Advanced Notice of Proposed Rule Making 6 NYCRR Part 664, Freshwater Wetlands Pre-Proposal Draft

664.1. Applicability.

- (a) This Part applies to all wetlands regulated under the Freshwater Wetlands Act, whether regulated by the department or by towns, cities, villages or counties. The department alone shall identify and classify wetlands, regardless of which agency is implementing the act in a particular locality, except that the Adirondack Park Agency shall identify and classify the wetlands within the Adirondack Park.
- (b) Where the department is the regulating authority, the wetlands classification system presented in this Part applies to the department's freshwater wetlands permit requirements regulations, Part 663 of this Title. In Part 663, standards for the issuance of permits are provided for each of the four wetland classes described in sections 664.4 and 664.5 of this Part.

664.2. Definitions.

- (a) 'Act' means the Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law).
- (b) 'Adjacent area' means those areas of land or water that are outside a wetland and within 100 feet (30.48 meters), measured horizontally, of the boundary of the wetland. However, an adjacent area broader than 100 feet (30.48 meters) may be established

where necessary to protect and preserve the wetland, as set forth in section 664.7 of this Part.

- (c) 'Amphibian' means, for the purposes of this Part, a member of the Class Amphibia that use vernal pools as critical breeding habitat. Amphibian species are those that are considered obligate vernal pool breeders in New York State, including the Spotted Salamander (*Ambystoma maculatum*), Wood Frog (*Lithobates sylvaticus* or *Rana sylvatica*), Jefferson Salamander (*Ambystoma jeffersonianum*), Blue-Spotted Salamander (*Ambystoma laterale*), hybrids of Jefferson and Blue-Spotted Salamander, Eastern Tiger Salamander (*Ambystoma tigrinum*), and Marbled Salamander (*Ambystoma opacum*).
- (d) 'Census tract' means an area delineated as such by the United States Bureau of the Census.
- (e) 'Commissioner' means the Commissioner of the Department of Environmental Conservation or a duly authorized representative.
- (f) 'Critically imperiled' means a wetland plant community, plant species, or animal species that because of extreme rarity, steep declines in population, or severe threats are at a high risk of extirpation in New York State, with generally five or fewer occurrences or few remaining individuals within the state.
- (g) 'Delineation' means a precise determination of a regulated freshwater wetland boundary.
- (h) 'Department' means the New York State Department of Environmental Conservation.

- (i) 'Essential behavior' means any of the behaviors exhibited by a species, listed by the department as endangered, threatened, a species of special concern, or a species of greatest conservation need as identified in the New York State Wildlife Action Plan (Sept. 2015), that are a part of its normal or traditional life cycle and that are essential to its survival and perpetuation. Essential behaviors include those associated with breeding, hibernation, reproduction, feeding, sheltering, migration, and overwintering.
- (j) 'Flood' means the overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas not normally submerged. Floods may include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods, coastal floods, and glacial lake outburst floods.
- (k) 'Flood Insurance Rate Map' or 'FIRM' means the insurance and floodplain management map produced by the Federal Emergency Management Agency that identifies, based on detailed or approximate analyses, the areas subject to flooding during a 1-percent-annual chance (100-year) flood event in a community. Flood insurance risk zones, which are used to compute actuarial flood insurance rates, also are shown on Flood Insurance Rate Maps. In areas studied by detailed analyses, the FIRM shows base flood elevations to reflect the elevations of the 1-percent-annual-chance flood. For many communities, when detailed analyses are performed, the FIRM also may show areas inundated by 0.2-percent-annual-chance (500-year) flood and regulatory floodway areas.
- (I) 'Floodplain' means any land area that is susceptible to being inundated by water from any source.

- (m) 'Floodway' means a Federal Emergency Management Agency determined channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
- (n) 'Freshwater wetland' or 'wetland' means lands and waters of the State which meet the definition provided in section 24-0107(1) of the Act and have an area of at least 12.4 acres (approximately 5 hectares), or, beginning on January 1, 2028, 7.4 acres (approximately 3 hectares). Freshwater wetland or wetland shall also include any lands and waters smaller than 12.4 or 7.4 acres that are of unusual importance as determined by the department pursuant to this Part.
- (o) 'Freshwater wetland boundary' means the outer limit of the vegetation specified in paragraphs (a) and (b) of subdivision 1 of section 24-0107 of the act and of the lands and waters specified in paragraphs (c) and (d) of such subdivision.
- (p) 'Hydrologic Unit Code or 'HUC' means a hierarchical land area classification system created by the United States Geological Survey that is based on surface hydrologic features in a standard, uniform geographical framework. Each unit is identified by a unique numeric hydrologic unit code consisting of two-to-twelve digits based on the level of classification. Each hydrologic boundary is determined from topography and represents a drainage divide between the various levels of units.
- (q) 'Hydrophytic vegetation' means plants especially adapted for life in areas having seasonally or permanent saturated soil conditions.

- (r) 'Imperiled' means a wetland plant community, plant species, or animal species that because of rarity, steep declines in population, or severe threats are vulnerable to extirpation in the state, with generally 6 to 20 occurrences, or few remaining individuals within the state.
- (s) 'Initial consultation' means a meeting providing an opportunity for a person or property owner to seek clarity regarding the process and criteria the department applied when making the positive wetland determination.
- (t) 'Local government' means a village, town, city, or county.
- (u) 'Nutrient Poor Wetlands' means the following wetland plant communities as identified by the department: black spruce-tamarack bog, coastal plain Atlantic white cedar swamp, coastal plain pond shore, coastal plain poor fen, dwarf shrub bog, highbush blueberry bog thicket, inland Atlantic white cedar swamp, inland poor fen, marl fen, medium fen, northern white cedar swamp, perched bog, pitch pine-blueberry peat swamp, red maple-tamarack peat swamp, rich graminoid fen, rich hemlock-hardwood peat swamp, rich shrub fen, rich sloping fen, seal level fen, sedge meadow.
- (v) 'Permit' means the written approval, issued by the commissioner or a local government, where required for the conducting of a regulated activity in a wetland or adjacent area, in accordance with title 7 of the Act.
- (w) 'Person' means any corporation, firm, partnership, association, trust, estate, one or more individuals, and any unit of government or agency or subdivision thereof, including the state.
- (x) 'Plant community' means an assemblage of plant species in an area.

- (y) 'Pollution' means the presence in the environment of human-induced conditions or contaminants in quantities or characteristics which are or may be injurious to human, plant or animal life, or to property.
- (z) 'Significant flooding' means large-scale flooding resulting in impacts to human-made infrastructure.
- (aa) 'Sub watershed' means, for the purposes of this Part, a HUC 12 area located within an identified watershed.
- ('ab') 'Verified delineation' means a precise determination of a regulated freshwater wetland boundary confirmed by the department.
- ('ac') 'Vernal pool' means a naturally occurring or purposefully created depression wetland containing hydrophytic vegetation that is geographically isolated from, and lacking a connection to, permanent surface waters. Vernal pools, temporarily hold water during the spring, summer, and/or fall, and typically dry up for a period of time during the year. Vernal pools do not support permanent adult fish populations, yet they provide essential habitat for amphibian, invertebrate, and other species.
- ('ad') 'Vulnerable' means a wetland plant community, plant species, or animal species that because of extreme rarity, steep declines in population, or severe threats are at a moderate risk of extirpation in the state, with generally 21-100 occurrences, or a very restricted range within the state.
- ('ae') 'Watershed' means, an area of land that drains water into a specific body of water.

 Watersheds include networks of rivers, streams, and lakes and the land area

surrounding them. Watersheds are separated by high elevation geographic features, including mountains, hills, or ridges.

- 664.3. Purposes and Approach.
- (a) Public policy. It is the public policy of the State, as set forth in the Freshwater Wetlands Act, to preserve, protect and conserve freshwater wetlands and the benefits derived therefrom, to prevent the despoliation and destruction of wetlands, and to regulate use and development of wetlands to secure the natural benefits of those wetlands, consistent with the general welfare and beneficial economic, social and agricultural development of the State.

It is the purpose of this Part to implement that policy by clarifying certain aspects of wetland identification and delineation of jurisdiction, and by creating a system for classifying wetlands in accordance with section 24-0903(1) of the act. Such a system must take into account the many benefits described below and in section 24-0105(7) of the Act.

- (b) Wetland benefits. The preservation, protection and conservation of wetlands is of public concern because of the functions and benefits they provide. These include:
 - (1) Flood and stormwater control. Wetlands may slow water runoff and temporarily store water, thus helping to protect downstream areas from flooding, particularly storm related flooding due to climate change. Public health and private property may be harmed in one portion of a watershed if wetlands are destroyed in a different part of that watershed.

- (2) Wildlife habitat. Wetlands are of unparalleled value as wildlife habitat, and the perpetuation of scores of species which depend upon them. Many of the species are migratory and must have nesting, migration, and wintering habitat. The destruction of one kind of wetlands habitat in one place may reduce populations of wildlife elsewhere. Where specific wetlands support endangered species, destruction of those wetlands may threaten the presence of the endangered species for all time.
- (3) Water supply. Wetlands themselves are a source of surface water and may, under appropriate hydrological conditions, serve to recharge groundwater and aquifers and to maintain surface water flow.
- (4) Water quality. Many wetlands serve as chemical and biological oxidation basins that help cleanse water that flows through them. Wetlands can also serve as sedimentation areas, and filtering basins that absorb silt and organic matter, thereby protecting channels and harbors and enhancing water quality.
- (5) Fisheries. Wetlands provide the spawning and nursery grounds for several species of fish. The availability of these fish in lakes and streams may be adversely affected by the loss of wetlands adjacent to those waters.
- (6) Food chains. Food and organic detritus supplied by wetlands support the fish and wildlife of adjacent waters.
- (7) Recreation. Wetlands provide important hunting, fishing, boating, hiking, birdwatching, photography, camping, and other recreational opportunities. In addition, wetlands may be critical to recreation beyond their own borders

- because of their ability to protect water quality and protect and produce wildlife and fish.
- (8) Open space and aesthetic appreciation. Wetlands provide visual variety in many different settings. Especially in urban areas, wetland open space contributes to social well-being by providing relief from intense development and a sense of connection with the natural world.
- (9) Education and scientific research. Because of the high biological productivity and the variety of plant and animal species they can support, wetlands can be of broad social benefit in providing outdoor laboratories and living classrooms for studying and appreciating natural history, ecology and biology. Many of the lessons learned and principles evolved through study of wetlands are applicable to other environmental issues.

664.4. Classification Procedures.

- (a) The commissioner shall classify each jurisdictional wetland according to the classification system set forth in section 664.5 of this Part. That system establishes four separate classes that rank wetlands according to their ability to perform wetland functions and provide wetland benefits. Class I wetlands have the highest rank, and the ranking descends through classes II, III and IV.
- (b) When a wetland contains characteristics of more than one class, the wetland shall be classified in the highest of the classes.
- (c) Where land previously mapped as wetland by the department on or before

 December thirty-first, two thousand twenty-four has been altered for agricultural

purposes, the land shall continue to be regulated according to its original classification once exempt agricultural activities cease.

664.5. Classification System.

Not all wetlands supply equally the benefits explained in section 664.3(b) of this Part. The degree to which wetlands supply benefits depends upon many factors, including: their rare species and biodiversity, their hydrological and pollution control features, their cover types and special features, and their distribution and location; and these may vary considerably from wetland to wetland. Because of this variation, the Act requires the commissioner to classify wetlands in a way that recognizes that not all wetlands are of equal value. This section establishes four ranked regulatory classes of wetlands, depending upon the degree of benefits supplied, as identified or documented by the department. The benefits cited in section 24-0105(7) of the Act are translated into discernible wetland characteristics, and these characteristics are used to classify wetlands.

(a) Class I wetlands. A wetland shall be a class I wetland if it has any of the following characteristics, as documented by the department:

Rare Species Conservation and Biodiversity

(1) it contains habitat for an essential behavior of a species listed as endangered or threatened in Part 182 of this Title; or listed as endangered or threatened by the United States Department of the Interior in the Code of Federal Regulations (50 CFR Part 17);

- (2) it contains an endangered or threatened plant species as listed in Part 193 of this Title;
- (3) it falls within, or is contiguous to a Significant Coastal Fish & Wildlife Habitat Area, designated as such by the Department of State pursuant to Part 602 of Title 19 of the New York Code of Rules and Regulations;
- (4) it is a tidally influenced wetland not regulated by the department pursuant to Article 25 of the Environmental Conservation Law;
- (5) it is contiguous to a tidally influenced wetland regulated under Article 25 of the Environmental Conservation Law;
- (6) it contains a wetland plant community identified as critically imperiled;
- (7) it is a nutrient-poor wetland;

Hydrological and Pollution Control Features

- (8) it is located in an area designated as a floodway on the most current Digital Flood Insurance Rate Map (DFIRM) produced by the Federal Emergency Management Agency (FEMA);
- (9) it is contiguous to fresh surface waters having classifications of A, AA, AA-S, A-S, or N, as set forth in Parts 800-941 of this Title;
- (b) Class II wetlands. A wetland shall be a class II wetland if it has any of the following characteristics, as documented by the department:

Rare Species Conservation and Biodiversity

 it contains an occurrence of an animal species identified as 'critically imperiled' or 'imperiled';

- (2) it contains habitat for an essential behavior of a species of special concern as listed in Part 182 of this Title, or a species listed in the New York State Wildlife Action Plan (Sept. 2015) as a 'high priority' species of greatest conservation need;
- (3) it contains an occurrence of a plant species identified as 'critically imperiled' or 'imperiled';
- (4) it is a Great Lakes Coastal Wetland that is not part of a Significant Coastal Fish & Wildlife Habitat area;
- (5) it is a vernal pool regulated pursuant to this Part;
- (6) it contains a wetland plant community identified as 'imperiled';

Hydrological and Pollution Control Features

- (7) it is located within a FEMA designated 100-year floodplain on the most current Digital Flood Insurance Rate Map (DFIRM) produced by the Federal Emergency Management Agency (FEMA);
- (8) it is within the boundary of an Environmental Protection Agency (EPA) identified Sole Source Aquifer;
- (9) it is contiguous to fresh surface waters having classifications of B as set forth in Part 701 of this Title;
- (10) it is contiguous to fresh surface waters assigned a standard of A(t), A(ts), AA(t), AA(ts), A-S(t), A-S(ts), AA-S(ts), B(t), B(ts), C(t), or C(ts) as set forth in Parts 800-941 of this Title;
- (11) it is contiguous to impaired surface waters found on New York State's most recent Clean Water Act Section 303(d) List of Impaired Waters;

Cover Types and other Special Features

- (12) it has all three wetland structural groups: woody, herbaceous, and open water;
- (13) it consists of floating and/or submerged aquatic vegetation (SAV) and is not dominated (≤ 50%) by invasive species identified by the department pursuant to Part 575 of this Title;

Distribution and Location

- (14) it is located within or adjacent to an urban area as defined and identified by the United States Census Bureau in their most recent decennial census;
- (15) the wetland is located in, or is partially located in, an area identified as a disadvantaged community as defined in the Climate Leadership and Community Protection Act (CLCPA) ECL 75-0101(5).
- (16) the wetland is located in, or is partially located in, an area identified as a Potential Environmental Justice Area as determined by the department.
- (c) Class III wetlands. A wetland shall be a class III wetland if it has any of the following characteristic, as documented by the department:

Rare Species Conservation and Biodiversity

- (1) it contains an occurrence of an animal species identified as 'vulnerable';Hydrological and Pollution Control Features
 - (2) it is located within a FEMA designated 500-year floodplain on the most current Digital Flood Insurance Rate Map (DFIRM) produced by the Federal Emergency Management Agency (FEMA);

(3) it is contiguous to fresh surface waters having classifications of C as set forth in Parts 800-941 of this Title;

Cover Types and other Special Features

- (4) it contains shrub-swamp and forested cover type(s);
- (5) it is an emergent marsh or wet meadow and is not dominated by (≤ 50%) invasive species identified by the department pursuant to Part 575.

Distribution and Location

- (6) it contains a wetland plant community identified as 'vulnerable';
- (7) it is in a town in which wetland acreage is less than one percent (1%) of the total acreage;
- (d) Class IV wetlands. A wetland shall be a class IV wetland if it has any of the following enumerated characteristics, as documented by the department:

Hydrological and Pollution Control Features

(1) It is contiguous to fresh surface waters having classifications of D as set forth in Part 701 of this Title;

Cover Types and other Special Features

- (2) it consists of floating and/or submerged aquatic vegetation (SAV) and is dominated (> 50%) by invasive species identified by the department pursuant to Part 575 of this Title;
- (3) it is an emergent marsh or wet meadow and is dominated (> 50%) by invasive species identified by the department pursuant to Part 575.

664.6. Wetlands of Unusual Importance.

A freshwater wetland, regardless of size, is of 'Unusual importance' and regulated if it possesses one or more of the following characteristics as determined by the department pursuant to this Part.

- (a) Significant Flooding. The freshwater wetland is located in a 12-digit Hydrologic Unit Code (HUC) that meets all of the following three criteria:
 - (1) it has 2 percent or more impervious surface based on recent land cover data;
 - (2) less than 5 percent of its surface area is comprised of floodwater storage zones in the form of lakes, ponds, reservoirs, or wetlands based on recent land cover data; and
 - (3) it is located within 4 kilometers (2.48 miles) of an Urban Area as defined and identified by the United States Census Bureau.
- (b) Urban Areas. It is located within or adjacent to an Urban Area, as defined and identified by the United States Census Bureau;
- (c) Rare Plants. It contains a plant species occurring in fewer than thirty-five sites statewide or having fewer than five thousand individuals statewide, as documented by the department;
- (d) Rare Animals. It meets one or more of the following criteria, as documented by the department:

- (1) It contains habitat for an essential behavior of a species listed as endangered in Part 182 of this Title; or listed as endangered by the United States Department of the Interior in the Code of Federal Regulations (50 CFR Part 17);
- (2) It contains habitat for an essential behavior of a species listed as threatened in Part 182 of this Title; or listed as threatened by the United States Department of the Interior in the Code of Federal Regulations (50 CFR Part 17);
- (3) It contains habitat for an essential behavior of species of special concern. Species of special concern are native species of fish and wildlife found by the department to be at risk of becoming threatened in New York based on the criteria for listing in Part 182 of this Title;
- (4) It contains habitat for an essential behavior of a species of greatest conservation need listed in the New York State Wildlife Action Plan (Sept. 2015) with habitat loss having been identified by the department as a high or moderate threat to New York populations.
- (e) Class I. It is classified by the department as a Class I wetland;
- (f) Unusual Local Importance. It was previously classified and mapped by the department as a wetland of unusual local importance;
- (g) Vernal Pools. It is a vernal pool that is known to be productive for amphibian breeding. The department shall determine that a vernal pool is known to be productive for amphibian breeding within a region of the state where it has documented one or more of the following in a particular vernal pool:

- In the Hudson-Mohawk Region, 55 or more Spotted Salamander egg masses, or 30 or more Wood Frog egg masses;
- (2) In the Great Lakes Region, two or more Spotted Salamander or Wood Frog egg masses;
- (3) In the Lower Hudson-NYC-Long Island, Adirondack, and Southern Tier

 Regions, 10 or more Spotted Salamander egg masses or 15 or more Wood

 Frog egg masses;
- (4) In the Lower Hudson-NYC-Long Island or Adirondacks Regions, one or more egg masses or larvae of Jefferson Salamander, Blue-Spotted Salamander, or hybrids of Jefferson and Blue-Spotted Salamander; or
- (5) In the Great Lakes, Southern Tier, or Hudson-Mohawk Regions, 20 or more egg masses or larvae of Jefferson Salamander, Blue-Spotted Salamander, or hybrids of Jefferson and Blue-Spotted Salamander; or
- (6) In any Region, one or more egg masses or larvae of Eastern Tiger Salamander, or Marbled Salamander.

A map depicting these regions is available on the department's website and in Appendix A.

The department shall create and maintain a list of geographic coordinates for vernal pools know to the department and that meet the criteria in subparagraphs (1) through (6) of paragraph (g) of this section. The department shall publish updates to the productive vernal pool list in the Environmental Notice Bulletin.

- (h) Floodways. It is located in an area designated as a floodway on the most current
 Digital Flood Insurance Rate Map (DFIRM) produced by the Federal Emergency
 Management Agency;
- (i) Previously Mapped Wetlands. It was previously mapped by the department as a regulated wetland on or before December thirty-first, two thousand twenty-four;
- (j) Local or Regional Significance. It has wetland functions and values that are of local or regional significance because it meets one or more of the following criteria:
 - (1) the wetland is located within an area specifically designated, pursuant to Part 617 of this Title, as a Critical Environmental Area (CEA) with specific reference to wetland protection by a local government;
 - (2) the wetland is partially located within the Adirondack Park and under the jurisdiction of the Adirondack Park Agency.
- (k) Important for Protection of New York State's Water Quality. A freshwater wetland shall be regulated if it is of significant importance to protecting the state's water quality based on substantial evidence, as determined by the Commissioner in writing. The Commissioner shall include in their written determination a description of the underlying reasons why the wetland is of significant importance to protecting the state's water quality and/or preventing exceedances of any water quality standards in Parts 703 or 704. The Commissioner's determinations pursuant to this paragraph shall be posted on the department's website.
- 664.7. Miscellaneous Provisions.

- (a) Extending Adjacent Areas. The adjacent area of Nutrient Poor Wetlands documented by the department shall be extended to 300 feet (91.44 meters) to protect and preserve the wetland pursuant to section 24-0701(2) of the Act.
- (b) Treatment of Two or More Areas as a Single Wetland. Two or more areas identified by the department as freshwater wetlands pursuant to this Part, may be classified and regulated as a single wetland if they are hydrologically connected, either on the surface or sub-surface, and no more than 50 meters (approximately 164.04 feet) apart.

664.8. Jurisdictional Determination Procedure

- (a) Any person may submit to the department a request for a determination as to whether a given parcel of land includes freshwater wetlands or freshwater wetland adjacent areas subject to state regulation. Such request may also inquire as to whether a permit is required for a proposed activity, provided the person has submitted a verified wetland delineation and site-specific development plans to the department.
- (b) Requests for a jurisdictional determination or wetland delineation must be made in writing and submitted consistent with instructions that shall be available on the department's website.
- (c) The department shall provide a definite answer in writing within 90 days of such request as to the jurisdictional status of a parcel, the assigned classification of any wetlands present on the parcel, and whether a permit is required for proposed activities. Provided however, that weather or ground conditions prevent the department from making a jurisdictional determination within ninety days, it may extend such period until a determination can be made.

- (d) A positive jurisdictional determination shall be reviewable pursuant to the procedures in section 664.9 of this Part. A negative jurisdictional determination shall be a complete defense to the enforcement of the Act as to such parcel of land for a period of five years from the date it is issued.
- 664.9. Consultation, and Review of Positive Jurisdictional Determinations.
- (a) Any person who owns property having received a positive jurisdictional determination from the department pursuant to this Part after January 1, 2025, may appeal such determination pursuant to this section.
- (b) Any person wishing to make an appeal must first have an initial consultation with the department and provide a verified delineation of the wetland or wetlands identified in the jurisdictional determination. If such person does not already have a delineation, they may request that the department delineate the boundary of the particular wetland or wetlands on their property prior to the date of the initial consultation.
- (c) If after the initial consultation, a landowner still wishes to formally appeal the determination pursuant to this section, they must complete a freshwater wetlands jurisdictional determination appeal application and submit it to the department. Appeal applications are not complete until the applicant has provided all necessary information. Appeal applications shall be available on the department's website. Appeals must be submitted no more than 120 days from the date of the initial consultation.
- (d) The department shall issue a decision in writing within 60 days after receipt of a complete freshwater wetlands jurisdictional determination appeal application, provided

that this deadline may be extended by the department for an additional 30 days if it determines that an additional visit to the property is necessary.

- (e) The acceptable basis for an appeal is technical information indicating one or more of the following:
 - (1) an omission of material fact;
 - (2) incorrect application of the current regulatory criteria or;
 - (3) incorrect application of guidance for identifying wetlands and delineating wetland boundaries.

664.10. Severability.

The provisions of this Part shall be severable, and if any clause, sentence, paragraph, subdivision, or any other provision of this Part shall be adjudged invalid by a court of competent jurisdiction, such order or judgment shall be confined in its operation to the controversy in which it was rendered, and shall not affect or invalidate the remainder of any provision of any section or the application of any part thereof to any other person or circumstance.

Appendix A - Map depicting major regions of New York State for productive vernal pools

