



## Maine Association of Conservation Commissions

### *Freshwater Initiative* *Lamoine Conservation Commission*

#### *Home Rules, Home Tools: Locally Led Conservation Achievements*

Lamoine, a rural community of less than 2000 residents, is a peninsula jutting into Frenchman Bay in Hancock County. In addition to its natural marine resources, it has large deposits of sand and gravel left by the glaciers responsible for the granite forming Mount Desert Island. Under these deposits is a large sand and gravel aquifer that extends north through the neighboring town of Hancock and the city of Ellsworth. This aquifer is the principle source of groundwater for Lamoine. Its over-burden feeds the bedrock below. Lamoine has no municipal water supply. Most residents and the few businesses in town use private wells. The Cold Spring Water Company supplies about 50 homes, the school, the fire department, the church, and the Grange with water fed from a spring connected to the aquifer.

#### *Background*

Gravel has been commercially mined from Lamoine deposits since the late 1800's. There are currently 24 active pits and approximately 10 inactive ones. Over the years residents have expressed concerned about the negative effects of gravel extraction might have on the quantity and quality of water lying below. In 2000 this concern erupted into angry, polarized groups arguing for or against continued mining. A retired scientist in town stated that data was needed rather than opinions, and chair of board of Selectmen suggested establishing a conservation commission might help resolve such disputes.

Lamoine's Conservation Commission subsequently came into being in May, 2002, with a mandate to serve both the Planning Board and the Board of Selectmen as they requested assistance with issues involving use of and protection of the town's natural resources.



*John Peckenham, of the George Mitchell Center for Environmental and Watershed Research, takes one of 70 water samples from a spring over the sand and gravel aquifer under Lamoine, Hancock, and Ellsworth.*

Many other issues have come before LCC since that time from these boards and from concerned residents. In 2003 LCC invited The College of the Atlantic to use Lamoine as a their field study site for students studying development issues. This project resulted in LCC receiving many useful GIS maps of the town detailing natural resources and areas of development. It also established good rapport with both COA, the Bar Harbor Conservation Commission, and Bar Harbor's city planner.

#### *Freshwater Initiative Initiated*

The principal focus of LCC, however, began with and continued to be on monitoring the town's ground water. Fortunately two studies of Lamoine wells had been done in 1983 and 2002. Thanks to this baseline, in 2004 LCC was able to enlist the partnership of the George Mitchell Center for Environmental and Watershed Research at UMaine/ Orono. John Peckenham, senior research fellow and co-director, agreed to design and monitor our research.

Because of its involvement with LCC, the Mitchell Center was able to secure a \$20,000 grant from the Island Foundation that allowed them to expand their previous study of groundwater to the Lamoine, Hancock, Ellsworth aquifer. Monies funded a stipend for an exceptional graduate student, Teresa Thornton, who joined the project with ten years classroom experience as a middle school science teacher.



*Lamoine, Maine*

## Home Rules, Home Tools: Locally Led Conservation Achievements

**Phase 1** of Freshwater Initiative involved conducting a voluntary survey of all wells over or within 100' of the sand and gravel aquifer. The data was collected by volunteers from Lamoine, Hancock, and Ellsworth and analyzed at the Mitchell Center against the earlier data.

**Phase 2** (2005) had a dual thrust:

1) Focus on water quantity measured by sophisticated water level loggers placed in three active gravel pits, with cooperation of pit owners, and a schedule of manual checking water levels in six private wells over the aquifer, again with permission of well owners.

2) Focus on water quality by involving schools in testing water samples brought from home for nitrates, chloride, iron, pH, hardness, and conductivity. The rationale for involving students was to teach them hands on scientific procedures, to raise their awareness of the importance of monitoring drinking water sources, to raise awareness of their parents, and to provide the Mitchell Center with much data for very little cost.

Teresa Thornton designed a curriculum that matched these water tests with the Maine State Learning Results, making it appealing to classroom teachers trying to fit interesting projects into state mandates. Ms. Thornton's curriculum, called GET WET! (Groundwater Education Through Water Evaluation & Testing) became central to the Freshwater Initiative.

### Present Status

In 2010 LCC will conduct its fifth year of classroom studies using the GET WET! curriculum in the Lamoine Consolidated School with 5th and 6th graders and in Ellsworth High School with chemistry classes, an algebra class, and more recently an environmental science class.

The Mitchell Center expanded the GET WET! curriculum into schools in Winterport and the Cape Elizabeth area as well. In 2009 UMaine's School of Forest Resources received a large three year grant from the US Department of Agriculture to introduce the GET WET! program through out schools in all New England states, except Massachusetts, and in Orange County New York.

### LESSONS LEARNED

- Enlist support from existing boards of town government
- Identify residents who have interest, skills, and/or time to help — preferably all 3!
- Identify institutions nearby who have the expertise you need and enlist their involvement by identifying what you can offer that will fit their mission.
- Keep on the look out for funding sources — apply early and often!
- Let the town residents know what you're doing (through public forums, video, news articles, letters) and look for ways to vary your presentations.
- Involve children, as well as adults, to generate increased interest.
- When a project involves repeating procedures over several years, be sure someone on your commission takes responsibility for its consistency.
- Communicate regularly with your outside organizations to keep their connection with you active.
- LCC believe that their deliberate decision to not request operating funds from the Town has contributed to their acceptance and support from residents.

---

#### **For more information, contact:**

**Robert Pulver, Chair**  
**Lamoine Conservation Commission**  
**207-667-4441**