



SPECIAL EDITION

THE *QUEACH* DECISION

In a landmark decision September 25, 2001, the Connecticut Supreme Court held that, in the evaluation of an application, municipal inland wetlands agencies can regulate the activities outside the boundaries of an inland wetlands area - *if* the activities are likely to impact a wetland or watercourse. This significant case, *Queach Corp. vs. Town of Branford Inland Wetlands Commission*, re-affirmed the broad legislative purpose of the Inland Wetlands and Watercourses Act.

This special issue of *The Habitat* reviews the scope and importance of *Queach*. It also provides recommendations and guidelines for developing the technical information needed for making decisions on activities in the upland areas that may impact wetlands and watercourses. The articles herein were written specifically for municipal inland wetlands and conservation commissioners. CACIWC recommends that each of the articles be reviewed and carefully studied by both inland wetlands and conservation commissioners for use in their important role of protecting the town's water resources.

We thank the authors for their interest, time commitment and expertise in clarifying the *Queach* decision, and in assisting commissions with the application of that decision based on relevant natural resource information.

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THE REACH OF QUEACH: REGULATION OUTSIDE OF WETLANDS AND WATERCOURSES AFTER *QUEACH CORPORATION V. INLAND WETLANDS COMMISSION*, 258 CONN. 178 (2001)

BY DAVID H. WRINN¹

The Connecticut Supreme Court is not in the habit of giving advisory opinions on the state of the law; nevertheless, its handling of a specific case sometimes affords it the opportunity to comment on the “long view” of how the law has evolved to the point in controversy. In *Queach Corporation v. Inland Wetlands Commission*,² the Court took such a retrospective glance at certain of its environmental law precedents. The Court considered a challenge to a routine amendment to a municipal inland wetlands commission’s regulations as an opportunity to reaffirm its early commitment to a broad interpretation of the Inland Wetlands and Watercourses Act (“I.W.W.A.”; “the Act”),³ that it had handed down in the leading case, *Aaron v. Inland Wetlands Commission*,⁴ twenty years previously. Although this article will discuss the particular issues raised and decided in *Queach*, it is this overarching background that lends to this latest decision of the Court its real significance, and which must be appreciated, too.

Without question, the salient aspect of this decision’s treatment of the Act is the extent of authority to regulate outside the boundaries of the designated inland wetland and watercourse natural resources. The decision in *Queach* effectively quashes a lingering—and persistent—argument from some quarters that amendments to the I.W.W.A. during the intervening period giving attention to regulation outside the resource proper (*i.e.*, “uplands,” so called) in what is now codified as Section 22a-42a(f) of the Act, effected a change in direction and a scaling back of the regulatory authority of municipal commissions.⁵ On the contrary, *Queach* indicates that the Court remains comfortable with an interpretation of the Act that affords broad scope to the ability to regulate consistent with the legislative charge set forth in the

preamble.⁶ The following issues raised and discussed in the decision illustrate this observation.

Regulated Activities

Queach makes unmistakable the necessary distinction to be drawn between “resource conservation” and other forms of land use control where the nature and extent of regulation is more rigidly defined (*e.g.*, zoning setbacks and enumerated uses); it reemphasizes the point that the subject of regulation is a *resource* (“wetlands” and “watercourses”), and that the object of regulation centers about the concept of “impact.” This distinction is as old as the *Aaron* case, where the Court rejected a challenge to a municipal commission’s consideration of the impact of sewer system components on the adjacent wetlands, notwithstanding the fact that no part of the system was to be sited in the wetlands.⁷ Several points in the Court’s discussion of this history are noteworthy.

The Court’s interpretation of Section 22a-42a(f), which provides that an inland wetlands agency may regulate activities outside of wetlands or watercourses “ [i]f [the agency] regulated activities within areas around wetlands or

Footnotes

¹ The author is an Assistant Attorney General in the Environment Department of the Office of the Attorney General; the views expressed herein are his alone and do not constitute an official opinion of the Attorney General.

² 258 Conn. 178, 779 A.2d 134 (2001).

³ Conn. Gen. Stat. §§ 22a-36 to 22a-45.

⁴ 183 Conn. 532, 441 A.2d 30 (1981).

⁵ Public Act 95-313, § 3; Public Act 96-157, § 4.

⁶ Conn. Gen. Stat. § 22a-36. In fact, this was the initial approach of the Court in the *Aaron* case, stating the obvious point that “[a] statute should be

interpreted according to the policy which the legislation seeks to serve.” The Court immediately cited to Section 22a-36, *Aaron*, 183 Conn. at 538, language that the Court has regarded as an expression of “a strong public policy in favor of protecting and preserving the natural resources, and particularly the wetlands, of this state[.]” and also as an “emphatic statement of the importance of protecting wetlands. . . .” *Commissioner of Environmental*

watercourses” and “those activities...are likely to impact or affect wetlands or watercourses,”” emphasized the Act’s requirement that such regulation be “in accordance with” the agency’s consideration of applications for activities “to be conducted *in* wetlands or watercourses,” and that such regulation applies *only* to activities “likely to impact or affect” these resources. Section 22a-42a(f) so completely squares with the earlier analysis in *Aaron* that the Court stated in *Queach* that this 1996 amendment “effectively codifies our previous statement in the seminal case of *Aaron*. . . .”⁸

Moreover, the Court also reviewed its post-*Aaron* and pre-amendment precedents and found them in accord with this view as well, referring approvingly to its decisions in *Mario v. Fairfield*,⁹ and *Cioffoletti v. Planning & Zoning Commission*.¹⁰ The Court specifically noted, even prior to beginning its analysis of Section 22a-42a(f) that the legislature had, in adopting the amendment, made *no* changes to the “broad legislative purpose” of the I.W.W.A., thereby confirming the correctness of the Court’s previous interpretations of the Act.¹¹

The plaintiffs in *Queach* had pointedly attacked the Branford commission’s “catch-all” provision in its definition of “regulated activity,” providing that “[t]he Agency may rule that any other activity located within such upland review area or in any other non-wetland or non-watercourse area is likely to impact or affect

wetlands or watercourses and is a regulated activity.” This language had been suggested to the municipal agencies in the Department of Environmental Protection’s (“DEP”) *Guidelines for Upland Review Area Regulations* (1997). The Court addressed this claim with economy, since the analysis contained in the case law to date, and the bare language of the Act itself, readily disposed of the issue. The same regulatory considerations come into play regardless of whether one is addressing a proposed activity within the upland review area or beyond it: Will the activity likely impact or affect the wetlands or watercourses?¹² Thus, there is *no* support for the proposition that the mere siting of a proposed activity beyond any designated upland review area renders it immune from regulation; the entire regulatory regime is predicated upon “*impact*” and not upon *distance*.

Setbacks or “upland review areas” thus have two discrete but related functions. First, they establish the zone within which the municipal inland wetland agency will consider impacts or effects on wetlands or watercourses posed by proposals for development. They are an expression of the likelihood that development activities within that lateral distance of the natural resources might cause an adverse environmental impact. According to the DEP’s *Guidelines*, the regulatory setback drives review of construction activities on the expectation that “most of the activities which are likely to impact or affect these resources will be located in that area.”¹³ This is only a regulatory “presumption,” as the *Guidelines* note, which means that a person proposing to conduct a regulated activity within this area has the burden of demonstrating that the environmental impacts associated with the proposal are consistent with the “purposes and provisions” of the Act. The upland review area is *not* a prohibitory buffer against development: a demonstration of no impact, or of acceptable impact, as outlined in the factors for consideration contained in Section 22a-41 of the Act, should lead to permit issuance.¹⁴ The *Guidelines* state, correctly, that “[t]he inland wetland statutes do not authorize a blanket prohibition of all activities either in the wetlands or in upland review, buffer or setback areas.”¹⁵ The Court in *Queach*, validating the approach

See Wrinn, page 4

Protection v. Connecticut Bldg. Wrecking Co., 227 Conn. 175, 198-99 (1993).

⁷The Court in *Queach* quoted *Aaron* as follows: “An examination of the act reveals that one of its major considerations is the environmental impact of proposed activity on wetlands and watercourses, which may, in some instances, come from outside the physical boundaries of a wetland or watercourse,” and then pointedly observed that, “[i]n *Aaron*, we held that activity that occurs in nonwetlands areas, but that

affects wetlands areas, falls within the scope of regulated activity.” *Queach*, 258 Conn. at 197-98. In *Aaron*, as in *Queach*, the agency’s definition of “regulated activity” was in issue. The regulations of the Town of Redding had defined “regulated activity” as encompassing not only “any operation *within*, or use of, a wetland or water course involving removal or deposition of material, or any obstruction, construction, alteration or pollution, of *such wetlands or watercourses*,” but also the “location of any portion of any subsurface waste disposal system *within* 200 feet of the mean water line of [certain enumerated rivers, ponds and reservoirs]; 150 feet of such water line of all other water courses and 50 feet of all wetlands *is deemed* a regulated activity. . . .” *Aaron*, 183 Conn. at 541-42, n.10 (emphasis added). When

Wrinn, continued from page 3

taken in the *Guidelines*, cautioned against “confusing the commission’s authority to *regulate* activity with the commission’s authority to *prohibit* activity. . . [T]he upland review process does not forbid activity based solely on proximity [*i.e.*, distance] to wetlands. Rather, the upland review process merely provides a basis for determining whether activities will have an adverse *impact* on the adjacent wetland or watercourse, and if necessary, regulating them.”¹⁶

Secondly, regulatory upland review areas function as an administrative expression of wetlands and watercourses management. For example, they provide notice to the public, as the DEP *Guidelines* explain:

In addition to implementing the law to protect wetlands and watercourses, regulations inform the public on what to expect if one proposes an activity in or affecting a wetland or watercourse in the subject town. Upland review area regulations reduce or eliminate the need for case-by-case rulings by providing notice as to what activities need wetland permits. By specifying where a permit is required, such regulations foster consistency and are convenient for the public.¹⁷

Therefore, the presence of the “catch-all” provision in the Branford regulations, based upon one of the models set forth in the Guidelines, (DEP’s Guidelines for Upland Review Area Regulations - 1997) emphasizes the point that, notwithstanding the requirement that a permit be obtained for conduct involving regulated activities within an upland review area, a wetlands agency retains authority to regulate proposed activities located more distantly if it finds that the activities are likely to have an impact upon or affect a wetland or watercourse. The decision in Queach unequivocally supports that assertion of regulatory authority.

In addition to notice to the public, such regulations provide advance notice to the inland wetland agencies themselves of activities that might have an impact upon or affect these natural resources.¹⁸ The

Court described a variant of such regulations in *Mario* as “a valid administrative device reasonably designed to enable the commission to protect and preserve the wetlands . . .”¹⁹ *Queach* confirmed the validity of this administrative function of the upland review area regulations.²⁰ The Court concluded that the establishment of such an area (and, in this particular case, an increase in the lateral extent of it) “does not automatically prevent or bar development . . . but provides the commission with a trigger for reviewing whether activity is likely to affect the wetlands or watercourses.”²¹

Therefore, the presence of the “catch-all” provision in the Branford regulations, based upon one of the models set forth in the *Guidelines*, emphasizes the point that, notwithstanding the requirement that a permit be obtained for conduct involving regulated activities

presented with the argument that this definition of “regulated activity,” implicating as it did the concept of “setback,” exceeded the scope of the I.W.W.A., the Court rejected it by appealing to an interpretation of “environmental impact” that was based upon both direct and indirect causation in keeping with the statute’s references to “any use,” “any alteration or pollution” of these resources. *Id.* At 542, quoting Conn. Gen. Stat. § 22a-38(13) [definition of “regulated activity”]. This approach was repeated, nearly verbatim, by the Court in *Queach*. *Queach*, 258 Conn. at 195-96.

⁸ The Court thus referred to the addition of Section 22a-42a(f) as providing “express authority for municipal agencies to regulate areas that extended

beyond designated wetland boundaries.” *Queach*, 258 Conn. at 183. By virtue of the Court’s prior interpretation of the Act, the authority to regulate in this manner was, necessarily, “implied.”

⁹ 217 Conn. 164 (1991).

¹⁰ 209 Conn. 544 (1989).

¹¹ *Queach*, 258 Conn. at 197-98.

¹² *Queach*, 258 Conn. at 198 n.23.

¹³ *Id.* at 5.

¹⁴ *Queach*, 258 Conn. at 199-200.

within an upland review area, a wetlands agency retains authority to regulate proposed activities located more distantly *if* it finds that the activities are likely to have an impact upon or affect a wetland or watercourse. The decision in *Queach* unequivocally supports that assertion of regulatory authority.

Finally, it is worthwhile noting what may seem to be an obvious point but also one that animates virtually every request for judicial review of agency legislative action under the I.W.W.A., and that is the question of who decides the predicate or preliminary facts that implicate the application of the Act's requirements. In short, who decides whether an activity constitutes an "impact" upon these natural resources? The answer is that, in the first as well as in the last instance, it is the regulatory authority. It was this question that caused the plaintiffs in *Queach* to characterize the Branford regulations' "catch-all" definition of "regulated activity" as beyond the jurisdiction of the agency. The Court, however, in the *Aaron* case and its progeny, and also in collateral cases such as *Cannata v. Dept. of Environmental Protection*,²² has made it clear that the regulatory regime in place that applies to wetlands and watercourses protection is both valid and "administratively necessary," and that even when a specific claim is advanced that a given proposed activity is exempt altogether by the express provisions of the Act, there should be an administrative determination,

in order to assess whether the activity falls within any limiting language of the enactment.²³ Accordingly, it is administratively necessary for a wetlands agency acting in the discharge of its obligations under the Act as enabling legislation to consider the likely impact of proposed regulated activities upon these particular natural resources that the Act has delegated to the agency's superintendence.²⁴ The oft-repeated language in *Aaron* that many different regulatory schemes may be at one and the same time in conformity with the I.W.W.A., because the enabling legislation "envisages its adaptation to infinitely variable conditions for the effectuation of the purposes of these statutes," is above all else an acknowledgment of the locus of decision making. The legislature, given the fragile and irreplaceable nature of the resource in question, has arrived at an allocation of responsibilities that is local, emphasizing close oversight.²⁵

Regulation and Amendment Process

The Court in *Queach* also considered whether the administrative record of the Branford commission's adoption of an amendment to its regulatory setback was legally sufficient. The Court noted that this challenge warranted little discussion, and listed three reasons supporting the decision of the municipal agency, two of which the case law and general principles of administrative law regard as unexceptional and essential: testimony before the inland wetlands agency and the "broad" purpose of the enabling legislation (*i.e.*, the language of the I.W.W.A. itself).

The DEP's *Guidelines* provided the third evidentiary basis for the amendment adoption. The Court noted that this document provided "a detailed explanation regarding the reasonableness of a 100 foot setback."²⁶ In other words, the Court endorsed the argument that the Commissioner of Environmental Protection's technical reflection upon this topic was appropriately treated as expert evidence for inclusion in the record of the agency's regulation amendment proceeding, and was appropriate, too, for the agency as fact finder to credit in its deliberations. This result is consistent both with the *Guideline*'s own characterization of its

See Wrinn, page 6

¹⁵ *Guidelines*, at 5. The legislature's removal of the term "buffer" from Section 22a-42a(f) was likely in recognition that "buffer" connotes "prohibition" or "exclusion," a point emphasized by DEP in choosing the term "upland review area" a better communicating the nature of the process, that being upon *review* of regulated activities on a case-by-case basis rather than by reference to their location alone.

¹⁶ *Queach*, 258 Conn. at 199 (original emphasis).

¹⁷ *DEP Guidelines*, at 2.

¹⁸ *See Mario*, 217 Conn. at 172.

¹⁹ *Id.* The regulation at issue in *Mario* required owners of property upon which were located regulated resources to obtain a "certificate of wetlands conformance" prior to erecting any structure on the non-wetlands portion of the parcel.

²⁰ *Queach*, 258 Conn. at 200.

²¹ *Id.* at 201.

²² 215 Conn. 616, 622-29 (1990).

²³ *Aaron*, 183 Conn. at 547.

purpose as providing assistance in the municipal regulation review and revision process, and the Court's deference to the state agency as a regulatory body possessing technical expertise in this area.

Groundwater Impacts

The plaintiffs in *Queach* sought review of the Branford regulation defining as a "significant activity" "any activity which causes a substantial diminution of flow of a natural watercourse, or groundwater levels of the regulated area . . ." The plaintiffs claimed that the promulgation of this provision was beyond the authority of the municipal agency, since groundwater resources were not enumerated among those matters defined as "regulated activities." The Court, however, viewed these provisions as concerning "impacts on wetlands and watercourses, *not groundwater per se*."²⁷ Again, the analysis is based upon the legislative purpose of the statute, and that purpose is set forth in detail in Section 22a-36. The Court took notice of some obvious impacts of proposed activities upon groundwater such as might be found to constitute an "impact" in or on wetlands and watercourses—dewatering, for example—but concluded more generally still that the Act seeks not only to protect these natural resources from pollution but also to preserve and protect them from disturbance, "whether polluting or not, which could affect their conservation, economic, aesthetic, recreational or other values."²⁸ Applying this test, the Court concluded that the Branford regulations' reference to groundwater impacts was "consistent" with the "broad purposes of the act," because the focus remained upon the wetlands and watercourses.

An important caveat exists here, and that is that the Court in *Queach* has *not* sanctioned the regulation of impacts on "groundwater per se" and it said so. Regulation of that resource, and, in particular, the consideration of impacts to and the provision of potable water, is vested in the Commissioners of Public

Health and of Environmental Protection.²⁹ The DEP Commissioner also has authority to define "regulated activities" that may pose a threat to groundwater in an aquifer protection area.³⁰ The I.W.W.A. itself defines the term "watercourse" in a manner that is not consistent with a non-surface body such as groundwater.³¹ Therefore, inland wetlands commissions should be clear about what they are examining: their review is confined to impacts upon wetlands and watercourses; they are *not* looking at the hydrological profile of a site for impacts upon the groundwater regime specifically.

Application To Current Events

Recently, the regulatory status of vernal pools has caused some to question in light of *Queach* "how much farther" inland wetlands and watercourses jurisdiction will extend.³² Vernal pools are "watercourses" within the parlance of the Act.³³ They are, therefore, fully subject to regulation by the municipal agency, which may evaluate impacts to such a watercourse as might occur from a proposed regulated activity. The posture of the current crop of vernal pool cases (trial level only) differs from this observation insofar as what the agencies have been evaluating is an activity proposed for uplands where the only "impact" is the interference with the upland habitat of an obligate species of the vernal pool³⁴; and

²⁴ Conn. Gen. Stat. § 22a-42(e) ("Any ordinances or regulations shall be for the purpose of effectuating the purposes of Sections 22a-36 to 22a-45, inclusive, and, a municipality or district, in acting upon ordinances and regulations shall give due consideration to the standards set forth in Section 22a-41.")

²⁵ *Aaron*, 183 Conn. at 541; *see also Queach*, 258 Conn. at 200, quoting *Mario*, 217 Conn. at 171-72.

²⁶ *Queach*, 258 Conn. at 201 and n.25.

²⁷ *Queach*, 258 Conn. at 204 (emphasis added).

²⁸ *Id.*, quoting *Aaron*, 183 Conn. at 551.

²⁹ Conn. Gen. Stat. § 22a-471. Consideration of the effect of water diversion upon the public water supply and upon "groundwater development" is another delegated power of the Commissioner of Environmental Protection pursuant to the Connecticut Water Diversion Policy Act, Conn. Gen. Stat. § 22a-365 *et seq.* *See* Conn. Gen. Stat. § 22a-373(b)(1) (factors for consideration in permitting water diversions).

whether the impact upon this species, if proved negative, would diminish the biodiversity of the watercourse system and thereby constitute an “impact” to the system. This scenario differs from that often confronted by municipal agencies, because it does not involve the usual and direct harms associated with filling, sedimentation and erosion and other forms of “pollution” to wetlands and watercourse resources.

Queach, of course, did not weigh the legal significance of such “impacts” under the Act. Nevertheless, one cannot ignore the Court’s insistence in *Queach* that “impact” is a broad and potentially wide-ranging regulatory consideration (both literally and legally). Three additional observations immediately come to mind. First, the Court’s framework of analysis continues to lay particular stress upon the legislative finding in Section 22a-36. The analysis in *Queach* began with this finding as proof of the “broad legislative objectives underlying the [act].”³⁵ Secondly, although the Act speaks of wetlands and watercourses as an “interrelated web of nature” “essential” to the “existence of many forms of animal, aquatic and plant life,” and of the goal of “preventing loss of “fish and other beneficial aquatic organisms, wildlife and vegetation and the destruction of the natural habitats thereof,” it nevertheless also speaks to the necessity

to “*balance* the need for the economic growth of the state and the use of its land with the need to protect the environment and its ecology . . . in order to guarantee the safety of such natural resources . . .”³⁶ Thirdly, there is the matter of the Commissioner of Environmental Protection’s statutorily derived authority over wildlife management to be considered, as well as what technical expertise his agency may formally bring to bear upon this topic.³⁷

Clearly, the only way to realize the complex goal expressed in Section 22a-36 with a legally adequate sense of “balance” as mandated by the Act is to proceed incrementally and with sufficient facts in order to make considered and careful judgments. Because the regulatory scheme for inland wetlands and watercourses management in this state is so firmly rooted in fact-specific findings, and the case law is driven from below by the decisions of many municipal wetlands agencies, it remains to be seen what the final contours of vernal pool regulation will look like. One can predict that, as in *Queach*, the interplay of the history of the Act, the technical opinions of the DEP and the development of the case law arising from local decision making will all play their part in the process of creating those contours.

In conclusion, the decision in *Queach* affirmed far more than the regulatory amendments at issue in the town of Branford. It reaffirmed the direction that the Court has taken in the interpretation of the I.W.W.A. in the time since its decision in *Aaron* a generation earlier. In every respect, the Court has supported and affirmed the legislative judgment that these natural resources constitute a vital component of our ecology. With respect to the specific issue of the scope of regulation, it is likely that the Court will continue to support the regulatory efforts of municipal wetlands and watercourses agencies so long as these bodies remain faithful to the Act’s insistence that the judgments that they make be in relation to “impacts” on the regulated resources, and so long as they make an adequate administrative record of their deliberations. 

³⁰ See generally, Conn. Gen. Stat. § 22a-354g *et seq.*

³¹ See Conn. Gen. Stat. § 22a-38(16).

³² Gregory Sharp’s insightful companion article devoted to this issue emphasizes the biodiversity values inherent in the I.W.W.A., and concludes that the decision in *Queach* provides adequate legal authority for the regulatory consideration of these values.

³³ Conn. Gen. Stat. § 22a-38(16).

³⁴ An obligate species, in these cases, the salamander, utilizes the particular natural resource during a portion of its life cycle.

³⁵ *Queach*, 258 Conn. at 193.

³⁶ Conn. Gen. Stat. § 22a-36 (emphasis added).

³⁷ See generally, Conn. Gen. Stat. Title 26 [Fisheries and Game].

VERNAL POOLS, *QUEACH*, AND PRESERVING BIODIVERSITY THROUGH UPLAND REGULATION

BY GREGORY A. SHARP, ESQ.¹

One of the most controversial issues presently facing local inland wetlands agencies in Connecticut is the extent to which they may regulate activities in uplands that would impact the survival of amphibians dependent upon vernal pools for part of their life cycle. The Connecticut Supreme Court's decision in *Queach Corporation v. Inland Wetlands Commission*² and recent Superior Court decisions may offer some helpful guidance on this issue.

Vernal Pools and Obligate Species

In the absence of a Connecticut regulatory definition of vernal pool³, this article will define the term as a body of water, typically intermittent, in a defined depression or basin, that lacks a fish population and may support the breeding or development of certain animal species dependent upon such watercourses.⁴ Vernal pools are identified as being within the definition of "watercourses" regulated by the Inland Wetlands and Watercourses Act ("IWWA").⁵ That term is defined as: "rivers, streams, brooks, . . . and all other bodies of water, natural or artificial, vernal or intermittent . . ."⁶ As such, vernal pools are clearly subject to wetlands regulation.⁷

These unique wetlands are critical to the survival of a variety of species which breed in or otherwise depend upon them for a significant part of their life cycle, and thus are considered "obligate" species. Common obligate species include the spotted salamander, wood frog, and fairy shrimp. Some obligate vernal pool species, such as the Jefferson salamander and the Blue-spotted salamander, are considered "species of special concern"⁸ by the Department of Environmental Protection ("DEP"). While vernal pools are essential habitat for

many of the amphibian species for part of their life cycle, the adults of these species spend most of the year in wooded uplands a considerable distance from the vernal pools – typically hundreds of feet from the vernal pool where they were born and to which they will likely return to breed.

These distances greatly exceed the typical 50 to 100 foot upland review area contained in most commissions' regulations. Therefore, the specific regulatory issue is whether, in the absence of direct impact on the vernal pool watercourse, local wetlands agencies can protect vernal pool obligates by regulating the upland areas, including the corridors to and from the vernal pools, beyond upland review areas prescribed in the regulations.

Queach and Recent Superior Court Decisions

In his detailed and thoughtful discussion of the *Queach* decision, Assistant Attorney General David H. Wrinn correctly points out that nothing in the Court's opinion directly addresses the issue of upland regulation to protect obligate vernal pool species in the absence of some direct threat to the vernal pool watercourse itself by excavation, filling, sedimentation, etc. However, *Queach*

Footnotes

¹ The author is an environmental lawyer and partner in the law firm of Murtha Cullina LLP, a frequent contributor to *The Habitat*, and was a member of the 1999-2000 CACIWC/DEP Task Force which worked on a proposed definition of "vernal pool" for the Model Inland Wetlands and Watercourses Regulations and identification criteria for use by local commissions.

² 258 Conn. 178, 779 A.2d 134 (2001).

³ The Army Corps of Engineers defines the term in its Programmatic General Permit, State of Connecticut (GP-41) as: "an often temporary body

of water occurring in a shallow depression of natural or human origin that fills during spring rains and snow melt and typically dries up during summer months. Vernal pools support populations of species specially adapted to reproducing in these habitats. Such species may include wood frogs, mole salamanders (*Ambystoma* sp.), fairy shrimp, fingernail clams,

clearly endorsed the authority of wetlands agencies to regulate activities outside the boundaries of wetlands where necessary to preserve the natural resources of the state. This strong reaffirmation of prior precedents on the subject suggests that, given an appropriate hearing record, the Court might well uphold a local commission's effort to regulate upland development activities that could adversely impact obligate vernal pool species.

Since the Queach decision was released, two Superior Court decisions have upheld local commissions' authority to regulate upland areas beyond specifically defined regulatory setbacks to protect populations of vernal pool obligate species in the upland areas. One case relied expressly on Queach, the other on earlier Supreme Court precedent.

In Avalonbay Communities, Inc. v. Wilton Inland Wetlands

Commission,⁹ one of the issues on appeal was whether the commission could deny an application for an inland wetlands permit for an affordable housing project where its project involved no regulated activities within 50 feet of a wetland or

100 feet of a watercourse, the minimum "regulated area" under Wilton's regulations.¹⁰

The 10.6 acre property contained a .30 acre deciduous wooded wetland, an intermittent watercourse flowing through it, and a separate .02 acre deciduous wooded wetland associated with a small pond off-site.¹¹ The evidence in the record concerning the extent of the spotted salamander population and the impact of the project on such population was inconclusive.¹²

Since the Queach decision was released, two Superior Court decisions have upheld local commissions' authority to regulate upland areas beyond specifically defined regulatory setbacks to protect populations of vernal pool obligate species in the upland areas. One case relied expressly on Queach, the other on earlier Supreme Court precedent.

As a basis for its denial, the commission cited the applicant's failure to demonstrate that no feasible or prudent alternative existed which would have less impact on spotted salamander populations. The commission also suggested that the applicant could meet its burden by demonstrating more conclusively through appropriate expert investigation whether or not a spotted salamander population exists at the site, and, if so, whether the population is so small as to be terminal.¹³

In Avalonbay I, the Superior Court, prior to release of the Queach decision, relied upon the 1995 and 1996 amendments to the IWWA in ruling that the commission was limited to considering activities within wetlands and watercourses and the respective 50 and 100 foot upland review areas specified in the regulations.¹⁴

See *Sharp*, page 10

and other amphibians, reptiles and invertebrates. Vernal pools lack breeding populations of fish."

⁴ This definition is a paraphrase of the definition proposed by the CACIWC/DEP Task Force for adoption as part of the Model Inland Wetlands and Watercourses Regulations. The Department is planning to formally issue a regulatory definition of vernal pool and

guidance for its use, as well as criteria to aid in identification of vernal pools, by year-end. This model regulation and guidance will not include recommendations on regulating these resources.

⁵ Conn. Gen. Stat. § 22a-36 et seq.

⁶ Conn. Gen. Stat. § 22a-38(16) (emphasis added).

⁷ For further information on vernal pools, see the article "Connecticut Vernal Pools: Identification and Regulation" by Douglas G. Hoskins III in the Spring 1999 issue of *The Habitat* (Vol. XII, No. 4).

The commission and the DEP Commissioner requested reconsideration following release of the Queach decision. Upon reconsideration, Judge Munro reversed the prior ruling sustaining the applicant's appeal. The court concluded that the Supreme Court had "determined that, regardless of where the upland activities are contemplated, the commission may exercise jurisdiction."¹⁵ If so, then the commission must make a threshold decision as to whether the activity is likely to impact the wetlands. If the commission concludes that wetland impacts are likely, then it may regulate the activity, just as it would within a specified upland review area.

The court observed that the Wilton regulations required the commission to consider the environmental impact of the proposed regulated activity, including its impacts on the ability of the wetlands and watercourses to support desirable biological life.¹⁶ The court found that the Wilton commission had concluded that the development would result in the loss of the spotted salamander population both on and off-site, and therefore would necessarily have an adverse effect on the overall biologic community.¹⁷ The court also found that this conclusion was supported by substantial evidence in the record.¹⁸ The applicant appealed the ruling in Avalonbay II to the Appellate Court, and the appeal is currently pending.

The other Superior Court decision in which the regulation of vernal pools and their obligate species came into play was, interestingly, in an appeal from a zoning commission decision on an affordable housing application in Farmington. In Landworks Development, LLC v. Town of Farmington Town Planning and Zoning Commission,¹⁹ the applicant had proposed a 384 unit apartment complex on 67.6 acres. The three- part application involved a zone change request, a request to amend the affordable housing zone regulation, and a site plan application. The commission denied the application citing, among other reasons,

environmental impacts and unreasonable impairment to the public trust in natural resources pursuant to Section 22a-19 of the General Statutes.²⁰

Based on the record of the zoning proceedings, Judge Eveleigh found that the applicant's plans would impact wetlands and watercourses on the site, both by introducing sediment and pollutants from storm water, and by failing to provide an adequate buffer around vernal pools at the site.²¹ The court concluded that, because the applicant had never applied for a wetlands permit and no final decision from the wetlands agency had been issued, the zoning commission was prohibited by Section 8-3 of the General Statutes from granting a site plan approval.²²

In its decision denying the application, the commission had also found that a 400-foot buffer was required around the vernal pool at the site to protect two obligate species, the spotted salamander and wood frog and that the applicant's proposed site plan included buildings, driveways and parking areas within 150 feet of the vernal pool, which might threaten the populations of these species. Although the applicant's expert claimed a buffer of 85 feet was adequate, conflicting expert testimony suggested that a 1,000 to 1,600 foot buffer was more

⁸ In the context of these species, this designation is given by DEP to "any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state or to be at a low population level...."

⁹ Docket No. HHB CV00-0502146 (Conn. Super. Ct. J.D. New Britain).

¹⁰ See *Avalonbay Communities, Inc. v. Wilton Inland Wetlands Commission*, No. HHB CV000502146, 2001 Conn. Super. LEXIS 2541, at *7, *9, *20-21 (Sept. 6, 2001) ("Avalonbay I").

¹¹ *Id.* at *5.

¹² *Id.* at *28.

¹³ *Id.* at *10-11.

¹⁴ *Id.* at *26-28.

¹⁵ *Avalonbay Communities, Inc. v. Wilton Inland Wetlands Commission*, No. HHB CV000502146, 2002 Conn. Super. LEXIS 157, at *23 (Jan. 15, 2002) ("Avalonbay II").

prudent. The applicant challenged the 400-foot buffer on the basis that the commission lacked substantial evidence in the record to make such a finding.²³

The court observed that:

“Uplands surrounding vernal pool wetlands are unique biological habitats, integral parts of the wetlands ecosystem, and critical to the survival of amphibians, including spotted salamanders and wood frogs. Because vernal pools are functionally tied to their immediate surroundings, permanent changes to topography and vegetation from the development of land can pose the greatest risk to the vernal pool habitat. Such changes may be harmful regardless of whether they occur outside of the vernal pool itself, within the contributing watershed or much further away, due in part to the fact that species such as spotted salamanders move up to a half mile from vernal pools, with distances of about 400 feet common for most populations. Changes that take place outside the vernal pool can prevent wildlife from returning to the pool to breed or considerably diminish re-population.”²⁴

Because the court found that there was substantial evidence in the record to support the commission’s denial, it dismissed the appeal. The applicant has

petitioned the Appellate Court for permission to appeal, and the petition is currently pending.

Summary

Wetlands commissions should consult with their own counsel on the subject before addressing the regulation of uplands utilized by vernal pool obligates. However, the cases to date would seem to support a commission in that effort, so long as there is expert evidence in the record as to existence of the vernal pool, the species that utilize it, and their respective home ranges.

Queach clearly gives a commission the authority to regulate activities outside the boundaries of wetlands, watercourses or defined upland review areas, if the agency concludes that the activities in question are likely to adversely impact the resource. The Queach holding was sufficient for the court in Avalonbay II to reverse itself and uphold the Wilton commission based upon the local regulation requiring the commission to consider impacts on wetlands or watercourses which would enable the resources to support beneficial biological life. Finally, in Landworks, information in the record that vernal pools are intrinsically tied to their upland surroundings allowed Judge Eveleigh to uphold the commission’s conclusion that disruption of the uplands within 400 feet is likely to adversely impact the vernal pool and its periodic inhabitants.

As noted above, an appeal of Avalonbay II is pending before the Appellate Court. When rendered, the Appellate Court’s decision in the Avalonbay II appeal will be a significant milestone in determining whether the IWWA authorizes local commissions to preserve the biodiversity of a watercourse by regulating uplands utilized by vernal pool obligates. 

¹⁶ Id. at *28-29.

¹⁷ Id. at *29.

¹⁸ Id. at *31-32.

¹⁹ No. CV000505525, 2002 Conn. Super. LEXIS 543 (Feb. 14, 2002).

²⁰ Id. at *1-2.

²¹ Id. at *33-34.

²² Id. at *30.

²³ Id. at *30-32.

²⁴ Id. at *32-33.

MUNICIPAL AUTHORITY TO PROTECT INLAND WETLANDS AND PROMOTE CONSERVATION

Connecticut Conference of Municipalities (CCM)

Environmental Bulletin #02-06

May 1, 2002

Executive Summary:

Two recent Connecticut Supreme Court decisions affirmed broad municipal powers to protect inland wetlands and watercourses and to adopt zoning regulations that promote conservation.

- In *Queach Corporation v. Inland Wetlands Commission of Branford*,¹ the Court held that municipal inland wetlands agencies can regulate *activities outside of the boundaries of an inland wetlands area and outside the boundaries of any upland buffer or review zone, if the activities are likely to impact or affect a wetland or watercourse.*
- In *Harris v. Zoning Commission of the Town of New Milford*,² the Court upheld an amendment to the zoning regulations that *excludes wetlands, watercourses and land with a natural 25 percent or greater slope from the calculation of the minimum lot size required for residential development.* It found that the regulation is “*reasonably related to balancing development and conservation, which is a legitimate purpose of zoning pursuant to §8-2*” of the general statutes.

Summary of the Opinions:

The *Queach* opinion made the following points:

- “A regulation deemed necessary by a wetlands agency is not inconsistent with the [Inland Wetlands and Watercourses Act (“act”)] so long as it is *reasonably designed to effectuate the stated purposes* of the wetlands statutes.”
- Inland wetlands commission *regulations do not have to use the exact language of the state statute, “so long as the additional language is in conformity with the act’s purposes and goals.”*³
- An inland wetlands agency has authority to regulate activities outside of wetlands areas under Section 22a-42a(f) of the act, which codified the Court’s earlier decision in *Aaron v. Conservation Commission*.⁴ Thus, Branford’s regulation of any activity located within an upland review area or “*in any other non-wetland or non-watercourse area [that] is likely to impact or affect wetlands or watercourses*” is valid.⁵

Footnotes

¹ 258 Conn. 178, 779 A.2d 134 (2001).

² 259 Conn. 402, 788 A.2d 1239 (2002).

³ For example, the Court held that the terms, “‘clearing,’ ‘grubbing,’ and ‘paving,’ [used in the Branford regulations, but not used in the act] clearly involve the removal or deposit of material as defined in the act.”

⁴ 183 Conn. 532, 441 A.2d 30 (1981)

⁵ Because the plaintiff in *Queach* made no application to the Inland Wetlands Commission under the challenged regulations, the trial court properly upheld the validity of the regulations without considering how they would apply to the plaintiff’s property. The *Queach* ruling has already been applied to affirm the denial of an actual application in *Avalonbay Communities, Inc. v. Wilton Inland Wetlands*, 2002 WL 194535 (Conn. Super. 2002). The judge in *Avalonbay* cited *Queach* to uphold

- An upland review buffer of 100 feet is “reasonable and consistent with the authority of a wetlands commission.” The Department of Environmental Protection’s “Guidelines for Upland Review Area Regulations Under Connecticut’s Inland Wetlands and Watercourses Act, the testimony before the commission, and the broad purposes of the act, provided ample evidence...” for the 100 foot buffer.
- A commission may *require an applicant to submit alternatives to all proposed regulated activities.*
- An applicant *may be required to evaluate the impact on wetlands of an activity that would substantially diminish ground water levels.*

According to the *Harris* opinion:

- The plaintiffs could bring suit because the regulation, *in practice*, affects “only a limited portion of land,” some of which is *owned by the plaintiffs*, thus giving them “A specific personal and legal interest” in the regulations not shared by the community as a whole. By excluding wetlands, watercourses and steep slopes from the calculation of the minimum lot size, the regulation reduced the number of lots that could be developed on each plaintiff’s parcel of land.
- *Even though the regulation does not limit construction on wetlands, watercourses and slopes in excess of 25 percent, it was reasonable for the commission to believe that conservation would occur.* Larger lots necessarily reduce development, and it is less likely that construction will occur in those areas excluded from the calculation of minimum lot size. Therefore, the regulation was “reasonably related to balancing development and conservation.”
- The regulation does not violate the uniformity requirement of §8-2(a) of the general statutes, which requires zoning regulations to be “uniform for each...use of land throughout each district.”
 - o The regulation applies throughout the town to all parcels of land in residential zones. Even though it affects only those parcels having the listed features, it is neither inconsistent nor unequal.
 - o The regulation is sufficiently precise to prevent inconsistent application because standard co-engineering practice can identify slopes in excess of 25 percent and §22a-38 of the general statutes identifies wetlands. Regulations need be only “reasonably precise, not exact, because...it is impossible to create one standard that covers all cases.”⁶

Please contact Gian-Carl Casa of CCM at (203) 498-3000 if you have any questions. 

jurisdiction over, and denial of a permit for, activities outside of the buffer area, relying on evidence that the activities would impact wetlands and watercourses, which would result in the loss of the salamander population. The applicant in *Avalonbay* has filed a petition for certification to appeal.

⁶The Court also rejected a claim that the uniformity requirement was violated because it would not apply to subdivisions approved before its effective date or to lots already developed or approved for development, recognizing that acceptance of the argument would lead to the bizarre and absurd result of negating every amendment to zoning regulations.

PRECEDENT SETTING WETLANDS DECISION

A STATE SUPREME COURT DECISION HAS TREMENDOUS IMPLICATIONS FOR CONNECTICUT'S WETLAND RESOURCES AND THE LOCAL WETLANDS COMMISSIONS IN EVERY ONE OF THE STATE'S 169 TOWNS.

BY JUDY PRESTON¹

The Connecticut Supreme Court officially released, in September 2001, its decision concerning Queach Corporation versus the Inland Wetlands Commission of the town of Branford. This decision is a “sweeping reaffirmation” of the Connecticut State statutes, according to attorney Peter Cooper, intervening defendant for Connecticut Fund for the Environment (CFE). CFE is similarly “greatly heartened by the Supreme Court’s affirmation of the inland wetland commissions’ authority to further preserve these natural [wetland] resources that help purify our water, prevent floods and erosion, and support diverse ecosystems”.

The key implications of this decision are:

1) This decision reaffirms the fundamental thrust of the state legislation, and Department of Environmental Protection guidelines, to protect wetland resources, including activity offsite, which impact those wetlands.

In 1995 and 1996 the state legislature amended the wetlands act to provide express authority for municipal agencies (i.e. wetlands commission) to regulate areas that extend beyond designated wetland boundaries, if those activities compromise the integrity of the state’s wetlands and watercourses.

2) The Wetlands Commission, not the applicant, determines the scope of the impacts to the wetland resource, and

the burden of proof is on the applicant. In other words, the commission, NOT the applicant, determines the likelihood that the proposed activity may or may not impact or affect the resource, and whether an alternative exists to lessen such impact.

Why This Is Important to Local Wetland Commissions

The *Queach* decision had its beginnings in the town of Branford, where the Queach Corporation and a cooperating developer own 205 acres of land, containing 55 acres of wetlands (27% of the property). The Queach Corporation originally proposed a 150-unit subdivision, including a golf course, that would require major alterations to the property, including leveling some of the ridges by as much as 50 feet, significant grading, soil movement and stripping other lots of all vegetation. This proposal was withdrawn and replaced with a proposal limited to housing but having many of the same impacts. The town of Branford’s regulations required the wetlands commission to review all activity occurring within

100 feet of a wetland or watercourse and “any other activity” located “in any other non-wetland or non-watercourse area [that] is likely to impact or affect wetlands or watercourses.”

The applicant alleged that the town’s regulations exceeded the statutory authority of the commission and that the commission was acting on matters specifically exempted from its jurisdiction.

The town of Branford’s regulations required the wetlands commission to review all activity occurring within one hundred feet of a wetland or watercourse and “any other activity” located “in any other non-wetland or non-watercourse area [that] is likely to impact or affect wetlands or watercourses.”

Footnotes

¹ Judy Preston is a member of the Old Saybrook Inland Wetlands Commission and Director of Coastal Conservation, Connecticut Chapter of The Nature Conservancy.

According to the Law Journal summary of the Queach case, “[a]n examination of the [wetlands] act reveals that one of its major considerations is the environmental impact of proposed activity on wetlands and watercourses, which may, in some instances, come from outside the physical boundaries of a wetland or watercourse.” Therefore, “activity that occurs in non wetlands areas, but that affects wetlands areas, falls within the scope of regulated activity.”

Transferring the Science

Scientific information collected from the Branford site was an important component of the Queach case testimony regarding potential impacts to the 55-acre wetlands. Over successive years Yale School of Forestry students and faculty inventoried and studied the natural resources of the site as part of their curriculum. This database provided the information needed for determining the potential impacts to the wetlands both on and off the proposed Branford development site.

The following considerations were made regarding the natural resources of the proposed Branford development site that were collectively instrumental in proving the potential for impacts due to development activity. The same arguments can be generally transferred to other Connecticut towns, although site specifics such as underlying soils and geology, need to be investigated by a specialist. The topography at this Branford site contains steep slopes, perennial and intermittent streams and vernal pools — a landscape shared by many Connecticut towns.

- Percent cover of forest replaced by impervious surface was estimated, with implications for stream flow and water quality.
- Using a northern forest model from the Hubbard Brook Experimental station, it was estimated that clearcutting on the site would increase stream flow by 30%.

- The rearranging and compacting of soil at the site, leading to diminished water storage capacity, resulting in increased runoff from the site.
- Earth moving and forest removal equals loss of infiltration capacity, resulting in increased runoff from the site.
- Analysis of erodability of soils on the site, coupled with slope.
- The built environment translates into increased impermeable surfaces, less transpiration, less permeable surfaces resulting in more water leaving the site with the potential for higher flows, greater frequency. This translates into greater erosion potential.
- Biogeochemistry considerations; is it possible to retain chemical pollutants on site?
- The impact of proposed water pumping from onsite/adjacent stream for golf course.

Other key considerations include the biologically relevant impacts of altering the timing, frequency, duration and rate of water flow exiting an engineered site to a host of aquatic species off site. Similarly, a dramatic increase in impervious surfaces redistributes water over the land, affecting groundwater storage and flow. This less well understood and certainly not seen element of water within the landscape is none-the-less integral to water availability to offsite streams and other waterbodies, such as vernal pools. Low “base flow” caused by groundwater depletion can impact a number of aquatic species.

The information collected by the Yale students and faculty was a distinct advantage in protecting the Branford 55-acre wetland and it points to the difficulty in making decisions on the many proposed development sites where this type of site specific data does not exist.

Wetlands commissions, working with other municipal land use commissions, need to be proactive in developing the natural resource information required to make scientifically based decisions in the regulated wetlands and watercourse areas and in the areas outside those boundaries. Fortunately there are many sources of natural resource information available and technical expertise to interpret them. In addition it is important to recognize that the Commission has the right to ask questions and receive adequate answers in order to render a decision that is *based on their satisfaction that the wetlands resource will be adequately protected*. The Wetlands Commission also may ask for the applicant to fund the hiring of experts to advise the Commission.

Local Wetland Commissions in the state of Connecticut have been given yet another tool in the ongoing effort to protect the state’s invaluable wetland resources; the precedent of one community’s successful court battle and the example of important wetland resources being protected. 

INLAND WETLANDS AND WATERCOURSE REVIEW AREAS

BY JAMES G. MACBROOM, P.E.¹

Inland Wetland Agencies (IWA) have traditionally regulated activities within mapped inland wetlands that are defined by soils, vegetation, or presence of water bodies. The 1995 revisions to the Inland Wetland and Watercourse Act specifically enabled the IWA to also regulate upland activities that would likely impact wetlands or watercourses. The recent Connecticut Supreme Court decision in the case of *Queach Corporation vs. Branford Inland Wetlands Commission* reaffirmed this authority. This clarification in the authority to regulate upland areas generates interest in how to evaluate the functions and values of upland areas with respect to the wetland or watercourse and how to assess the impact of proposed activities.

Evaluation of upland areas should include: hydrologic functions including protecting stream banks from erosion, providing flood water conveyance, providing groundwater recharge and storage; water quality functions including providing shade to moderate water temperature, trapping sediment, renovating surface water runoff and isolating pollution sources; ecological functions including providing sources of woody detritus for streams, terrestrial habitat, wildlife corridors, nesting sites, and protection of rare or endangered species; and cultural values including aesthetics, recreation and educational opportunities. Evaluating the scientific functions and values of wetlands and their adjacent upland areas often requires review of the watersheds natural resources and technical assistance.

The assessment and regulation of upland areas beyond the boundaries of wetlands and waterbodies is not a new role for IWA. Many IWAs have had regulated upland areas, popularly known as buffers, adjacent to wetlands for many years, often specifying a fixed width regulated area parallel to wetland boundaries. The designation and use of upland review areas has been suggested to IWAs in the Connecticut Department of Environmental Protection "Guidelines

For Upland Review Area Regulations." The guidelines recommend use of a 100-foot wide review area.

Buffer Zone Hierarchy

It is not uncommon for the riparian areas to be thought of as having two or more sub-areas based upon their primary function. The first 25± feet of upland adjacent to a wetland or watercourse are usually the most important. This inner portion of the zone includes stream banks that may be subject to periodic inundation and may convey and or store floodwaters. Bank vegetation provides root mass that stabilizes banks and the canopy reduces rainfall energy. It is the interface between aquatic and terrestrial habitat and its vegetation that provides shade to moderate water temperature fluctuations.

Vegetative zones up to 50± feet wide are important as a source of coarse woody debris and particulate material that serves as a source of organic energy for the base of the food chain. The first 50 feet adjacent to a wetland is also important for the treatment of surface water runoff which moves as sheet flow through vegetated areas that filter, absorb, infiltrate and attenuate of non-point source pollutants.

The use of increasingly wide buffer zones has diminishing benefits to wetlands and watercourses. Zones in excess of 100 feet

Footnotes

¹ The author is a Water Resources Engineer and Vice President of Milone & MacBroom, Inc., and author of *The River Book*, published by CT DEP.

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Herson-Jones, Lorraine, et.al. *Riparian Buffer Strategies for Urban Watersheds*, Metropolitan Washington Council of

have been reported in the literature primarily for protection of wetland dependent mobile wildlife rather than for direct water resources protection. This raises the logical issue of - to what extent an IWA should regulate a non-wetland habitat for species such as amphibians that use a combination of aquatic and upland terrestrial habitats.

The Metropolitan Washington Council of Governments has published a three-part procedure for estimating buffer widths. This model for water quality (sediment) protection considers the slope of the land, vegetation density, adjacent land uses and sediment type with resulting buffer widths ranging from 50 feet for low gradient sandy soils to 200 feet for steep silty soils. It is noted that vegetative buffers are not effective in trapping clay sediment particles, which can travel hundreds of feet (MWSOG, 1995).

Buffer zones in urban areas are primarily for the protection of stream banks, renovation of runoff, providing shade and woody detritus, and aesthetics. The literature suggests that these functions are often accomplished in relatively narrow zones of 25 to 75 feet in width. In suburban areas, dominant land uses are often single-family residential lots with on-site sewage disposal systems and water supply wells. The Connecticut Public Health Code requires sewage disposal systems to be 50 feet from

an "open watercourse," which could include wetlands with exposed surface water, and to be 100 feet from water supply reservoirs. The US Environmental Protection Agency recommends a 50-100 foot separation distance between sewage disposal systems and surface water.

Evaluation of Upland Areas

The author recommends a five-step process to help guide the review, regulation, and management of the upland areas in a structured manner. The five steps are: evaluate existing natural resources associated with the wetland and/or watercourse; evaluate upland site conditions such as soils, slope and vegetation; set clearly defined conservation goals and objectives consistent with the Inland Wetland and Watercourse Act; assess the scope of the proposed activities and their potential impacts; and evaluate potential mitigation measures that avoid, minimize or compensate for potential adverse impacts.

The first step in establishing an equitable regulated area is to inventory and assess the

The author recommends a five-step process to help guide the review, regulation, and management of the upland areas in a structured manner.

wetland and watercourse resources, including their local and watershed wide values. Typical metrics include type of wetland (marsh, swamp, bog, open water, etc.), water quality classification, water supply usage, fauna and flora, presence of rare or endangered species, floodwater storage or conveyances, recreational use, etc. There are numerous models that can be used to organize the data. The author recommends that communities with upland review areas develop guidelines for how to identify areas or activities of special concern. There are numerous wetland evaluation models available to help inventory and assess wetlands functions and values, including

See MacBroom, page 18

Governments, prepared for USEPA, Washington, DC. December 1995.
U.S. Army Corps of Engineers, New England Division. *Buffer Strips for Riparian Zone Management*, prepared for State of Vermont. Waltham, Massachusetts. January, 1971.

U.S. Army Corps of Engineers. *The Highway Methodology Workbook, Wetland Functions and Values, A Descriptive Approach*. November, 1995.

the CT DEP Bulletin #9, the US Army Corps of Engineers' HGM methodology and descriptive approach (see References). However, there are few established methods for evaluation of adjacent upland areas. Resource evaluations are most valuable when comparative data is available for other local wetlands/watercourses, allowing one to compare wetland values to reference sites. The above task should be performed in coordination with the staff of those towns that seek to regulate broad areas. Ideally, watershed management plans should be prepared at the inter-municipal level to coordinate basin activities that affect wetlands, flooding, water supply, waste disposal, open space, greenways etc. Individual applicants for activities in upland areas may not even own or abut the down gradient wetlands and often lack permission to enter and inspect private property or reference sites.

The second step is to assess the upland site of the proposed activity and the area leading to wetlands or watercourses. Specific geophysical issues that affect the performance of upland areas include soil types, soil erodibility, slopes, vegetation, depth to groundwater, watershed area, runoff rates and drainage patterns. For example, steep slopes and low permeability soils influence soil erosion and sediment transport, while dense natural vegetation and irregular micro-topography help to reduce sediment travel distances. Similarly, highly pervious soils minimize natural surface runoff and erosion, but result in a large increase in runoff if they are paved over.

The performance of upland areas for water quality protection varies with site conditions. Upland areas with steep slopes (over ten percent) have rapid flow velocities that tend to channelize overland flow, reducing opportunities for water infiltration, nutrient uptake or absorption of pollutants. Wider areas or less intense land uses are recommended for highly erodible soils with a high silt or clay content, or where there is thin vegetation.

At the conclusion of Steps 1 and 2, one can assess whether the adjacent upland review area contributes to the wetland or watercourse functions, leading to setting goals and objectives for balancing land use and resource conservation. Logical questions include whether the wetland has high value functions, is it rare, is it part of a continuous corridor, does it have true riparian characteristics or is it a perched groundwater site on a hillside? Does the upland review area support or supplement the wetland or watercourse? Is the wetland or watercourse dependent upon the adjacent upland area and to what extent? These questions can be difficult to address and incorporate into the application process

unless one has a basic understanding of the overall watershed.

Low impact activities within the upland area would include selective vegetation removal, passive recreation, water supply wells, narrow crossings such as roads, utilities, agriculture, pathways and water dependent activities. Activities with potentially large impacts include clear cutting vegetation, extensive earthwork, buildings, hazardous materials, excessive use of lawn products, parking lots and wastewater disposal systems. Some potential impacts can be limited by sensitive site design and erosion controls.

Temporal impact factors include the duration of the activity and the season in which it occurs. Short duration activities with temporary impacts may be more tolerable than long-term activities of a lower intensity. Similarly, in-water activities during the spawning, breeding, or migratory periods may be of greater significance than the same activities during the off-season.

Mitigation efforts begin with good site design to avoid unnecessary negative impacts. A simple example is to cross wetlands or watercourses at their lowest value area, often at their narrowest point. There is a need to emphasize low impact design to reduce the dependency on buffer zones. Low impact techniques include minimizing impervious cover, building vertically with a smaller footprint, use of narrower roads, avoiding non-functional curbs, use of grass swales instead of enclosed pipes, and use of storm water infiltration systems. It is desirable to avoid direct discharges of stormwater runoff from impervious areas into watercourses. Pollution prevention, through the use of substitute materials, safe storage and proper disposal, is an important measure to reduce pollutants. Phased construction to minimize

the disturbed area and rapid soil stabilization are important, plus best management measures for soil erosion prevention, sediment control, and runoff treatment.

There is extensive literature on the performance of buffer zones in relation to specific functions. However, much of the data is limited to regional geographic areas or vague, poorly defined land uses. As a result, summaries of the literature tend to be generalized and provide a wide range for buffer widths. It is apparent that published widths and performance vary depend on their intended function and site conditions. A recent publication by the U.S. Army Corps of Engineers for example, recommends 5 to 30 meters for water quality protection, 10 to 20 meters for stream bank stabilization, 3 to 10 meters for input of woody detritus, 20 to 150 meters for flood attenuation, and 30 to 500 meters for habitat (Fischer, 2000). The non-profit Center for Watershed Protection summary of buffer widths in 36 communities and found a median width of 100 feet.

As noted by the US Army Corps of Engineers, there is insufficient information in the literature to rigorously relate buffer widths to upland land use and riparian functions. The process thus requires professional judgment.

Emerging Issues

The use of effective mitigation measures is an important factor to consider in reviewing potential project impacts. For instance, research on water quality and sediment impacts generally neglect the use of best management practices which could include erosion silt fence, sediment basins, hydro seed, grit chambers, and others. Best management practices for storm water runoff are being emphasized by the new NPDES Phase II regulations and by the DEP Office of Long Island Sound.

The 1995 revisions to the General Statutes included vernal pools as a regulated area and allow IWA to review their impact areas. Vernal pools are a seasonal landscape feature whose unique properties, fauna and flora are most visible during a short period in the spring. Consequently, there are seasonal limitations that may impede comprehensive site assessments, IWA staff inspections and the public review process. There has been some discussion, but no resolution, concerning mandatory timing of site assessments. 

Regulations, continued from back

An understanding of how certain activities in upland areas affect wetlands and watercourses has led most towns to adopt regulations requiring wetland agency review of proposed development adjacent to wetlands and watercourses. Such regulations are optional under the Act, but serve to inform the public as to the circumstances under which a wetlands permit is required of activities proposed adjacent to a wetland or watercourse.

While requiring a permit for specified activities within defined upland review area boundaries, these agencies still maintain the authority to regulate proposed activities located in more distant upland areas if they find that the activities are likely to impact or affect a wetland or watercourse.

Editor's Note: The Queach decision validated the DEP's 1997 Guidelines. The purpose of the Guidelines is to assist municipal wetlands agencies to review and revise their wetlands and watercourses regulations. The 15-page Guidelines are instructional for both inland wetlands agencies and conservation commissions because they provide guidance on the scope of natural resources that should be inventoried and considered when evaluating upland activities. A copy of the Guidelines for Upland Review Area Regulations (June 1997) can be obtained by calling the Wetlands Management Section at (860)424-3019. 



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GUIDELINES: UPLAND REVIEW AREA REGULATIONS UNDER CONNECTICUT'S INLAND WETLANDS & WATERCOURSES ACT

Wetlands Management Section
Bureau of Water Management
Connecticut Department of Environmental Protection
June, 1997

Wetlands and Uplands: An Introduction

The relationship between a wetland or watercourse and its surrounding upland is complex. Upland land clearing, excavating, filling and other construction activities if not properly planned and executed can have significant impacts on adjacent wetlands and water courses. Under the Inland Wetlands and Watercourses Act, the municipal wetlands agency has broad authority to issue permits not only for activities in wetlands and watercourses themselves, but for activities located elsewhere when such activities are likely to impact or affect wetlands or watercourses. *It is the department's policy to encourage municipal wetlands agencies to review proposed activities located in upland areas surrounding wetlands and watercourses wherever such activities are likely to impact or affect wetlands or watercourses.*

See Regulations, page 19