

Vulnerability Assessment Worksheet

Author(s):

Please provide your name(s) and organization

Tricia Arndt, Delaware Coastal Programs

Resource Potentially Vulnerable:

Provide the name of the type of infrastructure, economic resource, environmental resource etc. that will be described.

Nature Preserves

Potential for Impacts resulting from inundation:

County	Total Number	Acres			Percent of Total Inundated		
		0.50m	1.0m	1.5m	0.50m	1.0m	1.5m
State	4556	1632	1873	2030	35.83%	41.12%	44.55%
New Castle	1458	414	482	512	28.38%	33.06%	35.12%
Kent	468	197	204	206	42.11%	43.55%	43.97%
Sussex	2630	1022	1188	1312	38.85%	45.15%	49.89%

Users and Uses:

Please indicate who the users of the resource are, or what groups benefit from the resource. Please indicate what, if any, competing uses or users exist.

Delaware residents and visitors would be the primary “users” of the resource for passive outdoor recreation activities such as birding, hiking, and wildlife watching. It is essential that people retain the opportunities to maintain close contact with thriving ecological communities and environmental systems and to benefit from the scientific, educational, esthetic, recreational and cultural values they possess. The benefit to the public is to have permanently protected unspoiled natural areas to enjoy. Nature Preserves are relatively undisturbed protected lands, free from development pressure and thereby provide exceptional habitat for various species of flora and fauna.

Fiscal Capacity:

Please identify and describe funding sources that are utilized to manage or make improvements to the resource. Please note whether there are existing revenue gaps or unmet revenue needs.

Dedication of Nature Preserves is a voluntary process entered into by the landowner or, in the case of public lands, by voluntary act of the agency with jurisdiction. A few Preserves have an endowment set aside for management purposes. Nature Preserves within State Parks are managed by Parks staff; others

are managed by the Division of Fish and Wildlife or responsible agency; privately held preserves are monitored annually by the Division of Parks and Recreation to ensure compliance with conditions.

Regulations & Policies:

Please identify and describe any Federal, State or local regulations or policies that are used to manage or direct this resource. Please indicate whether these regulations and policies include flexibility to address the impacts discussed above.

The Natural Areas Preservation System Act of 1978 (7 Delaware Code Ch. 73)

DNREC Regulations Governing Natural Areas and Nature Preserves

The Act and Regulations cover dedication and management of preserves and do not address potential losses of acreage or ecological function.

Potential Economic Impact:

Based upon the exposure analysis distributed and discussed at the 3/15 advisory committee meeting, please describe any potential direct and indirect economic impacts. Depending upon availability of information, this could include direct impacts like replacing buildings, rebuilding infrastructure and displacement of residents. It can also include potential indirect impacts like loss of tourism, loss of flood protection or increased transportation costs. Where cost estimates are available, please include them or indicate that there is no available data source.

The economic impact is unclear. Potential losses may come indirectly as a result of reduced ecotourism and associated dollars spent on lodging, food, etc. No economic data specific to Nature Preserves has been generated.

Potential Social Impact:

Based upon the exposure analysis distributed and discussed at the 3/15 advisory committee meeting, please describe the potential direct and indirect social impacts.

Loss of Nature Preserves would deprive residents and visitors of access to these sites of ecological significance resulting in potential “quality of life” type social impacts and fewer passive recreation opportunities.

Potential Environmental Impact:

Based upon the exposure analysis distributed and discussed at the 3/15 advisory committee meeting, please any potential direct and indirect environmental impacts resulting from inundation of the resource.

The designation of Nature Preserve is the highest level of land protection afforded by the State of Delaware. These lands are rare and often fragile environments that represent some of Delaware's most important natural habitats. There are currently 19 dedicated preserves, most of which are located in areas vulnerable to sea level rise. The level of impact varies based on location and types of habitats of each preserve. Within New Castle County, there are 4 preserves where almost half of the dedicated area is inundated and 1 that is completely inundated (Pea Patch Island). Kent County's Murderkill River Nature Preserve and Mispillion Harbor Reserve are also completely inundated. In Sussex County, there are 8 preserves significantly impacted, one that is approximately 50% inundated (Nanticoke River Nature Preserve) and one that is marginally affected (Doe Bridge Nature Preserve).

Additional Information:

Please provide any additional information that could be important to assessing the potential impact of inundation to this resource. This may include reports or studies that have been conducted, questions that need to be answered to fully describe the impact, research that must be conducted, etc.

Detailed information on types of habitat loss may be available from data collected from each affected preserve. This data is likely available from the Natural Areas Program or may be captured under other land use data layers.