Work done in US National Parks by staff at Oak Ridge National Laboratory (this list is incomplete)

Oak Ridge National Laboratory staff have a strong record of volunteering at several national parks:

- Participating in citizens science activities
- Giving invited lectures
- Leading field excursions

Foothills Parkway

- ORNL prepared an environmental impact statement for the NPS, considering the effects of a proposed extension to the Foothills Parkway. Ellen Smith contributed to that EIS, but my input didn't involve any fieldwork. Other ORNL staff did some field investigations along the proposed route.

Obed National Wild and Scenic River

- McManamay, RA, Bonsail, P, (2013) Digital Mapping and Environmental Characterization of the National Wild and Scenic Rivers System. ORNL/TM-2013/356

Olympic Peninsula National Park:

- Dale, V., M. Hemstrom, and J. Franklin. 1986. The long-term effects of disturbances on forest succession on the Olympic Peninsula. Canadian Journal of Forest Research 16:56-67.

Mount Rainier National Park:

- Adams, V. 1983. Temporal partitioning of blooming phenology in *Pedicularis* on Mount Rainier. Canadian Journal of Botany 61(3):786-791.

Yellowstone National Park:

- List of papers developed by Mircea Podar and his colleagues about their work at Yellowstone National Park:
  - Hamilton-Brehm SD, Mosher JJ, Vishnivetskaya T, Podar M, Carroll S, Allman S, Phelps TJ, Keller M, Elkins JG. (2010). *Caldicellulosiruptor obsidiansis* sp. nov., an anaerobic, extremely thermophilic, cellulolytic bacterium isolated from Obsidian Pool, Yellowstone National Park. *Appl Environ. Microbiol.* 76:1014-20.
  - Elkins JG, Lochner A, Hamilton-Brehm SD, Davenport KW, Podar M, Brown SD, Land ML, Hauser LJ, Klingeman DM, Raman B, Goodwin LA, Tapia R, Meincke LJ, Detter JC, Bruce DC, Han CS, Palumbo AV, Cottingham RW, Keller M, Graham DE. (2010). Complete Genome Sequence of the Cellulolytic Thermophile *Caldicellulosiruptor obsidiansis* OB47T. *J Bacteriology* 192:6099-100.
  - Podar M, Makarova KS, Graham DE, Wolf YI, Koonin EV, Reysenbach AL. (2013) Insights into archaeal evolution and symbiosis from the genomes of a nanoarchaeon and its

inferred crenarchaeal host from Obsidian Pool, Yellowstone National Park. *Biol Direct.* April 8:9. doi: 10.1186/1745-6150-8-9.

- Vishnivetskaya TA, Hamilton-Brehm SD, Podar M, Mosher JJ, Palumbo AV, Phelps TJ, Keller M, Elkins JG (2015) Community Analysis of Plant Biomass-Degrading Microorganisms from Obsidian Pool, Yellowstone National Park. *Microb Ecol.* 69:333-345.

- Selected papers (from a total of 77) by Monica Turner and Bob Gardner who began their ongoing work at Yellowstone while on staff at ORNL:
  - Turner, MG; Romme, WH; Gardner, RH. 1994. Landscape disturbance models and the long-term dynamics of natural areas. Natural Areas Journal 14: 3-11.
  - Turner, M.G., V.H. Dale, and E.H. Everham. 1997. Fires, hurricanes and volcanoes: comparing large disturbances. BioScience 47:758-768.
  - Turner, MG; Romme, WH; Gardner, RH. 1999. Prefire heterogeneity, fire severity, and early postfire plant reestablishment in subalpine forests of Yellowstone National Park, Wyoming. International Journal of Wildland Fire 9: 21-36.

Great Smoky Mountain National Park:

- Bondietti, EA, (1990) Descriptions of Research Sites in the Integrated Forest Study on Effects of Atmospheric Deposition. ORNL/TM-11149.
  SITES INCLUDE: Great Smoky Mountains Site, Whiteface Mountain Site, Duke Forest Site, Thompson Forest Site, Findley Lake Site, Huntington Forest Site, Turkey Lakes Watershed Site, B. F. Grant Forest Site et al.
  http://web.ornl.gov/info/reports/1990/3445603150630.pdf

- In the early 1980s there was an active research project involving electrofishing to sample Smokies streams to investigate environmental influences on fish in those streams. (from Ellen Smith - I recall colleagues talking about carrying large batteries in backpacks.)

- Busing, R.T. 2013. NPP Temperate Forest: Great Smoky Mountains, Tennessee, USA, 1968-1992, R1. Data set. Available on-line [http://daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, USA. doi:10.3334/ORNLDAAC/804
  http://daac.ornl.gov/NPP/guides/NPP_GSM.html

- Dale, V.H., R.H. Gardner, D.L. DeAngelis, C. Eagar, and J.W. Webb. 1991. Elevation-mediated effects of balsam woolly adelgid on southern Appalachian spruce-fir forests.

- SHANKS, RE; OLSON, JS. 1961. FIRST-YEAR BREAKDOWN OF LEAF LITTER IN SOUTHERN APPALACHIAN FORESTS. SCIENCE 134 (347): 194-&.

- Selected air quality studies from a long-term project
  - Weathers, Kathleen C.; Simkin, Samuel M.; Lovett, Gary M.; et al. 2006. Empirical modeling of atmospheric deposition in mountainous landscapes. ECOLOGICAL APPLICATIONS 16: 1590-1607.
  - Van Miegroet, H; Creed, I F; Nicholas, N S; et al. 2001. Is there synchronicity in nitrogen input and output fluxes at the Noland Divide Watershed, a small N-saturated forested

catchment in the Great Smoky Mountains National Park? The Scientific World Journal 1: 480-92.

- Nodvin, SC; VanMiegroet, H; Lindberg, SE; et al. 1995. Acidic deposition, ecosystem processes, and nitrogen saturation in a high elevation Southern Appalachian watershed. WATER AIR AND SOIL POLLUTION 85: 1647-1652.
- Shubzda, J; Lindberg, SE; Garten, CT; et al. 1995. Elevational trends in the fluxes of sulphur and nitrogen in throughfall in the southern Appalachian mountains: Some surprising results. WATER AIR AND SOIL POLLUTION 85: 2265-2270.
- LINDBERG, SE; OWENS, JG. 1993. THROUGHFALL STUDIES OF DEPOSITION TO FOREST EDGES AND GAPS IN MONTANE ECOSYSTEMS. BIOGEOCHEMISTRY 19: 173-194.
- TJOELKER, MG; MCLAUGHLIN, SB; DICOSTY, RJ; et al. 1992. SEASONAL-VARIATION IN NITRATE REDUCTASE-ACTIVITY IN NEEDLES OF HIGH-ELEVATION RED SPRUCE TREES. CANADIAN JOURNAL OF FOREST RESEARCH 22: 375-380.
- JOHNSON, DW; VANMIEGROET, H; LINDBERG, SE; et al. 1991. NUTRIENT CYCLING IN RED SPRUCE FORESTS OF THE GREAT SMOKY MOUNTAINS. CANADIAN JOURNAL OF FOREST RESEARCH 21: 769-787.
- PETTY, WH; LINDBERG, SE. 1990. AN INTENSIVE 1-MONTH INVESTIGATION OF TRACE-METAL DEPOSITION AND THROUGHFALL AT A MOUNTAIN SPRUCE FOREST. WATER AIR AND SOIL POLLUTION 53: 213-226.
- Cheng MD and Tanner RL (2002). Characterization of ultrafine and fine particles at a site near the great Smoky Mountains national Park. Atmospheric Environment 36: 5795-5806.

- Tree ring and physiology studies

- MCLAUGHLIN, SB; BLASING, TJ; DOWNING, DJ. 1994. 200-YEAR VARIATION OF SOUTHERN RED SPRUCE RADIAL GROWTH AS ESTIMATED BY SPECTRAL-ANALYSIS – COMMENT. CANADIAN JOURNAL OF FOREST RESEARCH 24: 2299-2304.
- MCLAUGHLIN, SB; TJOELKER, MG; ROY, WK. 1993. ACID DEPOSITION ALTERS RED SPRUCE PHYSIOLOGY - LABORATORY STUDIES SUPPORT FIELD OBSERVATIONS. CANADIAN JOURNAL OF FOREST RESEARCH 23: 380-386
- TJOELKER, MG; MCLAUGHLIN, SB; DICOSTY, RJ; et al. 1992. SEASONAL-VARIATION IN NITRATE REDUCTASE-ACTIVITY IN NEEDLES OF HIGH-ELEVATION RED SPRUCE TREES. CANADIAN JOURNAL OF FOREST RESEARCH 22: 375-380.
- ANDERSEN, CP; MCLAUGHLIN, SB; ROY, WK. 1991. A COMPARISON OF SEASONAL PATTERNS OF PHOTOSYNTHATE PRODUCTION AND USE IN BRANCHES OF RED SPRUCE SAPLINGS AT 2 ELEVATIONS. CANADIAN JOURNAL OF FOREST RESEARCH 21: 455-461
- ANDERSEN, CP; MCLAUGHLIN, SB. 1991. SEASONAL-CHANGES IN SHOOT WATER RELATIONS OF PICEA-RUBENS AT 2 HIGH ELEVATION SITES IN THE SMOKY MOUNTAINS. TREE PHYSIOLOGY 8: 11-21.
- BAES, CF; MCLAUGHLIN, SB. 1984. TRACE-ELEMENTS IN TREE RINGS - EVIDENCE OF RECENT AND HISTORICAL AIR-POLLUTION. SCIENCE 224: 494-497.