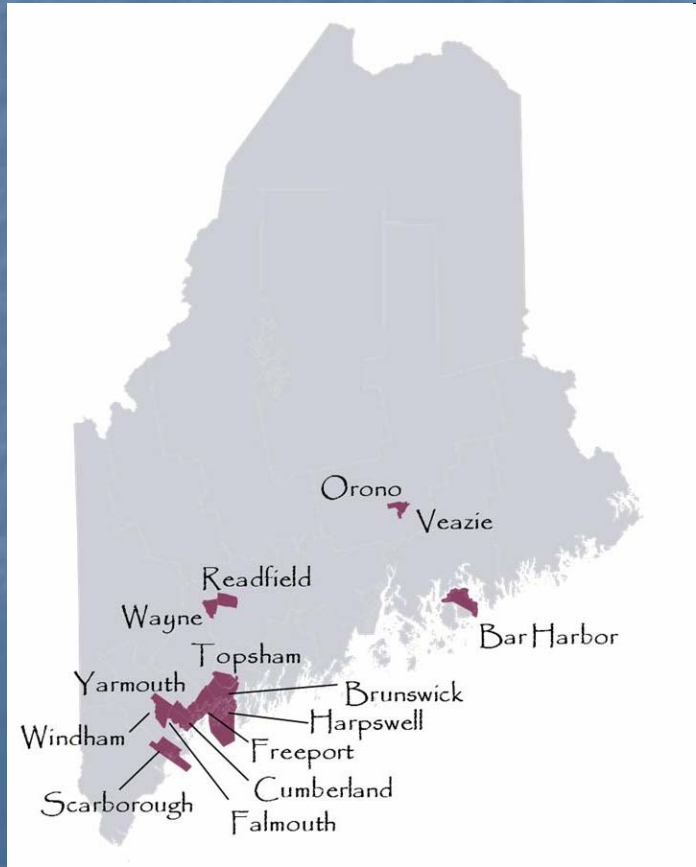
Cumberland Vernal Pools Project

Presented by the Cumberland Lands and Conservation Commission

Monday, Feb 22, 2010

Why the Project started

- Maine Audubon was the recipient of a Grant from: Together Green a joint program of National Audubon and Toyota. It was to be used for vernal pool mapping in 13 Maine towns. Sally Stockwell was our contact.
- Aram Calhoun PHD, a professor at the Department of Wildlife Ecology, University of Maine lead on training of volunteers and criteria and regulatory status of vernal pools for each town.



Vernal Pool ID

- Maine Audubon Society, hired Stantec Consulting (Fred DiBello) to review aerial photos of Cumberland to identify potential vernal pools within the town's limits.
- Stantec used April 2006 digital aerial photos provided by Bradstreet Consulting (Searsmont)
- High-resolution scans of true color photos at a scale of 1"=600', 1 pixel~0.5 feet.
- Used 3-D computer monitors to view.
- Digitized into ArcMap® GIS

What is a Vernal Pool ?

- Maine definition of vernal pools currently excludes pools that:
  - Are man-made
  - Have a permanent flowing inlet or outlet
  - Have viable populations of predatory fish
  - Is a permanent pond
  - Only those pools that meet the definition of a **“Significant”** vernal pool are regulated by the State of Maine as significant wildlife habitat. In addition to the pool itself, the significant wildlife habitat will include the critical terrestrial habitat extending 250 feet around the pool.

What is a Vernal Pool cont.

- The Clean Water Act and the Programmatic General Permit for Maine (PGP), issued by the Army Corps of Engineers for projects involving “minimal” wetland impacts, are the primary federal regulations that address protection of vernal pools in Maine and surrounding lands up to 500 feet.
- Fish and Wildlife Service and or the (EPA), may extend upland protection to 750 feet.
- Man-made pools such as skidder ruts, old borrow pits, and even some ditches that do not meet the definition of a vernal pool under Maine regulations, may be regulated by the Army Corps.
- If pools dry up to early (July 15 south and 31st north) they may not be classified as significant.

What is so important about Vernal Pools ?

- Unique habitat
  - Shallow water filled depressions with no outlet or inlet so no predatory fish
  - May dry up each season
  - May freeze solid in winter
- Species adapted for these conditions:
  - Primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, and provide habitat for other wildlife including several endangered and threatened species

What makes a vernal pool significant in Maine regulations?

- **Rarity** – A pool in documented use in any given year by state-listed endangered or threatened species (Ribbon Snakes, Wood Turtles, Swamp Darner Dragonflies and Comet Darner Dragonflies) that commonly require a vernal pool to complete a critical portion of their life history is a significant vernal pool.
- **Abundance** – The following species abundance levels, documented in any given year, are indicators of a significant vernal pool:
  - Blue-spotted salamanders; presence of 10 or more egg masses
  - Fairy shrimp; presence in any life stage
  - Spotted salamanders; presence of 20 or more egg masses
  - Wood frogs; presence of 40 or more egg masses

Fairy shrimp

Wood Frog

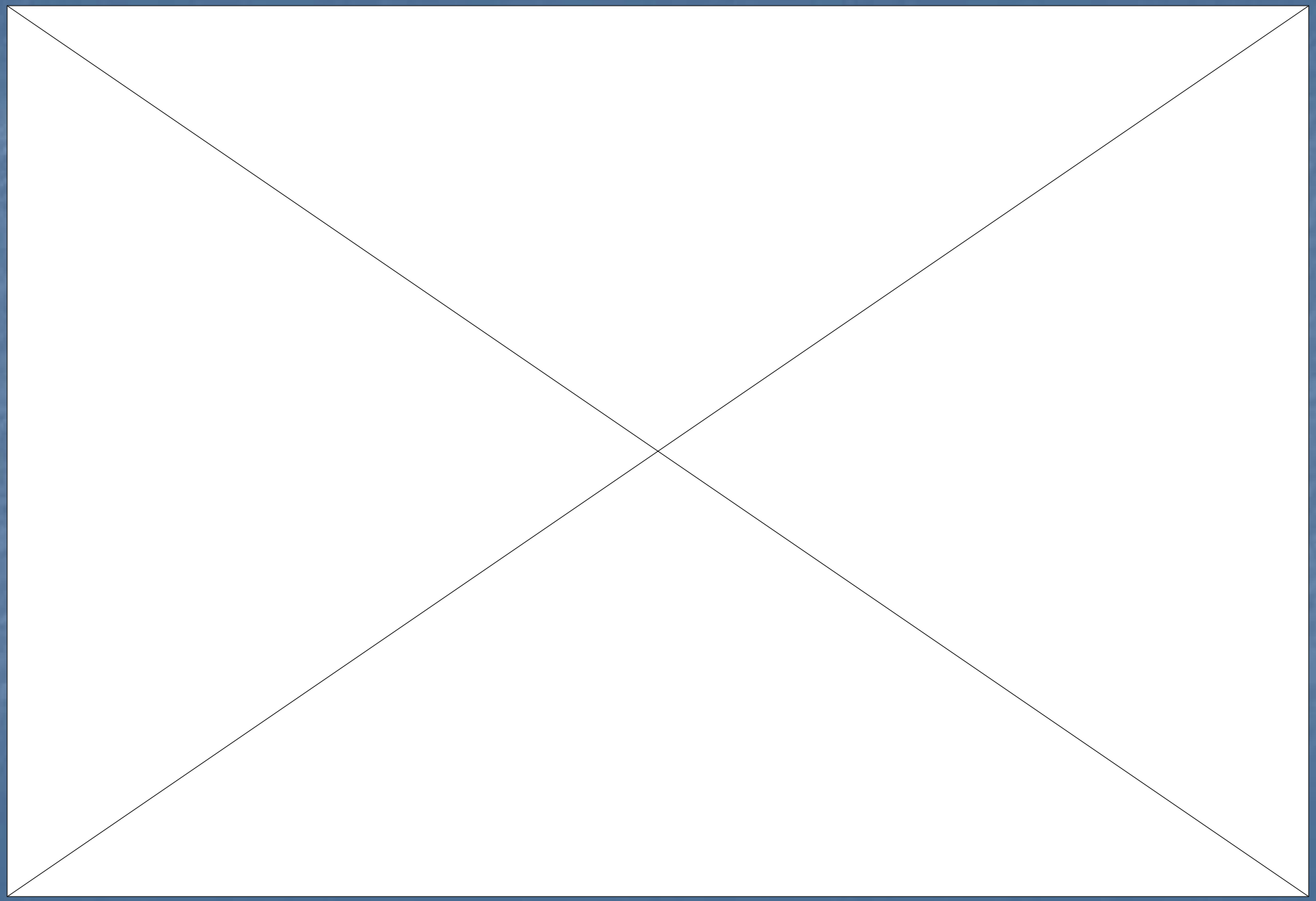
Spotted Salamander

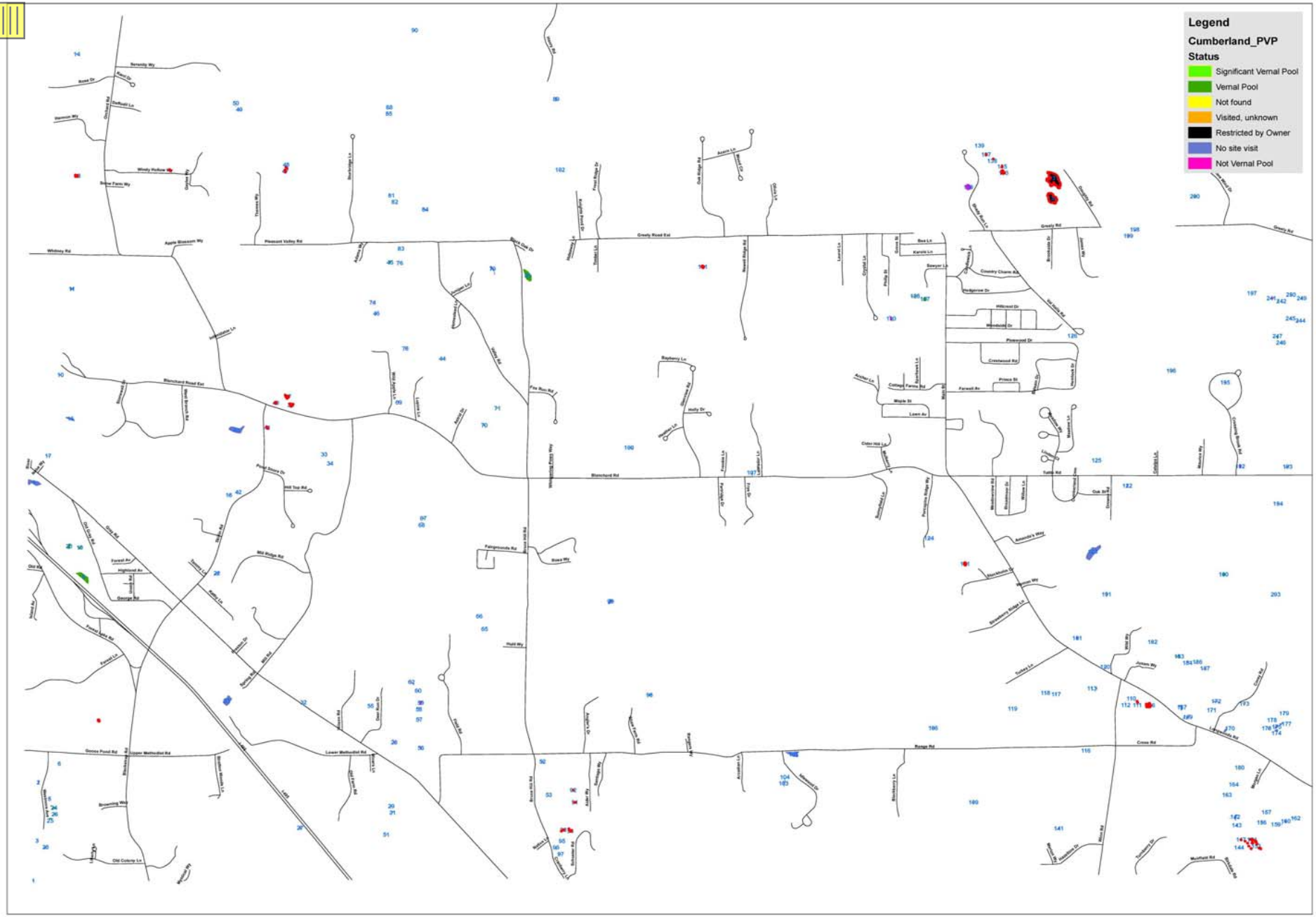
Blue-spotted Salamander

Cumberland Project

- 250 individual features that could be pools
- GIS mapped and divided into groupings
- Volunteers went to 2- 3 hour training sessions (indoor and outdoor)
- 23 Volunteers (including your very own; Mr. Bill Shane), got maps with their Potential Vernal Pools listed on them
- Landowners permission letter sent.
- Field Visits done 2 times (3rd week April-Wood frogs, 2nd week may-Salamanders) to coincide with egg mass development

Cumberland Salamander Video





Town of Cumberland
Vernal Pools 2010
Lands & Conservation Commission

Restricted by Owner

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Municipal Vernal Pool Mapping Project Data Form Spring 2009

Please refer to reverse side for instruction

1. 

Wood Frog Visit ☐ Date: _____

Salamander Visit ☐ Date: _____

2. Potential vernal pool number (PVP #):_____ 3. Tax map number:_____

4. Volunteer Name: _____ Phone Number: _____ Email: _____

Volunteer Name: _____ Phone Number: _____ Email: _____

5. Is PVP a vernal pool? YES ☐ NO ☐ UNKNOWN ☐ UNABLE TO LOCATE ☐

6. PVP is not a vernal pool, but is it a: FARM POND ☐ DITCH ☐ TIRE RUT ☐ GRAVEL PIT ☐

ACTIVE BEAVER POND ☐ WETLAND TOO SHALLOW TO BE A VERNAL POOL ☐ OTHER: _____

7. Pool(s) found that were not marked on map. YES ☐ NO ☐ (Use separate form for each additional pool found and mark on map.)

8. For each species, indicate the number of egg masses counted

	Indicator Species	Number
EGG MASSES	Wood Frog	
	Spotted Salamander	
	Blue-spotted Salamander	

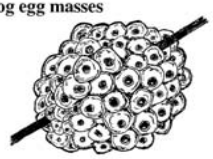
	Indicator Species	Presence/Absence
LARVAE	Wood Frog	
	Salamander	
ADULTS	Wood Frog	
	Spotted Salamander	
	Blue-spotted Salamander	
	Fairy Shrimp	

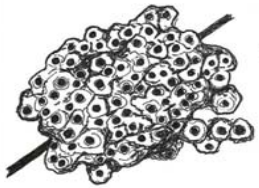
9. Are spermataphores present?

YES ☐ NO ☐

10. Condition of wood frog egg masses

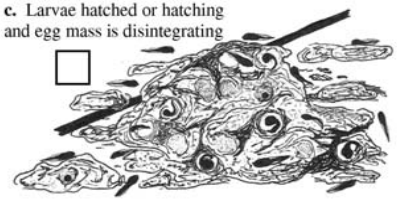
a. Firm, tight mass where individual eggs are spherical and easily discernable ☐





b. Eggs are swollen with water and mass is beginning to break down ☐

c. Larvae hatched or hatching and egg mass is disintegrating ☐

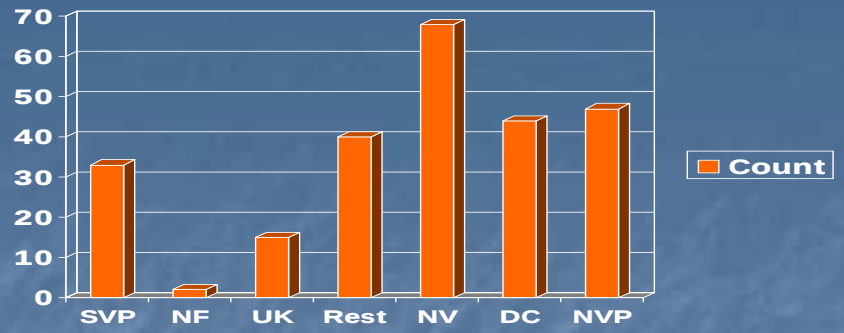


11. **Photo Documentation**
Data forms **MUST** be accompanied by photographs. Include at least one labeled photograph of each adult, egg mass or larvae for each species.

12. **General comments and/or other wildlife observations** (optional).

Data Sheets

Results



Potential Vernal Pools (PVP)	249
Significant Vernal Pools	33
Not found	2
Visited, unknown	15
Restricted by Owner	40
No site visit ▪ assigned, not visited 38 ▪ not assigned due to map issues 30	68
Data collected (DC), not in Database (yet)	44
Not Vernal Pool	47

Next Steps

- Trainings for new volunteers (we need more)!
- 2 more site visits in April/May to each site from last year and some that were missed
- Summary of data and presentation
- Suggestions and ideas for future of pools and project (next year)