Professional Profile

R. Richard Snarski

Office Address

New England Environmental Services
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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 Plant Science, May 1978

Professional Registrations

Professional Wetland Scientist #1391
Registered Professional Soil Scientist

Professional Affiliations

Native Plant Trust - **Qualified Consulting Botanist**
CT NEPCoP Task Force Member
Connecticut Botanical Society - Qualified Consulting Botanist
Connecticut Association of Wetland Scientists
New England Wildflower Society
Soil Science Society of Southern New England
The Wildlife Society

General Work Experience

Wetland Scientist & Soil Scientist - New England Environmental Services, Marlborough, Connecticut, 1983 - Present

Established New England Environmental Services in 1983 and Blackledge River Nursery in 1990. Specialize in wetland delineations, rare plant surveys, wetland restoration, and wetland assessments. Specific projects include:

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

- Conducted hundreds of submerged aquatic vegetation and tidal wetland plant surveys in tidal waters in the State of Connecticut.

- 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 Corps 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 germinations, influence of fluctuating water levels on plant growth and survival, soil requirements of wetland plants and propagation of rare State listed plant species.

- Performed numerous wetland assessments for development projects identifying functional values of wetlands and impacts to the wetlands. Developed plant and wildlife conservation plans. Present findings to Local, State and Federal agencies.

Environmental Scientist - Envirodyne Engineers, St. Louis Missouri, June 1980 - June 1983

Managed land and wetland restoration projects. Responsible for field operations. Conducted environmental assessments involving the development of plant conservation plans, wildlife habitat and fisheries habitat restoration.

Land Surveyor - Bernard Stone & Association, Land Surveyors & Engineers, Salem, Connecticut, summer of 1972 - 1978

Experience as party chief and transitman. Delineated inland wetland boundaries for proposed land developments.

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.

RARE PLANT SURVEYS & RARE PLANT CONSERVATION PLANS

2017 to Present - Lords Cove, Lyme
Established a coalition with the CTDEEP, U.S. Fish & Wildlife Service, The Nature Conservancy, Connecticut River Gateway Commission and private land owners to eradicate the Phragmites in the 400 acre brackish tidal marsh system. Approximately one half of the marsh is owned by the State of Connecticut as a Natural Area Preserve. In 2017, I located all State listed plant species in the 400 acre system. The location of the plants were tracked by GPS with Roger Wolf of WHAMM. The location of the plants, with coordinates, were submitted to the NDDB. One of my responsibilities in the project is to supervise the spraying of Phragmites to protect the State listed plant species.

2017 - The Nature Conservancy, Ely Meadow, Lyme
On-going project to enhance habitat for the New England Cottontail. Project involves the selective eradication of exotic invasive plants in order to promote differentiated plant community types. The natural recolonization of the various plant communities are being monitored annually (State, TNC and private land).

2017 - Lords Cove, Lyme and Old Lyme
Restore 2.5 miles of the Connecticut River Shoreline from Ely Ferry Road, Lyme to Goose Island, Old Lyme. Goal is to restore levee plant community types within native warm season grass species. Project will enhance the recolonization and protect five State listed plant species which occur in the area.

2017 - New England Wildflower Society
Collected rare plants for THE ARK, New England Wildflower Society.

2016 - Snarski Land, Lords Cove, Lyme
Discovered a new population of State listed *Paspalum laeve* (Field Paspalum) growing along the right-of-way to the State Natural Area Preserve. Plants were being driven over by adjacent land owners. The plants were staked and the travel way was mowed to protect the plants. Seeds were collected in 2017. Approximately 80 plants were propagated in 2018. The propagated Field Paspalum plants were planted in the area where plants were destroyed by vehicles.

2015 - St. Clements Marina Club, East Hampton
58 State listed *Paspalum laeve* (Field Paspalum) plants were transplanted out of harm's way for a dredging project. A suitable soil mixture was prepared for the re-establishment of the plants on the bank of the Connecticut River. Developed a Plant Conservation Plan for the dredging project. The relocation was successful.

2014 - Morgan School, Clinton
Designed and supervised the construction of a 3.5 acre wildflower pollinator meadow along the Indian River on land formerly used as a commercial nursery.

2012 - Southwick Commons, Old Lyme
State listed *Paspalum laeve* (Field Paspalum) was transplanted out of harm's way for the construction of a road. A front-end loader was used to strip the grass sod to expose the topsoil. 67 dormant Field Paspalum plants were transplanted to the prepared bed. A long term conservation and management plan was developed for the transplants. The relocation was successful.

2011 - Snarski Land, Marlborough
Designed and constructed a 1.5 acre native wildflower meadow for pollinators along the Blackledge River.

2008 - Snarski Land, Marlborough
Developed and conducted a 9.5 acre woodland clear cut to create early successional shrubland habitat for birds. Projects conducted with U.S.D.A. Natural Resource Conservation Service Grant.

2004 - Northeast Utilities, Old Saybrook
Developed a Conservation Plan for State listed *Carex exilis* occurring under the power lines.

2002 - Selden Cove, Connecticut River
Developed a Conservation Plan for State listed *Hudsonia tomentosa* along the Connecticut River near Selden Cove, Lyme.

2001 - Springfield Yacht Club, Chester
Discovered new population of State listed *Hudsonia tomentosa*. 31 of the plants were transplanted out of harm's way with Ken Metzler. The transplants were monitored for 3 years. Developed a Conservation Plan for the protection of the plants for a proposed dredged spoil disposal area. The relocation was successful.

1999 to 2000
Conducted seed germination experiments with 27 State listed plant species. Seeds were collected following New England Wild Flower Society collection guidelines (see Table 1). The experiment was conducted in cooperation with Ken Metzler, State Botanist.

1999 & 2000 - New England Wild Flower Society
Task force member of New England Plant Conservation Program (NEPCoP).

1999 - Groton Utilities, Groton
Conducted State listed plant survey on 4,900 acres. Chris Mangles assisted in part. Four State listed plants were discovered.

1999 - Redland Brick, South Windsor
Discovered three new populations of State listed *Carex barrattii*, *Carex cumulata* and *Scleria triglomerata*. Developed a conservation and management plan for the protection of *Scleria triglomerata* and *Carex cumulata*. The management plan was approved by Ken Metzler, State Botanist.

1997 to Present
22 years of experience in search for populations of rare plants and their habitat.

1997 to Present - Hamburg Cove, Lyme
Performed 13 surveys for State listed *Eriocaulon parkeri* (Parker's Pipewort) in Hamburg Cove.

1997 - Mashantucket Pequot Reservation, Mashantucket Lake of Isles, North Stonington
Conducted State listed plant survey on 2,200 acres. Propagated *Eleocharis quadrangulata* (Square-stemmed Spikesedge) and established population in a restored wetland in cedar swamp.

1989 - Snarski Land, Marlborough
Converted 6 acres of agriculture land to a warm season grassland meadow for bird habitat. Dominant warm season grass species seeded includes Little Bluestem, Big Bluestem, Indiangrass and Switchgrass.

1987-2009
Attended numerous plant identification workshops conducted by Ken Metzler and Leslie Meyerhoff.

STATE LISTED PLANT SPECIES

Found from 1997 to present
(18 of which are new populations)

State Status	Botanical Name	Common Name	Town	Seed Collection Date
SC	*Atriplex glabriuscula*	Bracted Orache	Old Saybrook	
SC	*Bidens beckii*	Beck's Water-marigold	Old Saybrook	
E	*Bidens eatonii*	Eaton's Beggarticks	Lyme	
SC	* *Bolboschoenus maritimus*	Bayonet Grass	Old Saybrook	08/10/99
SC	* *Bolboschoenus novae-angliae*	Salt Marsh Bulrush	Lyme	08/14/99
E	* *Carex alata*	Broadwing Sedge	North Stonington	07/22/99
E	* *Carex barrattii*	Barratt's Sedge	South Windsor	07/20/99
SC	* *Carex bushii*	Bush's Sedge	Glastonbury	07/11/99
E	* *Carex buxbaumii*	Brown Bog Sedge	Guilford	06/29/99
T	*Carex crawei*	Crawe's Sedge	New Milford	
T	* *Carex cumulata*	Clustered Sedge	South Windsor	09/16/99
T	* *Carex davisii*	Davis' Sedge	Haddam	06/16/99
E	* *Carex exilis*	Meager Sedge	Old Saybrook	06/11/99
Delisted	* *Carex lupuliformis*	False Hop Sedge	Madison	10/01/99
E	* *Carex polymorpha*	Variable Sedge	Deep River	10/10/99
E	* *Carex pseudocyperus*	Cyperus-like Sedge	Union	09/27/99
E	*Carex schweinitzii*	Schweinitz's Sedge	Salisbury	
Delisted	* *Carex squarrosa*	Squarrose Sedge	Middletown	10/26/99
SC	* *Carex trichocarpa*	Hairy-Fruited Sedge	New Milford	09/15/99
SC	* *Carex tuckermanii*	Tuckerman's Sedge	South Canaan	09/15/99
SC	* *Carex typhina*	Cattail Sedge	East Hartford	10/24/99
E	*Carex viridula*	Little Green Sedge	New Milford	
E	*Crassula aquatica*	Pygmyweed	Lyme	
SC	*Cypripedium parviflorum*	Yellow Lady's Slipper	Mashantucket	
SC	*Dryopteris goldiana*	Goldie's Fern	Mashantucket	
E	* *Eleocharis equisetoides*	Horsetail Spikesedge	Lyme	10/03/99
E	* *Eleocharis quadrangulata*	Squared-Stemmed Spikesedge	Groton	08/??/99
E	*Eriocaulon parkeri*	Parker's Pipewort	Lyme	
E	* *Eupatorium album*	White Thoroughwort	Groton	10/29/99
SC	*Honckenya peploides*	Seabeach Sandwort	Stonington	
SC	*Hottonia inflata*	Featherfoil	Essex	
E	*Hudsonia ericoides*	Golden-Heather	Voluntown	
SC	* *Hudsonia tomentosa*	Woolly Beach-Heather	Chester	08/15/99
E	*Hydrocotyle verticillata*	Whorled Pennywort	Groton	
E	*Lachnanthes caroliniana*	Carolina Redroot	Killingworth	
SC	*Lilaeopsis chinensis*	Lilaeopsis	Lyme	
SC	*Limosella australis*	Mudwort	Lyme	

State Status	Botanical Name	Common Name	Town	Seed Collection Date
E	*Ludwigia sphaerocarpa*	Globe-fruited False-loosestrife	Groton	
SC	* *Nuphar advena*	Large Yellow Pond Lily	Chester	09/13/99
SC	*Opuntia humifusa*	Eastern Prickly Pear	Groton	
SC	* *Orontium aquaticum*	Golden Club	Chester	06/26/98
T	* *Paspalum laeve*	Field Paspalum	Lyme	08/26/17
T	*Polygala nuttallii*	Nuttall's Milkwort	Groton	
SC	* *Phragmites americanus*	American Reed	Essex	09/04/18
E	*Rhynchospora capillacea*	Needle Beaksedge	Groton	
T	* *Rhynchospora macrostachya*	Tall Beaksedge	Old Lyme	08/04/99
SC	*Sabatia stellaris*	Marsh Pink	Old Saybrook	
SC	*Sagittaria subulata*	Awl-leaved Arrowhead	Lyme	
T	* *Schoenoplectus torreyi*	Torrey Bulrush	Colchester	08/22/99
E	* *Scleria triglomerata*	Whip Nutrush	South Windsor	07/30/99
T	*Spergularia canadensis*	Canada Sand-Spurry	Old Saybrook	
E	*Xyris smalliana*	Small's Yellow Eyed Grass	Voluntown	

Note 1: * Indicates seeds were collected for seed germination experiments.
Note 2: Many of the listed plants were found in additional towns other than the one noted.

EXAMPLES OF REPTILE AND AMPHIBIAN EXPERIENCE

1. Monitored the amphibians in thirteen 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. Conducted an Eastern Box Turtle and Spotted Turtle survey and developed a Conservation Plan; East Haddam, Connecticut; five year study.

2. Eastern Box Turtle, Wood Turtle and Spotted Turtle survey 1,200 acres owned by the Mashantucket Pequot Tribe; Mashantucket, Connecticut. Developed a Turtle Conservation Plan for a proposed golf course.

3. Eastern Box Turtle Survey and Conservation Plan for Bartlett Hill Subdivision; Portland, Connecticut. Project included locating the turtles and their relocation outside exclusionary fencing.

4. Oversee the protection of the Eastern Box Turtle during the replacement of a bridge. Project involved inspecting the construction site each morning for the Wood Turtle before construction began. Exclusionary fencing was installed around the construction site; Mansfield, Connecticut.

5. Developed an Eastern Box Turtle Habitat Conservation Plan; Marlborough, Connecticut.

6. Conducted an Eastern Box Turtle Survey on 80 acres for a proposed industrial park; Hebron, Connecticut

7. Conducted an Eastern Box Turtle Survey for an athletic complex. Developed a Turtle Conservation Plan; Quinnipiac University, Hamden, Connecticut.

8. Hog Nose Snake Survey, 48 acres, Marlborough, Connecticut.

9. Identified and confirmed 421 vernal pools in the State of Connecticut from 1996-2018.

10. Taught the field session for the Vernal Pool 3 Symposium in Ledyard, Connecticut; sponsored by the Connecticut Department of Environmental Protection; Spring 1998.

11. Assisted the Connecticut Department of Environmental Protection in locating vernal pools for the May 1997 Municipal Inland Wetland Commissioner's Training Program.

12. Constructed twenty-nine successful vernal pools in the State of Connecticut.

13. Inventoried and monitored the hydrology of eleven vernal pools on a 550 acre parcel; East Haddam, Connecticut.

14. Inventoried and monitored the hydrology on thirty-four vernal pools on 1,800 acres owned by the Mashantucket Pequot Tribe.

15. Consultant to Old Saybrook Wetland Commission to evaluate impacts of a proposed golf course (The Preserve) to amphibians and reptiles.

16. Developed a conservation plan for the Eastern Box Turtle and vernal pool amphibians for the design of 2 golf courses, Mashantucket Pequot Tribe, North Stonington, CT.

17. 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; four year study; Montville, Connecticut.

WETLAND CREATION AND RESTORATION PROJECTS

Marlborough & Salem
Connecticut

Blackledge River Nursery, 1989 - 2006
Designed and constructed four acres of wetlands including wet meadows, shallow and deep water marshes. Sixty-three native herbaceous wetland plant species were propagated in the created wetlands. Research studies include experimentation with various soil mediums for created wetlands, plant reproduction, rare plant propagation and long term establishment.

Mashantucket, Connecticut

Mashantucket Pequot Tribal Land, 1993 - 2003
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 eight acres 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 three 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 Mashantucket Pequot Tribe 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 included Federal, CTDEEP, Corps of Engineers and municipal environmental staff.

Groton, Connecticut	City of Groton, 1995 Designed a Fisheries Habitat Enhancement Plan for a previously degraded and channelized watercourse as part of a 401 Permit.
Clinton, Connecticut	1995 - 1996 Designed a two 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.
North Stonington, Connecticut	Pickwick Farm, 1995 Designed and supervised construction of a one acre deep water marsh and open water for Wildlife and Fisheries Habitat Enhancement Plan. Planted marsh with native herbaceous species.
Madison, Connecticut	Neck River Farms, 1995 Designed and constructed a 1.1 acre shallow and deep water marsh for wetland mitigation as part of a 404 Corps Permit. Supervised construction and planted created wetland with native wetland plants.
Ledyard, Connecticut	Town of Ledyard, 1996 Designed the restoration plan for a 1.1 acre wetland. Plans approved by Corps of Engineers.
North Stonington, Connecticut	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 Corps of Engineers.
Marlborough, Connecticut	1993 Supervised the restoration of a 3.2 acre wooded wetland. Restored wetland approved by Corps of Engineers.
Moosup, Connecticut	1995 Supervised the restoration and planted a 1.1 acre shrub marsh.
East Hampton, Connecticut	1992 Designed and supervised construction of a 1.2 acre marsh and pond.
Montville, Connecticut	1990 Supervised the restoration and planted a .4 acre wooded wetland.