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# Gilmanton School Teacher Lauded By UNH Forest Watch Program For Outstanding Service

Contact: [David Sims](#)  
603-862-5369  
Science Writer  
Institute for the Study of Earth, Oceans, and Space

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DURHAM, N.H. – Mary Fougere, a middle school teacher at the Gilmanton School in Gilmanton, N.H., was awarded the 2005 Gary N. Lauten Award for outstanding service and commitment to the University of New Hampshire's Forest Watch program at a ceremony held last week on the Durham campus. In addition to the Lauten plaque, Fougere was presented with the handcrafted, wood-burned walking stick that is given annually to recipients of the award.

Fougere, who teaches science to 7th and 8th graders at Gilmanton, has been involved in Forest Watch since 1992. The program is a unique, hands-on way of conducting science with the help of primary and secondary school students who collect and process data relating to air pollution damage in forest stands in New England. Over 350 schools have participated in the program, with some 50 to 100 actively engaged in monitoring white pines, a bio-indicator species for ground-level ozone (smog), in any given year.

Fougere says the first set of white pine trees the school used in the study were "lost" to a new wing that was built. "We're now on a second set of five white pines," she said. Receiving the award, Fougere noted, is especially gratifying because "Gary Lauten was a really good friend."

Lauten, a former Air Force lieutenant colonel who died in December 2001, served as the Forest Watch coordinator from 1992-1999. In 2002, the educational outreach program began recognizing teachers who best exemplify Lauten's devotion to Forest Watch's long-term goals.

"This award recognizes Gary's commitment to making science accessible in the classroom. He loved the program and became its heart and soul," said Barry Rock, Forest Watch director and professor of natural resources and plant biology at UNH's Institute for the Study of Earth, Oceans, and Space (EOS) and the Department of Natural Resources. Added Rock, "Teachers love the program because it integrates biology with physics, math, earth science, etc."

Each group of Forest Watch students collects white pine needles from a 30 x 30 meter plot each year. They then conduct several ecological and biophysical measurements using specific scientific protocols developed at UNH. The samples are measured and analyzed by the students who look for evidence of damage to the needles from ground-level ozone or smog. Their results, as well as needle samples, are shipped to UNH for further analysis.

Fougere notes that because most of the pines used in their study are relatively unaffected by the

pollution (ozone) that can damage needles, her students have come to appreciate the good air quality of their immediate environment. That said, she adds, “They do get the message loud and clear that somebody needs to be watching things closely like this” in order to monitor the health of the environment.

Forest Watch student data are compared to spectrometer measurements (which gauge how much chlorophyll needles contain) collected from samples sent to UNH, and the student and spectral data are compared to ground-level ozone data collected from state and Environmental Protection Agency (EPA) air quality monitoring sites throughout New England. Student samples provide evidence of changing white pine health and growth year after year in response to both smog levels and climate variables such as rainfall.

Over the course of 15 years, Forest Watch has demonstrated that students can collect valuable data for ongoing scientific research and learn science and mathematics by doing research in their local area. Student data have clearly shown how responsive white pines are to year-to-year variations in ozone levels.

For more information on Forest Watch, go to <http://www.forestwatch.sr.unh.edu>.

**Editors: For a photo of 2005 Lauten Award winner Mary Fougere, go to [http://www.unh.edu/news/img/colsa/mary\\_fougere\\_hires.jpg](http://www.unh.edu/news/img/colsa/mary_fougere_hires.jpg).  
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