

# Founders Preserve Open Space Subdivision

Hamden, Connecticut



*Sweet Pepperbush*

## King's Mark Environmental Review Team Report

King's Mark  
Resource Conservation and Development Area, Inc.

# Founders Preserve Open Space Subdivision Hamden, Connecticut



## Environmental Review Team Report

Prepared by the  
King's Mark Environmental Review Team  
of the King's Mark  
Resource Conservation and Development Area, Inc.

for the  
Conservation Commission and  
Planning and Zoning Commission  
Hamden, Connecticut

November 1997

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## ACKNOWLEDGMENTS

This report is an outgrowth of a request from the Hamden Planning and Zoning Commission and the Conservation Commission to the New Haven County Soil and Water Conservation District (SWCD). The SWCD referred this request to the King's Mark Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Thursday, September 23, 1997.

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I would also like to thank Dan Kops, Hamden town planner, Vincent DeAngelis, acting town engineer, David Carson, developer and Dana Friedman, consultant, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given plans and additional information. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town and landowner. This report identifies the existing resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the Town and applicant. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The King's Mark RC&D Executive Council hopes you will find this report of value and assistance in reviewing and making your decision on this proposed subdivision.

If you require additional information please contact:

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## *INTRODUCTION*

### *INTRODUCTION*

The Hamden Planning and Zoning Commission and Conservation Commission has requested assistance from the King's Mark Environmental Review Team in conducting an environmental review of the proposed Founders Preserve Open Space Subdivision.

The proposed subdivision is located on 46.25 acres on the west side of Still Hill Road, in the northern section of Hamden. The site is in an R-2 zone, but an open space subdivision is being proposed for the property which allows for greater flexibility in design. The project consists of 28 single family lots with average lot size being 22,000 sq. ft., with rear lots averaging 55,000 sq. ft. Nine lots are proposed to front on Still Hill Road and 19 lots will be along a proposed cul-de-sac off of Deerfield Road. The homes will be served by public water and sewer.

The site is wooded with three old buildings that will be demolished. The site is traversed by three watercourses that converge and flow under Still Hill Road. A total of 24.75 acres of open space is proposed, with 19.26 acres being wetlands.

### *OBJECTIVES OF THE ERT STUDY*

The Town has asked for assistance with the review of this project with regard to the physical and biological resources of the site. Specific concerns voiced by the Town included impacts to wetland and aquatic resources, wildlife habitat, stormwater management techniques and review of open space, site design and land use.

### *THE ERT PROCESS*

Through the efforts of the Planning and Zoning Commission and Conservation Commission this environmental review and report was prepared for the Town of Hamden.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the Town. Team members were able to review maps, plans and supporting documentation provided by the applicant.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

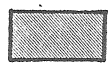
The data collection phase involved both literature and field research. The field review was conducted on September 23, 1997, and various Team members also made separate and/or additional field visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

FIGURE 1

TOPOGRAPHIC AND LOCATION MAP

Scale 1" = 2000'



Approximate Site

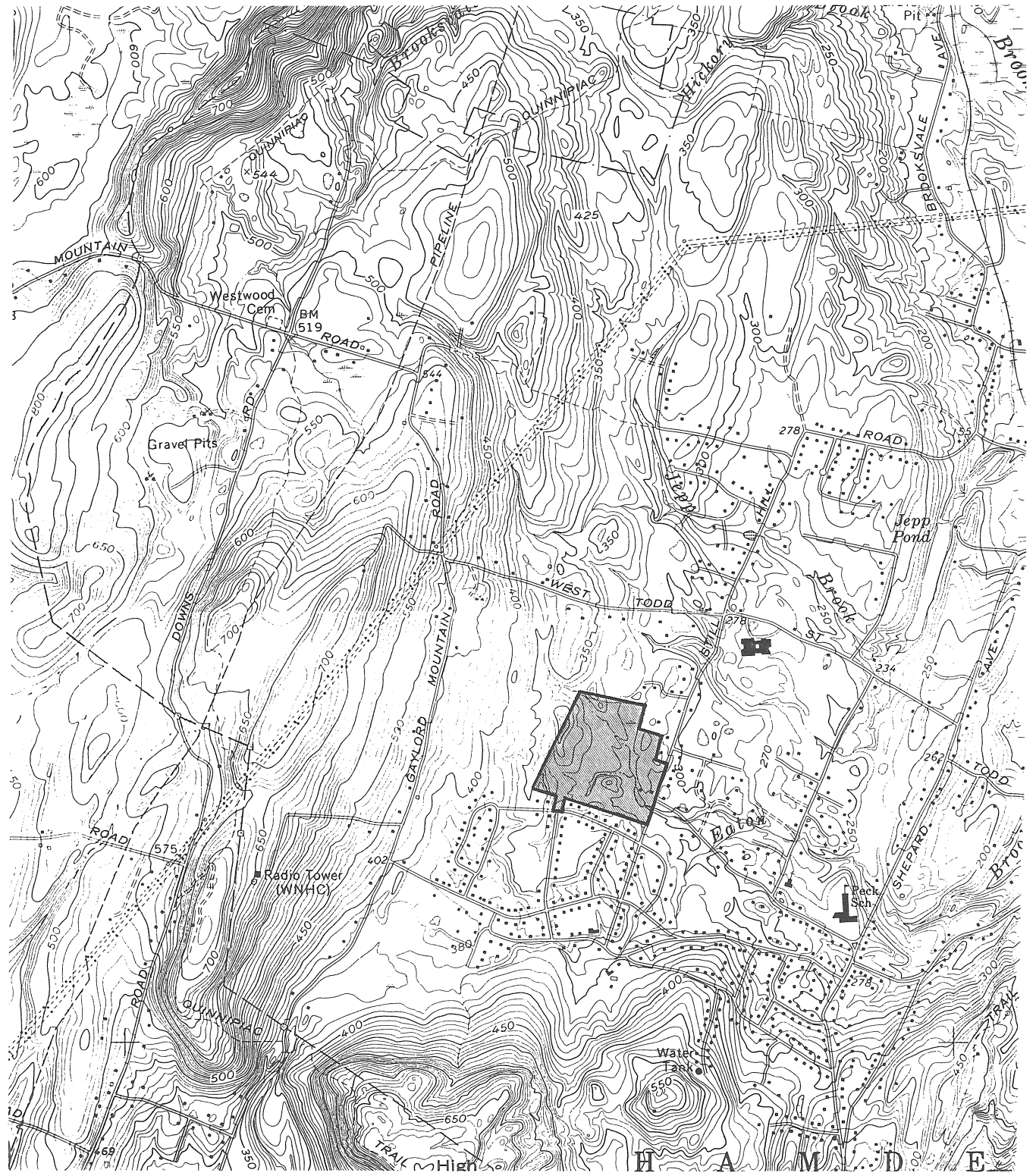


FIGURE 2

SOILS MAP

Scale 1" = 1320'



FIGURE 3

SUBDIVISION PLAN



## TOPOGRAPHY AND SURFICIAL GEOLOGY

The ±43 acre site of the proposed subdivision is characterized by two distinct topographic terrains. The hummocky uplands, rising 40 or so feet above the flat wetlands, occupy the southeastern and northern edges of the property. The small hills are underlain by permeable sands and ice-contact sands and gravels which were deposited by rapidly flowing streams on or adjacent to melting blocks of ice during the waning stages of the last continental ice age. The flat, low areas which occupy the central and northeastern sections of the site are underlain by a couple of feet of organic rich swamp deposits lying on glacial till material which was deposited at the base of the ice sheet at the height of glaciation. The sands and gravels are quite permeable and would be well suited for construction, whereas the till is rather impermeable and poorly drained.

### *REFERENCES*

The surficial and bedrock geology of the Mount Carmel Quadrangle are accurately portrayed on the following maps:

Flint, R. F., 1961. Surficial Geology of the Mount Carmel Quadrangle, Connecticut. Connecticut Geological and Natural History Survey, Quadrangle Report 12.

Fritts, C. E., 1963. Bedrock Geology of the Mount Carmel Quadrangle, Connecticut. USGS GQ-199.

## THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files regarding the project area have been reviewed. According to our information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

It is now possible for individuals to conduct an initial endangered species review using the "State and Federal Listed Species and Significant Natural Communities" maps available for viewing through each town's Town Hall. The town planner should have a copy of the map. This map shows the generalized locations for listed species and communities as gray-shaded areas on a 1:24,000 scale map of the town. An attached sheet has instructions on how to use the map to conduct an endangered species review.

Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

## WETLAND RESOURCES

### *MATERIALS REVIEWED*

Plan entitled "Founders Preserve," dated 7/11/97, last revised 8/29/97, by OCC Design Consortium.

Report entitled "Development Statement / Founders Preserve," dated 7/11/97, by OCC.

### *COMMENTS*

- Please refer to the Aquatic Resources section of this report for comments regarding Lots # 5, 6, 10, 11 and their proximity to the watercourse.
- The isolated wetland spanning Lots # 23 and 24, in the Team Wetland Specialist's opinion, is correctly described within the applicant's "Development Statement" as a "vernal pool." However, the Team Wetland Specialist does not necessarily agree with the statement that this wetland area "serves no viable function." The applicant should clarify for the Hamden Conservation Commission with what particular expertise this opinion was made. Vernal pools are small, shallow, circular depressions in the landscape which fill with water during periods of high Spring melt-water and stormwater runoff, becoming drier during the warm summer months. True vernal pools also support unusually high levels of wildlife. Much of this wildlife is solely dependent on these areas for one or more periods of their life cycle. Because of the absence of permanent water, fish do not live in these ephemeral pools, making these areas attractive to certain animals which would normally fall prey to these carnivorous fish. Rare and endangered wildlife are commonly found in these pools. The applicant's soil scientist, Richard Snarski, is familiar with the ecology of vernal pools, and should be consulted to confirm this Team member's opinion that this is a true vernal pool containing valuable "obligate" species normally associated with such areas. If it is a true vernal pool with its highly valuable functions, Mr. Snarski's experience with vernal pool impact mitigation may also be very useful.
- The construction sequence on sheet CD-2 of the above referenced plan should be amended to include detailed sequences for constructing the stream crossings. A plan for temporary and/or permanent crossings of the streams needs to be included prior to other scheduled activities located on the far side of the stream crossings. For more specific information regarding the stream crossings refer to the Aquatic Resources section of this report.



- Phase limits should be drawn on the plan. More exact descriptions are needed as to what level of completeness is required for one particular phase before the next phase is initiated.
- Number 11 (#11) on the construction sequence (stormwater drainage facilities) is scheduled after some major land disturbance. The possibility of using the detention basin as a temporary sediment basin to be utilized during the construction period should be investigated. The construction of the basin and associated swale for this purpose will greatly enhance the E&S plan. If this suggestion is adhered to, the construction of the detention basin should occur prior to any major land disturbance.
- There are more advanced, effective designs available for the gross-particle separator as detailed on sheet CD-1. The applicant should investigate these alternatives.
- If possible, the clearing limits and conservation easements as shown on the plan should be included and adequately described on the individual plot plans and property deeds when developed.

## AQUATIC RESOURCES

### *SITE DESCRIPTION*

The 46.35 acre site of the proposed Founders Preserve Open Space Subdivision contains two unnamed streams and one which the plot plan refers to as "Brookdale Stream." The three streams converge on the subdivision site and form a tributary to Eaton Brook. The two unnamed streams are contained in channels approximately 8 feet in top of bank width and normal flow depths averaging 0.8 feet. The low to moderate gradient channels creates surface flow predominated by moving pool interspersed by shallow riffle. Stream substrate is composed of cobble, gravel, coarse sand, and sand-silt fines.

The Brookdale Stream channel is approximately 5 feet in top of bank width and normal flow depths averaging 0.8 feet. The low gradient channel creates surface flow predominated by moving pool. Stream substrate is composed of gravel, coarse sand, and sand-silt fines.

Remnants of an impoundment created on the stream channel immediately upstream of the Still Hill Road crossing remain visible. The impoundment dam has breached allowing a channel to form within the former impoundment bed. The channel is some 10 feet in top of bank width and has normal flow depths of 0.8 feet or less. The stream is low in gradient which maintains surface flow as a moving pool. Stream substrate is composed of coarse sand, and sand-silt fines. Dense growths of hardwoods and woody shrubs predominate as riparian vegetation and provide the three streams with a nearly complete canopy. Physical in-stream habitat is provided by the water depth in pools, undercut banks, and fallen or overhanging riparian vegetation.

Although residential development has occurred, the drainage basin remains primarily forested. The limited development to date provides a means of maintaining stream water quality. The Department of Environmental Protection classifies Brookdale Stream and the unnamed watercourses as *Class AA* surface waters. Designated uses for surface water of this classification are existing or potential public drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other purposes. Recreational uses may be restricted.

### *AQUATIC RESOURCES*

Based upon channel grade, morphology, and substrate composition, Brookdale Stream and the two unnamed streams on The Founders Preserve Open Space Subdivision site can be classified as coldwater resources. Although these streams

were never subject to formal Fisheries Division survey, visual observation revealed the presence of brook trout (*Salvelinus fontinalis*) and blacknose dace (*Rhinichthys alratulus*). These finfish species are commonly associated with coldwater streams in Connecticut. Several age-size classes of brook trout were observed and is characteristic of a naturally developed, self-sustaining population.

In addition to alone providing conditions suitable for maintaining cold water resources, the three streams of the Founders Preserve Open Space Subdivision parcel unite to provide a significant tributary flow to Eaton Brook. The quality of that flow is well reflected in the Eaton Brook finfish population as shown by results of Inland Fisheries Division survey. That survey, conducted in 1990, focused on a 150 foot stream reach in the vicinity of Shepard Avenue, Hamden. Survey results (see Appendix) revealed a finfish population composed of largely of brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*). The substantial numbers of yearling aged individuals found is indicative of exceptional physical habitat and water quality conditions available for natural reproduction.

## ***IMPACTS***

As previously mentioned, limited development has maintained water quality and physical habitat conditions at levels supportive of intolerant finfish species such as brook trout on the Founders Preserve Open Space Subdivision parcel and both brook and brown trout elsewhere in the drainage basin. However, existing residential development in headwaters of the drainage have had an apparent affect on storm flow frequencies as noted by bank erosion, channel braiding, and sediment deposition within the streams. Continued land use change within the remaining forested areas of the drainage, such as that currently proposed through development of the Founders Preserve Open Space Subdivision, has the potential to adversely impact aquatic habitats and resources should mitigative measures not be implemented. Anticipated impacts include:

- Soil erosion and subsequent sediment transport through increased runoff from unvegetated areas. Excessive erosion, sediment transport, and sediment deposition can degrade both water quality and physical habitat, in turn affecting the resident finfish population. Specifically, excessive siltation has the potential to:
  - ⇒ cause a depletion of oxygen within the water column
  - ⇒ disrupt fish respiration and gill function

- ⇒ reduce water depth resulting in a reduction of habitats used by finfish for feeding, cover, and spawning
  - ⇒ reduce finfish egg survival
  
  - ⇒ reduce aquatic insect production
  
  - ⇒ promote aquatic plant growth
- Development adjacent to streams often results in the alteration or removal of riparian vegetation. Changes to riparian vegetation can result in the following:
    - ⇒ remove the natural "filtering" effect of vegetation which has the ability to prevent sediments, nutrients, fertilizers, and other non-point source pollutants from upland sources from entry into streams; such non-point source pollutants can degrade habitat and water quality, nutrients, fertilizers, and other non-point source pollutants from upland sources from entry into streams; such non-point source pollutants can degrade habitat and water quality
  
    - ⇒ increase stream water temperature during the summer months (thermal loading) while decreasing winter water temperatures to levels causing a complete ice cover
  
    - ⇒ decrease stream bank stability thereby increasing surface water siltation and habitat degradation
  
    - ⇒ eliminate or drastically reduce the supply of large woody debris provided to streams; such material provides critical physical habitat features for numerous species of aquatic organisms
  
    - ⇒ reduce a substantial proportion of food for aquatic insects which in turn constitutes a reduction in a significant proportion of food available for resident finfish
  
    - ⇒ stimulate excessive aquatic plant growth
  
    - ⇒ decrease the riparian corridor's ability to serve as a "reservoir" storing surplus runoff for gradual release back into the streams during summer and early fall low flow periods

- An influx of stormwater drainage may cause aquatic habitat degradation due to the release of pollutants from developed areas. Such pollutants include gasoline, oil, heavy metals, road salt, fine silts, and coarse sediments.
- Nutrient enrichment from fertilizer runoff from manicured lawns will stimulate aquatic plant growth. Herbicide runoff from manicured areas may result in fish kills and water quality degradation.

## ***RECOMMENDATIONS***

Reportedly, the Founders Preserve Open Space Subdivision parcel contains 19.62 acres of wetlands associated with the three streams. While 24.75 acres (a combination of wetlands and uplands) will be preserved as open space, the currently proposed 28 lot residential subdivision will alter .31 acres of wetland and stream habitat. In an effort to mitigate the potential impacts to the site's streams and associated wetlands, the following measures are recommended for incorporation into the design of proposed subdivision:

- Maintain, at a minimum, a 100 foot buffer zone of undisturbed habitat adjacent to the site's three streams. The buffer zone boundaries should be measured from either, (1) the edge of riparian inland wetland as determined by Connecticut inland wetland soil delineation methods or (2) in the absence of riparian wetlands, the edge of the stream bank based upon bank-full flow conditions. Research has indicated that a buffer zone of this width prevents damage to aquatic ecosystems that are supportive of diverse species assemblages. Buffers absorb surface runoff, and the pollutants they may carry, before they enter wetlands or surface waters. Please refer to the documentation in the Appendix presenting Fisheries Division policy and position regarding riparian buffers for additional information.
- Portions of several proposed house lots fall within the riparian buffers previously recommended. To be most effective in assuring preservation of riparian habitat, all private ownership or "conservation easements" within the buffer zone should be eliminated with all acreage dedicated to open space. The administration of the open space should be entrusted to the entity responsible for such management within the Town of Hamden.
- The following plot plan alterations need be undertaken in order for this to be accomplished: eliminate Lot# 5 and 6 and reconfigure the remaining lots along Still Hill Road; eliminate Lot# 10 and 11; and consolidate
- Lot# 27 and 28.
- Redesign the access road stream crossing structures. Preferred alternatives for crossing structures would be a span bridge or arch culvert. These structures

most adequately preserve physical in-stream habitat and do not create impediments to finfish migration.

- Institute a phased development of the site with an approved and completely functional stormwater management system installed initially. This should include the proposed stormwater detention basin. Design of the stormwater detention basin and grassed swale inlet should be enhanced with a "biofilter" capability to further the system's capacity for nutrient removal.
- Establish comprehensive erosion and sediment control plans with mitigative measures (haybales, silt fence, etc.) to be installed prior to and maintained through all development phases. Land clearing and other disturbance should be kept to a minimum with all disturbed areas being protected from storm events and restabilized in a timely manner.
- Limit liming, fertilizing, and the introduction of chemicals to developed land susceptible to runoff into streams or wetlands.
- 
- Limit regulated activities adjacent to riparian buffer zones to historic low precipitation periods of the year. Reduced precipitation periods of summer to early fall provide the least hazardous conditions when working near sensitive aquatic environments.
- 
- Create a formal breach or completely remove the remnant dam in the stream channel immediately upstream of the Still Hill Road crossing. In its present condition, the remnant structure prevents finfish migration and has functionally segmented in-stream habitats. Dam breaching or removal may necessitate stabilizing portions of the stream channel.

## WILDLIFE RESOURCES

### *INTRODUCTION*

This section will focus on potential wildlife habitat impacts for the proposed development and recommendations for reducing wildlife resource impacts for the subdivision.

### *CURRENT CONDITIONS*

The 46.35 acres of forest and wetland areas currently provide a variety of wildlife with their habitat requirements. The property is located in an increasingly urbanized area and provides habitat for some adaptable wildlife species. Notably, the habitats on the property are currently heavily utilized by white-tailed deer (*Odocoileus virginiana*) and wild turkey (*Gallapavo gallapavo*).

WETLAND/RIPARIAN AREA: The wetlands on the property are mostly wooded. The wet seepy areas along with the accompanying lower canopy vegetation, dead wood, and rocks provide habitat for wildlife such as the Northern two-lined salamander (*Eurycea bislineata*) (collected and identified at site) and American toad (*Bufo a. americanus*). These wooded wetlands and surrounding habitat also may be frequented seasonally by hens with their precocial young of wild turkeys (*Meleagris gallopavo*), ruffed grouse (*Bonasa umbellus*), and American woodcock (*Scolopax minor*) searching for the variety insects associated with the moist habitat conditions. A variety of resident and migratory songbirds can be expected to utilize the wetland habitats seasonally. This area may also serve as stopover habitat for feeding or resting by many migrating songbirds as they make their northerly and southerly migrations.

UPLAND FOREST/MIXED HARDWOOD: The drier upland areas contain some valuable mast (acorns, nuts, berries) producing trees. Most of the uplands are targeted for roads and houselot development, except for the rear and sides of the houselots. Drier upland areas contain plants species which add an important mix to the existing habitat components. Mast produced in these areas provide seasonal food sources for wildlife. White pine that has been planted and naturally occurring provides valuable winter cover and fall seeds for wildlife.

## ***DISCUSSION AND RECOMMENDATIONS***

**OPEN SPACE AREA:** Linking open space to other open space is a valuable method of increasing the value of various habitats to more sedentary wildlife species such as reptiles and amphibians. The linkage of this open space to other open space land increases the wildlife value.

Reducing impacts to wetland areas and their buffers is important for maintaining habitat for wetland wildlife. Direct and indirect alteration of wetlands and their buffers should be minimized. Wetlands, by their very nature, provide a diversity of habitat components for wildlife. They will become increasingly important for local wildlife as the surrounding area continues to become urbanized.

- **Impact # 1** - Lot #27 contains a large portion of the lot (about 40 percent) as wetland areas and wetland buffer. If one includes wetland buffer area the lot is mostly wetlands and buffer area. Post-development impacts such as rear yard filling, additions and dumping should be considered when configuring lots.
- **Recommendation # 1** - Lot # 27 and #28 should be reconfigured, joined or eliminated to reduce impacts to wetland and buffer area. The house footprints should be farther away from the wetland edge and buffer.

- **Impact # 2** - Lots # 23 and 24 include a portion of wetland area which has the features of a vernal pool. Further assessment is required to document the productivity and use of this wetland by amphibians, however the protection of this area from infringement and alteration is warranted.
- **Recommendation #2** - Lots # 23 and 24 should be joined or reconfigured to protect the wetland pocket and buffer area. The configuration of lot #23 makes it very difficult for a subsequent landowner to have a dry yard without impacting the wetland area. Joining lots #23 and #24 and reconfiguring adjoining lots can help reduce impacts to the wetland area.

- **Impact # 3** - Lot # 19 configuration allows for a limited linking of this development's open space to the Sunwoods open space property to the east and northeast.
- **Recommendation # 3** - Place a conservation easement of 100 feet bordering open space (wetland line) on lot #19 to allow for larger habitat corridor which links Sunwood's open space area.



- **Impacts # 4 and #5** - Stream crossings for Founders Way road.
- **Recommendations #4 and #5** - Minimize impacts to the crossing areas and stream by maintaining flow and water conditions as closely as possible. This may include adding a high flow pipe in addition to proposed culverts.

The open space areas associated with this subdivision will help keep some valuable habitat intact for wildlife and allow the neighborhood residents to enjoy seeing wildlife in close proximity to where they live. However, an attempt to increase wetland boundary setbacks and minimize the footprint of development is recommended. Post-development impacts such as add-ons (pools, decks, garages, larger backyards) can result in further degradation of the habitat value of the open space areas. Care should be taken to configure lots to minimize immediate impacts to wetland areas and post-development impacts. Wooded areas in the rear of lots # 12, 13, 14, 15, 16, 17 and 18 which are labeled : "Existing wooded area to remain undisturbed" should have a formal conservation easement rather than just a note on the map. The clearing line for lawns for these lots needs to be demarcated clearly on plot plans and in the field. Conservation easements and other restrictions should be placed on land records and deeds.

Plantings used for restoration or sedimentation basin use in the subdivision should be complimentary to existing plant communities in order to maximize the utility to wildlife. Native plants are most valuable for wildlife and should be used whenever feasible. The following non-native trees, shrubs and vines should not be planted and, if present, should be removed:

- Norway Maple (*Acer platanoides*)
- Tree of Heaven (*Ailanthus altissima*)
- Catalpa (*Catalpa* spp.)
- Autumn Olive (*Elaeagnus altissima*)
- Winged Euonymus (*Euonymus alatus*)
- Privet (*Ligustrum* spp.)
- Amur Honeysuckle (*Lonicera mackii*)
- Morrow's Honeysuckle (*Lonicera morrowii*)
- Tartarian Honeysuckle (*Lonicera tatarica*)
- Common Buckthorn (*Rhamnus cathartica*)
- Glossy Buckthorn (*Rhamnus frangula*)
- Multiflora rose (*Rosa multiflora*)
- Asiatic bittersweet (*Celastrus orbiculatus*)
- Japanese honeysuckle (*Lonicera japonica*)

Burning bush (*Euonymus alata compacta*) is listed in the landscape plan for this development. Alternative shrubs should be considered. Possible replacement native shrubs to consider are Black Chokeberry (*Aronia melanocarpa*) or Highbush blueberry (*Vaccinium corymbosum*).

Native plants that are in the path of the road or other developed areas should be considered for digging and use within the development. For example: in the area of the detention basin there is a profusion of sweet pepperbush (*Clethra alnifolia*) which will be destroyed from the construction activities. An attempt at digging and using this shrub for the detention area or other areas should be considered. Maintaining natural vegetation along roads, open space or undeveloped areas is strongly recommended. The Team wildlife biologist is available for further consultation upon request.

## **PLANNING REVIEW**

### ***SITE LOCATION***

The 46.35 acre site is located on the west side of Still Hill Road and north of Deerfield Road in the northwest section of the town. The site is located in the R-2 district, which is characterized by single-family dwellings on individual lots having a minimum area of 40,000 square feet. An open space design for the site has been proposed which allows for flexibility in lot size; no greater overall density for the area, and at least 30% of dedicated set aside for open space.

### ***SITE CHARACTERISTICS***

The site is heavily wooded and contains a substantial amount of wetlands (19.26 acres). The proposed open space subdivision would provide 28 single family homes with an average lot size of 22,000 square feet. A total of five rear lots are being proposed which average 55,000 square feet. The site contains three dilapidated buildings, which will be demolished. The proposed development includes 24.75 acres of open space. Of that amount, 19.26 acres are designated wetlands. This leaves approximately 5.49 acres of upland soils for open space purposes in the development.

### ***CONFORMITY WITH ZONING REGULATIONS & MUNICIPAL PLANS***

The Hamden Zoning Regulations define the purpose of an Open Space Development (OSD) in the following terms: "It is the purpose of this provision to encourage flexibility and innovation in the design of residential development that cannot be achieved on many sites through adherence to traditional zoning and subdivision regulations. Further, the application of the OSD technique is intended to achieve: (1) maximum reasonable conservation of land and creation of usable open space and recreation areas; (2) variety in type and cost of residential development, thus increasing the choice of housing types available to town residents; (3) preservation of trees and outstanding natural features and prevention of soil erosion; and (4) a shorter network of streets and utilities and more efficient use of energy than would be possible through strict application of standard zoning." The regulations further state that "the Planning and Zoning Commission shall make a finding that the application of standard zoning to the subject site will not be consistent with the objectives set forth in this section. Specifically, the Commission shall take into consideration "open space" benefits to be gained by the development, the neighborhood, and by the community; the specific design of the proposed development; the nature of the topography; and the purpose for which the open space is intended -whether it is to provide formal or informal recreation, provide scenic views, or preserve a unique

ecological area; the nature of adjacent areas, the proper screening and/or buffering of the units from adjacent areas.”

### ***TRAFFIC CIRCULATION/SITE ACCESS/OFF-SITE IMPACTS***

A 1,190 foot cul-de-sac is proposed to intersect with Deerfield Road to serve 19 lots. The remaining nine lots are proposed to be built with individual access off of Still Hill Road. The developer is seeking a sidewalk waiver in the design of the cul-de-sac. Neither the proposed cul-de-sac nor driveways along Still Hill Road should create any significant safety related problems. The required sight line clearance can be easily attained with limited disturbance. The waiver for sidewalks would appear appropriate to match the low impact residential design of the proposed “open space” development.

### ***SELECTED AREA DEMOGRAPHICS AND MUNICIPAL STATISTICS***

The 1990 Census reveals the following general information for the immediate surrounding area bordered by the town line to the west and north, the railroad tracks and Shepard Avenue to the east, and Choate Avenue and Westwoods Road to the south of the proposed development.

- Total population - 2,220
- Total housing units - 678
- Median Family Income - \$63,224

The census information reveals that 40% of the houses had four bedrooms and 51% had three bedrooms. Based on the most recent state housing reports the Town of Hamden recorded 81 building permits in 1994. The previous year the town recorded 336 building permits, the majority of which were contained in eight apartment structures, which were an addition to an existing housing development project. From 1985 through 1993, a total of 2,690 building permits were drawn in the Town of Hamden.

### ***LAND USE PLANNING***

The open space development technique was designed in Hamden to allow for a more “creative” way to develop land that would protect important sensitive natural resources. Another key aspect of the open space development technique is to encourage the placement of the housing structures to achieve a more natural development pattern and provide passive and active recreation where it is appropriate. The open space dedication from the Founders Preserve subdivision does help to protect key “regulated” natural resources and features, and provides potential future linkage with off site open space areas. However, the open space plan was essentially the same design as the proposed

“conventional subdivision.” Developer's in many areas of the northeast are finding that new homeowners are looking for an attractive park-like setting where homes have protected views and informal footpaths that help connect various parts of the neighborhood. Creative residential open space subdivisions are likely to be popular with homeowners, sell quickly and at a premium and retain high property values.

The Town of Hamden land use commissions may want to consider pursuing a long range coordinated Open Space Planning approach for the community that establishes a natural resource inventory, regulatory controls, and establishes funding mechanisms to acquire key easements or property to provide needed recreational opportunities. Subdivision regulations that reference the community's Open Space Plan cite specific types of land the commission seeks to preserve and helps the commission and the applicant to decide what lands to set aside. The Farmington Canal greenway is a great example of a linear park put together through long range planning, citizen involvement and dedicated fund sources.

The Hamden zoning regulations require that all Open Space Developments either create a homeowner's association or any other arrangement approved by the Town Attorney and Planning & Zoning Commission. The zoning regulations detail the standards and requirements that the homeowners' association must meet to gain acceptance by the PZC. A homeowners' association should be established for Founders Preserve to assure proper maintenance and use of the common open space due to the connectivity of the delineated area. Other communities may encourage subdivision open space areas to be maintained via conservation easements by a third party Land Trust or the municipality. The Town of Wallingford is investigating a policy in which the landowners in an open space development agree to purchase a portion of the open space area rather than establish an of official homeowners' association. Many times homeowners' associations have difficulty collecting the municipal dues/taxes from the individual landowners. An individual lot owner who is bound by a deed restriction to be responsible for a certain percentage of the neighborhood open space property may prove to be a more successful management tool.

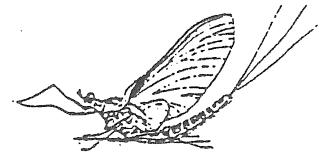
The Town should seek a consulting engineer to review the drainage plans, recommend appropriate best management practices and assess any potential off site watershed impacts due to the large drainage area and watercourses traversing the site.

**APPENDIX**

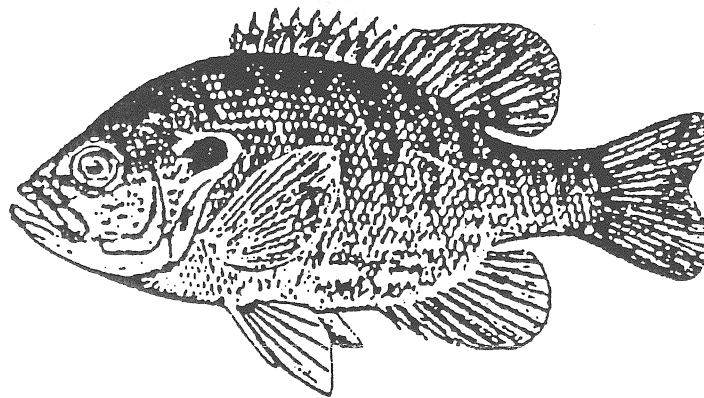
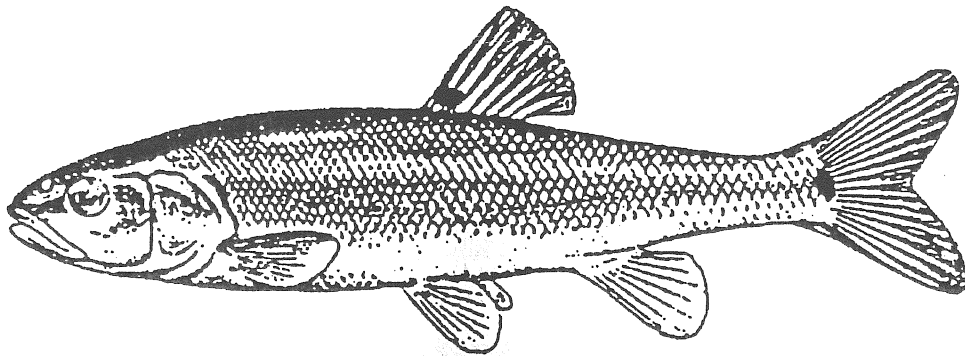
*FINFISH RESOURCE INVENTORY*

*FISHERIES DIVISION RIPARIAN POLICY AND POSITION STATEMENT*

F-66-R-3: Progress Report  
April 1, 1990 - March 31, 1991



## A Survey of Connecticut Streams and Rivers - Central Coastal and Western Coastal Drainages.



By

Neal T. Hagstrom Michael Humphreys William A. Hyatt

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STATE OF CONNECTICUT, Department of Environmental Protection  
Inland Fisheries Division, State Office Bldg., Hartford, CT 06106



STREAM NAME : EATON BROOK SITE #: 2115  
 SITE DESCRIPTION: UPSTREAM OF SHEPARD AVE, HAMDEN. GOOD  
 FINGERLING PRODUCTION STREAM  
 SAMPLE LENGTH : 50. SAMPLE DATE: 07/18/1990

PHYSICAL	CHEMICAL	MEAN	STD
AIR TEMP. . . . . : 30.0 (C)	DISSOLVED OXYGEN (mg/l) . . .	9.4	0.06
WATER TEMP. . . . . : 19.0 (C)	pH . . . . .	7.7	0.06
VELOCITY . . . . . : 0.436 (m/s)	COND . . . . . (uS/cm3) . . .	156.7	2.89
DISCHARGE . . . . . : 0.087 (m3/s)	ALKALINITY . (mg CaCO3 eq/l) :	37.6	1.80

	MEAN	STD	
WIDTH . . . . .	2.9	1.3	(m)
DEPTH . . . . .	7.3	6.96	(cm)
DOMINANT SUBSTRATE TYPE . . .	4	POOL/RIFFLE RATIO . . .	1.00
TYPE THREE SUBSTRATE . . . .	0.00 (%)	AIR/WATER TEMP. RATIO:	1.58
EMBEDDEDNESS OF TYPE THREE :	25.38 (%)		
OVERHEAD CANOPY . . . . .	(%)		
INSTREAM SHELTER . . . . .	2.11 (m2)		

SPECIES	BIOLOGICAL	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salmo trutta		2380	48.59
Salvelinus fontinalis		1564	48.89
Rhinichthys atratulus		1360	54.42

STREAM NAME : EIGHTMILE RIVER SITE #: 2014  
 SITE DESCRIPTION: UPSTREAM OF PROSPECT RD, SOUTHWINGTON.  
 PARALLELS 1-84 LEDGE AND LARGE COBBLE  
 SAMPLE LENGTH : 150. SAMPLE DATE: 07/09/1990

PHYSICAL	CHEMICAL	MEAN	STD
AIR TEMP. . . . . : 31.0 (C)	DISSOLVED OXYGEN (mg/l) . . .		
WATER TEMP. . . . . : 21.0 (C)	pH . . . . .	7.0	0.06
VELOCITY . . . . . : 0.261 (m/s)	COND . . . . . (uS/cm3) . . .	190.0	0.00
DISCHARGE . . . . . : 0.353 (m3/s)	ALKALINITY . (mg CaCO3 eq/l) :	40.9	0.50

	MEAN	STD	
WIDTH . . . . .	7.3	2.2	(m)
DEPTH . . . . .	19.3	15.89	(cm)
DOMINANT SUBSTRATE TYPE . . .	4	POOL/RIFFLE RATIO . . .	0.70
TYPE THREE SUBSTRATE . . . .	0.05 (%)	AIR/WATER TEMP. RATIO:	1.48
EMBEDDEDNESS OF TYPE THREE :	31.67 (%)		
OVERHEAD CANOPY . . . . .	65.00 (%)		
INSTREAM SHELTER . . . . .	96.28 (m2)		

SPECIES	BIOLOGICAL	POPULATION SIZE (Number/ha)	STANDARD ERROR (Number/ha)
Salvelinus fontinalis		26	3.77
Lepomis macrochirus		8	4.40
Catostomus commersoni		167	6.97
Rhinichthys atratulus		4926	3.27
Salmo trutta		61	5.60
Notropis cornutus		193	3.18
Semotilus corporalis		158	5.47
Notemigonus crysoleucas		8	4.40
Anguilla rostrata		35	4.40
Etheostoma olmstedii		176	2.68
Rhinichthys cataractae		2679	3.69



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DEPARTMENT OF ENVIRONMENTAL PROTECTION  
INLAND FISHERIES DIVISION

POLICY STATEMENT  
RIPARIAN CORRIDOR PROTECTION

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I. INTRODUCTION, GOALS, AND OBJECTIVE

Alteration and exploitation of riparian corridors in Connecticut is a common event that significantly degrades stream water quality and quantity. Inasmuch as riparian ecosystems play a critical role in maintaining aquatic resource productivity and diversity, the Inland Fisheries Division (Division) recognizes that rigorous efforts are required to preserve, protect, and restore these valuable resources. Consequently, a riparian corridor protection policy has been developed to achieve the following goals and objective:

Goals

Maintain Biologically Diverse Stream and Riparian Ecosystems, and

Maintain and Improve Stream Water Quality and Water Quantity.

Objective

Establish Uniform Riparian Corridor Buffer Zone Guidelines.

II. DEFINITIONS

For the purpose of implementing a statewide riparian corridor protection policy, the following definitions are established:

Riparian Corridor: A land area contiguous with and parallel to an intermittent or perennial stream.

Buffer Zone: An undisturbed, naturally vegetated area adjacent to or contained within a riparian corridor that serves to attenuate the effects of development.

Perennial Stream: A stream that maintains a constant perceptible flow of water within its channel throughout the year.

Intermittent Stream: A stream that flows only in direct response to precipitation or which is seasonally dry.

III. RIPARIAN FUNCTION

Naturally vegetated riparian ecosystems perform a variety of unique functions essential to a healthy instream aquatic environment. The delineation and importance of riparian functions are herein described. Vegetated riparian ecosystems:

- \* Naturally filter sediments, nutrients, fertilizers, and other nonpoint source pollutants from overland runoff.

- \* Maintain stream water temperatures suitable for spawning, egg and fry incubation, and rearing of resident finfish.
- \* Stabilize stream banks and stream channels thereby reducing instream erosion and aquatic habitat degradation.
- \* Supply large woody debris to streams providing critical instream habitat features for aquatic organisms.
- \* Provide a substantial food source for aquatic insects which represent a significant proportion of food for resident finfish.
- \* Serve as a reservoir, storing surplus runoff for gradual release into streams during summer and early fall base flow periods.

#### IV. RIPARIAN CORRIDOR BUFFER ZONE GUIDELINES

Recognizing the critical roles of riparian corridors, the Division provides buffer zone guidelines that are designed to bring uniformity and consistency to environmental review. The guidelines are simple, effective, and easy to administer. The following standard setting procedure should be used to calculate buffer zone widths.

**Perennial Stream:** A buffer zone 100 feet in width should be maintained along each side.

**Intermittent Stream:** A buffer zone 50 feet in width should be maintained along each side.

Buffer zone boundaries should be measured from either, (1) edge of riparian inland wetland as determined by Connecticut inland wetland soil delineation methods or (2) in the absence of a riparian wetland, the edge of the stream bank based on bank-full flow conditions.

The riparian corridor buffer zone should be retained in a naturally vegetated and undisturbed condition. All activities that pose a significant pollution threat to the stream ecosystem should be prohibited.

Where the Division policy is not in consonance with local regulations and policies regarding riparian corridor buffer zone widths and allowable development uses within these areas, local authorities should be encouraged to adopt the more restrictive regulations and policies.

12/13/91  
Date

James C. Moulton  
James C. Moulton  
Acting Director

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POSITION STATEMENT  
UTILIZATION OF 100 FOOT BUFFER ZONES TO PROTECT RIPARIAN AREAS  
IN CONNECTICUT  
BY  
BRIAN D. MURPHY  
TECHNICAL ASSISTANCE BIOLOGIST  
INLAND FISHERIES DIVISION

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I. INTRODUCTION

One tenet of the Inland Fisheries Division Policy on Riparian Corridor Protection is the utilization of a 100 foot buffer zone as a minimum setback along perennial streams. The adoption of such a policy is sure to be controversial. Laymen, developers and natural resource professionals alike will ask questions such as: Why was a standard setting method adopted? What's magical about 100 feet? Will 100 feet be sufficiently protective, or will it be overly protective? In response, this paper outlines the ramifications of adopting a riparian corridor policy including the use of a 100 foot buffer zone.

II. STANDARD SETTING VERSUS SITE SPECIFIC BUFFER ZONES

There are two approaches for determining buffer zone width; standard setting and site specific. Standard setting methods define an area extending from the streambank edge or highwater mark to some landward fixed point boundary. Site specific methods utilize formulas that incorporate and consider special site specific land characteristics, hence, the calculation of a variable width buffer zone. In both case, buffers are employed to define an area in which development is prohibited or limited.

A major advantage of standard setting methods is that they are easy to delineate and administer, thereby improving the consistency and quality of environmental assessments. Furthermore, valuable staff time would not be required to determine site specific buffer zones along each and every watercourse of concern.

The exact width of a buffer zone required for riparian corridor protection is widely disputed (Bottom et al. 1985 and Brinson et al. 1981). Buffer width recommendations found in the literature vary from as little as 25 feet to as great as 300 feet (Palfrey et al. 1982). The 100 foot buffer is widely accepted in Connecticut having been adopted by numerous inland wetland and conservation commissions as an appropriate minimum setback regulation for streambelts. In addition, Division staff have been recommending the utilization of the 100 foot buffer zone to protect streambelts since the early 1980's. Scientific research has not been generated to dispute the adequacy of utilizing 100 foot buffer zones to protect Connecticut's riparian corridors. In fact, to ensure that riparian functions are not significantly altered, recent scientific information points towards maintaining buffer zones that would be at a minimum, 100 feet in width (see section III).

Site specific methods define buffer widths according to the character and sensitivity of adjacent streamside lands. These buffer widths, also referred to as "floating buffers," consider physical site characteristics such as slope, soil type, and vegetative cover. The advantage of site specific methods is that buffer widths are designed using site characteristics and not an arbitrary predetermined width. Unfortunately, there is no "one" universally accepted formula or model and none have been developed for use in Connecticut. Most formulas are based on the degree to which sediment can be removed or filtered by natural vegetation, thus, the primary useage is sediment control. Other weaknesses of site specific techniques are (1) all areas must be evaluated on a case-by case basis and, (2) the subjectivity of different techniques (i.e. if the evaluation technique is inadequate, the buffer width will also be inadequate).

Additionally, these formulas only concentrate on one specific riparian function at a time and do not take into account multiple riparian functions, especially those of inland fisheries values as discussed in Section III. Consequently, site specific formulas approach riparian function on a single dimension rather than taking a more realistic, holistic approach.

In the absence of a scientific model to determine buffer widths suitable to protect Connecticut's riparian corridors, the utilization of a standard setting method is environmentally and politically prudent.

### III. RIPARIAN FUNCTION

To assess the efficacy of a 100 foot buffer zone, the literature was searched to identify studies which have applied a quantitative approach to buffer width determination. Literature was searched for studies which both support and dispute the 100 foot zone. The following is a summary "by riparian function" of quantitative studies which assess buffer widths.

#### Sediment Control

Width, slope and vegetation have been cited as important factors in determining effectiveness of buffer zones as sediment filters (Karr and Schlosser 1977). Wong and McCuen (1981), who developed and applied a mathematical model to a 47 acre watershed, found that a 150 foot zone along a 3% slope reduced sediment transport to streams by 90%. Mannering and Johnson (1974) passed sediment laden water through a 49.2 foot strip of bluegrass and found that 54% of sediment was removed from the water. Trimble and Sartz (1957) developed recommendations as to width of buffer areas between logging roads and streams to reduce sediment load. They determined a minimum strip of 50 feet was required on level land with the width increasing 4 feet for each 1% slope increase. Buffer widths as determined by Trimble and Sartz (1957) have been characterized as evaluated guesses rather than empirically defined widths (Karr and Schlosser 1977). Rodgers et al. (1976) state that slopes greater than 10% are too steep to allow any significant detention of runoff and sediment regardless of buffer width. After a critical review of the literature, Karr and Schlosser (1977) determined that the size and type of vegetative buffer strip needed to remove a given fraction of the overland sediment load cannot be universally quantified. Existing literature does suggest that 100 foot riparian buffers will assist with sediment entrapment, although efficacy will vary according to site conditions.

#### Temperature Control

Brown and Brazier (1973) evaluated the efficacy of buffer widths required to ameliorate stream water temperature change. They concluded that angular canopy density (ACD), a measure of the ability of vegetation to provide shading, is the only buffer area parameter correlated with temperature control. Results show that maximum angular canopy density or maximum shading ability is reached within a width of 80 feet. Study sites were 9 small mountain streams in Oregon that contained a conifer riparian vegetative complex. Whether or not maximum angular canopy density is reached within 80 feet in a typical Connecticut deciduous forest riparian zone is doubtful. Tree height in Connecticut riparian zones is smaller than in Oregon (Scarpino, personal communication), therefore buffers greater than 80 feet in width would be required for temperature maintenance in Connecticut.

#### Nutrient Removal

Nutrient enrichment is caused by phosphorous and nitrogen transport from, among other things, fertilized lands and underground septic systems. Most research on nutrient enrichment has focused on overland surface flow. Karr and Schlosser (1977) report that 88% of all nitrogen and 96% of all phosphorous reaching watercourses in "agricultural watersheds" were found to be attached to sediment particles; thus, successful nutrient removal can be accomplished through successful sediment removal. There are conflicting reports on the ability of buffer widths to remove nutrients with most research being tested on grass plots. Butler et al. (1974) as cited by Karr and Schlosser (1977) found that a 150 foot buffer width of reed canary grass with a 6% slope caused reductions in phosphate and nitrate concentrations of between 0-20%. Wilson and Lehman (1966) as cited by Karr and Schlosser (1977) in a

study of effluent applied to 300 m grass plots found that nitrogen and phosphorous concentrations were reduced 4 and 6%, respectively. Studies on subsurface runoff as cited in Clark (1977) found high concentrations of nitrates at 100 feet from septic systems with unacceptable levels at 150 feet. Clark (1977) recommended that a 300 foot setback be used whenever possible, with a 150 setback considered adequate to avoid nitrate pollution. Environmental Perspective Newsletter (1991) states that experts who commonly work with the 100 foot buffer zone set by the Massachusetts Wetlands Protection Act are increasingly finding that it is insufficient since many pollutants routinely travel distances far greater than 100 feet with nitrate-nitrogen derived from septic systems moving distances of greater than 1000 feet. Research indicates that the adoption of 100 foot buffer widths for Connecticut riparian zones will assist with the nutrient assimilation; albeit, complete removal of all nutrients may not be achieved.

### Large Woody Debris

The input of large woody debris (LWD) to streams from riparian zones, defined as fallen trees greater than 3 m in length and 10 cm in diameter has been recently heralded as extremely critical to stream habitat diversity as well as stream channel maintenance. Research on large woody debris input has mainly been accomplished in the Pacific Northwest in relation to timber harvests. Murphy and Koski (1989) in a study of seven Alaskan watersheds determined that almost all (99%) identified sources of LWD were within 100 feet of the streambank. Bottom et al. 1983 as cited by Budd et al. (1987) confirm that in Oregon most woody structure in streams is derived from within 100 feet of the bank. Based on research done within old-growth forests, the Alaska region of the National Marine Fisheries Service, recognizing the importance of LWD to salmonid habitat, issued a policy statement in 1988 advocating the protection of riparian habitat through the retention of buffer strips not less than 100 feet in width (Murphy and Koski 1989). All research findings support the use of a 100 foot buffer zone in Connecticut for large woody debris input.

### Food Supply

Erman et al. (1977) conducted an evaluation of logging impacts and subsequent sediment input to 62 streams in California. Benthic invertebrate populations (the primary food source of stream fishes) in streams with no riparian buffer strips were compared to populations in streams with buffer widths of up to 100 feet. Results showed that buffer strips less than 100 feet in width were ineffective as protective measures for invertebrate populations since sediment input reduced overall diversity of benthic invertebrates. Buffer strips greater than 100 feet in width afforded protection equivalent to conditions observed in unlogged streams. The ultimate significance of these findings is that fish growth and survival may be directly impacted along streams with inadequate sized riparian buffer zones. All research supports the feasibility of implementing a 100 foot buffer zone in Connecticut to maintain aquatic food supplies.

### Streamflow Maintenance

The importance of riparian ecosystems in terms of streamflow maintenance has been widely recognized (Bottom et al. 1985). In Connecticut, riparian zones comprised of wetlands are of major importance in the hydrologic regime. Riparian wetlands store surplus flood waters thus dampening stream discharge fluctuations. Peak flood flows are then gradually released reducing the severity of downstream flooding. Some riparian wetlands also act as important groundwater discharge or recharge areas. Groundwater discharge to streams during drier seasonal conditions is termed low flow augmentation. The survival of fish communities, especially coldwater salmonid populations is highly dependent upon low flow augmentation (Bottom et al. 1985). Research, although documenting the importance of riparian zones as areas critical to streamflow maintenance, has not investigated specific riparian buffer widths required to provide the most effective storage and release of stream flows.

#### IV. OTHER POLICY CONSIDERATIONS

##### Measurement Determination

The proposed policy states that buffer zone boundaries should be measured from either the edge of the riparian inland wetland as determined by Connecticut inland wetland soil delineation methods or in the absence of a riparian wetland, the edge of the streambank based on bank-full flow conditions. This boundary demarcation is absolutely necessary to ensure that all riparian wetlands are protected. For example, if all measurements were to start from the perennial stream edge and extend landward for a distance of 100 feet, many riparian zones that contain expansive wetlands greater than 100 feet in width would be left unprotected.

Also, since boundary demarcation includes wetland delineation, the ultimate width of the buffer will vary according to site specific features. Consequently, buffer width determination as stated by Division policy is a "hybridization" of both standard setting and site specific methods. This hybridization of methods is advantageous since it acknowledges the sensitivity of streamside wetlands.

##### Home Rule

Where the Division policy is not in consonance with local regulations and policies regarding riparian corridor buffer zone widths, local authorities would be encouraged to adopt the more restrictive regulations and policies. This feature incorporates flexibility to acknowledge the importance of local "home rule" regulations or policies already in accepted practice. Conversely, towns and cities without accepted policies and regulations could choose to enact the Division policy.

##### Allowable Uses in Buffer Zones

The Division policy states that "the riparian corridor buffer zone should be retained in a naturally vegetated and undisturbed condition and that all activities that pose a significant pollution threat to the stream ecosystem should be prohibited." In essence, the buffer zone becomes an area where no development should be allowed. For this policy to be effective, there should be no exceptions, a blanket restriction of all uses would be recommended. Further clarification and more precise definitions of allowable uses will, however, be required in the future if the policy evolves into a departmental regulation.

Recently, the Connecticut Supreme Court has ruled that local agencies can prohibit specific development within buffer zones. The *Lizotte v. Conservation Commission of the Town of Somers*, 216 Conn.320 (1990) decision ruled that the construction or maintenance of any septic system, tank, leach field, dry well, chemical waste disposal system, manure storage area or other pollution source within 150 feet of the nearest edge of a watercourse or inland wetland's seasonal high water level can be prohibited (Wetlands Watch 1990). If this decision is a precursor of the future, Connecticut courts will continue to support the use of buffers, especially those which restrict or prohibit detrimental activities.

#### V. CONCLUSIONS

The following actions are required to preserve, protect, and restore Connecticut's riparian corridors:

1. The Inland Fisheries Division needs to adopt and implement the proposed policy so that staff can use it as a guideline to assist cities, towns, developers and private landowners with making sound land use decisions. This policy will act to solidify a collective position concerning riparian corridor protection.
2. While the proposed policy in its "current form," represents a recommendation from the CTDEP Inland Fisheries Division, the ultimate goal of the Division should be to progressively implement this policy as either a CTDEP regulation or State of Connecticut statute.

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# ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists and landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83 town area serving western Connecticut.

As a public service activity, the Team is available to serve towns within the King's Mark RC&D Area - **free of charge**.

## **Purpose of the Environmental Review Team**

The Environmental Review Team is available to assist towns in the review of sites proposed for major land use activities or natural resource inventories for critical areas. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision making. This is done through identifying the natural resource base of the site and highlighting opportunities and limitations for the proposed land use.

## **Requesting an Environmental Review**

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the Team to enter the property for the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Soil and Water Conservation District and approved by the King's Mark RC&D Executive Council, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the King's Mark ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977.