

Community  
Ecology  
Economy

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## National Science Teachers Association 2004 Outstanding Environmental Educator Winner!

### Project Partners

Whitestone Farms Community

Shaw Creek Community

Alaska Boreal Forest Council (ABFC)

Geo-Watersheds Scientific (GWS)

Alaska Department of Fish and Game

Alaska Department of Natural  
Resources—Division of Forestry (ADNR)

Alaska Department of  
Environmental Conservation (ADEC)  
-ACWA

University of Alaska Fairbanks — School  
of Fisheries and Ocean Sciences

American Water Resources Association—  
Alaska Section (AWRA)

Engineering and Environmental Internet  
Solutions (EEInternet)

Campbell Scientific Inc.



**Figure 1:** John Donaldson and Whitestone science class perform maintenance on a stream gaging station on Whitestone Creek. Campbell Scientific dataloggers collect stream temperature, conductivity, soil moisture, and stage information.

**John Donaldson** (Fig. 1) was recently selected as a 2004 SeaWorld/Busch Gardens/Fujifilm **Environmental Excellence Awards** (EEA) Winner! Of 117 projects received, the top 10% were picked as finalists, and then 8 National finalists were chosen, John being one of them. John and 3 students will get to travel to Sea World as part of their award. John was then selected out of the 8 finalists to be the National Science Teachers Association **2004 Outstanding Environmental Educator** award. John uses the environment to teach school-age children at Whitestone Training Center in Big Delta, Alaska. Students record meteorological parameters, collect hydrology data and study alternative-energy methods (Figures 1-3). “The use of grants and willingness of local professionals has often ‘lubricated the wheels’ of our sustainability-based investigations,” said John Donaldson. Projects, such as the Shaw Creek Project allow students to get involved in the community and learn at the same time. “We are also working with the Environmental Protection Agency (EPA) to establish baseline data for our watershed. This is being done through an educational partnership with Geo-Watersheds Scientific.” The local watershed is not only important environmentally, but also for education.

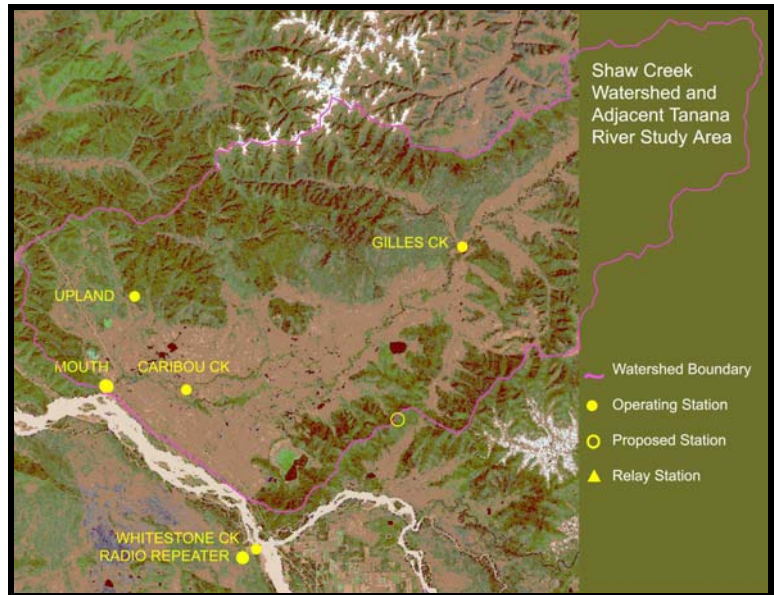


**Figure 2:** Whitestone Science class uses an ice auger to create a hole in the ice to collect water and invertebrates samples. The class drilled seven holes on the pond and all of them had similar temperature, pH, conductivity and dissolved oxygen. A population of pike is sustained in this lake even with low oxygen (0.62-1.6 ppt) and only 5 feet of water. (Nicholaus Donaldson, photo courtesy of John Donaldson).

## Environmental Excellence



**Figure 3:** Rachel, a Junior High student at Whitestone Farms Training Center, collects soil-moisture data for their study on how water availability affects birch-sap production. Dataloggers were donated by **Campbell Scientific Inc.** Photo provided by John Donaldson



**Figure 4:** Shaw Creek Watershed, showing data collection sites.

Geo-Watersheds Scientific staff have been working in the Shaw & Whitestone Creeks Watersheds (Fig 4) with John for many years educating the community and collecting baseline data. The Shaw Creek watershed is recognized as important fish spawning and rearing habitat, containing valuable timber resources, mining resources, wildlife habitat, and recreational areas (Alaska Department of Natural Resources, 200; Ridder, 1989, 1994; Barton, 1992). ABFC and Geo-Watersheds Scientific's purpose is to gather long-term baseline data to aid in the hydrologic assessment of the Shaw Creek watershed and neighboring spring-fed streams.

John's students also recognized their watershed is important. "The coal-bed methane industry has leased thousands of acres of public land adjacent to the community. This last situation prompted a student motivated action to file and secure local water-rights for their rural Alaskan community with the Department of Natural Resources (DNR)," said John Donaldson. It is important to utilize these resources with a balance to long-term community and watershed needs to ensure sustainable development. Cooperative efforts with state agencies, industry partners, professional societies, and watershed organizations is part of our long term plan for reaching achieving these objectives.

## Selected Watershed Study Objectives

- Continued collection of baseline hydrologic data in the watershed
- John & students, along with other residents, collect water data with water quality meters for education and training
- Characterization of watershed processes
- Invertebrate lake study
- Improve hydrology and resource understanding for existing & future development and resource management agencies

— Emily Youcha

### For More Information:

If you would like to get involved or find out more about our projects, visit the following website:  
<http://www.tanana-watershed.org> or contact:

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