

# Now You Can Get There from Here - Virtually



## GIS Mapping of Suffolk University's Friedman Field Station in Edmunds, Maine

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## What's Not Remarkable About this Project?

- **Uses basic ESRI technology – nothing fancy**
  - ArcView 9.2
  - Trimble GeoXH
  - Google Earth 5
  - Google SketchUp 7

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## What is Remarkable About this Project?

- The Friedman Field Station itself
- The reception from the University
- The number of uses these maps have spawned into

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The R.S. Friedman Field Station  
on Cobscook Bay

The Maine Campus of  
Suffolk University



## Field Station Facts

- A 40 acre summer station with living, teaching, and research facilities for 60 on Cobscook Bay in Edmunds, Maine.
- 340 miles (approx. 7.5 hrs by car) from Boston
- Land purchased in 1968 through the generosity of Dr. Robert S. Friedman, first chair of biology department
- Founded in 1968 by Dr. Arthur J. West, II and dedicated in 1973 to Dr. Friedman
- Operates under the administration of the Biology Department (Dr. Beatrice L. Snow, Chair and Executive Director of FFS) and the College of Arts and Sciences.

## Cobscook Bay

- Large, twenty-foot tidal fluctuation exposes diversity of intertidal habitats: rocky areas, mudflats, and salt marshes with a rich diversity of marine life.
- Located between Eastport and Lubec, Maine, the most northeastern part of the coast of the U.S.
- Lowermost portion of the Bay of Fundy in the Gulf of Maine
- A relatively undeveloped area, adjacent to the Moosehorn National Wildlife Refuge



Access to diverse and pristine  
marine and terrestrial environments



*ESRI International User Conference – July 2009*







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Beautiful tide pools



Abundant Marine Life



History, Fishing and Ocean Industry



coastal bogs



*Cornus canadensis*  
along trails in spruce-fir forest



Unique and diverse assemblages of animals and plants



## The Facilities

Main building with kitchen, dining hall and The Arthur J. West Teaching Lab



The office



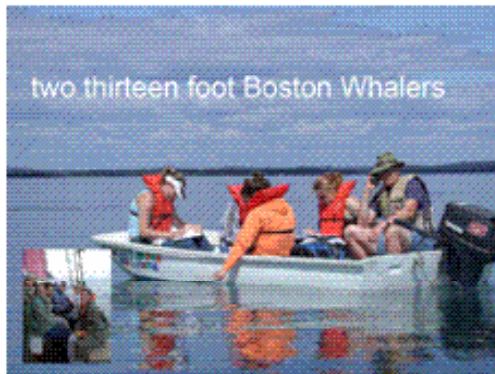
Computer Lab



four faculty cabins



12 student cabins



two thirteen foot Boston Whalers

Teaching and Research Labs  
Each with seawater systems





# Suffolk University Courses

- Ecology
- Marine Biology
- Field Botany
- Tropical Marine Science
- Directed Research
- Marine Science Field Experience Program (co-sponsored with Museum of Science)





Moose at Sandy Stream  
with Mount Katahdin in  
background



Appalachian Mountain Trail





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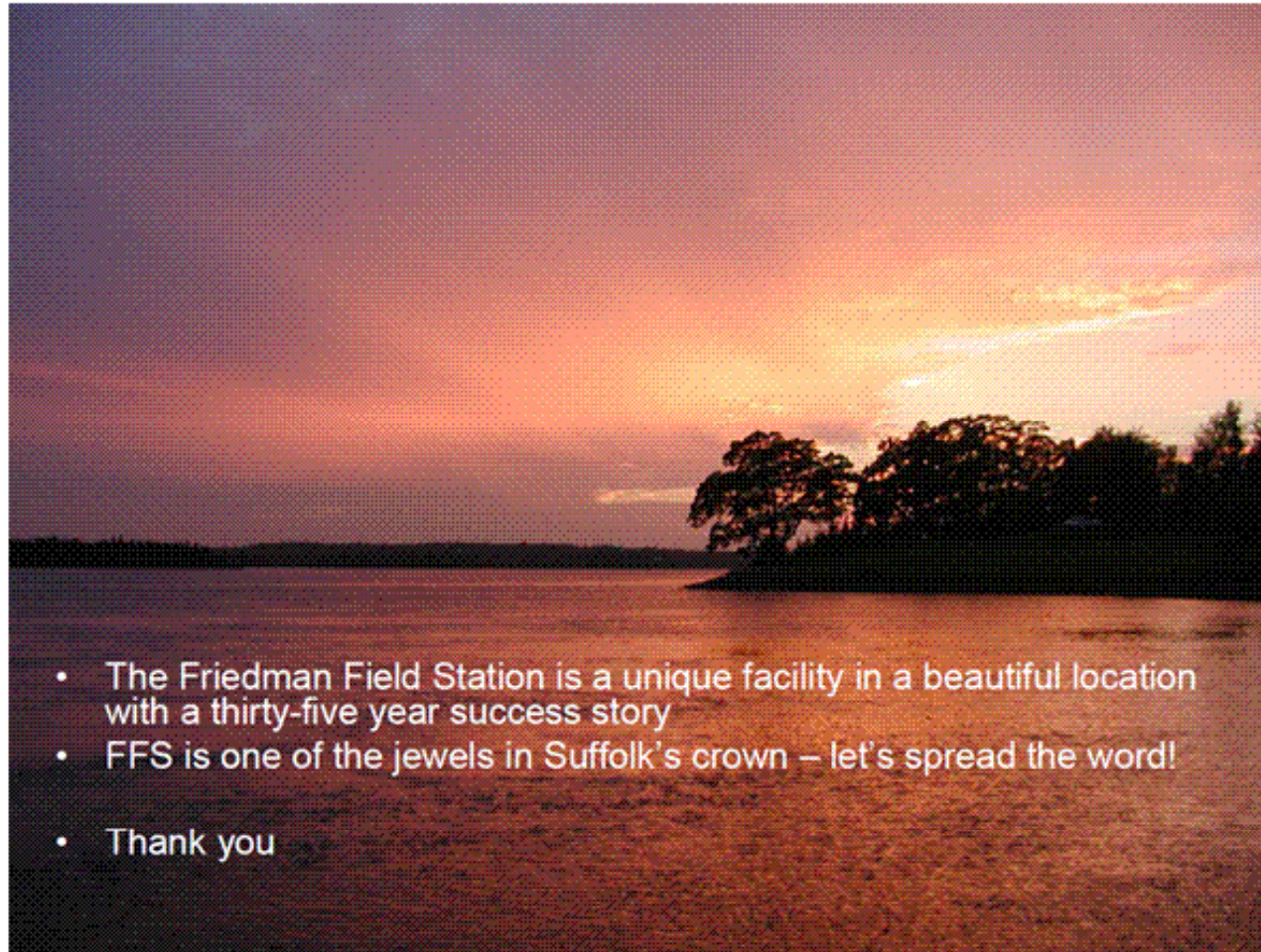
# Marine Science Field Experience

(co-sponsored with the Museum of Science)



# Biology Freshmen Trip



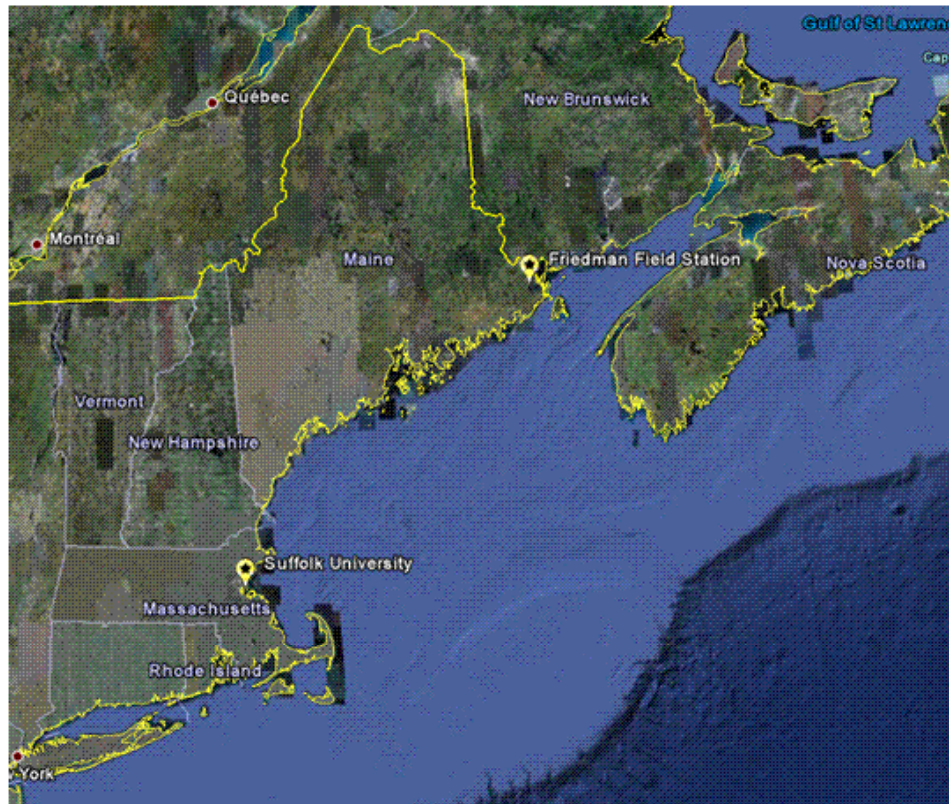


- The Friedman Field Station is a unique facility in a beautiful location with a thirty-five year success story
- FFS is one of the jewels in Suffolk's crown – let's spread the word!
- Thank you





Approximately 2,771 miles from here



*ESRI International User Conference – July 2009*













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## My Goals

- Map it – it's just what I do
- Give my students a real project to work on
- Organize their data
- Provide a spatial context for the property
  - Locate main property features
  - Property boundaries
  - Integrate photos and videos
- Build a virtual world – on the web
- Evaluate ESRI 3D Technology vs. Google
- Assist in siting a small wind turbine
- Spread the word – both about Friedman and what GIS can do for Suffolk University

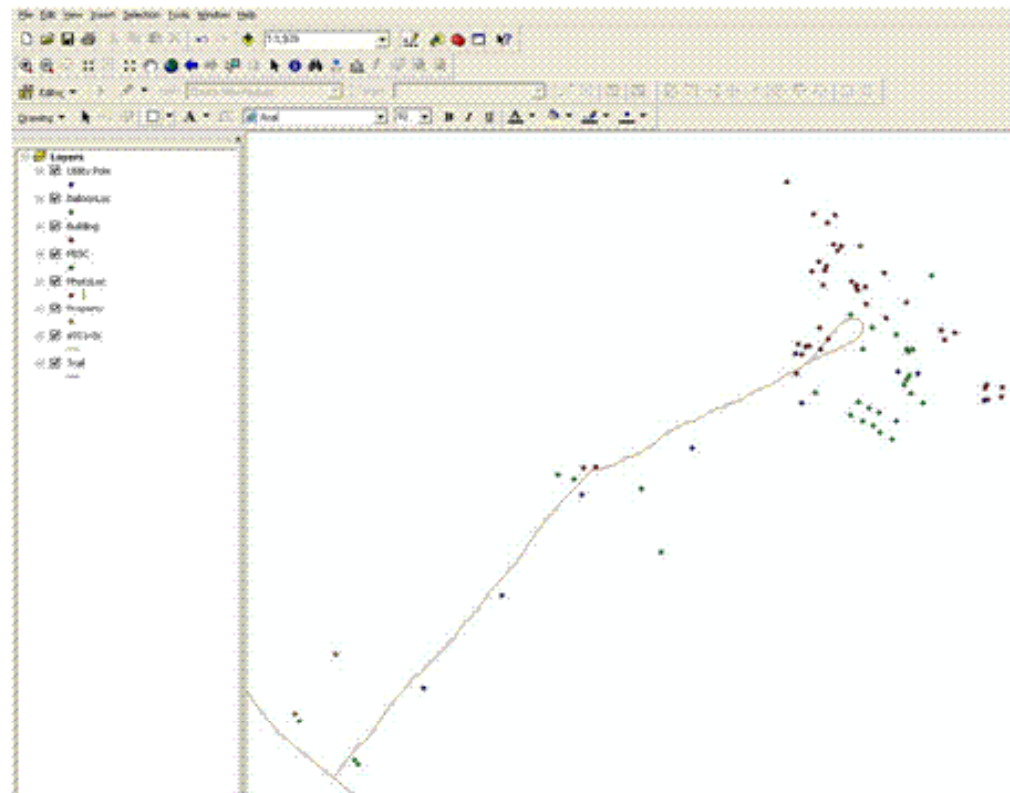


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Data Gathering Mission – September 27, 2008  
Scott Lussier as Meriwether T. Kirk



# Collected ~100 Points with a Trimble GeoXH



# Wind Turbine Site Selection



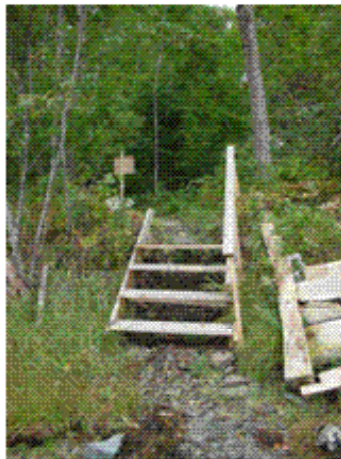


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## Points Gathered

- Building Corners
- Utility Poles
- Cabin Front Steps
- Property Corners
- Signs
- Misc
  - Wells, Septic Vents, Flag Poles, Weather Stations, Volleyball Court, Saltwater Intakes

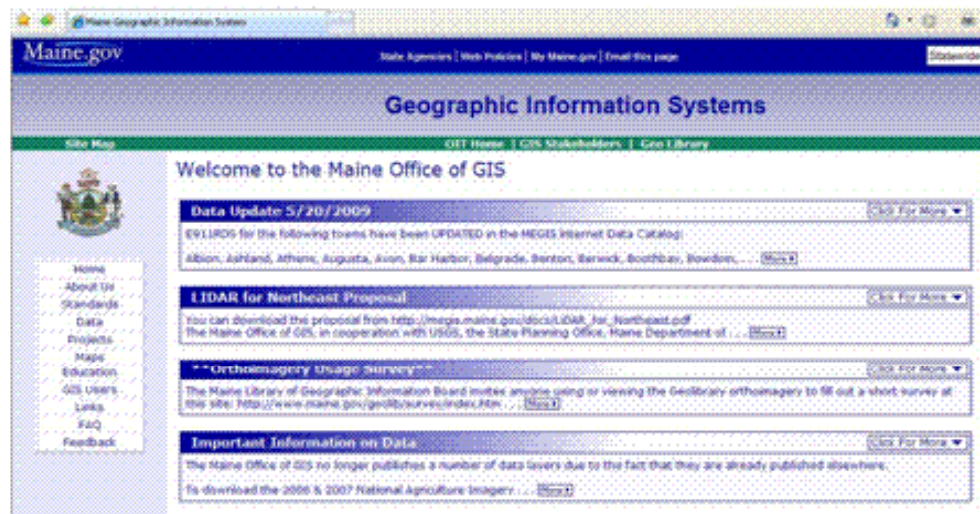
# Photos



# Layers Downloaded from Maine GIS

<http://megis.maine.gov/>

- Parcels
- Roads
- Shoreline
- 30 ft Elevations
- Bald Eagle Habitat





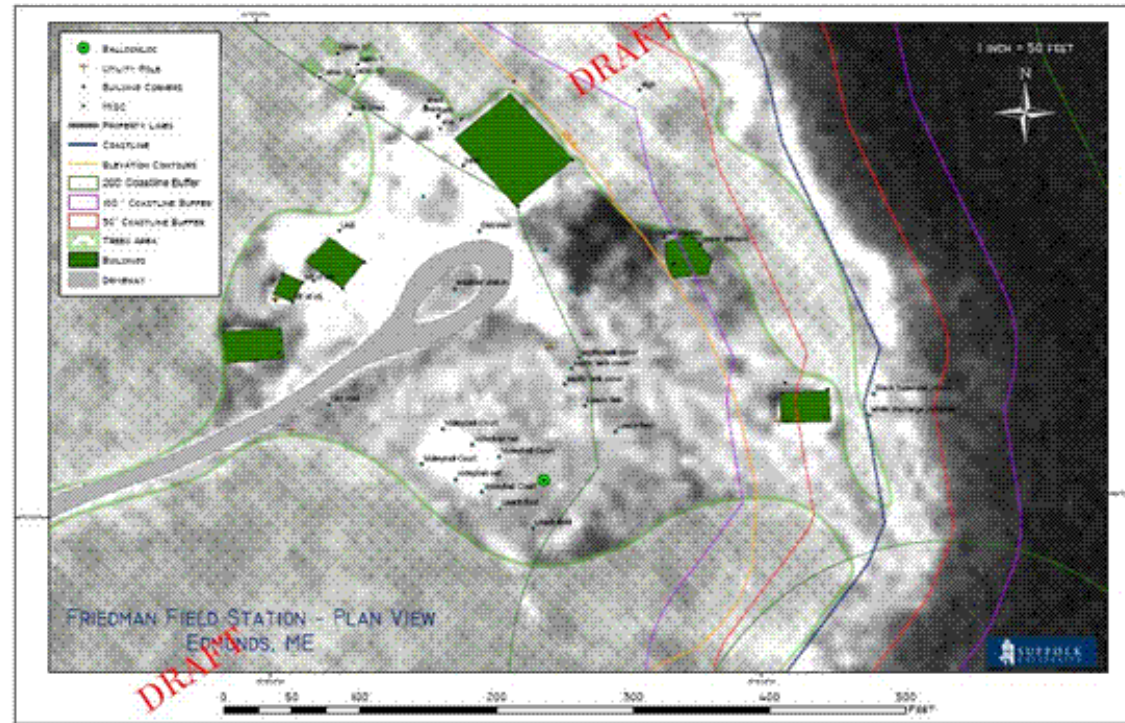
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## Layers Created

- Building Outlines – GPS/New Layer
- Shoreline Buffers – Buffer Tool
- Balloon Locations - GPS
- Driveway – Heads Up Digitization
- Treed Area – Heads Up Digitization
- Final Wind Turbine Location – Field Work

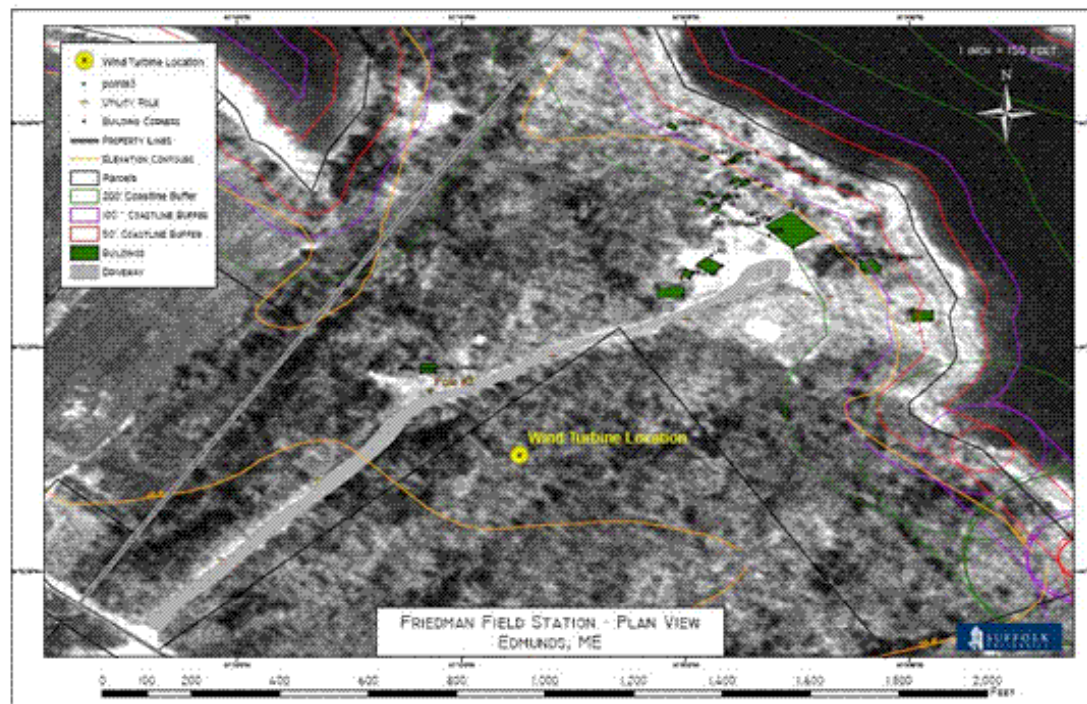
# ArcGIS Map #1

## General Property Layout



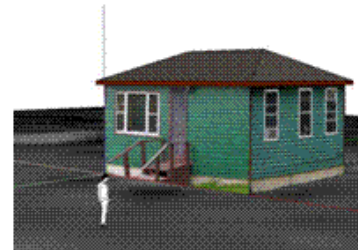
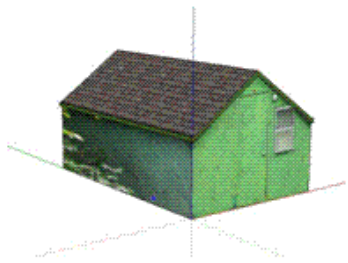
# ArcGIS Map #3

## Wind Turbine Location





## Sketch Up Models



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## Lessons Learned

- Out of the box tools are great
- Even basic GIS tasks are impressive to those back at the mothership
  - Measuring from your desktop
  - Inserting digital photos
  - Google has its place

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## Next Steps

- Assist with Wind Turbine Installation
- Fully 3D
  - Google Server
  - Virtual Fly-over
- Web based
- Photo Respository
- Video tie in
- Assist in getting an Observatory built
- Cabin Tent Competition



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## Acknowledgements

- Dr. Walter Johnson
- Dr. Carl Merrill
- My students
- ESRI