

2010

Vital Signs: A Community that Explores, Shares, and Learns (2010 State of the Bay Presentation)

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A Community that Explores, Shares, and Learns

State of the Bay Conference
October 21, 2010
Alexa Dayton

Gulf of Maine Research Institute



Science. Education. Community.

Cultivating a Scientifically-Literate Public



Vital Signs

A learning community that produces real data for science about a question of regional and global concern.



Maine's Natural Heritage Assets

- 32,000 miles of rivers and streams
- 6,000 lakes and ponds
- 5,000 miles of coastline
- 17 million acres of forest



Threat: Invasive species



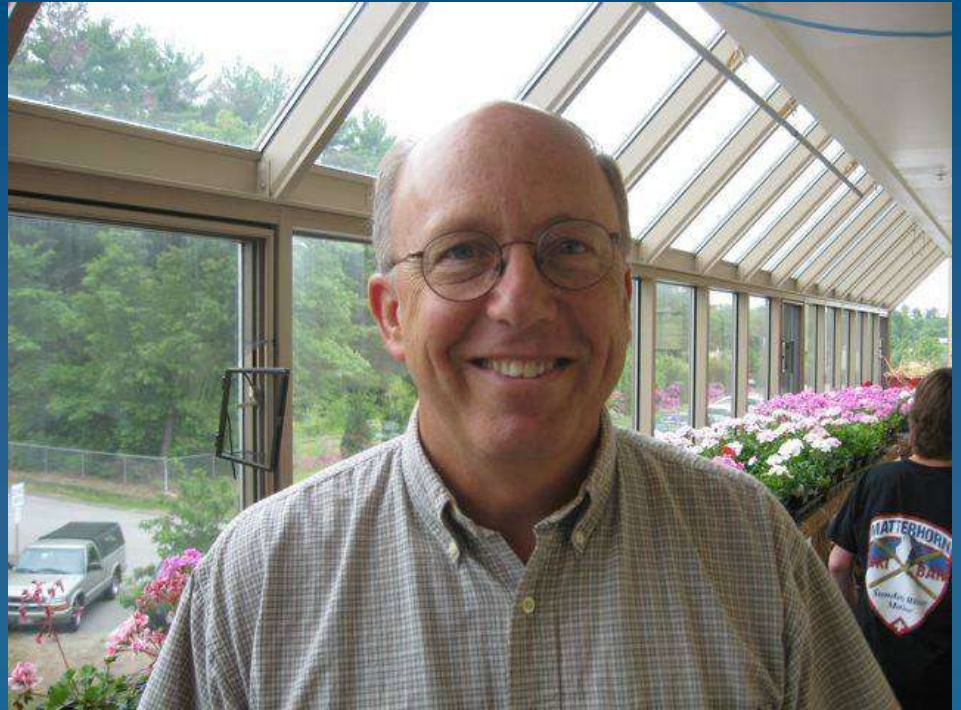
Vital Signs

A COMMUNITY THAT EXPLORES,
SHARES, AND LEARNS.



Teachers: Mike

- Science
- Methodology
- Pedagogy
- Technology



Locations of Participating Schools

46 teachers today

+ 60 teachers this
summer

106 teachers
~5,000 students
14 counties



Students: Colby



Learn science by doing science

- Ask a question
- Choose a species to look for
- Make a prediction
- Practice data collection skills
- Investigate!

Learn science by doing real science

- Ask a question



Choose a species to look for

- Make a prediction
- Practice data collection skills
- Investigate!



Success = Solid Supporting Evidence

Codium fragile

Dead Man's Fingers,
Green Fleece, Oyster Thief

Invasive to Maine

Coastal
Rocky Intertidal

Growth Pattern



Look for an alga that grows dichotomously, meaning each branch divides into two over and over and over. See the diagram below.

Thallus (Body)



Look for pencil-thick growth with texture. The alga can grow up to 4

Color



MIT Sea Grant College Program

Look for an alga that is dark green spinach.

Similar Species

Dead Man's Fingers is unlike any other alga in Maine.

Fun Fact

Each individual Dead Man's Fingers is a single (multinucleate) cell! When you cut it, it oozes because it has no cell walls to hold in its cytoplasm (cell fluid). A cut off branch can grow into a new individual.

GROWTH PATTERN



DICHOTOMOUS GROWTH



AXIAL GROWTH

THALLUS CROSS-SECTION



ROUND



FLATTENED



FLATTENED WITH MIDRIB

GROWTH PATTERN



DICHOTOMOUS GROWTH



AXIAL GROWTH

THALLUS CROSS SECTION



ROUND



FLATTENED



FLATTENED WITH MIDRIB

Other Information

Your Photo here!

We need another picture of Dead Man's Fingers. Please take a clear photo and send it to vitalsigns@gmri.org

When Dead Man's Fingers dies, its thallus (body) fades to a pale grey-tan color. It can grow on shells or rocks or any other hard surface.

www.vitalsignsme.org

Collect data in the field

- Study site images & GPS location
- Written & photo evidence to prove species is or is not there
- Habitat observations & measurements



Publish data to www.vitalsignsme.org

- Interactive web application with error checking
- Quality check
- Peer review



[Home](#) > [Explore Data](#) > [Species Phragmites australis was found by BACA on 2009-10-19](#) > [Species Phragmites australis was found by BACA on 2009-10-19](#)

Phragmites australis was FOUND

on 2009-10-19 in York
Submitted by BACA on Fri, 2009-10-30 at 11:31 am
ID was **not yet reviewed** by a Vital Signs Expert Reviewer.
This observation was **Quality Checked** by
This observation was **Peer Reviewed** by

Field Notes

We change and observe.

This was a really amazing experience, because we all were able to observe plants and their natural habitats that we've been by for years, but never noticed, or knew the importance of.



Supporting evidence



This was verified by both the field guide, and the science teacher.



The grass was broken and there was a picture of what the stem should look like and we matched it with the broken piece of stem.



Is we also matched the leaves of the Phragmites (*Phragmites australis*) in the pictures to the actual leaves in front of us.

Place studied



Latitude: 43.144080 ° N

Longitude: -70.852010 ° W

Observation Site Information



Name: BACA's visit to York Middle School upland/wetland edge

Habitat: Upland - Developed areas

Trip Information

Trip name: York Middle School upland/wetland edge

Trip date: 2009-10-19

Nearest town: York

Type of investigation: Species Survey

Ecosystem: Upland

Watershed: Other

Nearest waterbody: York River

Log in to comment or suggest an ID

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Suggest an ID

Please log in in order to review this observation.

Nobody has suggested an ID yet. Be the first!

Leave a comment to tell us why you agree with this ID, or think it's something else.

Recent Comments

[Salicornia](#)

1 day 1 hour ago

[Appreciate the info](#)

6 days 16 hours ago

[Feathers are not just for birds](#)

6 days 17 min ago

[Crystal clear](#)

6 days 24 min ago

[Lucky field partner](#)

6 days 27 min ago

[Too skinny!](#)

6 days 1 hour ago

[Nice Find.](#)

2 weeks 11 hours ago

[I'm not sure](#)

3 weeks 4 days ago

[You're right](#)

3 weeks 4 days ago

[You're right](#)

3 weeks 4 days ago



Citizen Scientists: Morgan



Scientists: Dr. Les Mehrhoff



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[Home](#) > [Explore Data](#) > [Species](#) *Celastrus orbiculatus* was found by Leaf Peeper on 2009-11-04 > [Species](#) *Celastrus orbiculatus* was found by Leaf Peeper on 2009-11-04


Celastrus orbiculatus was FOUND

on 2009-11-04 in South Portland
 Submitted by Leaf Peeper on Wed, 2009-11-04 at 05:09 pm
 ID was **confirmed** by a Vital Signs Expert Reviewer
 This observation was Quality Checked by **Vector Inspector**
 This observation was Peer Reviewed by


Field Notes

I am happy today because the weather is great and I just ate a wonderful peanut butter and jelly sandwich.
 I see a park with grass, ornamental plants, walkers, and quite a few squirrels. I see a small muddy creek and a busy road. I smell cold and fall. I hear people talking, cars driving and leaves rustling in the wind. The park is used by many people and so there are many vectors for the movement of invasive species.
 I was surprised that I saw so many plants that I have questions about dark spots that I saw on some type of fungus growing on the tree.


Supporting evidence



Oriental Bittersweet has bright red fruit with yellow stems after August and the plant that I am investigating now (November) had the same. The fruit that I observed looked very much like the picture of the fruit on the *Celastrus orbiculatus* species card.



The plant that I am investigating grows as a vine and wraps itself around trees as Oriental Bittersweet is described as doing on the species card.



Log in to comment or suggest an ID

Username: Password:
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Suggest an ID

Please log in in order to review this observation.
 Nobody has suggested an ID yet. Be the first!
 Leave a comment to tell us why you agree with this ID, or think it's something else.

Recent Comments

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Observation Site Information

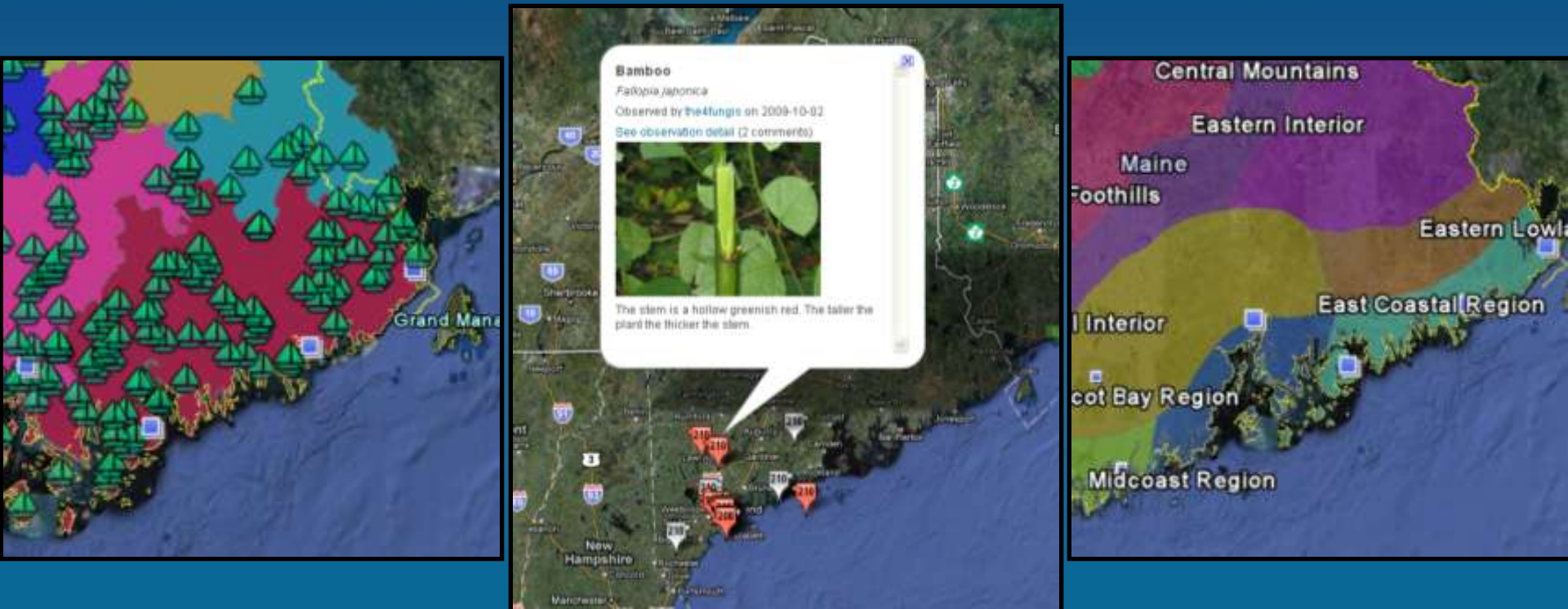


Name: Leaf Peeper's visit to Mill Creek Park
Habitat: Upland - Developed areas

Trip Information

Trip name: Mill Creek Park
Trip date: 2009-11-04
Nearest town: South Portland
Type of investigation: Species Survey
Ecotone: Upland

Searchable Map & Exportable Data



A next generation of scientists



Let's Look more closely at Casco Bay



What are they looking for?





What are they finding?

Carcinus maenas



Hemigrapsus sanguineus



Cancer irroratus



Cancer irroratus

What are they finding?



Littorina littorea



Nucella lapillus



Littorina obtusata

What are they finding?



Mytilus edulis



Balanus spp.



What are they finding?



Botrylloides violaceus



Codium fragile



Fucus vesiculosus



Ascophyllum nodosum

What are they finding?



Membranipora membranacea



Chondrus crispus



Botryllus Schlosseri

What are they finding?



Caprellid Spp.



Asterias vulgaris



Isopoda spp



Homarus americanus



Didemnum Vexillum monitoring

- Spring Point
- Macworth island
- Vinalhaven





Documenting native species





THANK YOU!

www.vitalsignsme.org

Alexa Dayton

alexa@gmri.org