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DEPARTMENT OF ENVIRONMENTAL PROTECTION
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May 14, 2010

Docket No. WET-2009-067
DEP File No. 050-0987

In the Matter of John Van Loan

Newbury

RECOMMENDED FINAL DECISION

This appeal involves a one-acre site adjacent to Plum Island Turnpike in Newbury, Massachusetts. The property owner, John Van Loan (the "Petitioner"), filed a Notice of Intent seeking to demolish an existing structure, formerly used as a boat house, set on pilings below mean high water and to construct a single family house and walkway on pilings above mean high water. The Newbury Conservation Commission and the Department of Environmental Protection (the "Department") denied the project based upon findings that it does not meet the performance standards for work in salt marsh, a coastal wetlands resource area. The Petitioner's appeal claimed that the proposed structures will be located in bordering vegetated wetlands ("BVW"), a freshwater wetland, because the site is dominated by *Phragmites*, an invasive species which, he argued, is not a salt marsh plant.[1] The Petitioner claimed that the proposed project may be permitted as a limited project under 310 CMR 10.53(3), and nevertheless, meets the

[1] *Phragmites* is also but less frequently known as "common reed." Although there are more than one species of *Phragmites*, because the relevant species here is *Phragmites australis*, I have used only the genus name. As to the genus *Spartina*, references may be species-specific to *Spartina alterniflora*, common name salt marsh cord grass, or *Spartina patens*, common name salt meadow cord grass, or to both *Spartina* species as *Spartina sp*.

performance standards for bordering vegetated wetlands and would improve the existing conditions at the site by restoration of salt marsh. The Department argued that the site is within salt marsh and does not meet the performance standards for salt marsh, but also does not meet the performance standards for BVW. After a site visit and evidentiary hearing, I conclude that the site is salt marsh, that the project does not qualify as a limited project, and that the project does not meet the performance standards for either salt marsh or BVW.

ISSUES

1. Whether the Petitioner's proposed demolition of the boat shack and construction of a single family home and boardwalk at the property will take place in salt marsh or BVW?

2. Whether the Petitioner's proposed demolition of the boat shack and construction of a single family home and boardwalk at the Property can be permitted or authorized under the Limited Project Provisions of the Wetlands Regulations: (a) 310 CMR 10.24(7)(2) for salt marsh; and (b) 310 CMR 10.53(3)(i) for BVW?

3. If the Petitioner's proposed demolition of the boat shack and construction of a single family home and boardwalk at the Property cannot be permitted or authorized under the Limited Project Provisions of the Wetlands Regulations as set forth above, does the proposed Project satisfy the Performance Standards of Wetlands Regulations: (a) 310 CMR 10.32 for salt marsh; and (b) 310 CMR 10.55 for BVW?

BACKGROUND

The one acre parcel owned by the Petitioner lies along Plum Bush Creek, within the Merrimack River estuary about 2.25 miles from the Atlantic Ocean. The lot is largely vegetated by *Phragmites*. Plum Bush Creek has adjacent marshes, and the Creek and the

Merrimack River near the Site are tidally influenced. Peter PFDT at sections 2 and 3. The site is within an Area of Critical Environmental Concern ("ACEC"), where more stringent regulatory provisions may apply. Currently existing on the lot along Plum Island Turnpike is a dilapidated structure described by the Parties as a "boat shack." The Petitioner's proposed project includes the construction of a single family house more centrally located on the parcel with a boardwalk for access, all on pilings above mean high water.[2] The Petitioner further proposes to remove the *Phragmites* and restore native salt marsh vegetation at the site.

A Pre-Hearing Conference and site visit preceded the hearing.[3] Prior to cross-examination, both the Petitioner and the Department orally moved for directed decisions on the grounds that each should prevail as a matter of law; I denied both motions. The Petitioner also requested that the Department's witnesses be sequestered during cross-examination of his witness, a motion I also denied because direct testimony was pre-filed and it is contrary to past practice to sequester witnesses at the Department's administrative hearings. Supplemental materials to the Notice of Intent were submitted by the Petitioner for the record. The Parties filed closing briefs.[4]

APPLICABLE LAW AND REGULATIONS

Definitions for wetlands may be found in both the statute and regulations. M.G.L. c. 131, § 40; 310 CMR 10.00. Performance standards for each wetland resource area are

[2] According to the Notice of Intent, the existing building is 717 square feet. The proposed building is 864 square feet. The proposed decks and boardwalk, to be constructed of materials to allow some passage of light, total 1,532 square feet.

[3] The Pre-Screening Conference was conducted by Chief Presiding Officer Salvatore Giorlandino, who prepared the Scheduling Order but subsequently transferred the case when unanticipated circumstances arose.

[4] The Department's closing brief was refiled, after the Petitioner correctly noted that it did not conform to agreed upon limitations.

found in the regulations, which are divided into provisions for coastal and inland wetlands. In the statute, the term "coastal wetlands" means "any bank, marsh, swamp, meadow, flat or other lowland subject to tidal action or coastal storm flowage." M.G.L. c. 131, § 40, at ¶ 7.[5] "Freshwater wetlands" are "wet meadows, marshes, swamps, bogs, areas where groundwater, flowing or standing surface water or ice provide a significant part of the supporting substrate for a plant community for at least five months of the year; emergent and submergent plant communities in inland waters, that portion of any bank which touches any inland waters." M.G.L. c. 131, § 40, at ¶ 8. "Swamps," "wet meadows," and "marshes" are also defined, and specify that "a significant part of the vegetational community" includes wetlands plant species. M.G.L. c. 131, § 40, at ¶¶ 9, 10, and 11.[6]

In the Coastal Wetlands Regulations, a "salt marsh" is defined as:

> " . . . a coastal wetland that extends landward up to the highest high tide line, that is, the highest spring tide of the year, and is characterized by plants that are well adapted to or prefer living in, saline soils. Dominant plants within salt marshes are salt meadow cord grass (Spartina patens) and/or salt marsh cord grass (Spartina alterniflora). A salt marsh may contain tidal creeks, ditches and pools.
>
> Spring tide means the tide of the greatest amplitude during the approximately 14-day tidal cycle. It occurs at or near the time when the gravitational forces of the sun and the moon are in phase (new and full moons).

310 CMR 10.32(2). The performance standards for salt marsh are as follows:

> A proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. Alterations in growth, distribution and composition of salt marsh vegetation shall

[5] "Land Subject to Tidal Action" is defined as "land subject to the periodic rise and fall of a coastal water body, including spring tides." 310 CMR 10.04 Land Subject to Tidal Action.

[6] The definition of "bogs" uses similar language. M.G.L. c. 131, § 40, at ¶ 6. Neither *Spartina* nor *Phragmites* is identified in the Act.

> be considered in evaluating adverse effects on productivity. This section shall not be construed to prohibit the harvesting of salt hay.

310 CMR 10.32(3). The regulations do allow "a small project within a salt marsh, such as an elevated walkway or other structure which has no adverse effects other than blocking sunlight from the underlying vegetation for a portion of each day." 310 CMR 10.32(4). The small project must also meet all applicable requirements of the coastal regulations. Id. The regulations also specifically allow "a project which will restore or rehabilitate a salt marsh, or create a salt marsh." 310 CMR 10.32(5).

The "limited project" provision for coastal wetlands allows the issuing authority to issue an order of conditions notwithstanding the performance standards and impose conditions to contribute to the protection of the interests of the Act for "[t]he maintenance. repair and improvement (but not substantial enlargement) of structures, including buildings, piers, towers, headwalls, bridges and culverts which existed on November 1, 1987. 310 CMR 10.24(7)(c)2.

The Inland Wetlands Regulations group together the types of freshwater wetlands as "Bordering Vegetated Wetlands," or BVW, as follows:

> Bordering vegetated wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering vegetated wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground and surface water regime and the vegetational community which occur in each type of freshwater wetland are specified in M.G.L. c. 131, § 40.

310 CMR 10.55(2)(a).

The performance standard for BVW states that "any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area." However, issuing authorities may allow the loss of up to 5000 square feet

provided that the loss is replaced by an area "which will function in a manner similar to the area that will be lost." 310 CMR 10.55(4)(a). The replacement area must be of equal size, elevation, and horizontal configuration as the lost area, must have an unrestricted hydraulic connection to and be within the same reach of the same water body, and provide 75% reestablishment of indigenous plant species within two growing seasons. 310 CMR 10.55(4)(b). The regulations also provide that any proposed work may not destroy or otherwise impair any portion of a BVW within an ACEC. 310 CMR 10.55(4)(e).

The "limited project" provision for inland wetlands allows the issuing authority to issue an order of conditions notwithstanding the performance standards and impose conditions to contribute to the protection of the interests of the Act for "t]he maintenance. repair and improvement (but not substantial enlargement) of structures . . . which existed on April 1, 1983 . . . . " 310 CMR 10.53(3)(i). In exercising its discretion in allowing limited projects, the issuing authority must consider the magnitude of the alteration and its significance to protected interests, the availability of reasonable alternatives, the extent of minimization of adverse impacts, and mitigation measures including replication and restoration. 310 CMR 10.53(3).

PETITIONER'S TESTIMONY

The Petitioner submitted the testimony of Tracy A. Peter, a wetlands scientist with 25 years of experience as a consultant, a former member of the Department's wetlands program staff, and a former conservation commission administrator. Peter PFDT at p. 2 and Exhibit 1. She is qualified as an expert witness. Ms. Peter delineated the wetlands boundaries at the Site. She flagged a narrow area of salt marsh along Plum

Island Creek, extending from mud flats at the lower edge up to the Mean High Water (MHW) where the vegetation was dominated by *Spartina patens* and *Spartina alterniflora*. She also identified several other typical salt marsh plant species along the fringe of Plum Bush Creek. *See* NOI, Appendix II. MHW at the Site is at elevation 4.52 feet NGVD. She testified that the MHW elevation corresponds to the boundary of the brackish salt marsh and the monoculture of Common Reed. She stated that landward of the flagged boundary and within the Common Reed, salt marsh plants were "not present in any significant percent." Peter PFDT at p. 3.

Ms. Peter testified that most of the Petitioner's property is a monoculture of *Phragmites australis,* meaning nearly 100% of the vegetation is this single species. In her opinion, *Phragmites* is "neither well adapted to nor prefers to live in saline soils. *Phragmites* can tolerate minimal salinity in soils, consistent with the brackish waters found in this area along the Plum Island Turnpike and Plum Bush Creek." Peter PFDT at p. 4. She testified that compared to the nearly 100% germination rate of *Phragmites* in fresh water, growth of seeds are inhibited at 10 ppt salinity and the plants would die if exposed to high levels of salinity such as the 35 ppt of undiluted marine water where *Spartina* will thrive. Peter PFDT at p. 4. She stated that wetland resource areas under the wetlands regulations are sequential, so it would be incorrect to extend the area of salt marsh up to the Spring High Tide. She testified that "Salt Marsh always must have a dominance of *Spartina*; and an area dominated by *Phragmites* can never be a Salt Marsh." Peter PFDT at p. 6.

Ms. Peter also noted differences in soils, with "mucky peat tidal soils" near the existing structure and a mineral soil near the proposed house location. Peter PFDT at p. 8.

Although augur holes revealed hydric soils at 8 to 15 inches, there was no sulphuric odor as would be found within the top 12 inches of a tidal soil. The locus of the new structure is above MHW and will be flooded several times a month with the new and full moon events. Id. Thus, having determined that the area dominated by *Phragmites* cannot be salt marsh, because that species is typically found in freshwater wetlands, Ms. Peter concluded that "the area is best defined as Bordering Vegetated Wetlands; 310 CMR 10.55." Peter PFDT at p. 11.

Ms. Peter testified that the proposed project meets the performance standards for inland wetland replication at 310 CMR 10.55(4)(b). She stated that the "lost area" is 21.3 square feet (39 pilings at 10 inches each), compared to a much larger replacement area adjacent to and under the existing structure, after it is removed. Peter PFDT at p. 13. The loci of the proposed structure where wetlands will be lost and the replacement area at the existing structure are at equivalent elevations (El. 5 v. El. 3 to 4.5 feet), and both are adjacent to the same water body, Plum Bush Creek. The replacement area will be planted with *Spartina*, consistent with the salt marsh vegetation near the existing structure. The Petitioner also plans to remediate the monoculture of *Phragmites* by replacing it with native salt marsh species. Peter PFDT at p. 13 to 14.

Ms. Peter testified that the proposed work also meets the performance standards for salt marsh, if the area of the proposed new structure were to be regulated as salt marsh, by dividing the work into categories. She stated that (1) the repair and improvement of a building existing prior to 1987 is allowed under 310 CMR 10.24(7)(c)2., (2) the creation or restoration of salt marsh for the area under the existing building and the *Phragmites* removal is allowed under 310 CMR 10.32(5), and (3) the

construction of a small, elevated walkway is allowed under 310 CMR 10.32(4). Peter PFDT at p. 15. She described the impacts of reconstruction of the 1956 building as limited to the installation of the pilings and a minimal shaded area that will be smaller than the area shaded by the existing building because it will be a minimum of 7 feet above the marsh and the decking will allow 65% light penetration. Peter PFDT at p. 16. The proposed building will be above the 9 foot elevation of the 100 year flood, as compared to the existing structure which is at least 3 feet lower. In Ms. Peter' view, the project will be an improvement to public interests, enhance environmental conditions within the Plum Bush Creek watershed, and be consistent with overall efforts of marsh conservation in the vicinity. Peter PFDT at 7.

Ms. Peter testified that the habitat value of *Phragmites* is low, and that wherever it occurs, property managers seek to eradicate it. Peter Rebuttal at ¶¶ 14 and 21. She stated that she did not observe a fringe of *Spartina patens* along the roadway, only along the Creek, and disagreed that the pilings could pierce the peat layer and cause more freshwater to intrude. Peter Rebuttal at ¶ 16 and 19; Peter Cross. She testified that the Petitioner could have proposed a replacement area of freshwater plants because the site is a transition zone. Peter Rebuttal at ¶ 24.

THE DEPARTMENT'S TESTIMONY

The Department offered the testimony of three witnesses, including Michael Abell, the Department staff who prepared the SOC. Mr. Abell has been an environmental analyst with the Department for ten years, where his experience has included the identification of resource areas and the preparation of SOCs. Abell PFDT at Exhibit A.

He observed the site on August 21 and 26, 2009. Abell PFDT at ¶ 11. Mr. Abell is qualified as an expert witness.

Mr. Abell cited to research attached to the testimony of Ms. Peter to explain how *Phragmites* is able to find less saline water, making it possible for colonization of a salt marsh. Abell PFDT at ¶ 11. In his opinion, the presence of *Phragmites* could not be used to distinguish between a freshwater marsh and a salt marsh. Id. His salinity measurements taken on August 21, 2009 about five feet seaward from the utility poles ranged from 10.7 ppt to 12.4 ppt. Abell PFDT at ¶ 13. He observed that the site was dominated by *Phragmites* but other species were present including *Spartina patens* and *Juncus gerardii*, with *Iva frutescens*, or High Tide Bush, along the road. Id. He concluded that because the vegetation was nonwoody, the vegetation at the site was a marsh community and because the salinity readings indicated a saline environment, the site was salt marsh, not a freshwater marsh. Abell PFDT at ¶ 14.

He further concluded that because the site is inundated six times a month during full and new moons, organic matter would be exported from the site, even though the productivity would be less than its full capacity due to the colonization by the invasive *Phragmites*. Abell PFDT at ¶ 16. Because of the frequency of inundation at the site, he concluded that it performs the salt marsh functions of protection of marine fisheries, shell fisheries, and wildlife habitat. Id. He dug holes at the site to observe the presence of peat and to confirm that the site provided the functions of prevention of pollution, storm damage prevention and protection of groundwater supply. Abell PFDT at ¶ 17. Thus, he described the site as dominated by a "salt-tolerant species" and concluded that because the site serves the statutory functions of salt marsh, it should be regulated as salt marsh.

Abell PFDT at ¶ 19.

Mr. Abell testified that in his opinion the project could not be allowed as a limited project because the demolition and "relocation" of the boat shack, with the construction of a single family house, is not "maintenance, repair or improvement" of the existing shack: "Transforming an apple into an orange, no matter how much you may like oranges, is not an improvement of the apple." Abell PFDT at ¶ 23; see 310 CMR 10.53(3)(i). He also did not believe the proposed walkway to the house could be permitted as a separate limited project unless the single family house was allowed as a limited project. Abell PFDT at ¶ 22. Mr. Abell also testified that the proposed project would not meet the performance standards for either salt marsh or BVW within an ACEC, because of the more stringent rules for ACECs. The pilings would result in the destruction or loss of resource area, which itself is not allowed, and the 22 square foot area of the pilings used by Ms. Peter under-represents the impact of the structure due to its shading which would adversely affect the growth of vegetation under the house. Abell PFDT at ¶ 27 and 28. He also testified that the piercing of the peat layer by the pile foundation would allow more freshwater to the area, increasing the colonization of *Phragmites*. Id.

The Department also offered the testimony of Jan P. Smith, an environmental scientist for 24 years at the Massachusetts Office of Coastal Zone Management. Smith PFDT at ¶ 1. He has participated on two research teams to measure and evaluate the condition of coastal wetlands systems. Smith PFDT at ¶¶ 2 and 3. Mr. Smith also has expertise in coastal habitat restoration. Smith PFDT at ¶¶ 4 and 5. He is qualified as an expert witness. He provided background on salt marsh vegetation, describing *Spartina*

alterniflora as the dominant plant in the low marsh and *Spartina patens* in the high marsh. Smith PFDT at ¶¶ 9 to 13, 14 and 15. He testified that "[i]n recent decades, *Phramites australis* has invaded the high marsh. Once it takes hold, *Phragmites* is often more dense and taller than *Spartina patens* and the other native salt marshes[sic]. *Phragmites* can take over large areas within a salt marsh by crowding out other plants and blocking their exposure to the sun. *Phragmites* can spread quickly. In some instances, *Phragmites* has been known to cover more than ten meters in a single growing season." Smith PFDT at ¶ 16. He stated that *Phragmites* degrades habitat and its management was to be encouraged, but he still believed it promoted the interests of the Wetlands Protection Act. Smith Cross.

Mr. Smith provided background on the ACEC program, and noted that the Great Marsh ACEC contains more than 10,000 acres of salt marsh, the largest salt marsh north of Long Island. Smith PFDT at ¶¶ 21 and 22. He also noted the site is included as habitat for shorebirds as part of the Western Hemisphere Shorebird Reserve Network and as an Important Bird Area, a program coordinated locally by the Massachusetts Audubon Society. Smith PFDT at ¶¶ 23 and 24.

Mr. Smith observed the site on March 2, 2010, and was familiar with the area from prior visits. Smith PFDT at ¶ 28. He believed that the blockage of a culvert under Plum Island Turnpike for Plum Bush Creek led to the loss of a tidal connection which contributed to the growth of *Phragmites*, together with fill on adjacent parcels. Smith PFDT at ¶¶ 29 and 30. He observed the entire site under flowing tidal water, and concluded, based on regular inundation and the presence of *Spartina patens* at a higher elevation than *Phragmites*, that the site was salt marsh. Smith PFDT at ¶ 31. He stated

that "[t]here is much about the biology of *Phragmites* that is not understood, including how and why it comes to dominate the landscape." Smith PFDT at ¶ 35. He explained that *Phragmites* may thrive in salt marshes by relying on underground rhizomes that can connect to identical stems in less saline conditions. Id. However, he cited to studies within the Great Marsh of *Phragmites* surrounded by, and subject to the same salinity as, other salt marsh vegetation. Smith PFDT at ¶¶ 33 and 34. Mr. Smith had conducted sampling 200 meters from the Petitioner's property south of Plum Island Turnpike, with salinity at 10 to 20 PPT, with a 25 by 15 foot stand of *Phragmites* immediately adjacent to the tidal creek and within *Spartina sp*. Smith PFDT at ¶ 37. He observed obligate salt marsh bird species in the *Phragmites* adjacent to the Petitioner's site, which supported his opinion that *Phragmites* stands have some habitat value. Smith PFDT at ¶¶ 37. He concluded that conditions at the project site are "indistinguishable from those in the surrounding Great Marsh and it appears to be all part of the same ecological system," which is a salt marsh system. Smith PFDT at ¶ 37.

The final Department witness was Edward L. Reiner, a Senior Wetlands Scientist at the EPA, New England Region, for more than 30 years. Reiner PFDT at ¶ 1.[7] In addition to a Masters Thesis on Massachusetts salt marshes, he has assisted with salt marsh restoration projects. Reiner PFDT at ¶ 2 and 3. He provided comments on the Petitioner's project during MEPA review, asserting that the area is salt marsh, not BVW, and was responsible for project review of a nearby site on Plum Island Turnpike, referred to by witnesses as the "Richards" project or site, where an owner was permitted to raze an existing structure and build a single family house on pilings in BVW. Reiner PFDT at ¶

[7] Mr. Reiner testified that he had followed appropriate procedures to testify for another agency. Reiner Cross.

6 and 18. He observed the Petitioner's site on October 30, 2009. He is qualified as an expert witness.

Mr. Reiner testified that he tested the salinity at the site at 5 ppt. Because the substrate elevations were below the elevation of extreme high tide and the surface water contained salt water, meaning the salinity was greater than 0.5 ppt, he concluded that the *Phragmites*-dominated site was salt marsh. PFDT at ¶ 8. He explained that open ocean is about 35 ppt salinity, 0.5 ppt to 30 ppt is brackish, and salinity of less than 0.5 is freshwater. Id. He criticized Ms. Peter for measuring salinity in the root zone, but stated that her measurements of 3.0 to 7.0 ppt show that the site is not a freshwater wetland because the salinity exceeds 0.5 ppt. Reiner PFDT at ¶ 9.

Mr. Reiner testified that *Phragmites* similar to the situation at the Petitioner's site "can be found in almost every estuary and coastal salt marsh in Massachusetts." Reiner PFDT at ¶ 10. He submitted photos of the site taken on March 2, 2010, which show *Phragmites* and *Spartina sp.* on adjacent areas. He stated that the presence of *Spartina* on the Petitioner's property along the Creek and Plum Island Turnpike supports his view that the site is salt marsh, and notes that *Phragmites* can "tolerate moderate levels of salinity typical of those at the project site." Reiner PFDT at ¶ 11 and 12. In addition to the tidal restriction and adjacent fill identified by Mr. Smith as potential causes of *Phragmites*, Mr. Reiner stated that the large accumulation of wrack at the site may have contributed as well. Reiner PFDT at ¶ 13. In his opinion, the site was salt marsh that had been "colonized with *Phragmites*." Reiner PFDT at ¶ 14. He testified that *Phragmites* is not an indicator species as to the type of wetland, but instead "salinity and frequency of inundation are appropriate indicators for distinguishing between fresh and salt water

wetlands." Reiner PFDT at ¶ 17. He testified that if *Phragmites* had not colonized the Petitioner's site, the plants species growing there would be the same as now grow on adjacent areas, *Spartina patens*. Reiner Cross.

As to the Richards project, Mr. Reiner provided documentary evidence on its permitting. Reiner PFDT at ¶ 20 and 22. He testified that the Richards site had no *Phragmites* and was determined to be BVW based upon the presence of freshwater plants under the proposed building. In addition, salinity was not measured at the Richards site, while salinity at the Petitioner's site clearly showed that the *Phragmites* were not growing in a freshwater wetland. Reiner PFDT at ¶ 21.

WHETHER THE PROJECT WILL TAKE PLACE IN SALT MARSH OR BVW?

A threshold question in any wetlands permitting case is the identification of the resource area where the work will be located, because the identity of the resource area determines which performance standards will govern the work. The Petitioner's site is either a salt marsh, a coastal wetland, or a BVW, a freshwater wetland. For the reasons stated below, I find that the site is salt marsh.

The Parties agree on many facts about the site. The site has hydrology and soils that are characteristic of wetlands. The site is almost entirely *Phragmites*,, with other species including *Spartina* particularly near the Creek.[8] The area of the lot where work is proposed is a monoculture of *Phragmites*. *Phragmites* is an invasive species that can

[8]The site contains several plant species, includig *Spartina alterniflora* (Obl), *Spartina patens* (Facw+), and *Phragmites* (Facw). See Peter PFDT, NOI at Appendix II. All three species are considered wetlands plant indicator species. According to the U.S. Fish and Wildlife Service's *National List of Plant Species That Occur in Wetlands*, obligate (Obl) species such as *Spartina alterniflora* almost always (>99% of the time) grow in saturated or inundated conditions during the growing season; facultative wetland plants (Facw) such as *Spartina patens* and *Phragmites* usually (67-99% of the time, with Facw+ toward the wetter end) occur in wetlands but are occasionally found in uplands. *See* Abell PFDT at ¶ *18; See also Delineating Bordering Vegetated Wetlands*, at pp. 6-7. The plan prepared by the Petitioner shows no area of upland. Thus, the Parties do not dispute that the entire lot is predominantly wetlands plant species or that it is predominantly *Phragmites*.

grow in uplands, freshwater wetlands, and brackish waters that might otherwise support a high marsh community of *Spartina patens*. *Phragmites* is not a salt marsh indicator species. The area where the proposed structure would be located is above mean high water but below the highest spring tide and is inundated six times a month. Peter Cross. Much of this dispute involves the regulatory definition of salt marsh.

As to the first sentence in the definition of salt marsh stating what salt marsh means, I find that the site is appropriately characterized as a coastal wetland because it is subject to tidal action and because the salinity at the site is above the 0.5 ppt that the witnesses agree is the threshold for fresh water. Under the definitions of salt marsh and BVW at 310 CMR 10.32(2) and 310 CMR 10.55(2)(a), respectively, a salt marsh is a "coastal wetland" and a BVW is a "freshwater wetland." Coastal wetlands are "subject to tidal action," a term appearing in the statute and defined in the regulations as "land subject to the periodic rise and fall of a coastal water body, including spring tides." 310 CMR 10.04 Land Subject to Tidal Action; M.G.L. c. 131, § 40, at ¶ 7. The extent of spring tides is the landward extent of a salt marsh in the regulatory definition of salt marsh. 310 CMR 10.32(2). Freshwater wetlands are associated with "inland waters." M.G.L. c. 131, § 40, at ¶ 8. The statutory distinction between coastal and freshwater wetlands does not rely exclusively on vegetation. The Van Loan site is more accurately described as a "coastal wetland" rather than a "freshwater wetland," and it meets the second part of the definition of salt marsh because it is below the highest spring tides.

The nub of the dispute between the Parties is the second sentence in the definition of salt marsh stating that "dominant plants within a salt marsh are salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alternaflora*)." 310 CMR

10.32(2). The Petitioner argued that an area "dominated" by *Phragmites* rather than *Spartina sp.* cannot be salt marsh as the term is defined in the regulations. The Petitioner argued that the area of *Phragmites* is a BVW, a freshwater wetland. The Department argued that *Spartina sp*. are dominant in salt marshes generally and in the Great Marsh where the site is located, but that an area dominated by *Phragmites* can also meet the definition of salt marsh.

Neither Party provided a definition of "dominant" as the term is used in this context. As a matter of ordinary usage, "dominant" means "exercising the most influence or control" or "most prominent in position or prevalence." *American Heritage Dictionary,* 2nd College Ed. (1985). *See* Warcewicz v. Department of Environmental Protection, 410 Mass. 548 (March 4, 1991). In the ecological context, the term means "[d]esignating or pertaining to the species that is most characteristic of a habitat and that may determine the presence and type of other species." Id. The experts agree that *Spartina sp*. are the most prominent, prevalent, and characteristic plant species in salt marshes. However, to state that *Spartina sp.* are the most prominent or most prevalent plants in salt marshes does not state, or even imply, that *Spartina* must be present in every area of salt marsh for the term "salt marsh" to apply. To state that *Spartina sp.* are the most characteristic plant within a salt marsh habitat, determining the presence or type of other species, likewise does not state, or even imply, that other plant species may not be present or that *Spartina sp.* must necessarily be present.[9]

[9]As a technical term, a "dominant plant" is defined in the Department's *Handbook on Delineating Bordering Vegetated Wetlands* as "[b]ased on calculations in the dominance test, a plant determined to be dominant in a particular vegetative layer." Dominant plants are identified by listing the most abundant species until the cumulative total for percent dominance meets or exceeds 50 percent, plus any other species with a percent dominance of 20% or greater, plus any other species with the same dominance as species already listed. Plant abundance for each species is evaluated for each vegetative layer where the

The Department's *Guide to the Coastal Wetlands Regulations* states that "boundaries of salt marshes must be determined on the basis of vegetation. They do not always follow a contour line." *Guide to the Coastal Wetlands Regulations* at p. 36. The Guide lists 11 salt marsh plants, including *Spartina alterniflora* and *Spartina patens*, that are indicator species of a salt marsh and five plants, including *Phragmites*, that are not to be used as salt marsh indicator species. Id. at p. 36. To determine the landward boundary, the Guide advises to use a one meter square plot and place the boundary where the actual number of plants or percent ground cover of plants that are "salt tolerant" are greater than 50% of the listed salt marsh indicator species. Id. at p. 37. While this guidance will yield a boundary that comports with the definition of salt marsh, it is not clear that this "good guide" is the only acceptable method.[10] Although *Phragmites* is not listed in the Guide as an indicator species of salt marsh, the site meets the regulatory definition. The Parties noted distinctions between soil types, such "mucky peat," but the salinity measurements of the groundwater from soils at the site at a depth of 3 feet, nine inches was 5.0 ppt. I conclude that a "saline soil" is a soil that exhibits levels of salinity

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total percent coverage is greater than 5%, with a plant species disregarded only if it has less than 1% cover; plant species greater than 1% cover are included in the dominance test to assess whether the vegetative community has greater than 50% wetland indicator plants. *Delineating Bordering Vegetated Wetlands*, p. 12. Thus, while a single species could be the sole "dominant plant," certainly there may also be many dominant plants within an observation plot and some dominant plants may have quite low percent cover. Thus, while it may be true that *Spartina sp*. are the most frequently listed dominant species in salt marshes generally, there is nothing in the dominance test which suggests that the absence of a specific plant species may be used to define a vegetative community. Thus, the logical interpretation is that *Spartina* are most likely listed as "dominant plants" following the dominance procedure, but that these two species need not necessarily be present in every portion of every salt marsh.

[10] I was unable to locate a copy of the Guide at the Department's website, and while it is a useful reference, it was apparently written in 1978, prior to the colonization of *Phragmites* that has since occurred. Certainly, the regulation, not the Guide, must govern the Department's decisionmaking. To the extent that the regulation allows the Department to base its decisions on current conditions and research, it may well be appropriate for the Department to do so as a matter of policy. The purpose of the regulations is to protect the interests of the Act, and it would negate that purpose if the increasing presence of an invasive species in salt marshes means that they may no longer be protected as salt marshes for the functions that these coastal wetlands provide, even when colonized by *Phragmites.*

higher than fresh water, or 0.5 ppt and that the site, at least where this sample was taken, has saline soils. Peter PFDT at p. 6. While *Phragmites* may not prefer living in saline conditions, there appears to be no question, from the presence of the thriving *Phragmites* colony at the Petitioner's property and elsewhere within the Great Marsh, that *Phragmites* is well adapted to saline conditions.

Finally, the regulation must be read in context. The first sentence defines salt marsh in three parts, a coastal wetland, extending to the highest spring tide, characterized by plants well adapted to or preferring saline soils. The following two sentences provide information about salt marshes as defined: dominant plants are *Spartina sp.* and may contain unvegetated areas of tidal creeks, ditches and pools. If the Department intended to require the presence or predominance of *Spartina sp.*, the language would reflect the requirement, such as "Salt marsh shall contain *Spartina sp*." or "Salt marsh shall contain a predominance of *Spartina sp*." Compare 310 CMR 10.55(2). Instead, the first sentence is stated as mandatory. If the presence of *Spartina sp.* were mandatory, the regulation would have so stated instead of citing to the requirement of plant species that are adapted to or prefer saline soils.

The Parties identified prior adjudicatory decisions in support of their positions. Matter of Cicolini, a 1984 case, addressed the question of whether *Phragmites* is a plant that is "well adapted to or prefers living in saline soils." Matter of Vincent Cicolini, Docket No. 67-142, Final Decision (May 15, 1984). The decision concludes that the words "well adapted to or prefers living" relate to the frequency and degree of exposure to saline conditions the vegetation can tolerate and do not describe phragmites at the subject site." Id. The site in Cicolini was flooded once a month, as opposed to six times

a month at the Petitioner's site, so the situation is factually different. The decision does not find that the type of vegetation alone is determinative, so at least in this case in 1984, the presence of *Phragmites* did not preclude a determination that an area was a salt marsh.

In a footnote in Matter of Kamoniek, *Phragmites* was determined to be part of a BVW, and the BVW was located between salt marsh and uplands. The inquiry of the appeal, however, focused on the riverfront area and salinity in the river rather than conditions that might have determined the boundary between salt marsh and BVW. Matter of Kathleen Kamionek, Docket No. 2001-075, Recommended Final Decision (December 10, 2004).[11] Kamoniek does not state, as the Petitioner contends, that *Phragmite*s must be regulated as BVW. There is no question that *Phragmites* may be found in BVW or that a salt marsh may transition into a BVW.[12] Whether an area dominated by *Phragmites* is salt marsh or BVW is a site-specific inquiry and appears to depend largely on salinity, which in turn depends on frequency of inundation.[13]

The Parties devoted considerable attention to a property near the Petitioner's site where the Department issued an SOC, file number 51-95, in 1987 to William Richards to raze an existing building and construct a new dwelling on piles, with an alteration of 640

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[11] The Recommended Decision was not adopted by Final Decision, and the Final Decision did not address the question of salt marsh and BVW.

[12] Indeed, the *Guide to Coastal Wetlands Regulations* states that there may a gradual transition as a "salt marsh grades into a freshwater marsh" and the diagram shows a fresh marsh adjacent to high marsh salt marsh. Notably, in the diagram, the dividing line between fresh marsh and high marsh salt marsh is drawn at the highest spring tide of the year. *Guide to Coastal Wetlands Regulations*, at 36 to 37.

[13] The Petitioner also cited to a decision focusing on the distinction between coastal dune and coastal bank. Apparently the site had an area of beach with salt marsh seaward. Matter of John Allen and Barbara Cordi-Allen, Recommended Final Decision, Docket Nos. 2000-083 and 2000-087, July 6, 2006. The distinction between beach and salt marsh as separate resource areas was not sufficiently elucidated in the case to shed light on its relevance to this matter. Neither Allen or Kamionek states, as the Petitioner contends, that salt marsh ends where the dominance of *Spartina* vegetation ends.

square feet of BVW to be compensated by the creation of 700 square feet of BVW within the footprint of the razed dwelling.[14] The Petitioner argued that the Department reached an inconsistent and contradictory outcome for his project, on essentially similar facts except that the Richards property contained cat tails as the dominant freshwater plant species instead of *Phragmites*. The Richards site has some similarities to the Petitioner's but with an important difference. Mr. Reiner, the only witness who observed the Richards site in 1987 and who produced his inspection report and photographs, testified that the area of the proposed Richards house was characterized as BVW, not salt marsh, and that the area of the proposed footprint "had some typical freshwater wetland plants," did not have *Phragmites,* and there were no salinity readings. Reiner PFDT at ¶¶ 18 to 21.[15] Thus, I conclude that the sites are factually distinguishable.

WHETHER THE PROJECT MAY BE PERMITTED AS A LIMTED PROJECT?

Although I have found that the site is salt marsh, not BVW, I address this issue as an alternate ground for my recommendation because even if the site were BVW, the proposed project could not be permitted as a limited project. The Petitioner proposed the project as work in BVW under the provision of 310 CMR 10.53(3) as a limited project which provides issuing authorities with the discretion to permit certain types of activities under limited circumstances even where they do not meet the performance standards. Because the site is located within an ACEC, the proposed work at the site may not destroy or otherwise impair any portion of the BVW. 310 CMR 10.55(4)(e). Thus, the

[14] This property was included in the site visit that I conducted with the Parties.

[15] The lack of salinity readings and other differences between the permitting of projects in 1987 and 2010 may reveal both changes at the sites and changes in the Department's permitting. By all accounts, there is more *Phragmites*. I also do not accept the proposition, as the Petitioner contends, that the Department's permits cannot vary over time based upon its experience with issues such as the impact of pile supported structures on vegetation.

Petitioner cannot meet the performance standards for BVW by operation of the regulations, and the project may only be permitted as a limited project.[16]

The single family house on pilings is proposed under 310 CMR 10.53(3)(i), "the maintenance, repair and improvement (but not substantial enlargement) of structures . . . which existed on . . . April 1, 1983". While there is no dispute that the boat shack at the site existed on April 1, 1983, the Parties disagree on whether the demolition of the existing structure and the construction of a new structure approximately 50 feet away falls within the confines of "maintenance, repair and improvement" of the existing structure. The Petitioner has characterized the project as "reconstruction." I conclude based upon the plain meaning of the regulations, that proposed work under 310 CMR 10.53(3)(i) is limited to maintenance, repair and improvement of the structure that existed on April 1, 1983, and does not extend to the construction of new structures even where there is an existing structure that will be demolished. *See* Warcewicz v. Department of Environmental Protection, 410 Mass. 548 (March 4, 1991).

The regulations at 310 CMR 10.53(3) specify what types of activities may be eligible for the various types of limited projects, specify when construction of new structures is allowed, and distinguish construction from maintenance and repair of existing structures.[17] To improve means "make better" and, in this instance, it is a

[16] Mr. Abell testified that the project could be allowed as a limited project despite its location within an ACEC. Abell Cross.

[17] The Petitioner argued that Mr. Van Loan as a right under the limited project provision to undertake the construction of the proposed building. Even if new construction were allowed, the limited project provision at 310 CMR 10.53 (3) does not create a "right" to conduct the listed activities. The introductory language is permissive as to the issuing authority, not to the applicant. 310 CMR 10.53(3)("Notwithstanding the provisions of 310 CMR 10.54 through 10.58 and 10.60, the issuing authority *may* issue an Order of Conditions . . . permitting the following limited projects . . . "(emphasis added)).

transitive verb with "structures" as the relevant direct object. Nothing in the language of maintain, repair or improve an existing structure suggests that the work need not be performed on the existing structure, but that instead the existing structure may be demolished in its entirety and replaced with a new structure in a different location.[18] To the contrary, the regulation assumes that the existing structure will remain and will be "maintain[ed], repair[ed] or improve[d]." If the regulation intended to allow existing structures to be demolished and replaced with new structures, its terms would convey that meaning, such as "replace" or "reconstruct." *See, e.g.*, 310 CMR 10.58(6)(a) (existing structures in riverfront area, but allowing "the replacement within the same footprint of structures destroyed by fire or other casualty.").

I have found no instance where the Department has interpreted this provision to allow the demolition of an existing structure and the construction of a new structure in a different location. *See* Matter of David H. Carls and Gary F. Snerson, Trustees, Annex Realty Trust, Docket no. 89-302, Final Decision (April 29, 1997); Matter of Town of Amesbury, Docket No. 94-114, Final Decision (January 29, 1996); Matter of Town of Amesbury, Docket No. 2009-051, Recommended Final Decision (March 18, 2010, adopted by Final Decision (April 1, 2010). Where applicants have proposed the demolition of an existing structure and new construction, the work has not been permitted as a limited project but instead has been permitted under the performance standards. *See* Matter of Deborah M. Stanley and Donald D. Stanley, Docket No. 99-033, Final Decision (March 27, 2001). Under this provision, the Petitioner could be allowed to maintain, repair or improve (but not substantially enlarge), the existing structure on the

[18] Ms. Peter testified on cross-examination that there would be complete demolition and removal of the existing building and the new construction would be accomplished with new materials.

property, but the Petitioner did not propose work on the existing structure in the Notice of Intent.[19]

The same reasoning applies to the limited project language in the coastal regulations at 310 CMR 10.24(7)(c)2., so that the project could also not be allowed in salt marsh as a project to maintain, repair or improve an existing structure. Unlike the provisions governing BVW, even if this project were a limited project it could not be allowed because it is located within an ACEC. The regulations at 310 CMR 10.24(5)(a) and (b) provide that where a project in an ACEC that is determined to be significant to interests of the Act, it can have no adverse effects on those interests. Thus, loss of salt marsh determined significant cannot be allowed as a limited project.

WHETHER THE PROJECT MEETS THE PERFORMANCE STANDARDS?

Although the applicant proposed the project under the limited project provisions, the final issue identified for adjudication is whether the work meets the performance standards for either salt marsh or BVW. The language of the performance standards for salt marsh and BVW are similar: the work "shall not destroy any portion of the salt marsh" and the work "shall not destroy or otherwise impair" the BVW unless the issuing authority allows replication. 310 CMR 10.32(3) and 310 CMR 10.55(4)(a). The Petitioner states that the impacts of the proposed project are limited to the 21.3 square feet of the pilings for the proposed house and that the benefits offered by the project, particularly the restoration of *Spartina sp*., sufficiently counter any adverse impacts.

I find that the proposed structure will "destroy" resource area, through the installation of the pilings and will likely destroy a larger area through shading impacts

[19] Mr. Abell testified that he would view any improvement of the building as limited to improvement for its current use. Abell Cross. He stated that he did not inquire how other Department staff view this limited project. *Id*.

which will diminish or eliminate growth of vegetation beneath the structure. The Parties did not quantify the shading impacts, and accordingly, I make no specific finding, but the destruction of resource area by the installation of the pilings is sufficient to support a conclusion that the proposed project does not meet the performance standards for either salt marsh or BVW. The Petitioner argued that the proposed removal of *Phragmites* and restoration of salt marsh vegetation met the requirements for replacement of a lost area of BVW. Because the BVW regulations require that a replacement area function in a manner similar to the area lost and be provided in a manner consistent with all other performance standards for inland resource areas, I find that the replacement of BVW by salt marsh as proposed does not conform to 310 CMR 10.55(b)(1) through (7) as required.[20] The presence of the site within an ACEC is an alternative grounds for concluding that the project does not meet the performance standards for salt marsh or BVW.

CONCLUSION

For the reasons stated, I recommend that the Department's Commissioner issue a Final Decision which sustains the denial of a permit issued by the Northeast Regional Office for this project.

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Pamela D. Harvey
Presiding Officer

[20] The conversion of BVW to salt marsh could be allowed for projects with this purpose under 310 CMR 10.53(4) because the provision applies notwithstanding the performance standards for inland resource areas, but the provision is not applicable to a single family house project.

NOTICE- RECOMMENDED FINAL DECISION

This decision is a Recommended Final Decision of the Presiding Officer. It has been transmitted to the Commissioner for her Final Decision in this matter. This decision is therefore not a Final Decision subject to reconsideration under 310 CMR 1.01(14)(e), and may not be appealed to Superior Court pursuant to M.G.L. c. 30A. The Commissioner's Final Decision is subject to rights of reconsideration and court appeal and will contain a notice to that effect.

Because this matter has now been transmitted to the Commissioner, no party shall file a motion to renew or reargue this Recommended Final Decision or any part of it, and no party shall communicate with the Commissioner's office regarding this decision unless the Commissioner, in her sole discretion, directs otherwise.