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Professional Profile
Richard Snarski, CPSS, CPESC

**PLANNING
COMMISSION
EXHIBIT #28b.**

Office Address: New England Environmental Services
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Marlborough, CT 06447
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Education:

University Of Illinois, Champaign-Urbana; M.S. in Soil Science,
May 1980. Thesis project on surface mine reclamation.

University Of Connecticut, Storrs; B.S. in Soil Science, May 1978.
Emphasis of study in soil classification and genesis.

Professional Registrations:

- Certified Professional Soil Scientist (CPSS #1975)
- Certified Professional Soil Erosion and Sediment Control Specialist
(CPESC #200)
- The Society of Soil Scientists of Southern New England
- Professional Wetland Scientist

Work Experience:

Soil & Environmental Scientist. New England Environmental Services and Blackledge River Nursery, Marlborough Connecticut, 1983-Present. Established New England Environmental Services in 1983 and Blackledge River Nursery in 1990. Specializes in wetland delineations, wetland design and construction, wetland assessments, soil investigations and construction supervision, specifically the following:

- * Conducted several thousand inland and tidal wetland delineations throughout Connecticut for development projects using the state methodology. Performed several hundred federal wetland delineations which require detailed soil and vegetation transects. Clients include private individuals, corporations, non-profit organizations, state agencies and the Mashantucket Pequot Tribe and the Mohegan Tribe.

- * Designed and supervised the creation and restoration of numerous wetlands in Connecticut. Wetland systems include deep and shallow marshes, red maple swamps, lake shorelines and wetland detention basins. Creation and restoration projects have included inland, freshwater-tidal, brackish and tidal wetlands. Activities for wetland creation and restoration involve ground water monitoring, determination of appropriate hydrology, soil medium, selection of plant species and layout, construction supervision and planting of wetlands. Experienced in acquiring local, state (401 and Water Diversion) and Army Corp of Engineers individual permits.
- * Established Blackledge River Nursery which specializes in the propagation of native herbaceous wetland plants. Six acres of wetlands were constructed to conduct research with created wetlands in areas of construction, seed germination, influence of fluctuating water levels on plant growth and survival, soil requirements of aquatic plants and competition among aquatic plant species.
- * Performed numerous wetland assessments for development projects identifying functional values of wetlands and impacts to the wetlands, including hydrology, water quality, sedimentation and wildlife habitat. Presents findings to Local, State and Federal agencies to obtain the necessary wetland activity permits.
- * Conducted numerous D.E.P. Pollutant and Renovation analysis for subsurface sewage disposal systems over 5000 gal/day. Analysis involve test hole descriptions, permeability testing, determination of groundwater flow direction and gradient and the design of septic fields to meet D.E.P. standards for hydraulic capacity and effluent travel times.
- * As a Certified Professional Erosion Control Specialist, have developed and supervised numerous erosion control plans for development projects for private organizations and municipalities.

Environmental Scientist, Envirodyne Engineers, St. Louis Missouri. 6/80-6/83. Conducted environmental assessments and hydrogeological surveys including hazardous waste surveys. Developed land reclamation plans and supervised construction. Responsible for field operations including soil, sediment, water and biological sampling. Specific projects include the following:

- * Developed a surface mine reclamation plan for 2,200 acres of highly acidic mined land in central Missouri.
- * Designed a waste management plan for a 180,000 cubic yard gangue pile at a closed ore processing facility. Project involved treating highly acidic waste materials containing toxic elements while initiating an environmentally safe procedure to distribute the materials on a nearby property.
- * Developed a soil engineering program for a major California raisin distiller designed to

apply stillage waste to the land in an environmentally-acceptable manner.

- * Prepared closure and maintenance plans for an abandoned hazardous waste dump in Wagnesboro, Tennessee. Designed erosion control structures and sedimentation basins and developed a soil, sediment and groundwater monitoring program to determine the concentration of contaminants migrating from the site.
- * Determined the environmental impact for the relocation of a rail system in East St. Louis, Illinois. Determined impacts on prime agricultural farmland, water quality, and wildlife habitat.
- * Conducted hydrogeological surveys of Louisiana Army Ammunition Plant, Shreveport, Louisiana, and Cornhusker Army Ammunition Plant, Grand Island, Nebraska. Responsible for all field operations in both surveys including sampling site selection, drilling, sample collection and interpretation of results as they relate to the various contamination sources.
- * Environmental Scientist for the initial assessment studies of the U.S. Submarine Base. (Groton, Connecticut) and the Naval Training Center, (Newport, Rhode Island) to determine whether plant operations contaminated soils, surface waters and groundwater.
- * Developed a waste management plan for a Midwest pesticide manufacturing plant. Project included designing a closure and post-closure plan for three waste lagoons containing high concentrations of pesticides.
- * Conducted sediment, biological and water sampling in Lake Michigan and Lake Superior for the U.S. Army Corps of Engineers, Detroit, Michigan. Responsible for all field operations.
- * Conducted contamination surveys at numerous sites in Eastern Missouri to determine whether dioxin is present in the soils and sediment.
- * Designed and performed a lead contamination study for a rubber hose manufacturing plant to determine if plant operations were emitting dangerous levels of lead to the soils, foliage and air in the vicinity of the plant.

Graduate Research Assistant: University of Illinois, Department of Agronomy. Evaluated the chemical and physical properties of post mine soil mixtures requiring twelve soil tests including clay mineralogy for surface mine reclamation research. 8/78-5/80

Laboratory Technician: University of Connecticut, Department of Plant Science. Responsible for the organization and operation of soil characterization laboratory. Worked on archeological study to determine the effect prehistoric man had on altering soil development in the Connecticut River Valley. 6/77-5/78

Land Surveyor: Bernard Stone & Association, Land Surveyors & Engineers. Salem, Connecticut. Experience as party chief and transitman. Performed engineering surveys of the following types; property surveys, topographic surveys, mortgage surveys, road stakeouts, and as-builts. Described soil profiles and evaluated them for engineering designs. Delineated inland wetland boundaries for proposed land developments. Summer 1972-1976, 1978.

Student Intern: U.S.D.A, Soil Conservation Service. Assisted Soil Conservation Service with surveying and designing soil use interpretive maps. Designed ponds, surface and subsurface drainage systems, soil and water conservation structures, and earth dams. 2/74- 6/74

Professional Affiliations

Soil Science Society of Southern New England
Soil Science Society of America
International Society of Soil Science
Soil Conservation Society of America
American Society of Agronomy
North American Lakes Management Society
American Council for Reclamation Research
Society for Ecological Restoration

Publications

" Physical and Chemical Characteristics of Pre-mine Soils and Post-mine Soil Mixtures in Illinois". Soil Science Society of America Journal, Volume 45, July- August 1981.

RELATED PROJECT EXPERIENCE

NEW ENGLAND ENVIRONMENTAL SERVICES BLACKLEDGE RIVER NURSERY

Marlborough & Salem, CT

Blackledge River Nursery, 1989-1994: Designed and constructed 4 acres of wetlands including wet meadows, shallow and deep water marshes. Sixty-three native herbaceous wetland plant species are propagated in the created wetlands. Deep and shallow water ponds were constructed for cold and warm water fisheries. Fisheries structure included in ponds to enhance fisheries habitat. Assisted D.E.P. Fisheries Unit in placing boulders in the Blackledge River to create riffles and pools for salmon. Ongoing research studies include experimentation with various soil mediums for created wetlands, plant reproduction and survival rates and competition among wetland plant species.

Ledyard, CT

Mashantucket Pequot Tribal Land, 1993-Present: Provided site testing, plant inventory, wetland system design, site construction supervision, planting design layouts, plant installation, and continual site monitoring and assessment to determine project success, plant survival, growth rates and overall health and recovery of the natural systems for all Tribal Wetland Projects and specifically:

- * Creation of an 8 acre wetland and deep water pond for the purpose of development and enhancement of Fisheries habitat. Details included access channels connecting open water and marsh areas, addition of various types of fisheries structures strategically placed within the pond for cold water fish species.

- * Restored several watercourse channels and associated wetlands disturbed with the construction of bridges. Watercourse restoration included bottom substrate and channel reconstruction to promote stream aeration, reduce channel erosion and provide habitat and cover for insects, small reptiles and amphibians.

- * Designed and supervised construction of 3 wetlands, created for stormwater renovation. Wetland basin bottoms were carefully contoured to encourage maximum

stormwater flow contact but minimize stagnant water conditions to reduce potential for mosquito breeding. Native wetland plant species were selected for their characteristics of pollutant uptake and soil stabilization and wildlife habitat value.

Note: These sites have been used for specialized training sessions, sponsored by the MPT and conducted by Richard Snarski on wetland and watercourse restoration techniques, water quality treatment benefits and design of natural systems, and wildlife and fisheries habitat enhancement methods utilizing natural materials and specific design features. Attendees have included Federal, State and Municipal Environmental Professionals as well as Private Environmental Consultants.

Berlin, CT

Manafort Brothers Clay Pit Pond, 1996: designed a wetland restoration plan for an abandoned clay pit pond as part of a 401 permit. Design elements include construction of shallow and deep water marshes and enhancement of fisheries habitat by incorporating strategically placed channels to connect different water systems and constructing underwater nesting and cover sites with natural materials.

Groton, CT

City of Groton, 1995: Designed a Fisheries Habitat Enhancement Plan for a previously degraded and channelized watercourse as part of a 401 Permit.

Clinton, CT

1995-1996: Designed a 2.0 acre Wetland Restoration Plan for an illegally filled wetland. Supervised fill removal and site restoration to ensure proper elevations and erosion controls. Selected wetland plants to provide maximum habitat enhancement and site stabilization. Provided construction supervision during the restoration. Restoration has since been approved by the Corp. of Engineers.

North Stonington, CT

Pickwick Farm 1995: Designed and supervised construction of a 1.0 acre deep water marsh and open water for Wildlife and Fisheries Habitat Enhancement. Planted marsh with native herbaceous species.

Madison, CT

Neck River Farms, 1995: Designed and constructed a 1.1 acre shallow and deep water marsh for wetland mitigation as part of a 404 Corp. Permit. Supervised construction and planted created wetland with native wetland plants.

- Ledyard, CT** **Town of Ledyard, 1996:** Designed the restoration plan for a 1.1 acre wetland. Plans approved by Corp. of Engineers.
- North Stonington, CT** **Eastern Pequot Tribe, 1996:** designed a .5 acre shallow and deep water marsh for a wetland mitigation project. Plans approved by D.E.P. and Corp. Of Engineers.
- Marlborough, CT** **1993:** Supervised the restoration of a 3.2 acre wooded wetland. Restored wetland approved by Corp. Of Engineers.
- Moosup, CT** **1995:** Supervised the restoration and planted a 1.1 acre shrub marsh.
- East Hampton, CT** **1992:** Designed and supervised construction of a 1.2 acre marsh and pond.
- Montville, CT** **1990:** Supervised the restoration and planted a .4 acre wooded wetland.

VERNAL POOL RELATED EXPERIENCE

New England Environmental Services Blackledge River Nursery

1. Identified and confirmed 153 vernal pools in the state of Connecticut. 1996-2000.
2. Teaching the field session in Ledyard, Ct. for the Vernal Pool 3 Symposium.
Sponsored by the Connecticut Department of Environmental Protection. Spring 1998.
3. Assisted the Connecticut Department of Environmental Protection in locating vernal pools for
the May 1997 Municipal Inland Wetland Commissioners Training Program.
4. Constructed seven successful vernal pools in the towns of Marlborough, Sterling, Waterford, Hebron, Cromwell, and Salem.
5. Inventoried and monitored the hydrology of 11 vernal pools on a 550 acre parcel, East Haddam, Ct.
6. Inventoried and monitored the hydrology on 34 vernal pools on 1,800 acres owned by the Mashantucket Pequot Tribe.
7. Provided technical assistance to the towns of Old Saybrook and North Stonington on the impacts of golf course construction on vernal pools.
8. Provided technical assistance related to vernal pool protection in the development of golf courses. Foxhopyard Golf course, East haddam and Mashantucket Pequot Tribe, North Stonington.
9. Monitored the amphibians in the vernal pools during the excavation of a gravel bank to determine any impacts the gravel operation has on the amphibian population. Montville, Ct. 4 Year study.
10. Monitored the amphibians in 13 vernal pools before and after the construction of a golf course to determine impacts the construction of the golf course has on the amphibian population. East Haddam, Ct. 5 Year study.