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IV. SUMMARY OF WILDLIFE REGULATIONS

A. Presumptions of Significance. A presumption is created that the following coastal resource areas are significant to the protection of wildlife habitat: Land Under Water; Coastal Beaches; Coastal Dunes; Barrier Beaches; Rocky Intertidal Shores; Salt Marshes; and Land Under Salt Ponds. Presumptions of significance are also made for all inland resource areas, though only for portions of Land Subject to Flooding. For Bordering Land Subject to Flooding, only those areas are presumed significant which have not been extensively altered by human activity; furthermore, except for vernal pool habitat (which is critical to certain amphibians), the presumption is limited to areas on the 10-year floodplain or within 100 feet of the bank or bordering vegetated wetland (whichever is further from the water body). Within isolated Land Subject to flooding, only vernal pool habitat is presumed significant to the protection of wildlife habitat. Vernal pools are presumed to exist, however, only when certified and mapped by the Massachusetts Division of Fisheries and Wildlife.

Like the presumptions of significance found in current regulations regarding other interests protected by M.G.L. c. 131, § 40, presumptions regarding wildlife habitat are generalizations based on a generic study of each resource area. (As noted above, however, unlike presumptions of significance regarding other statutory interests, presumptions regarding wildlife are predicated on a statutory definition which requires the presence of certain physical characteristics providing important wildlife habitat functions.) The *prima facie* force of the presumption can be overcome by the introduction of sufficient evidence to the contrary; that is, by a showing that the resource area in question functions atypically.

B. Performance Standards. For coastal resource areas, little or no change in performance standards are made for Dunes, Salt Marshes or Land Under Salt Ponds. This is because existing standards for fisheries and other interests protected by M.G.L. c. 131, § 40 are generally adequate to protect wildlife habitat as well. Only minor changes are made in performance standards for water-dependent projects on Land Under the Ocean, Coastal Beaches, Barrier Beaches, and Rocky Intertidal shores. New, stricter performance standards, however, are set for non-water-dependent projects in these resource areas. Such projects may have no adverse effects on specified wildlife habitat characteristics.

In addition, conservation commissions or the Department may allow maintenance, repair, and/or improvement (but not substantial enlargement) of certain projects such as existing roadways, structures and road drainage facilities in coastal resource areas, subject to whatever conditions are deemed appropriate.

For all resource areas (coastal and inland), no project may have any adverse effect on the local population of a rare, "state-listed" vertebrate or invertebrate animal species, where the project is located within the habitat of such species. These habitats are only presumed to exist where mapped by the Massachusetts Natural Heritage and Endangered Species Program. These areas make up only a small percentage of the land subject to these regulations.

For inland resource areas, no changes in performance standards are made for bordering vegetated wetlands (with the exception of special provisions for rare, state-listed species, described above), because existing performance standards allow no large scale alteration of such wetlands, and even small alterations (under 5,000 sq. ft.) must be replicated. For other inland resource areas, project size "thresholds" of 10% of the wildlife habitat on each lot (with a maximum threshold on each lot of 50 feet of Bank and 5,000 sq. ft. of Land Under Water and Land Subject to Flooding) are established, below which projects are allowed without being considered to impair their capacity to provide important wildlife habitat functions. Such thresholds do not apply to critical "vernal pool (amphibian) habitat" on Land Subject to Flooding. Moreover, once this threshold of the wildlife habitat on a lot has been altered

The preamble to the 1987 regulations has a statement of particular importance to the protection of uncertified vernal pools. ILSF typically functions as vernal pool habitat. Their size, duration of flooding, and other characters lead to this generalization. ILSF is not presumed to be significant to the protection of the wildlife habitat interest unless it contains an officially certified vernal pool. However, according to the preamble, the *prima facie* force of the presumptions of significance can be overcome upon a showing that the resource area functions atypically. With adequate information presented during a public hearing, such as photographs of evidence that would suffice for certification, commissions may protect uncertified vernal pools as though they had been certified - the presumption of non-existence has been overcome. This statement in the preamble also establishes the Commission's discretionary authority (10.57(3)) to protect wetlands that are providing wetland functions for which there is no presumption of significance. If the commission sees evidence that overcomes a presumption, it has the authority to impose conditions that would protect that interest.

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As noted in detail above, this is exactly what the Department has done in creating the presumptions contained in these regulations and certain thresholds below which wildlife habitat functions are irrebuttably deemed not to be important (with the exception of rare species habitat).

As with presumptions of significance regarding all other statutory interests, the presumption for wildlife habitat is based on scientifically supported generalities regarding each resource area, and may be overcome by clear evidence that a specific project site acts atypically.

B. Expansion of Jurisdiction. Certain parties suggested that the proposed regulations expanded the jurisdiction of the regulations by adding what can be strict new performance standards to certain resource areas which had previously been subject to less strict standards. The Department disagrees. Adding a new interest to be protected under M.G.L. c. 131, § 40 clearly requires new performance standards in some resource areas, but in no case has the Department changed the definition or boundaries of any resource area as previously defined, nor has it changed any rules pertaining to the buffer zone or uplands. Furthermore, although there were a very large number of comments asking the Department to protect small, upland vernal pools, the Department has consistently rejected this suggestion on the basis that such an action would expand the geographic jurisdiction of conservation commissions and the Department, in contradiction to the intention of most parties supporting the wetlands/wildlife amendment and the Legislature itself.

C. Vernal Pools. On the issue of vernal pools, the Department received two groups of comments. As noted directly above, many individuals and organizations pressed the Department to protect all vernal pools, including those outside currently defined wetland resource areas, but this was rejected as an unauthorized expansion of jurisdiction. Many parties, including the Department's own regional staff, noted that because they are often very small in size and usually temporary in nature, the proposed regulatory language on identifying vernal pools would lead to innumerable, frequently insoluble disputes over the presence of such habitats on Land Subject to Flooding. After extensive research on vernal pool identification techniques, the Department concluded that it would be unfair to applicants to retain proposed requirements that could force them to conduct difficult, timely, expensive and often inconclusive searches for possible vernal pools. Instead, the final regulations create a presumption that vernal pools are present only when mapped, where such maps have been certified by the Division of Fisheries and Wildlife. That Division has agreed to establish such a certification program, which will require evidence of the breeding of amphibian species that need vernal pools. Finally, scientific evidence was presented to the Department that areas immediately surrounding vernal pools generally serve all the important nonbreeding habitat functions of amphibians which require vernal pools for breeding. Consequently, the regulations contain performance standards protecting the area within 100 feet of the boundaries of vernal pools.

D. Floodplains. Perhaps the most controversial provisions in the proposed regulations were those protecting floodplains (Bordering Land Subject to Flooding). On the one hand, there were many comments urging the Department to protect all wildlife habitats (including fields) throughout the 100 year floodplain, except for those portions altered by human activity. On the other hand, others suggested that the Department has no basis for proposing to presume that woodlands (or other defined areas) on the entire 100-year floodplain were significant to the protection of "important" wildlife habitat functions. The Department recognized some merit in each of these contentions, and incorporated aspects of both in the final regulations.

As noted above, presumptions of significance are based on scientifically grounded generalizations on how resource areas typically function; however, regarding protection of wildlife habitat, they are also limited to those wetland habitats which, due to certain physical characteristics, provide "important" functions for wildlife (*i.e.*, those "special" qualities which, though they may be present in uplands, are particularly prevalent or valuable in wetland resource

There is an critical distinction to be drawn between biological function (meeting official certification criteria) and jurisdiction. This section of the preamble clarifies that vernal pools are not jurisdictional wetlands - there was no expansion of WPA jurisdiction by including protection of vernal pools. A vernal pool may provide biological function and therefore be certified, but may not occur in a jurisdictional resource area. This also informs the understanding of the 100-foot zone around a vernal pool. This zone does not extend into non-jurisdictional upland areas surrounding pools. It stops at the limit of the jurisdictional wetland.

Official certification was devised to help alleviate the perceived problem of identifying vernal pools outside of the spring amphibian breeding season. Certification is used to establish the presumption of significance to wildlife habitat for LSF which is otherwise not considered significant to the protection of that interest.

10.01: Introduction and Purpose

(1) Introduction. 310 CMR 10.00 is promulgated by the Commissioner of the Massachusetts Department of Environmental Protection pursuant to the authority granted under The Wetlands Protection Act, M.G.L. c. 131, § 40. 310 CMR 10.00 shall complement M.G.L. c. 131, § 40, and shall have the force of law.

310 CMR 10.01 through 10.10 provide definitions and procedures. 310 CMR 10.01 through 10.10 pertains to both inland and coastal areas subject to protection under M.G.L. c. 131, § 40. 310 CMR 10.21 through 10.60 provide standards for work within those areas. 310 CMR 10.21 through 10.37 pertains only to coastal areas and 310 CMR 10.51 through 10.60 pertains only to inland areas. A project may be subject to regulation under 310 CMR 10.00 in which case compliance with all applicable regulations is required.

(2) Purpose. M.G.L. c. 131, § 40 sets forth a public review and decision-making process by which activities affecting Areas Subject to Protection Under M.G.L. c. 131, § 40 are to be regulated in order to contribute to the following interests:

- protection of public and private water supply
- protection of ground water supply
- flood control
- storm damage prevention
- prevention of pollution
- protection of land containing shellfish
- protection of fisheries
- protection of wildlife habitat

The purpose of 310 CMR 10.00 is to define and clarify that process by establishing standard definitions and uniform procedures by which conservation commissions and the Department may carry out their responsibilities under M.G.L. c. 131, § 40. Applicants and issuing authorities shall use forms provided by the Department to implement 310 CMR 10.00.

310 CMR 10.00 is intended solely for use in administering M.G.L. c. 131, § 40; nothing contained herein should be construed as preempting or precluding more stringent protection of wetlands or other natural resource areas by local by-law, ordinance or regulation.

10.02: Statement of Jurisdiction

(1) Areas Subject to Protection Under M.G.L. c. 131, § 40. The following areas are subject to protection under M.G.L. c. 131, § 40:

- |  |                         |  |
|--|-------------------------|--|
| <p>(a) Any bank,<br/>any freshwater wetland,<br/>any coastal wetland,<br/>any beach,<br/>any dune,<br/>any flat,<br/>any marsh,<br/>or any swamp</p> | <p>bordering<br/>on</p> | <p>the ocean<br/>any estuary<br/>any creek<br/>any river<br/>any stream<br/>any pond<br/>or any lake</p> |
| <p>(b) Land under any of the water bodies listed above</p>   |                         |  |
| <p>(c) Land subject to tidal action</p>  |                         |  |
| <p>(d) Land subject to coastal storm flowage</p>   |                         |  |
| <p>(e) Land subject to flooding</p>  |                         |  |
| <p>(f) Riverfront area.</p>  |                         |  |

(2) Activities Subject to Regulation Under M.G.L. c. 131, § 40.

(a) Activities Within the Areas Subject to Protection Under M.G.L. c. 131 § 40. Except for minor activities within the riverfront area meeting the requirements of 310 CMR 10.58(6)(b), any activity proposed or undertaken within an area specified in 310 CMR 10.02(1) which will remove, fill, dredge or alter that area is subject to Regulation under M.G.L. c. 131, § 40 and requires a filing of a Notice of Intent.

(b) Activities Within the Buffer Zone. Any activity other than minor activities identified in 310 CMR 10.58(6)(b) proposed or undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (hereinafter called the Buffer Zone) which, in the judgement of the issuing authority, will alter an Area Subject to Protection Under M.G.L. c. 131, § 40 is subject to regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent. [See also

Vernal pool is not a resource area type, and therefore a pool is not automatically protected by these regulations. However, a vernal pool that occurs in any wetland resource area is typically protectable.

With the exception of vernal pools in Riverfront Area, no buffer zone, *per se*, exists for vernal pools. Buffer zones are established only for Areas Subject to Protection Under [the Act], and the only wetland resource area that has a 100-foot buffer zone is bordering vegetated wetland (10.02(1)(a)). See the note at 10.04 regarding the 100-foot "vernal pool habitat" associated with vernal pools.

10.04: continued

Rocky Intertidal Shore is defined in 310 CMR 10.31(2).

Salt Marsh is defined in 310 CMR 10.32(2).

Shelter means protection from the elements or predators.

Significant means plays a role. A resource area is significant to an interest identified in M.G.L. c. 131, § 40 when it plays a role in the provision or protection, as appropriate, of that interest. Within the context of the protection of the riverfront area, no significant adverse impact means the level of protection of the performance standards provided under 310 CMR 10.58.

Spring Tides means those tides which occur with the new and full moons, and which are perceptibly higher and lower than other tides.

State-listed species mean the same as rare species, as defined in 310 CMR 10.04.

Storm Damage Prevention means the prevention of damage caused by water from storms, including, but not limited to, erosion and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding, water-borne debris or water-borne ice.

Stream means a body of running water, including brooks and creeks, which moves in a definite channel in the ground due to a hydraulic gradient, and which flows within, into or out of an Area Subject to Protection Under M.G.L. c. 131, § 40. A portion of a stream may flow through a culvert or beneath a bridge. Such a body of running water which does not flow throughout the year (*i.e.*, which is intermittent) is a stream except for that portion upgradient of all bogs, swamps, wet meadows and marshes.

Superseding Determination means a determination of applicability, of significance or of non-significance, as the case may be, issued by the Department. It shall be made on Form 2.

Superseding Order means a document issued by the Department containing conditions which regulate or prohibit an activity. It shall be made on Form 5.

Swamp is defined in M.G.L. c. 131, § 40, para. 8.

Vernal pool habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection Under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non-breeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat for other wildlife species.

Vista Pruning means the selective thinning of tree branches or understory shrubs to establish a specific "window" to improve visibility. Vista pruning does not include the cutting of trees which would reduce the leaf canopy to less than 90% of the existing crown cover and does not include the mowing or removal of understory brush.

Water-dependent uses mean those uses and facilities which require direct access to, or location in, marine, tidal or inland waters and which therefore cannot be located away from said waters, including but not limited to: marinas, public recreational uses, navigational and commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an upland site, crossings over or under water bodies or waterways (but limited to railroad and public roadway bridges, tunnels, culverts, as well as railroad tracks and public roadways connecting thereto which are generally perpendicular to the water body or waterway), and any other uses and facilities as may further hereafter be defined as water-dependent in 310 CMR 9.00.

The definition of vernal pool habitat makes no reference to the type of wetland resource areas in which they can occur, nor does it state that vernal pools may only occur in a particular wetland resource area type.

Criteria in the definition (specifically the 2 months criterion) are threshold criteria to determine if something is a vernal pool. Boundary determinations should not be established using these criteria.

The 100 feet associated with vernal pools is not a buffer zone similar to the one established for BVW (10.02(2)(b)). This 100-foot zone must lie within the boundary of a wetland resource area and is truncated at that boundary if it would extend into upland.

The intent behind protecting vernal pools is clearly to protect the wildlife that depend upon them, especially wood frogs and spotted salamanders. However, the preamble is clear in stating that this is not a wildlife protection law.



10.52: continued

310 CMR 10.51 through 10.60 is intended to ensure coordination between the divisions of the Department and between the Department and other EOEA agencies; and to ensure consideration by the Department of relevant policies, laws or programs of other EOEA agencies.

310 CMR 10.51 through 10.60 is, in addition, intended to be consistent with and form a part of the Commonwealth's Coastal Zone Management Program as it has been promulgated and defined by 301 CMR 21.00 issued pursuant to M.G.L. c. 21A and entitled "Establishment of the Coastal Zone Management Program by the Executive Office of Environmental Affairs". 310 CMR 10.51 through 10.60, however, is adopted independently under M.G.L. c. 131, § 40 and would remain in full force and effect in the absence of 301 CMR 21.00.

310 CMR 10.51 through 10.60 is intended to notify both persons proposing work in Areas Subject to Protection Under M.G.L. c. 131, § 40 and those regulating that work as to the performance standards that should be applied. These standards are intended to identify the level of protection that the issuing authority must impose in order to contribute to the protection of the interests identified in M.G.L. c. 131, § 40. It is the responsibility of the person proposing work to design and complete his project in conformance with these performance standards. It is the responsibility of the issuing authority to impose such conditions on a proposed project as to ensure that the project is designed and completed in a manner consistent with these standards.

#### 10.53: General Provisions

(1) If the issuing authority determines that a resource area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the issuing authority shall impose such conditions as are necessary to contribute to the protection of such interests.

(2) When the site of a proposed project is subject to a Restriction Order which has been duly recorded under the provisions of M.G.L. c. 131, § 40A, such a project shall conform to both the provisions contained in that Order and 310 CMR 10.51 through 10.60.

(3) Notwithstanding the provisions of 310 CMR 10.54 through 10.58 and 10.60, the issuing authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40 permitting the following limited projects (although no such project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59). In the exercise of this discretion, the issuing authority shall consider the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L. c. 131, § 40, the availability of reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

(a) Work on land to be used primarily and directly in the raising of animals, including but not limited to dairy cattle, beef cattle, poultry, sheep, swine, horses, ponies, mules, goats, bees and fur-bearing animals or on land to be used in a related manner which is incidental thereto and represents a customary and necessary use in raising such animals; and work on land to be used primarily and directly in the raising of fruits, vegetables, berries, nuts and other foods for human consumption, feed for animals, tobacco, flowers, sod, trees, nursery or greenhouse products, and ornamental plants and shrubs; or on land to be used in a related manner which is incidental thereto and represents a customary and necessary use in raising such products, provided they are carried out in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority:

1. there shall occur no change in the existing topography or the existing soil and surface water levels of the area;
2. all fertilizers, pesticides, herbicides and other such materials shall be used in accordance with all applicable state and federal laws and regulations governing their use; and

Arguments over protection of a vernal pool often hinge on prior certification. For example, the only portion of an ILSF that is presumed significant to wildlife habitat is a certified vernal pool. For a wetland that does not carry a presumption of significance to wildlife habitat, 10.53(1) allows a commission to consider the wildlife habitat interest if the commission determines that it is providing wildlife habitat. If, during a public hearing, information is presented about a vernal pool, the commission may protect it as though certified, without an official certification from the state DFW. See also section IV. A. in the Preface to the 1987 Regulatory Revisions.

10.53(3) deals with Limited Projects. For certain types of projects, alterations that would not otherwise be permissible based on performance standards for affected resource areas may be permitted. Vernal pools will most often be affected by the limited projects at 10.53(3)(c) - forestry, (e) - access roads and driveways, and (j) - construction of boardwalks and similar structures.

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3. all activities shall be undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands as specified by the U.S.D.A. Soil Conservation Service, "Guidelines for Soil and Water Conservation". A plan prepared by the U.S.D.A. Soil Conservation Service through a county conservation district for the improvement of land for agriculture shall be deemed adequate to prevent erosion and siltation.
- (b) Work on land to be used primarily and directly in the raising of cranberries or on land to be used in a related manner which is incidental thereto and represents a customary and necessary use in raising such products, provided it is carried out in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority:
1. all fertilizers, pesticides, herbicides and other such materials shall be used in accordance with all applicable state and federal laws and regulations governing their use; and
  2. all activities shall be undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands as specified by the U.S.D.A. Soil Conservation Service, "Guidelines for Soil and Water Conservation".
- (c) Work on land to be used primarily and directly in the raising of forest products under a planned program to improve the quantity and quality of a continuous crop or on land to be used in a related manner which is incidental thereto and represents a customary and necessary use in raising such products, provided it is carried out in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority:
1. there shall occur no change in the existing topography or the existing soil and surface water levels of the area except for temporary access roads;
  2. the removal of trees shall occur only during those periods when the ground is sufficiently frozen, dry or otherwise stable to support the equipment used; and
  3. all activities shall be undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands as specified by the U.S.D.A. Soil Conservation Service, "Guidelines for Soil and Water Conservation."
  4. the placement of slash, branches and limbs resulting from the cutting and removal operations shall not occur within 25 feet of the bank of a water body.
- (d) The construction, reconstruction, operation and maintenance of underground and overhead public utilities, such as electrical distribution or transmission lines, or communication, sewer, water and natural gas lines, may be permitted, in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority:
1. the issuing authority may require a reasonable alternative route with fewer adverse effects for a local distribution or connecting line not reviewed by the Energy Facilities Siting Council;
  2. best available measures shall be used to minimize adverse effects during construction;
  3. the surface vegetation and contours of the area shall be substantially restored; and
  4. all sewer lines shall be constructed to minimize inflow and leakage.
- (e) The construction and maintenance of a new roadway or driveway of minimum legal and practical width acceptable to the planning board, where reasonable alternative means of access from a public way to an upland area of the same owner is unavailable. Such roadway or driveway shall be constructed in a manner which does not restrict the flow of water. Reasonable alternative means of access may include any previously or currently available alternatives such as realignment or reconfiguration of the project to conform to 310 CMR 10.54 to 310 CMR 10.58 or to otherwise minimize adverse impacts on resource areas. The issuing authority may require the applicant to utilize access over an adjacent parcel of land currently or formerly owned by the applicant, or in which the applicant has, or can obtain, an ownership interest. The applicant shall design the roadway or driveway according to the minimum length and width acceptable to the Planning Board, and shall present reasonable alternative means of access to the Board. The applicant shall provide replication of bordering vegetated wetlands and compensatory flood storage to the extent practicable. In the Certificate of Compliance, the issuing authority may continue a condition imposed in the Order of Conditions to prohibit further activities under 310 CMR 10.53(3)(e).

**10.53(3)(c): Forestry.**

Vernal pools should be considered water bodies and therefore covered under the general conditions at 10.53(3)(c) 1-3. Many landowners and foresters will be open to following the Forest Cutting Practices Act regulations (314 CMR 10.00) and recommendations; if vernal pool impacts are likely on a site it is worth recommending that they be followed.

**10.53(3)(e): Access roads.**

Only impacts to bordering vegetated wetlands must be replicated and compensatory flood storage provided for a limited project permitting an access road.

Commissions are not bound to permit limited projects (see DEP policy guidance). However, this status does allow for the avoidance of takings when *all economic value would otherwise be lost*. Limited project status should be a last resort and not used to permit projects for which there are reasonable alternatives, or for which the only legitimate claim is a partial diminution of value. This is true even if it is a majority of lots.

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- (f) Maintenance and improvement of existing public roadways, but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving inadequate drainage systems.
- (g) The excavation of wildlife impoundments, farm ponds and ponds for fire protection. The above uses are allowed provided that no fill or other material is placed upon the wetland except as may be necessary to construct said impoundments or ponds, to provide access thereto, and to provide bank stabilization.
- (h) The maintenance of beaches and boat launching ramps which existed on the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983).
- (i) The maintenance, repair and improvement (but not substantial enlargement) of structures, including dams and reservoirs and appurtenant works to such dams and reservoirs, buildings, piers, towers, headwalls, bridges, and culverts which existed on the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983). When water levels are drawn down for the maintenance, repair, or improvement of dams or reservoirs or appurtenant works to such dams or reservoirs under 310 CMR 10.53(3)(i), water levels that existed immediately prior to such projects being undertaken shall be restored upon completion of the work, and a new Notice of Intent need not be filed for such restoration.
- (j) The construction and maintenance of catwalks, footbridges, wharves, docks, piers, boathouses, boat shelters, duck blinds, skeet and trap shooting decks and observation decks; provided, however, that such structures are constructed on pilings or posts so as to permit the reasonably unobstructed flowage of water and adequate light to maintain vegetation.
- (k) The routine maintenance and repair of road drainage structures including culverts and catch basins, drainage easements, ditches, watercourses and artificial water conveyances to insure flow capacities which existed on the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983).
- (l) The construction, reconstruction, operation or maintenance of water dependent uses; provided, however that:
  1. any portion of such work which alters a bordering vegetated wetland shall remain subject to the provisions of 310 CMR 10.55,
  2. such work in any other resource area(s) found to be significant to flood control or prevention of storm damage shall meet the performance standards for that interest(s), and
  3. adverse impacts from such work in any other resource area(s) shall be minimized regarding the other statutory interests for which that resource area(s) is found to be significant.
- (m) Lake drawdown projects (except those related to the breaching of a dam or a reservoir or an appurtenant work to such dam or reservoir) undertaken in response to written Orders or Recommendation Letters issued by the Department of Environmental Management Office of Dam Safety (DEM). The issuing authority shall, in the Order of Conditions, limit the duration of the drawdown based on information contained in the written finding or superseding finding by DEM pursuant to M.G.L. c. 253, §§ 44 through 50, concerning the time required to repair the dam and the economic practicability of repairing the dam. In no event shall the drawdown continue longer than three years without a new or extended Order of Conditions being obtained. Water levels that existed immediately prior to such drawdowns shall be restored no later than the expiration date of the Order of Conditions or any new or extended Order of Conditions, and a new Notice of Intent need not be filed for such restoration.
- (n) Airport vegetation removal projects; provided, however, that:
  1. such projects must be undertaken in order to comply with Federal Aviation Administration (FAA) Regulation Part 77 (14 CFR Part 77), FAA Advisory Circular 150/5300-13 (Navigational Aids and Approach Light Systems), and FAA Order 6480.4 (Air Traffic Control Tower Siting Criteria), all as amended, or to comply with the airport approach regulations set forth in M.G.L. c. 90, §§ 40A through 40I, inclusive;

10.53(3)(j): boardwalks etc.

The construction of boardwalks, observation platforms, and the like is an excellent way to get the public engaged with wetland and vernal pool ecology. Every effort should be made to facilitate projects of this nature if there is a clear benefit to the public. This should not, however, be used to increase access to isolated portions of private property or other projects with no public benefit if they would result in impacts to vernal pools.

10.56: continued

(4) General Performance Standards.

(a) Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within Land Under Water Bodies and Waterways shall not impair the following:

1. The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;
2. Ground and surface water quality;
3. The capacity of said land to provide breeding habitat, escape cover and food for fisheries; and

4. The capacity of said land to provide important wildlife habitat functions. 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 this 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. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures established under 310 CMR 10.60.

(b) Notwithstanding the provisions of 310 CMR 10.56(4)(a), the issuing authority may issue an Order in accordance with M.G.L. c. 131, § 40 to maintain or improve boat channels within Land Under Water Bodies and Waterways when said work is designed and carried out using the best practical measures so as to minimize adverse effects such as the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms or the destruction of fisheries habitat or nutrient source areas.

(c) Notwithstanding the provisions of 310 CMR 10.56(4)(a) or (b), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

10.57: Land Subject to Flooding (Bordering and Isolated Areas)(1) Preamble.(a) Bordering Land Subject to Flooding:

1. Bordering Land Subject to Flooding is an area which floods from a rise in a bordering waterway or water body. Such areas are likely to be significant to flood control and storm damage prevention.

2. Bordering Land Subject to Flooding provides a temporary storage area for flood water which has overtopped the bank of the main channel of a creek, river or stream or the basin of a pond or lake. During periods of peak run-off, flood waters are both retained (*i.e.*, slowly released through evaporation and percolation) and detained (slowly released through surface discharge) by Bordering Land Subject to Flooding. Over time, incremental filling of these areas causes increases in the extent and level of flooding by eliminating flood storage volume or by restricting flows, thereby causing increases in damage to public and private properties.

3. Certain portions of Bordering Land Subject to Flooding are also likely to be significant to the protection of wildlife habitat. These include: (a) all areas on the ten year floodplain or within 100 feet of the bank or bordering vegetated wetland (whichever is further from the water body or waterway, so long as such area is contained within the 100 year floodplain), and (b) all vernal pool habitat on the 100 year floodplain, except for those portions of (a) and (b) which have been so extensively altered by human activity that their important wildlife habitat functions have been effectively eliminated (such "altered" areas include paved and gravelled areas, golf courses, cemeteries, playgrounds, landfills, fairgrounds, quarries, gravel pits, buildings, lawns, gardens, roadways (including median strips, areas enclosed within highway interchanges, shoulders, and embankments), railroad tracks (including ballast and embankments), and similar areas lawfully existing on November 1, 1987 and maintained as such since that time).

Land Subject to Flooding and Riverfront Area (10.58) are the only sections of the inland regulations with specific reference to and standards for vernal pool protection. However, the definition of vernal pool habitat (see 10.04) does not limit their occurrence to any particular resource area. The occurrence of vernal pools in BVW has been adjudicated (JanCo, Docket #97-069) and performance standards at 10.57 applied in that case to vernal pool habitat in bordering vegetated wetland.

10.57(1)(a)3 does not pertain to undeveloped land owned by any of the specified interests, rather to land that has been lawfully altered and maintained since November 1, 1987. The exemption does not pertain to vernal pools that are on undeveloped lands.



10.57: continued

The hydrologic regime, plant community composition and structure, topography, soil composition and proximity to water bodies and bordering vegetated wetlands of these portions of bordering land subject to flooding provide important food, shelter, migratory and overwintering areas, and breeding areas for wildlife. Nutrients from flood waters, as well as the inundation of floodplain soil, create important wildlife habitat characteristics, such as richness and diversity of soil and vegetation. A great many species require or prefer habitat which is as close as possible to water and/or has moist conditions, characteristics generally present on lower floodplains. Similarly, lower floodplains, because of their proximity to water and vegetated wetlands, can provide important shelter for wildlife which needs to migrate between such areas, or between such areas and uplands. The "edge" where floodplain habitat borders vegetated wetlands or water bodies is frequently very high in wildlife richness and diversity. Similar "edges" may be found elsewhere the lower floodplain, where differences in topography and frequency of flooding have created varied soil and plant community composition and structure.

Finally, vernal pool habitat is found at various locations throughout the 100 year floodplain, the pool itself generally formed by meander scars, or sloughs left after the main water channel has changed course. These pools are essential breeding sites for certain amphibians which require isolated areas that are generally flooded for at least two continuous months in the spring and/or summer and are free from fish predators. Most of these amphibians remain near the breeding pool during the remainder of their lifecycle. Many reptiles, birds and mammals also feed here.

(b) Isolated Land Subject to Flooding:

1. Isolated Land Subject to Flooding is an isolated depression or a closed basin which serves as a ponding area for run-off or high ground water which has risen above the ground surface. Such areas are likely to be locally significant to flood control and storm damage prevention. In addition, where such areas are underlain by pervious material they are likely to be significant to public or private water supply and to ground water supply. Where such areas are underlain by pervious material covered by a mat of organic peat and muck, they are also likely to be significant to the prevention of pollution. Finally, where such areas are vernal pool habitat, they are significant to the protection of wildlife habitat.

2. Isolated Land Subject to Flooding provides a temporary storage area where run-off and high ground water pond and slowly evaporate or percolate into the substrate. Filling causes lateral displacement of the ponded water onto contiguous properties, which may in turn result in damage to said properties.

3. Isolated Land Subject to Flooding, where it is underlain by pervious material, provides a point of exchange between ground and surface waters. Contaminants introduced into said area, such as septic system discharges and road salts, find easy access into the ground water and neighboring wells. Where these conditions occur and a mat of organic peat or muck covers the substrate of the area, said mat serves to detain and remove contaminants which might otherwise enter the ground water and neighboring wells.

4. Isolated Land Subject to Flooding, where it is vernal pool habitat, is an essential breeding site for certain amphibians which require isolated areas that are generally flooded for at least two continuous months in the spring and/or summer and are free from fish predators. Most of these amphibians remain near the breeding pool during the remainder of their lifecycle. Many reptiles, birds and mammals also feed here.

(2) Definitions, Critical Characteristics and Boundaries.

(a) Bordering Land Subject to Flooding:

1. Bordering Land Subject to Flooding is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.

2. The topography and location of Bordering Land Subject to Flooding specified in the foregoing 310 CMR 10.57(2)(a)1. are critical to the protection of the interests specified in 310 CMR 10.57(1)(a). Where Bordering Land Subject to Flooding is significant to the protection of wildlife habitat, the physical characteristics as described in the foregoing 310 CMR 10.57(1)(a)(3) are critical to the protection of that interest.

The preamble to the LSF section simply states that LSF is significant to the protection of the wildlife habitat interest only where it has been identified as vernal pool habitat. This effectively establishes a "presumption of non-significance to the protection of wildlife habitat," or no opinion regarding wildlife, for Land Subject to Flooding.

10.57: continued

3. 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 that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP, currently administered by the Federal Emergency Management Agency, successor to the U.S. Department of Housing and Urban Development). Said boundary, so determined, shall be presumed accurate. This presumption may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters.

Where NFIP Profile data is unavailable, the boundary of Bordering Land Subject to Flooding shall be the maximum lateral extent of flood water which has been observed or recorded. In the event of a conflict, the issuing authority may require the applicant to determine the boundary of Bordering Land Subject to Flooding by engineering calculations which shall be:

- a. based upon a design storm of seven inches of precipitation in 24 hours (*i.e.*, a Type III Rainfall, as defined by the U.S. Soil Conservation Service);
- b. based upon the standard methodologies set forth in U.S. Soil Conservation Service Technical Release No. 55, *Urban Hydrology for Small Watersheds* and Section 4 of the U.S. Soil Conservation Service, *National Engineering Hydrology Handbook*; and
- c. prepared by a registered professional engineer or other professional competent in such matters.

4. The boundary of the ten year floodplain is the estimated maximum lateral extent of the flood water which will theoretically result from the statistical 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 is 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.

5. The only portions of this resource area which shall be presumed to be vernal pool habitat are those that have been certified as such by the Massachusetts Division of Fisheries and Wildlife, where said Division has forwarded maps and other information needed to identify the location of such habitat to the Conservation Commission and DEP prior to the filing of each Notice of Intent or Abbreviated Notice of Intent regarding that portion. Such presumption is rebuttable, and may be overcome upon a clear showing to the contrary. However, notwithstanding any other provision of 310 CMR 10.57, should an Environmental Impact Report be required for a proposed project as determined by 301 CMR 11.00 the performance standard established under this Section regarding vernal pool habitat shall only apply to proposed projects which would alter such habitats as have been identified prior to the time that the Secretary of the Executive Office of Environmental Affairs has determined, in accordance with the provisions of 301 CMR 11.09(4), that a final Environmental Impact Report for that project adequately and properly complies with the M.G.L. c. 30, § 6 through 62H (unless, subsequent to that determination, the Secretary requires supplemental information concerning vernal pool habitat, in accordance with the provisions of 301 CMR 11.17).

6. The boundary of vernal pool habitat is that certified by the Massachusetts Division of Fisheries and Wildlife. In the event of a conflict of opinion, or the lack of a clear boundary delineation certified by the Division of Fisheries and Wildlife, the applicant may submit an opinion certified by a registered professional engineer, supported by engineering calculations, as to the probable extent of said habitat. Said calculations shall be prepared in accordance with the general requirements set forth in 310 CMR 10.57(2)(a)3.a. through c., except that the maximum extent of said water shall be based upon the total volume (rather than peak rate) of run-off from the drainage area contributing to the vernal pool and shall be further based upon a design storm of 26/10 (2.6) inches (rather than seven inches) of precipitation in 24 hours. Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself, insofar as such area is contained within the boundaries of this resource area.

The extent of BLSF is the maximum lateral extent of flood water that has been observed or recorded. Engineering calculations can be used in the event of a conflict of opinion, but are not the final word. Pay more attention to field indicators than to engineering calculations.

The only portion of BLSF that is presumed to be vernal pool habitat is that which is certified prior to a filing. However, all presumptions are rebuttable upon a clear showing to the contrary, allowing protection of uncertified pools if they are identified by a competent source during the public hearing process.

The NHESP does not establish a boundary during certification. The official certification guidelines state that the boundary of a vernal pool is the maximum extent of flooding in order to include the extreme edges of the habitat that are important to the animals that use them. An opinion may be submitted based on the total volume of run-off from a statistical 2.6 inch in 24 hours storm, but it must include groundwater input (see DWW Policy 85-2) and make sense given field indicators of flooding. Indicators such as soils, tree staining, and dominant vegetation are observable throughout the year and can be used to validate or refute opinions based on engineering calculations.

10.57: continued

## (b) Isolated Land Subject to Flooding:

1. Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches.

Isolated Land Subject to Flooding may be underlain by pervious material, which in turn may be covered by a mat of organic peat or muck.

2. The characteristics specified in the foregoing 310 CMR 10.57(2)(b)1. are critical to the protection of the interests specified in 310 CMR 10.57(1)(b).

3. The boundary of Isolated Land Subject to Flooding is the perimeter of the largest observed or recorded volume of water confined in said area.

In the event of a conflict of opinion regarding the extent of water confined in an Isolated Land Subject to Flooding, the applicant may submit an opinion certified by a registered professional engineer, supported by engineering calculations, as to the probable extent of said water. Said calculations shall be prepared in accordance with the general requirements set forth in 310 CMR 10.57(2)(a)3.a. through c., except that the maximum extent of said water shall be based upon the total volume (rather than peak rate) of run-off from the drainage area contributing to the Isolated Land Subject to Flooding and shall be further based upon the assumption that there is no infiltration of said run-off into the soil within the Isolated Land Subject to Flooding.

4. The only portions of this resource area which shall be presumed to be vernal pool habitat are those determined under procedures established in 310 CMR 10.57(2)(a)5.

5. The boundary of vernal pool habitat is that determined under procedures established in 310 CMR 10.57(2)(a)6.

(3) Presumption. Where a project involves removing, filling, dredging or altering of Land Subject to Flooding (both Bordering and Isolated Areas) the issuing authority shall presume that such an area is significant to, and only to, the respective interests specified in 310 CMR 10.57(1)(a) and (b). This presumption may be overcome only 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 issuing authority shall make a written determination to this effect, setting forth its grounds (Form 6).

(4) General Performance Standards.

## (a) Bordering Land Subject to Flooding:

1. 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 issuing authority 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, stream or creek.

2. Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.

3. Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, 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 this 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. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.

The 1/4 acre-feet to 6 inches is a threshold standard for ILSF. If the basin reaches that threshold, then the boundary is set independently based upon (preferably) observations of flooding (10.57(2)(b)3) or engineering calculations.

If a vernal pool boundary is set via engineering calculations, it is based upon a 2.6 inch storm event whereas the ILSF boundary is based upon a 7 inch storm event. In cases where the engineering calculations are accepted, the vernal pool will necessarily be smaller than the ILSF. The "vernal pool habitat" extends 100 feet from the boundary of the pool or to the boundary of the ILSF, whichever is smaller.

The general performance standards for work in BLSF do not apply to projects that would adversely affect vernal pools (10.57(4)(a)3). Altering vernal pool habitat may be permitted only if, based on a wildlife habitat evaluation, the project would have no adverse effects on the wildlife habitat value of the pool. No adverse effect is a tough standard that prohibits alteration of any habitat characteristic listed in 10.60(2) that will reduce the capacity of the pool to provide wildlife habitat functions listed at 10.60(2).

10.57: continued

(b) Isolated Land Subject to Flooding: A proposed project in Isolated Land Subject to Flooding shall not result in the following:

1. Flood damage due to filling which causes lateral displacement of water that would otherwise be confined within said area.
2. An adverse effect on public and private water supply or ground water supply, where said area is underlain by pervious material.
3. An adverse effect on the capacity of said area to prevent pollution of the ground water, where the area is underlain by pervious material which in turn is covered by a mat of organic peat and muck.
4. An impairment of its capacity to provide wildlife habitat where said area is vernal pool habitat, as determined by procedures contained in 310 CMR 10.60.

(c) Protection of Rare Wildlife Species: Notwithstanding the provisions of 310 CMR 10.57(4)(a) or (b), no project may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

Performance standards for projects in ILSF that are vernal pools do not allow an impairment of the pool's capacity to provide wildlife habitat based upon a wildlife habitat evaluation at 310 CMR 10.60. DEP's Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands should be consulted.

#### 10.58 Riverfront Area

(1) Preamble. Riverfront areas are likely to be significant to protect the private or public water supply; to protect groundwater; to provide flood control; to prevent storm damage; to prevent pollution; to protect land containing shellfish; to protect wildlife habitat; and to protect the fisheries. Land adjacent to rivers and streams can protect the natural integrity of these water bodies. The presence of natural vegetation within riverfront areas is critical to sustaining rivers as ecosystems and providing these public values. The riverfront area can prevent degradation of water quality by filtering sediments, toxic substances (such as heavy metals), and nutrients (such as phosphorus and nitrogen) from stormwater, nonpoint pollution sources, and the river itself. Sediments are trapped by vegetation before reaching the river. Nutrients and toxic substances may be detained in plant root systems or broken down by soil bacteria. Riverfront areas can trap and remove disease-causing bacteria that otherwise would reach rivers and coastal estuaries where they can contaminate shellfish beds and prohibit safe human consumption. Natural vegetation within the riverfront area also maintains water quality for fish and wildlife.

Where rivers serve as water supplies or provide induced recharge to wells, the riverfront area can be important to the maintenance of drinking water quality and quantity. Land along rivers in its natural state with a high infiltration capacity increases the yield of a water supply well. When riverfront areas lack the capacity to filter pollutants, contaminants can reach human populations served by wells near rivers or by direct river intakes. The capacity of riverfront areas to filter pollutants is equally critical to surface water supplies, reducing or eliminating the need for additional treatment. In the watershed, mature vegetation within riverfront areas provides shade to moderate water temperatures and slow algal growth, which can produce odors and taste problems in drinking water.

Within riverfront areas, surface water interaction with groundwater significantly influences the stream ecosystem. The dynamic relationship between surface and groundwater within the "hyporheic zone" sustains communities of aquatic organisms which regulate the flux of nutrients, biomass and the productivity of organisms including fish within the stream itself. The hyporheic zone extends to greater distances horizontally from the channel in large, higher order streams with alluvial floodplains, but the interaction within this zone is important in smaller streams as well.

By providing recharge and retaining natural flood storage, as well as by slowing surface water runoff, riverfront areas can mitigate flooding and damage from storms. The root systems of riverfront vegetation keep soil porous, increasing infiltration capacity. Vegetation also removes excess water through evaporation and transpiration. This removal of water from the soil allows for more infiltration when flooding occurs. Increases in storage of floodwaters can decrease peak discharges and reduce storm damage. Vegetated riverfronts also dissipate the energy of storm flows, reducing damage to public and private property.

Riverfront areas are critical to maintaining thriving fisheries. Maintaining vegetation along rivers promotes fish cover, increases food and oxygen availability, decreases sedimentation, and provides spawning habitat. Maintenance of water temperatures and depths is critical to many important fish species. Where groundwater recharges surface water flows, loss of recharge as a result of impervious surfaces within the riverfront area may aggravate low flow conditions and increase water temperatures. In some cases, summer stream flows are maintained almost exclusively from groundwater recharge. Small streams are most readily impacted by removal of trees and other vegetation along the shore.

It is important to understand that Riverfront Area is a resource area in the same way that BVW is, with equivalent performance standards. Riverfront area encompasses upland, terrestrial land within 200' of perennial streams. The Preamble (10.58(1)) establishes that vernal pools can occur in depressions anywhere in riverfront area, and are to be protected wherever they occur within the resource area.



10.58: continued

(4) General Performance Standard. Where the presumption set forth in 310 CMR 10.58(3) is not overcome, the applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified in M.G.L. c.131 § 40 and that the work, including proposed mitigation, will have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131 § 40. In the event that the presumption is partially overcome, the issuing authority shall make a written determination setting forth its grounds in the Order of Conditions and the partial rebuttal shall be taken into account in the application of 310 CMR 10.58 (4)(d)1.a. and c.; the issuing authority shall impose conditions in the Order that contribute to the protection of interests for which the riverfront area is significant.

(a) Protection of Other Resource Areas. The work shall meet the performance standards for all other resource areas within the riverfront area, as identified in 310 CMR 10.30 (coastal bank), 10.32 (salt marsh), 10.55 (Bordering Vegetated Wetland), and 10.57 (Land Subject to Flooding). When work in the riverfront area is also within the buffer zone to another resource area, the performance standards for the riverfront area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within the riverfront area.

(b) Protection of Rare Species. No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 or 10.37, or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent.

(c) Practicable and Substantially Equivalent Economic Alternatives. There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40.

1. Definition of Practicable. An alternative is practicable and substantially equivalent economically if it is available and capable of being done after taking into consideration costs, existing technology, proposed use, and logistics, in light of overall project purposes. Available and capable of being done means the alternative is obtainable and feasible. Project purposes shall be defined generally (*e.g.*, single family home, residential subdivision, expansion of a commercial development). The alternatives analysis may reduce the scale of the activity or the number of lots available for development, consistent with the project purpose and proposed use. The alternatives analysis shall not include interior design specifications (*i.e.*, neither the proposed use or project purpose in the Notice of Intent nor the Order of Conditions should specify the number of rooms, bedrooms, etc. within a building). Transactions shall not be arranged to circumvent the intent of alternatives analysis review. The four factors to be considered are:

10.58(4)(b) states that no project may be permitted that will have any adverse effect on a vernal pool that is certified prior to the filing of a Notice of Intent. The Rivers Protection Act also provides protection to pools that are not certified (see note at 10.58(4)(d)).

10.58: continued

The purpose of evaluating project alternatives is to locate activities so that impacts to the riverfront area are avoided to the extent practicable. Projects within the scope of alternatives must be evaluated to determine whether any are practicable. As much of a project as feasible shall be sited outside the riverfront area. If siting of a project entirely outside the riverfront area is not practicable, the alternatives shall be evaluated to locate the project as far as possible from the river.

The issuing authority shall not require alternatives which result in greater or substantially equivalent adverse impacts. If an alternative would result in no identifiable difference in impact, the issuing authority shall eliminate the alternative. If there would be no less adverse effects on the interests identified in M.G.L. c. 131, § 40, the proposed project rather than a practicable alternative shall be allowed, but the criteria in 310 CMR 10.58(4)(d) for determining no significant adverse impact must still be met. If there is a practicable and substantially equivalent economic alternative with less adverse effects, the proposed work shall be denied and the applicant may either withdraw the Notice of Intent or receive an Order of Conditions for the alternative, provided the applicant submitted sufficient information on the alternative in the Notice of Intent.

(d) No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

1. Within 200 foot riverfront areas, the issuing authority may allow the alteration of up to 5000 square feet or 10% of the riverfront area within the lot, whichever is greater, on a lot recorded on or before October 6, 1997 or lots recorded after October 6, 1997 subject to the restrictions of 310 CMR 10.58(4)(c)2.b.vi., or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided that:

a. At a minimum, a 100 foot wide area of undisturbed vegetation is provided. This area shall extend from mean annual high-water along the river unless another location would better protect the interests identified in M.G.L. c. 131 § 40. If there is not a 100 foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100 foot wide corridor of natural vegetation. Replication and compensatory storage required to meet other resource area performance standards are allowed within this area; structural stormwater management measures may be allowed only when there is no practicable alternative. Temporary impacts where necessary for installation of linear site-related utilities are allowed, provided the area is restored to its natural conditions. Proposed work which does not meet the requirement of 310 CMR 10.58(4)(d)1.a. may be allowed only if an applicant demonstrates by a preponderance of evidence from a competent source that an area of undisturbed vegetation with an overall average width of 100 feet will provide equivalent protection of the riverfront area, or that a partial rebuttal of the presumptions of significance is sufficient to justify a lesser area of undisturbed vegetation;

b. Stormwater is managed according to standards established by the Department.

c. Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat identified by evidence from a competent source, but not yet certified. For work within an undeveloped riverfront area which exceeds 5,000 square feet, the issuing authority may require a wildlife habitat evaluation study under 310 CMR 10.60.

d. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.

The calculation of square footage of alteration shall exclude areas of replication or compensatory flood storage required to meet performance standards for other resource areas, or any area of restoration within the riverfront area. The calculation also shall exclude areas used for structural stormwater management measures, provided there is no practicable alternative to siting these structures within the riverfront area and provided a wildlife corridor is maintained (e.g. detention basins shall not be fenced).

2. Within 25 foot riverfront areas, any proposed work shall cause no significant adverse impact by:

Pools in riverfront area that are identified during the public hearing process but not officially certified are protected. Work may not be permitted that will result in an impairment of the pool's ability to provide habitat to vernal pool dependent wildlife.

## 10.59: continued

Within 30 days of the filing of such a Notice of Intent with the issuing authority the Program shall determine whether any state-listed species identified on the aforementioned map are likely to continue to be located on or near the site of the original occurrence and, if so, whether the area to be altered by the proposed project is in fact part of such species' habitat. Such determination shall be presumed by the issuing authority to be correct. Any proposed project which would alter a resource area that is not located on the most recent Estimated Habitat Map (if any) provided to the conservation commission, shall be presumed not to be within a rare species' habitat. Both of these presumptions are rebuttable and may be overcome upon a clear showing to the contrary. If the issuing authority fails to receive a response from the Program within 30 days of the filing of such a Notice of Intent, a copy of which was received by the Program in a timely manner, it shall issue its Order of Conditions based on available information; however, the fact that a proposed project would alter a resource area that is located on an Estimated Habitat Map shall not be considered sufficient evidence in itself that such project is in fact within the habitat of a rare species.

If the Program determines that a resource area which would be altered by a proposed project is in fact within the habitat of a state-listed species, it shall provide in writing to the applicant and to the Conservation Commission and the Department, the identification of the species whose habitat would be altered by the proposed project, and all other relevant information which the Program has regarding the species' location and habitat requirements, insofar as such information may assist the applicant and the issuing authority to determine whether the project is or can be designed so as to meet the performance standard set in 310 CMR 10.59.

Notwithstanding 310 CMR 10.53 through 10.58 and 310 CMR 10.60, if a proposed project is found by the issuing authority to alter a resource area which is part of the habitat of a state-listed species, such project shall not be permitted to have any short or long term adverse effects on the habitat of the local population of that species. A determination of whether or not a proposed project will have such an adverse effect shall be made by the issuing authority. However, a written opinion of the Program on whether or not a proposed project will have such an adverse effect shall be presumed by the issuing authority to be correct. This presumption is rebuttable and may be overcome upon a clear showing to the contrary.

The conservation commission shall not issue an Order of Conditions under 310 CMR 10.05(6) regarding any such project for at least 30 days after the filing of the Notice of Intent unless the Program before such time period has elapsed has either determined that the resource area(s) which would be altered by the project is not in fact within the habitat of a state-listed species or, if it has determined that such resource area(s) is in fact within rare species habitat, rendered a written opinion as to whether the project will have an adverse effect on that habitat.

Notwithstanding any other provision of 310 CMR 10.58, should an Environmental Impact Report be required for a proposed project under the M.G.L. c. 30, §§ 6 through 62H, as determined by 301 CMR 11.00 the performance standard established under 310 CMR 10.58 shall only apply to proposed projects which would alter the habitat of a rare species for which an occurrence has been entered into the official data base of the Massachusetts Natural Heritage and Endangered Species Program prior to the time that the Secretary of the Executive Office of Environmental Affairs has determined, in accordance with the provisions of 301 CMR 11.09(4), that a final Environmental Impact Report for that project adequately and properly complies with the M.G.L. c. 30, §§ 6 through 62H (unless, subsequent to that determination, the Secretary requires supplemental information concerning state-listed species, in accordance with the provisions of 301 CMR 11.17).

10.60: Wildlife Habitat Evaluations(1) Measuring Adverse Effects on Wildlife Habitat

(a) To the extent that a proposed project on inland Banks, Land Under Water, Riverfront Area, or Land Subject to Flooding will alter vernal pool habitat or will alter other wildlife habitat beyond the thresholds permitted under 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., 10.57(4)(a)3. and 10.58(4)(d)1., such alterations may be permitted only if they will have no adverse effects on wildlife habitat. Adverse effects on wildlife habitat mean the alteration of any habitat characteristic listed in 310 CMR 10.60(2), insofar as such alteration will, following two growing seasons of project completion and thereafter (or, if a project would eliminate trees, upon the maturity of replanted saplings) substantially reduce its capacity to provide the important wildlife habitat functions listed in 310 CMR 10.60(2). Such performance standard, however, shall not apply to the habitat of rare species, which are covered by the performance standards established under 310 CMR 10.59.

No alteration of vernal pool habitat is allowed if it will alter any habitat characteristic (see 10.60(2)) that would result in a substantial reduction in the pool's capacity to provide important wildlife habitat functions.

10.60: continued

(b) An evaluation by the applicant of whether a proposed project will have an adverse effect on wildlife habitat beyond permissible thresholds shall be performed by an individual with at least a masters degree in wildlife biology or ecological science from an accredited college or university, or other competent professional with at least two years experience in wildlife habitat evaluation.

(c) Any wildlife habitat management practices conducted by the Division of Fisheries and Wildlife, and any wildlife management practices of any individual or organization if reviewed and approved in writing by said Division, shall be presumed to have no adverse effect on wildlife habitat. Such presumption is rebuttable, and may be overcome by a clear showing to the contrary.

(2) Wildlife Habitat Characteristics of Inland Resource Areas:

(a) Banks. The topography, soil structure, and plant community composition and structure of banks can provide the following important wildlife habitat functions:

1. Food, shelter and migratory and breeding areas for wildlife
2. Overwintering areas for mammals and reptiles.

(b) Land Under Water Bodies or Waterways. The plant community and soil composition and structure, hydrologic regime, topography and water quality of land under water bodies or waterways can provide the following important wildlife habitat functions:

1. Food, shelter and breeding areas for wildlife;
2. Overwintering areas for mammals, reptiles and amphibians.

(c) Vernal Pool Habitat. The topography, soil structure, plant community composition and structure, and hydrologic regime of vernal pool habitat can provide the following important wildlife habitat functions:

1. Food, shelter, migratory and breeding areas, and overwintering areas for amphibians;
2. Food for other wildlife.

(d) Lower Floodplains. The hydrologic regime, plant community and soil composition and structure, topography, and proximity to water bodies and waterways of lower floodplains can provide the following important wildlife habitat functions:

1. Food, shelter, migratory and overwintering areas for wildlife;
2. Breeding areas for birds, mammals and reptiles.

(e) Riverfront Area. The topography, soil structure, plant community composition and structure, and hydrologic regime can provide the following important wildlife habitat functions:

1. Food, shelter, overwintering and breeding areas for wildlife, including turtle nesting areas, nesting sites for birds which typically reuse specific nesting sites, cavity trees, and isolated depressions that function as vernal pools.
2. Migratory areas along the riparian corridor including the movement of wildlife unimpeded by barriers within the riverfront area.

(3) Restoration and Replication of Altered Habitat. Alterations of wildlife habitat characteristics beyond permissible thresholds may be restored onsite or replicated offsite in accordance with the following general conditions, and any additional conditions the issuing authority deems necessary to insure that the standard in 310 CMR 10.60(1)(a) is satisfied:

- (a) the surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");
- (b) the elevation of groundwater relative to the surface of the replacement area shall be approximately equal to that of the lost area;
- (c) the replacement area shall be located within the same general area as the lost area. In the case of banks and land under water, the replacement area shall be located on the same water body or waterway if the latter has not been rechanneled or otherwise relocated. In the case of bordering land subject to flooding, the replacement area shall be located approximately the same distance from the water body or waterway as the lost area. In the case of vernal pool habitat, the replacement area shall be located in close proximity to the lost area;
- (d) interspersed and diversity of vegetation, water and other wildlife habitat characteristics of the replacement area, as well as its location relative to neighboring wildlife habitats, shall be similar to that of the lost areas, insofar as necessary to maintain the wildlife habitat functions of the lost area;

While topography and plant community composition and structure may be fairly easy to restore and replicate, soil structure and hydrology are much less feasible. Hydrology is arguably the most significant driving force behind the character and wildlife composition of vernal pools in Massachusetts. Small drainages, connections to subsurface water sources, and complex soil structure make hydrology an extremely difficult characteristic to leave unaffected by work in and near vernal pools. Even very slight changes in hydrologic regime can have significant impacts upon the wildlife that depends upon a pool. In most cases it will be extremely difficult to be certain that work in or near a vernal pool will not affect this critical characteristic.