

IV. STANDARDS FOR INLAND WETLANDS

A. Banks (Naturally Occurring Banks and Beaches)

1. Preamble

- a. Banks are likely to be significant to wildlife habitat, public or private water supply, groundwater supply, flood control, storm damage prevention, prevention of pollution, and the protection of fisheries. Where banks are composed of concrete, asphalt, or other artificial impervious material, said banks are likely to be significant to flood control and storm damage prevention.
- b. Banks are areas where groundwater discharges to the surface and where, under some circumstances, surface water recharges the groundwater.
- c. Where banks are partially or totally vegetated, the vegetation serves to maintain the bank's stability, which in turn protects water quality by reducing erosion and siltation.
- d. Banks may also provide shade that moderates water temperatures, as well as providing breeding habitat, escape cover, and food, all of which are significant to the protection of fisheries. Banks which drop off quickly or overhang the water's edge often contain numerous undercuts which are favorite hiding spots for fish.
- e. Banks act to confine floodwaters during storms, preventing the spread of water to adjacent land. Because banks confine water during storms to an established channel, they maintain water temperatures and depths necessary for the protection of fisheries. The maintenance of cool water temperatures during warm weather is critical to the survival of many species. An alteration of a bank that permits water to spread frequently or consistently over a larger and more shallow area increases the amount of property that is routinely flooded, as well as elevating water temperatures and reducing fish habitat within the main channel.
- f. The topography, plant community composition and structure, and soil structure of banks together provide important food, shelter, migratory and overwintering areas, and breeding areas for wildlife. Topography plays a role in determining the suitability of banks to serve as burrowing or feeding habitat. Soil structure also plays a role in determining the suitability for burrowing, hibernation, and other cover. Bank topography and soil structure impact the bank's vegetative structure as well. Bushes and other undergrowth, trees, vegetation extending from the bank into the water, and vegetation growing along the water's edge are also important to a wide variety of wildlife. A number of tubers and berry bushes also grow in banks and serve as important food for wildlife. Finally, banks may provide important shelter for wildlife which needs to move between wetland areas.

2. Definitions, Critical Characteristics, and Boundaries

- a. A bank is the portion of the land surface that normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, between a water body and an upland.
- b. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, stone, or sand.
- c. The physical characteristics of a bank, as well as its location, as described in the foregoing subsections 2.a and 2b. are critical to the protection of the interests specified in Section IV.A.1.
- d. The upper boundary of a bank is the first observable break in the slope or the mean annual flood level, whichever is higher. The lower boundary of a bank is the mean

annual low flow level.

3. Presumptions

- a. Where a proposed activity involves the removing, filling, dredging, or altering of a bank, the Commission shall presume that such area is significant to the interests specified in the Preamble above. This presumption is rebuttable and may be overcome upon a clear showing that the bank does not play a role in the protection of said interests. In the event that the presumption is deemed to have been overcome, the Commission shall make a written determination to this effect, setting forth its grounds.
- b. Land within 100 feet of a bank (200 feet in riverfront) is likely to be significant to the protection and maintenance of the bank, and therefore to the protection of the interests specified in the Preamble above.

4. General Performance Standards.

- a. No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, or altering of a bank, or of land within 50 feet of any bank, shall be permitted by the Commission, except for activity which is allowed under a variance from these regulations granted pursuant to Section I.D.
- b. Any proposed work permitted by the Commission on a bank or within 100 feet of the upper boundary of a bank (200 feet in riverfront), shall not impair the following: (1) the physical stability of the bank; (2) the water-carrying capacity of the existing channel within the bank; (3) groundwater and surface water quality; (4) the capacity of the bank to provide breeding habitat, escape cover, and food for fisheries; or, (5) the capacity of the bank to provide important wildlife habitat functions.
- c. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or fifty (50) feet (whichever is less) of the length of the bank found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat as determined by procedures contained in 310 CMR 10.60.
- d. No structure of any kind shall be permitted on an eroding bank to protect any building or other structure built pursuant to a Permit granted after the effective date of these regulations.

B. Vegetated Wetlands, Bordering and Isolated (Wet Meadows, Marshes, Swamps, and Bogs)

1. Preamble

- a. Freshwater wetlands are likely to be significant to public or private water supply, groundwater supply, flood control, storm damage prevention, prevention of pollution, and protection of fisheries and wildlife habitat.
- b. The plant communities, soil, and associated low topography of freshwater wetlands remove or detain sediments, nutrients (such as nitrogen and phosphorous) and toxic substances (such as heavy metal compounds) that occur in runoff and flood waters.
- c. Some nutrients and toxic substances are detained for years in plant root systems or in the soils. Others are held by plants during the growing season and released as the plants decay in the fall and winter. This latter phenomenon delays the impact of

- nutrients and toxins until the cold weather period, when such impacts are less likely to reduce water quality.
- d. Freshwater wetlands are areas where ground water discharges to the surface and where, under some circumstances, surface water discharges to the ground water. The profusion of vegetation and the low topography of freshwater wetlands slow down and reduce the passage of flood waters during periods of peak flows by providing temporary flood water storage, and by facilitating water removal through evaporation and transpiration. This process reduces downstream flood crests and resulting damage to private and public property. During dry periods the water retained in freshwater wetlands is essential to the maintenance of base flow levels in rivers and streams, which in turn is important to the protection of water quality and water supplies.
 - e. Wetland vegetation provides shade that moderates water temperatures important to fish life. Wetlands flooded by adjacent water bodies and waterways provide food, breeding habitat, and cover for fish. Fish populations in the larval stage are particularly dependent upon food provided by over-bank flooding that occurs during peak flow periods (extreme storms), because most river and stream channels do not provide sufficient quantities of the microscopic plant and animal life required for food.
 - f. Wetland vegetation supports a wide variety of insects, reptiles, amphibians, mammals, and birds that are a source of food for important game fish. Bluegills (*Lepomis macrochirus*), pumpkinseeds (*Lepomis gibbosus*), yellow perch (*Perca flavescens*), rock bass (*Ambloplites rupestris*), and all trout species feed upon nonaquatic insects. Large-mouth bass (*Micropterus salmoides*), chain pickerel (*Esox niger*), and northern pike (*Esox lucius*) feed upon small mammals, snakes, nonaquatic insects, birds, and amphibians.
 - g. Freshwater wetlands are probably the Town's most important habitat for wildlife. The hydrologic regime, plant community composition and structure, soil composition and structure, topography, and water chemistry of freshwater wetlands provide important food, shelter, migratory and overwintering areas, and breeding areas for many birds, mammals, amphibians, and reptiles. A wide variety of vegetative wetland plants, the nature of which are determined in large part by the depth and duration of water, as well as soil and water composition, are utilized by various species as important areas for mating, nesting, brood rearing, shelter, and (directly and indirectly) food. The diversity and interspersed structure of the vegetative structure is also important in determining the nature of its wildlife habitat. Different habitat characteristics are used by different wildlife species during summer, winter, and migratory seasons.
2. Definitions, Critical Characteristics, and Boundary
- a. Vegetated wetlands are freshwater wetlands. They may border on rivers, streams, or ponds, or may be isolated. The types of freshwater wetlands are riverine wetlands, marshes, wet meadows, bogs, and swamps that meet both of the following requirements: 1) 50% or more of the natural vegetative community consists of obligate or facultative wetland plant species as included or identified in the Wetland Plant List (Northeast Region) for the National Wetlands Inventory, U.S. Fish and Wildlife Service, as most recently amended; and 2) saturated or inundated conditions exist as evidenced by hydric soils.
 - b. Hydric soils are those soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. For the purposes of these Regulations, "upper part" is defined as 6 inches for Somewhat

Poorly Drained Soils. Poorly and very Poorly Drained Soils are presumed to be hydric, unless they have been artificially drained or otherwise altered. In such special cases, the “upper part” shall be defined as within 12 inches of the soil surface. Oxidized rhizospheres and mottling within the “upper part” of the soil as defined above shall be considered as evidence of anaerobic conditions, and the soil shall be considered hydric. Also for the purposes of the Regulations, wetland plant communities which are dominated by plants rated as FACW by the Fish and Wildlife Service and which contain obligate wetland plants shall be presumed to be hydric soils.)

- c. The drainage classification of a soil shall be determined as designated in “Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands protection Act” (March, 1995). The Commission recognizes however that some hydric soils in Amherst do not meet these published guidelines, and so reserves the right to make a case-by-case determination of a soil’s drainage classification. These unusual soils include: soils developed in red parent materials, recently deposited sediments, and soils formed in oxygenated groundwater seeps.
- d. In situations where the natural vegetative community may have been destroyed, as for example by lawn or agricultural use, the Commission may determine an area to be a freshwater wetland on the basis of hydric soils alone or, at the request of the applicant or landowner, may defer the determination until the natural vegetation has regrown.
- e. In situations where the Commission determines that the natural vegetative community has been destroyed in violation of the bylaw, the Commission itself may elect to defer any determination of the presence or absence or (or boundaries of) a freshwater wetland until the natural vegetation has regrown, and until that time may determine the area to be a freshwater wetland on the basis of hydric soils alone.

4. Presumptions

- a. Where a proposed activity involves the removing, filling, dredging, or altering of a freshwater wetland, the Commission shall presume that such an area is significant to the interests specified in the Preamble above (B1). This presumption is rebuttable and may be overcome upon a clear showing that the freshwater wetland does not play a role in the protection of said interests. In the event that the presumption is deemed to have been overcome, the Commission shall make a written determination to this effect, setting forth its grounds.
- b. Land within 100 feet of a vegetated wetland is likely to be significant to the protection and maintenance of vegetated wetlands and therefore to the protection of the interests that these resource areas serve to protect.

5. General Performance Standards

Replication. Where the presumption set forth above is not overcome, any proposed work in a freshwater wetland shall not destroy or otherwise impair any portion of said area.

Notwithstanding this, the Commission may issue a Permit allowing work that results in the loss of up to 5,000 square feet of wetland when said area is replaced in accordance with the following general conditions, as well as any additional conditions the Commission deems necessary to ensure that the replacement area will function in a manner similar to the area being lost:

- a. The surface of the replacement area being created shall be double that of the lost area.
- b. The groundwater and surface water elevation of the replacement area shall be approximately equal to that of the lost area.
- c. The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area.
- d. The replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area.
- e. The replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area.
- f. At least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with U.S. Soil Conservation Service methods.
- g. The replacement area shall be provided in a manner that is consistent with all other general performance standards for each resource area described in these Regulations.
- h. The Commission may, at its discretion, issue a Permit if the wetland in question has a surface area of less than 500 square feet; takes the form of a narrow, linear finger-like wetland extending into an adjacent upland; or if in the judgment of the Commission it is not reasonable to scale down, redesign, or otherwise change the proposed work so that it could be completed without loss of said wetland.
- i. If the Commission determines that it is unfeasible to create a replacement wetland on site, it may require the applicant to contribute financially to the construction of an off-site replacement area in wetlands under the control of the Commission, the contribution not to exceed the actual cost of the wetland replacement.
- j. Notwithstanding the above provisions, no project may be permitted that might have adverse effect on: (1) habitat sites of rare plants, as well as vertebrate or invertebrate species as identified on the Natural Heritage and Endangered Species Estimated Habitat Maps on file with the Commission and identified under "Estimated Habitats of Rare Wildlife" (Section 10.59) of the state Wetlands Protection Act Regulations, or (2) any portion of a bordering vegetated wetland that is within an Area of Critical Environmental Concern designated by the Secretary of Environmental Affairs under M.G.L. Ch. 21A, Sec. 2(7) and 310 CMR 12.00.
- k. These provisions shall not apply to maintenance of stormwater detention, retention, or sedimentation ponds, or to maintenance of stormwater emergency dissipating structures, that have been constructed in accordance with a valid Order of Conditions.

C. Land Under Water Bodies (Rivers, Streams, Ditches, Ponds, Pools)

1. Preamble

- a. Land under water bodies and waterways is likely to be significant to wildlife habitat, public and private water supply, groundwater supply, flood control, storm damage prevention, prevention of pollution, and protection of fisheries and wildlife habitat. Where such land is composed of concrete, asphalt, or other artificial impervious material, said land is likely to be significant to flood control and storm damage prevention.

- b. Where land under water bodies and waterways is composed of pervious material, such land represents a point of exchange between surface and groundwater.
- c. The physical nature of land under water bodies and waterways is highly variable, ranging from deep organic and fine sedimentary deposits to rocks and bedrock. The organic soils and sediments play an important role in the process of detaining and removing dissolved and particulate nutrients (such as nitrogen and phosphorous) from the surface water above. They also serve as traps for toxic substance such as heavy metal compounds.
- d. Land under water bodies and waterways, in conjunction with banks, serves to confine floodwater within a definite channel during frequent storm activity. Filling within a channel blocks flow, which in turn causes backwater and overbank flooding during such storms. An alteration of land under water bodies and waterways which causes water frequently to spread out over a larger area at a lower depth increases the amount of property that is routinely flooded. It also results in an elevation of water temperature and a decrease in habitat in the main channel, both of which are detrimental to fisheries, particularly during periods of warm weather and low flows.
- e. Land under water bodies and waterways that is composed of gravel allows the circulation of cold, well oxygenated water necessary for the survival of important game fish species. River and stream bottoms with a diverse structure composed of gravel, large and small boulders, and rock outcrops provide escape cover and resting areas for game fish species. Such bottom structures also provide areas for the production of aquatic insects essential to fisheries.
- f. Land under ponds is vital to a large assortment of warm-water fish during spawning periods. Species such as largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), bluegills (*Lepomis macrochirus*), pumpkinseeds (*Lepomis gibbosus*), black crappie (*Pomoxis nigromaculatus*), and rock bass (*Ambloplites rupestris*) build nests on the bottom substrates within which they shed and fertilize their eggs.
- g. The plant community composition and structure, hydrologic regime, topography, soil composition, and water quality of land under water bodies and waterways provide important food, shelter, migratory, and overwintering areas, and breeding areas for wildlife. Certain submerged, rooted vegetation is eaten by waterfowl and some mammals. Some amphibians (as well as some invertebrate species eaten by vertebrate wildlife) attach their eggs to such vegetation. Some aquatic vegetation protruding out of the water is also used for nesting, and many species use dead vegetation resting on land under water but protruding above the surface for feeding and basking. Soil composition is also important for hibernation and for animals that burrow their tunnels under water. Hydrologic regime, topography, and water quality not only affect vegetation but also determine which species feed in an area.

2. Definitions, Critical Characteristics, and Boundaries

- a. Land under water bodies is the land beneath any river, stream, ditch, pond, or vernal pool. Said land may be composed of organic muck or peat, fine sediments, gravel, rock, or bedrock.
- b. The physical characteristics and location of land under water bodies and waterways specified in the subsection above (2.a) are critical to the protection of the interests specified in the Preamble to this category.

- c. The boundary of land under water bodies is the mean annual low water level.
3. Presumptions
- a. Where a project involves removing, filling, dredging, or altering any land under a water body or waterway, the Commission shall presume that such an area is significant to the interests specified in the Preamble above. This presumption is rebuttable and may be overcome upon a clear showing that said land does not play a role in the protection of said interests. In the event that the presumption is deemed to have been overcome, the Commission shall make a written determination to this effect, setting forth the grounds.
 - b. Land within 100 feet of land under water bodies is likely to be significant to the protection and maintenance of the land under the water bodies, and therefore to the protection of the interests which these water bodies serve to protect.
4. General Performance Standards
- a. Where the presumption set forth above (C.3) is not overcome, any proposed work permitted by the Commission on land under water bodies or within 100 feet of land under water bodies shall not impair the following:
 - i. the water-carrying capacity within the defined channel, as provided by said land in conjunction with the banks;
 - ii. ground and surface water quality;
 - iii. the capacity of said land to provide breeding habitat, escape cover, and food for fisheries; or,
 - iv. the capacity of said land to provide important wildlife habitat functions.
 - b. Notwithstanding the provisions of 4.a above, no project may be permitted which will have any adverse effect on specified habitat sites of rare plants or rare vertebrate or invertebrate species as identified by procedures established under 310 CMR 10.59.

D. Bordering Land Subject to Flooding

1. Preamble
- a. Land bordering a waterway or water body subject to flooding is likely to be significant to flood control and storm damage prevention. Such land provides a temporary storage area for flood water that has overtopped the bank of a river, stream, or ditch, or the basin of a pond or pool.
 - b. During periods of peak runoff, flood waters are both retained (slowly released through evaporation and percolation) and detained (slowly released through surface discharge) by bordering land subject to flooding.
 - c. Over time, incremental filling of bordering land subject to flooding increases the extent and level of flooding. Filling causes lateral displacement of ponded water onto contiguous properties, which may result in damage to said properties.
 - d. Land subject to flooding is likely to be significant habitat for various plant and animal species.
2. Definitions, Critical Characteristics, and Boundaries

- a. Bordering land subject to flooding is an area with a low, flat topography adjacent to and subject to inundation by flood waters rising from rivers, streams, ditches, ponds, or water courses. It extends from the banks of said waterways or water bodies, or from any bordering vegetated wetlands adjacent to said waterways or water bodies.
- b. The topography and location of bordering land subject to flooding as specified in 2.a above make such lands critical to the protection of the interests specified in D.1 above. Where bordering land subject to flooding is significant to the protection of wildlife habitat, the physical characteristics as described in 310 CMR 10.57(1)(a) are critical to the protection of that interest.
- c. The boundary of bordering land subject to flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be determined by reference to the most recently available flood profile data prepared for Amherst under the National Flood Insurance Program (NFIP), currently administered by the federal Emergency Management Agency (FEMA). Where NFIP profile data is unavailable, the boundary shall be the maximum lateral extent of flood water which has been observed or recorded. In the event of a conflict, the Commission may require the applicant to determine the boundary by engineering calculations.
- d. The boundary of the ten year floodplain is the estimated maximum lateral extent of the flood water which will theoretically result from the statistic ten-year frequency storm. Said boundary shall be determined as specified under 310 CMR 10.57 (2)(a)3, except that where NFIP Profile data in unavailable, the boundary shall be the maximum lateral extent of flood water which has been observed or recorded during a 10 year frequency storm and, in the event of conflict, engineering calculations under 310 CMR 10.57 (2)(a)3.a shall be based on a design storm of 48/10 (4.8) inches of precipitation in 24 hours.

3. Presumptions

- a. The boundary of bordering land subject to flooding as determined by NFIP shall be presumed accurate. This presumption may be overcome only by credible evidence from a registered professional engineer or other qualified professional.
- b. Where a proposed activity involves removing, filling, dredging, or otherwise altering land subject to flooding, the Commission shall presume that such an area is significant to the protection of the interests specified in D.1 above. This presumption is rebuttable and may be overcome only upon a clear showing that said land does not play such a role. In the event that the presumption is deemed to have been overcome, the Commission shall make a written determination to this effect, setting forth its grounds.

4. General Performance Standards

- a. Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within bordering land subject to flooding, when in the judgment of the Commission said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows. Compensatory storage shall mean a volume not previously used for flood

- storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river or stream.
- b. Work within bordering land subject to flooding, including the work required to provide compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.
 - c. Any activity undertaken on land subject to flooding or within 100 feet of land subject to flooding shall not result in the following: (1) flood damage due to filling causing lateral displacement of water that would otherwise be confined; (2) an adverse effect on public or private water supply or groundwater supply, where said area is underlain by pervious material; (3) an adverse effect on the capacity of said area to prevent pollution of groundwater, where the area is underlain by pervious material covered by a mat of peat or muck; or (4) an impairment of the area's capacity to provide wildlife or rare plant species habitat.
 - d. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in a resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions.
 - e. Notwithstanding the above provisions, no project may be permitted that might have adverse effect on habitat sites of rare vertebrate or invertebrate species as identified on the Natural Heritage and Endangered Species Estimated Habitat Maps on file with the Commission and identified under "Estimated Habitats of Rare Wildlife" (Section 10.59) of the state Wetlands Protection Act Regulations.

E. Seasonal Wetlands (Temporary Ponds, Isolated Areas Subject to Flooding, and Vernal Pools)

1. Preamble
 - a. Seasonal wetlands, found in flood plains and in saddles at the base of slopes, temporarily confine water during periods of high water table or high input from spring runoff, snowmelt, or heavy precipitation, and thus are likely to be locally significant for flood control, storm damage prevention, and groundwater and public and private water supply. Such wetlands are characteristically small, but there is no minimum threshold size and a given pool can vary in size from year to year depending upon the amount of rainfall or snowmelt.
 - b. Where such areas are underlain by pervious materials, they form a point of exchange between ground and surface water, and so are likely to be significant to public or private water supply and to groundwater supply. Where such land is underlain by pervious materials covered by a mat of organic peat and muck which detains and removes contaminants, it is likely to be significant in the prevention of pollution from substance such as herbicides, pesticides, fertilizers, road salts, and septic system discharges.

- c. Vernal pools, which are seasonal wetlands that confine water for a minimum of two continuous spring months but lack vertebrate predators such as adult fish, are significant in the support of duckweed, caddis flies, and mollusks, thus providing habitat for members of the fingernail and pea clam family (*Sphaeriidae*), numerous amphibians, reptiles (including spotted turtle, painted turtle, and snapping turtle) and a number of other animals.
- d. Vernal pools, in addition, provide critical breeding habitat for the Jefferson salamander (*Ambystoma jeffersonianum*), blue-spotted salamander (*A. laterale*), marbled salamander (*A. opacum*), spotted salamander (*A. maculatum*), and wood frog (*Rana sylvatica*), as well as feeding and occasional breeding habitat for the gray treefrog (*Hyla versicolor*), spring peeper (*H. crucifer*), American toad (*Bufo americanus*), and four-toed salamander (*Hemidactylium scutatum*).
- e. Land under vernal pools is crucial breeding habitat for amphibian species, and, as most of these amphibians remain near the breeding pool during the remainder of their lifecycle, areas immediately surrounding vernal pools are critical in serving all of the non-breeding habitat functions of amphibians that require the pools for breeding. Such areas also provide food for many reptiles, birds, and mammals.

2. Definitions, Critical Characteristics, and Boundaries

- a. Seasonal wetlands (isolated areas subject to flooding and temporary ponds) constitute land that does not border on a river, stream, or pond, but that contains a depression or closed basin which holds water for an extended period of time or even continuously but is too small to be called a pond or lake. The depression may occur in otherwise flat topography, where the water may pool to the surface at least once a year or may be contained in the top 24 inches of soil, or may occur on a downslope of a sidehill steep.
- b. Seasonal wetlands typically produce a well-developed layer of organic matter, primarily through trapping airborne leaves in the fall. The presence of water-stained leaves in a dry depression is a good indicator that the area temporarily serves to pool water.
- c. The vegetation and soil of seasonal wetlands may be like the vegetative community and hydric soil found in a freshwater wetland, or, if the presence of water is of short duration, the vegetation and soil may be those of a seasonal wetland.
- d. The boundary of a seasonal wetland shall be defined as one of the following (depending upon the available information), with the measuring method containing the largest area being adopted: 1) an area consisting of at least 50% of the natural vegetative community of obligate or facultative wetland species; 2) the broadest extent of pooling observed or recorded in said area; 3) the extent of the presence of water stained leaves; 4) the extent of the presence of caddis fly cases and/or fingernail or pea clams; 5) the area calculated to be inundated by runoff from the 100-year storm; or, 6) the area of hydric soil.
- e. Vernal pools are seasonal wetlands in the form of isolated depressions or closed basins which temporarily (for a minimum of two continuous spring months in most years) confine water during periods of high water table or high input from spring runoff, snowmelt, or heavy precipitation. Being free of adult fish populations and other vertebrate predators, they support populations of non-transient macro-organisms, duckweed, caddis flies, and mollusks, and provide habitat for members of

the fingernail and pea clam family (*Sphaeriidae*), numerous amphibians, reptiles (including spotted turtle, painted turtle, and snapping turtle), and a number of other animals.

3. Presumptions

- a. Where a proposed activity involves the removing, filling, dredging, or otherwise altering of a seasonal wetland, the Commission shall presume that such an area, as well as the area within 100 feet of the mean annual boundary of said wetland, is significant to the interests identified in the preamble and, in the case of vernal pools, to the protection of wildlife habitat, particularly amphibian breeding habitat. This presumption is rebuttable and may be overcome upon a clear showing that the seasonal wetland does not play a role in the protection of wildlife habitat. In the event that the presumption is deemed to have been overcome, the Commission shall make a written determination to this effect, setting forth its grounds.
- b. Since a seasonal wetland may also be significant for the prevention of flooding and flood damage, protection of public and private water supplies and groundwater, and the prevention of pollution, if a presumption of wildlife habitat is overcome, a determination for these other interests may be considered as set forth under Section D above.
- c. Provided the isolated wetland subject to flooding is not a vernal pool and is less than 500 square feet in size, it is presumed not to be significant to the resource areas protected by the bylaw.

4. General Performance Standards

Where the presumptions set forth in E.3 above are not overcome, any proposed work permitted by the Commission on seasonal wetlands or within 100 feet of seasonal wetlands shall not result in the following:

- a. Any impairment of the capacity of the seasonal wetland, as well as the area within 100 feet of the mean annual boundary of said wetland, to provide wildlife habitat.
- b. Flood damage due to filling that causes lateral displacement of water which would otherwise be confined within said area.
- c. An adverse effect of public and private water supply or groundwater supply, where said area is underlain by pervious material.
- d. An adverse effect on the capacity of said area to prevent pollution of groundwater, where said area is underlain by pervious material covered by a mat of organic peat and muck.
- e. An adverse effect on specified wildlife habitat of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

F. Limited Projects

Notwithstanding the provisions of IV.A through IV.E above, the Commission may issue a Permit and impose such conditions as will contribute to the interests identified in the bylaw permitting limited projects as specified in the state Wetlands Protection Act Regulations, 310 CMR 10.53 (3).

G. Buffer Zones

1. Preamble

- a. Any project undertaken near a wetlands resource area has a high likelihood of altering that area, either immediately, as a consequence of construction, or over a longer period of time, as a consequence of daily operation of the completed project. Accordingly, these regulations require that any person intending to perform work within 100 feet of a resource area must submit to the Commission either a Request for Determination of applicability or a Notice of Intent application. In this way the Commission has an opportunity to review the proposed project to determine whether any alteration of a neighboring resource area will occur, and whether any resulting alteration is in compliance with other applicable performance standards.
- b. If, in response to a Request for Determination of applicability, the Commission finds that work within the Buffer Zone will not alter the resource area, it may issue a Negative Determination of applicability, with or without conditions.

2. Definitions and Critical Characteristics

- a. The Buffer Zone is that area of land extending 100 feet *horizontally* outward from the boundary of any resource area specified in IV.A through IV.E above.
- b. Vegetative cover and soils within the Buffer Zone filter runoff, thus protecting water quality within the resource area. The vegetation and soils may also slow surface runoff, thereby permitting infiltration of precipitation, thus maintaining the hydrologic regime to which the resource area is adapted.
- c. Vegetative cover, soils, and topography may help to control the surface and groundwater regime in the resource area in a Buffer Zone even where drainage is not towards a resource area.

3. Presumptions

- a. The Commission shall presume that work in the types of projects listed below, within the designated distances from a resource area, will result in alteration of the resource area. For purposes of the table below: “work” means filling, excavating, grading, operating construction equipment, and storing or stockpiling earth or construction materials; “building” means a structure requiring a building permit.

| <i>Type of Project</i> | <i>No-work Distance from Resource Area</i> | <i>Building Set-back Limit</i> |
|--|--|--------------------------------|
| Residential lot | 30 ft. | 50 ft. |
| Subdivision lot (with lot preparation done in conjunction with road construction) | 30 ft. | 50 ft. |
| Commercial/Industrial | 30 ft. | 75 ft. |
| Driveways/Utilities | 25 ft. (except for permitted crossings) | |
| Parking lot | 25 ft. | |
| Other roads | 25 ft. (except for permitted crossings) | |
| Vernal Pools | 100 ft. | 100 ft. |

These presumptions are rebuttable and may be overcome upon a clear showing that the

nature of the proposed work, special design measures, construction controls, or site conditions will prevent alteration of the resource area.

- b. The following activities in the Buffer Zone are presumed not to alter a resource area, but still require (as a minimum) filing of a Request for Determination of Applicability in order for the Commission to determine whether this presumption applies:
 - i. discharge of subsurface drainage from a single lot or residential building;
 - ii. discharge of roof and driveway runoff from a total impervious area of less than 4000 square feet (per project) meeting the above separation distances;
 - iii. landscape plantings of non-invasive species, provided that areas disturbed are mulched immediately and there is no change in grade;
 - iv. construction or installation of fences or structures not requiring a building permit;
 - v. percolation tests or soil borings carried out to gather information for submittal with a Notice of Intent application.

These presumptions are rebuttable and may be overcome when the nature of the work or site conditions will result in alteration of the resource area unless special preventive measures are taken.

4. General Performance Standards

- a. Work within the Buffer Zone shall result in either no alteration of a resource area, or in alteration permitted by the Commission that complies with the applicable performance standards for the resource area and any other conditions the Commission may require to enforce those performance standards.
- b. For small projects such as single-family lots, point discharge of surface runoff within or through a Buffer Zone shall be controlled to minimize increase in peak flow in the watercourse downstream of the discharge point for the runoff, as determined for the 2-year, 10-year, and 100-year storms, and to cause no increase in flood elevations outside the project site.
- c. For large projects, Massachusetts storm water management standards shall apply.