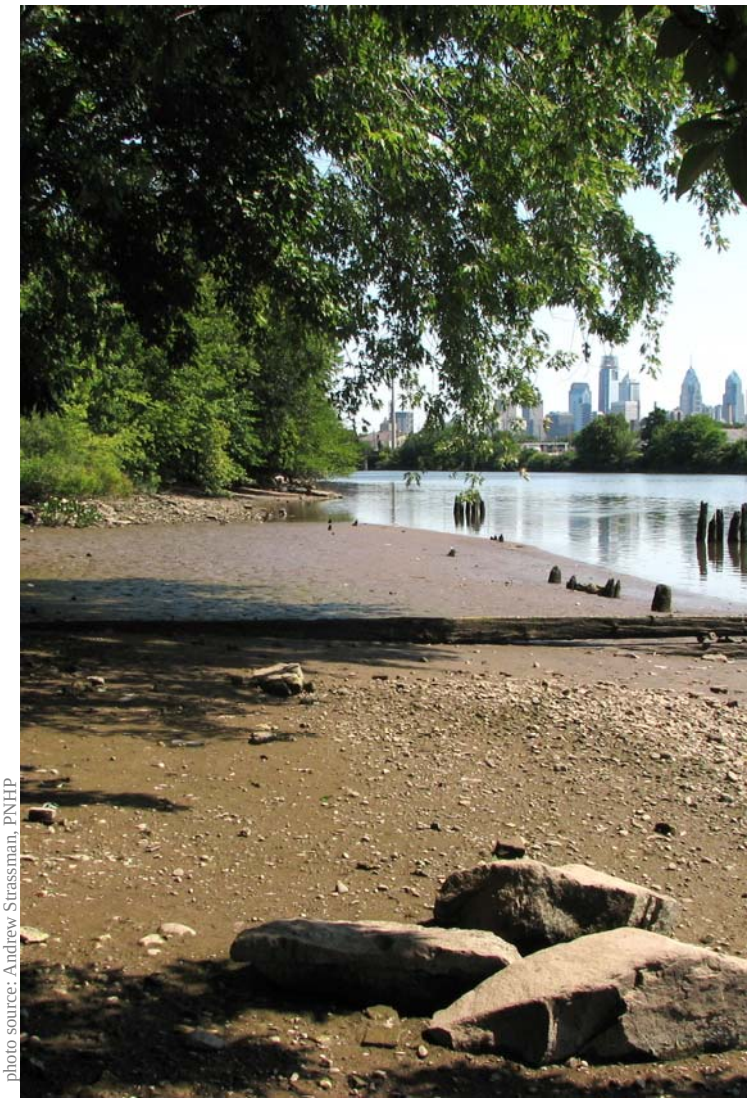

photo source: Andrew Strassman, PNHP

Schuylkill River, at Bartram's Garden, looking upriver at the downtown Philadelphia skyline.

Once the area is protected from development it can be examined for restoration opportunities. Among these opportunities will be the control of non-native invasive species and planting of appropriate native species. Other opportunities may be the restoration of areas of floodplain through reducing the height of or completely removing existing bulkheads. With the removal of the bulkheads the possibility of expanding the existing mudflats in the area can be examined along with replanting to native tidal plants. Revegetation will facilitate their stabilization and increase their environmental value by opening them up to new suites of species.
A final need in the southern portion is the removal, as possible, of scrap cars and oil industry infrastructure from the active floodplain. These areas will eventually flood again as they have many times in the past and the continued storage of toxic substances within this area will only increase the future costs of site remediation.

The characteristics of the northern portion of this site make full environmental restoration in this area impractical. The degree of disturbance to the natural system, level of development in the surrounding area, and available space simply prevent this. Ideally, planting this area with native trees common to the river ecosystems of southeastern Pennsylvania and managing a park-like habitat will facilitate the movement of animals along this green corridor.

Open space and greenspace protection and safe public access across this site need to be priorities. Safe publicly accessible greenspace should be a requirement for redevelopment permits along the river. Once open space and access are secured, removal of non-native trees and replanting of native trees that are

adapted to the highly disturbed land would be appropriate. These trees would increase the environmental value of the area, help to alleviate the urban heat-island effect, and greatly improve the aesthetic quality of the site.

Continuation of the Schuylkill River Trail through this area will promote the ecological conservation and restoration goals for the site. By introducing the public to the potential and importance of natural areas along the Schuylkill River through safe and easy access, a greater awareness of the issues facing the site will develop.