

# ENHANCING CONSERVATION IN NEW HAMPSHIRE THROUGH GEOGRAPHIC INFORMATION SYSTEMS AND GEOSPATIAL TECHNOLOGIES

Meeting of the NH GIS Conservation Collaborative (NHGCC)  
New Hampshire Charitable Foundation, Concord, NH  
November 30, 2001  
Meeting Notes  
*Draft 12-27-01*

## **Welcome and Introductions**

Bruce Pardoe welcomed the group and reviewed the agenda and the goals for the day. He noted that this is the fourth meeting of the group, which has grown in size, interest, and vision since formation. He remarked how far NHGCC has come since its initial meeting last November. Bruce asked people to introduce themselves before moving to our two presentations by Stephen Engle and Fay Rubin.

## **Presentations**

Stephen Engle, GIS Programs Coordinator from the Quebec Labrador Foundation, then gave a presentation on "GIS for Community-Based Planning: Expanding Local Use of Geo-Technologies." Stephen described how QLF has been working with diverse rural communities to make GIS more accessible to community information and inclusive of community knowledge. His power point presentation is attached as a pdf file with the follow-up email and meeting notes. Anyone wanting the color picture version of his presentation should contact Stephen directly at [sengle@qlf.org](mailto:sengle@qlf.org). Stephen suggested that there may be opportunities for the NHGCC to encourage the State of New Hampshire to put mechanisms in place to help address community mapping needs. He commented on the Data Development section of the Vision Document, which addresses data development by the state and other governmental entities, by accredited groups, and by the private sector. He asked if this vision includes data developed by citizens, emphasizing this interface is a two-way conduit. He suggested the NHGCC could help identify and support cooperative resource inventory and mapping approaches at the local level, citing several examples from British Columbia, including BC Frogwatch.

Fay Rubin from UNH Complex Systems Research Center provided a presentation and demonstration of the nearly completed GRANIT Conservation Lands Viewer, phase I. The Conservation Lands Viewer is a web-based, interactive mapping site that provides access to the GRANIT Conservation Lands data layer. (The layer itself describes parcels of land that are greater than 3 acres and are protected from development.) While the core piece of software for this interface is Arc Internet Map Server (IMS), Fay noted that many pieces of technology and different software were needed to develop a usable site. While the functionality of the interface is essentially complete, additional data documentation and instructions/guidance for users will be added to the interface in the near future. Fay explained that this web-mapping interface should be very valuable for

community level and land trust work – showing current patterns of conservation land, providing maps of ownerships, and addressing the constant demand for map graphics that up to now has required significant time of RPC and other GIS staff. Cliff Sinnott from Rockingham County RPC underscored the value of this new tool, which will significantly free up GIS staff time heretofore spent responding to endless requests for GIS maps. Web users will be able to produce these maps simply off of their own printers, using this interface.

While the interface is not completed, NHGCC participants were delighted with the progress that has been made in the last six months. In addition to thanking the Pardoe Foundation for its support of this project, Fay added that several NHGCC members had been instrumental in providing assistance to this project including Ken Gallager (Office of State Planning), Larry Garland (Appalachian Mountain Club), Nancy Lambert (UNH Cooperative Extension), and Dan Sundquist (Society for the Protection of NH Forests).

There was extensive discussion about getting similar data sets out on a web-viewer, which is the direction that GRANIT is heading. There also were questions about adding to the data on the Conservation Lands Viewer. Fay added that the more data added to the interface, the more confusing it will become for the user. A question arose as to the content of the underlying data layer, and whether it included all currently protected parcels. Fay explained that this is dependent on the type of agency managing the protected parcels. The state and federal level data are reasonably complete, while there are known gaps in the coverage of parcels managed by municipal agencies. Members of the group were excited by the prospect that the site can encourage people to help contribute to and update land conservation data. Fay noted that GRANIT includes a registry to alert its GIS managers of new protected parcels. Fay hopes to link the Conservation Lands Viewer to this registry. In response to a question about which data layers should be next for a web viewer, top candidates seemed to be rare species – plants and animals. Fay responded that one approach may be to have separate viewers developed to provide access to other, related types of data.

It was noted that the empowerment provided by this interface is fabulous. The fact that this information is visible and accessible will point out its gaps. Don Cooke stressed, for instance, that it leads you to ask “*Where are the parcel data layers?*” He suggested we need to get Ray Burton and Charlie Bass to see this – as a way of encouraging state support for developing the parcel data layers. This point relates to our later discussion about the advocacy role of NHGCC.

Fay explained that the next phase of the web interface may allow users to submit parcel boundaries for newly protected parcels. This would require careful review/oversight by GRANIT staff before those parcels are incorporated in the GRANIT Conservation Lands layer. As for the user’s ability to choose which data aspects it would like to be actively combined, Fay explained it is harder to decide what types of queries to allow when you have many different data sets, as the level of complexity increases considerably. Don Cooke noted that GRANIT has much more information in its databases. He suggested that UNH could create a series of viewers for different elements: invasive plants, rare and

endangered species, wildlife, etc. It was pointed out that DES is working on a similar system for its One Stop Hazardous Waste Program.

Fay was asked about the cost of developing this Conservation Lands Viewer. The cost was approximately \$13,000 with \$10,000 from Pardoe and \$3,000-\$4,000 from the GRANIT core budget. In addition, there was a modest additional contribution as an incentive to get this interface ready to be demonstrated at this meeting. (These costs do not include the acquisition of the commercial software, including ArcIMS, or the hardware used in the project.) The work was done by GRANIT staff, with a subcontract to Northern Geomatics. The core GRANIT budget is approximately \$80,000 - \$90,000 with funds from the Office for State Planning and contributions from various state agencies.

### **Informal Updates & Information Exchange with Participants**

Marcy Lyman facilitated an update and information exchange session among the group. Highlights included:

- An update by Dan Sundquist on the Forest Society's GIS Services Program with demand far exceeding capacity for natural resource mapping and GIS analysis services;
- A status report by Nancy Lambert from UNH Cooperative Extension on the evolution of the Geospatial Technology Training and Resource Center: strategic planning with higher ed institutions, focus groups to identify needs, expanding beyond conservation to include several other sectors, such as health and wellness, hiring of new natural resource outreach person at Cooperative Extension (doubling capacity);
- Marcy Lyman added how valuable the NHGCC meetings have been in educating funders, including McCabe, and noted that the private sector contributions toward the GSTTRC have made it attractive for public agencies and public granting entities like Space Grant and Sea Grant to commit funds.
- Carol Foss reported that the Audubon Society sees its role in the data development arena, helping develop the wildlife and biodiversity information that will feed into the data layers. This effort is underway. She noted the potential of using these GIS tools to solve many problems, such as having DOT's landscape analysis compare road data to protected wildlands, identifying potential conflicts and informing development of new road design.
- Kate Hartnett explained that the NH Minimum Impact Development Project is developing approaches to community planning that address the built environment, green infrastructure, and the social infrastructure. She is very enthusiastic about linking its efforts to the work of this collaborative.
- John Kanter reported that NH Fish & Game is working hard to develop the wildlife data layer for GRANIT. One staff person has been assigned to input the wildlife and rare species data into their biological and conservation database. The agency has recently published a guide to identifying and protecting significant wildlife habitat that includes a set of seven maps, and refers people to GRANIT.

- Kevin Shyne from the North Country School to Work Regional Partnership described his work with New Hampshire schools to promote GIS/GPS Educator Education. He noted the many connections between GIS and heritage business opportunities.
- Don Cooke described his role at GDT as founder and community outreach point person. Much of his efforts focus on working with kids and schools, and he encouraged the group to look for opportunities for kids to work as peers with conservation groups. He offered GDT's staff as a technical resource to the NHGCC.
- Ben Silberfarb described his advisory work with landowners, with focus on establishing conservation easements over large landscapes. He incorporates GIS into large-scale conservation planning, using social and natural resource data.
- Kevin Peterson reported that the Wellborn Ecology Fund at the Upper Valley Community Foundation had just completed its first round of grantmaking, with 4 or 5 grants involving kids working with GIS technology in the field.
- Laura Deming is working on an outreach project at NH Audubon to identify vernal pools. Adding a community outreach and mapping element would be a big plus.
- Ken Gallager reported that Rick Chorman at DES is surveying the RPC's in the state to find out which municipalities have digital parcel data.
- Cliff Sinnott explained that within the Rockingham RPC region, 80% of the towns have digitized tax parcel data. The RPC is working on a small project with the Office of State Planning to enable conservation commission and planning officials to develop the ability to routinely use and develop their own GIS products/maps. Planning and conservation folks routinely use a dozen or so kinds of maps, with the data remaining relatively static. The RPC is considering better ways to make that map data available, such as cutting CD's for each community of the twelve most frequently needed GIS maps.
- Cathy Poppenwimer reported that AMC is developing its own interactive web-mapping sites for various regions, including endangered species maps. AMC is also providing GIS training to local high school teachers.
- Darrell Covell from Cooperative Extension has been running training workshops for communities using the Natural Resources Inventory Guide for Towns and Communities. This training uses a GIS approach with priority on conservation. Darrell encouraged the group to think about ways to get towns to provide data back to the state database repository, rather than just having the data flow the other way from the state to regional and local levels.
- Fay reported that UNH has received funding to develop standards for digital parcel data. An advisory group has been created, including GIS managers from the state/municipal agencies and representatives from the NH Land Surveyors Association and the Association of Assessing Officials. The group will benefit greatly from using the recently developed MassGIS standards.
- Bruce Pardoe explained that NHGCC funder members have continued to work to engage other funders in our efforts. He knows there is significant donor interest if we can take the vision document and develop an actionable work

plan and budget that demonstrates how the group or organizations within the group are ready to implement the work plan.

## **Review of Vision Document: Steps Needed to Realize the Vision**

### **General Feedback**

- The basic knowledge for advancing the vision is available within our group;
- People need a place to go to be directed to available service providers: a clearinghouse or resource directory (Fay pointed out that such a directory exists on GRANIT);
- The document does not state outcomes that we are hoping for, such as a greater pushing out of the technology to a broader set of users (This last point appears to be touched on in several parts of the Vision Document);
- Related to last point, a goal of the group is the democratization of GIS (This appears to be addressed in the Internet-based GIS Technology Access section of the Vision Document);
- There is a real need to increase the general knowledge base about GIS;
- The process is just as important as the product, whether it be for leadership on policy issues or neighborhood activities;
- Don't lose sight of the importance of training, data distribution; and access;
- Get the Vision onto one page;
- Maps are the tool and starting point. Just as important is the interpretation of the maps and application of the data.

### **Realizing the Vision: What does success look like?**

*(The text that follows in this section was suggested by Kevin Peterson with modest additions from Ann Fowler Wallace. It is meant to be a starting point for continued discussion of how we define successful implementation of the NHGCC vision.)*

**Mission Statement:** To have GIS viewed as a well-coordinated, core function/service of government that is politically supported, adequately funded, publicly recognized as important, and widely available.

**Work Plan:** One idea: consider adopting the Land and Community Heritage Coalition model to coordinate GIS efforts statewide. The Coalition brought together a diverse group of conservation and historic preservation nonprofits in a concerted effort to generate public support and ultimately public funding for land and historic preservation acquisitions in NH. Three aspects of this effort included the coalition coordination, grassroots organizing, and the focused campaign for public funding. As a result of this effort, the Governor and Legislature created the Land and Community Heritage Program (LCHIP), with one-time funding of \$3 million over the bi-ennium. There is currently no future funding commitment.

To achieve what? (Objectives?)

- data development
- internet-based technology access
- GIS service providers
- education & training

How? (Strategies?)

- outreach
- collaboration
- advocacy

Questions:

- Who would “house” a staff person to coordinate this effort?
- Where would the funding come from?
- How long should we expect to have to engage in this effort?

We need to set short and long term **GOALS, OBJECTIVES, ACTIVITIES** as part of the Work Plan.

We need a broad-based strategy that has many pieces:

- private initiative leveraging public support & dollars  
(infuse private dollars, but keep in mind how private support can engage government effort/resources)
- increase the order of magnitude of funding (and coordination of funders’ efforts)
- multi-year funding

***Resource Needs***

*(We only began to tackle this question. This should be a priority area for the working groups.)*

People Needs:

- Wildlife map/interpretation person half-time
- More resource people to provide *sustained* technical assistance

\$\$\$ Needs: (TO BE DETERMINED)

Who Can Do What?

Create Working Groups to get a handle on the what and the how (and the how much).

Considerations:

- Enable self-service mode via the internet, moving staff effort from making maps to interpretation and application;
- Target audiences: Commissioners and Agency Directors (leadership within agencies);

- Narrow (prioritize) geographic focus to areas undergoing most rapid development;
- Actionable item: every community needs digitized parcel data;
- Define core map resources needed at the community level – this defines the phase II web-mapping and informs data development;
- Quantify who needs to understand what;
- Nancy and Fay want to stress the importance that large sums be available to do this work, over a multi-year period. Piecemeal support and one year grants take too much time away from the work. Program staff spends much too much time raising \$! If funders could help coordinate, the availability of a significant pool of funds would advance this vision immeasurably.

<b>PRIORITY AREAS:</b>	
<b>COLLABORATION</b>	<b>WEB-BASED TECHNOLOGY ACCESS</b> <ul style="list-style-type: none"> <li>• Phase II: central repository other info</li> <li>• \$100,000 - \$200,000 for full site</li> </ul>
<b>ADVOCACY</b> <ul style="list-style-type: none"> <li>• Address state \$ for GRANIT &amp; RPCs</li> <li>• GRANIT needs \$500,000 annually</li> <li>• Use LCHC model to get state \$ commitment to hire staff to do work</li> </ul>	<b>GIS SERVICE PROVIDERS</b> <ul style="list-style-type: none"> <li>• Kinds of services is important</li> <li>• Centralized &amp; Coordinated also important (GRANIT the place)</li> <li>• Easy access/low cost – has to be web-based and free</li> <li>• Need formalized coordination of service providers</li> <li>• Consider public work stations, such as DES kiosks, Dept. Employment Svcs computer sites in schools and libraries</li> <li>• Portals to access, people to provide TA &amp; services</li> <li>• Listing of scripts comes down to time and money</li> <li>• Mechanical output &amp; interpretation</li> </ul>
<b>DATA DEVELOPMENT</b> <ul style="list-style-type: none"> <li>• Methods are important (general-specific)</li> <li>• Create body of information</li> <li>• Identify resources for each region</li> <li>• List resources on web site</li> </ul>	<b>EDUCATION &amp; TRAINING</b> <ul style="list-style-type: none"> <li>• No one method – NHGCC help foster information available and quality</li> <li>• GSRTC efforts underway</li> <li>• Technology still too hard for non-users</li> <li>• Even with web-mapping, offer training shorter time frame</li> </ul>
<b>OUTREACH</b> <ul style="list-style-type: none"> <li>• People not accessing b/c don't understand what GIS is and can do</li> <li>• Raising awareness and enabling</li> <li>• Outreach to RPC's</li> <li>• Dialog, not frontal assault</li> <li>• Concern outreach will get ahead of education and training capacity</li> <li>• May be few pilot projects</li> <li>• Dynamic congregation (of interest?)</li> </ul>	

**Working Groups:** the group decided to form several working groups to advance development of priorities and a work plan: (Please let Ann know if I left you off this list!)

Functionality/Internet Mapping (ARC IMS)

Fay Rubin, Chair  
Bruce Pardoe  
Cliff Sinnott  
Dan Sundquist  
Don Cooke  
Ben Silberfarb  
Peg Heaney

Wildlife Data Layer Development

Darrell Covell, Chair  
Ellen Snyder  
Dan Sundquist  
John Kanter  
Carol Foss  
Laura Deming  
Fay Rubin  
Bruce Pardoe

Data Development (Using Students)

Stephen Engle, Chair  
Peg Heaney  
Kevin Shyne  
Don Cooke  
Laura Deming

Public/Private Fundraising and Advocacy

Kevin Peterson, Chair  
Bruce Pardoe  
Charlie Bridges (John Kanter)  
Nancy Lambert  
Lora Gerard  
Ken Gallager  
Fay Rubin  
Bruce Pardoe