

History of ITEX and NATEX: One man's version

While the ITEX (International Tundra Experiment) project has its roots in ARCSS and certainly pre-dates LAII Flux it did not really become part of ARCSS or LAII until the ITEX program was up and running across the circumpolar world. NATEX (North American Tundra Experiment) came much later and is contemporaneous with ATLAS. Let me explain.

The seeds for ARCSS were planted when the leaders in the US Arctic Global Change Community formulated a science initiative during 1987 (Arctic Interactions: Recommendations for an Arctic Component in the International Geosphere-Biosphere Programme, UCAR OIES Report –4 1988). At this meeting I was challenged by Arthur Lachenbruch who asked why botanists were not trying to monitor climate change using plant response the way he and his colleagues were doing with permafrost and ground temperature. Later in 1989 Philip Johnson (then Executive Director of the US Arctic Research Commission), and Jerry Brown and Ted Delaca (then of Division of Polar Programs NSF) asked me to explore the idea that plant phenology might be used to monitor climate warming. After some thought I submitted a proposal to the fledgling ARCSS program (Ted Delaca was its founding Program Director) to hold a workshop to explore the prospects for an ITEX that would involve all the Arctic Countries in a standardized simple, inexpensive phenology study. The proposal was aimed at designing a simple experiment that could be applied across the arctic and that would look at organisms *per se* rather than whole ecosystems. The whole organism focus was prompted by frequent questions to me from arctic residents about the fate of the organisms, such as fish and berries upon which they depend. The residents did not deny the importance of the total system questions but they thought that the scientists were ignoring the organism specific questions. The proposal was awarded and a workshop was held in December 1990 at the Michigan State University W. K. Kellogg Biological Station that led to the design and launching of ITEX (Webber and Walker 1991, Arctic and Alpine research 23:124). The fundamental experiment in ITEX was to use small open top chambers to passively warm tundra plants and to measure their response. ITEX became part of the UNESCO Man and the Biosphere Program Northern Sciences Network with its Secretariat at first in Finland and later Denmark. Thanks to the leadership of Ulf Molau (Sweden), Greg Henry (Canada) and Per Molgaard (Denmark) ITEX got underway in a hurry in sites were established Canada, Greenland, Finland, Norway, Russia, Sweden, and Svalbard. By this time I had made a career move into temperate ecology and agriculture and other US scientists accepted the responsibility to launch a US contribution to ITEX. The first attempts to raise support via the Division of Biotic Systems and Resources NSF failed but later resubmission and other proposals to the expanding ARCSS program were successful in 1994. Marilyn Walker led these efforts and Gus Shaver, Kaye Everett, Steve Oberbauer, Kent Schaegerle, and Jeff Welker joined her. This led to the establishment of US ITEX sites at Toolik Lake, Barrow and the Colorado alpine. In 1995 the US contribution to ITEX was given equal status within to the ARCSS LAII portfolio to the Flux project and subsequently the ATLAS project. NATEX (North American Tundra Experiment) came into being at about the time of ATLAS as the

second wave of US ITEX proposals were awarded. NATEX is aimed at extending the basic ITEX plant focus to include ecosystem response to increased temperature.

I might add a post script that I returned to arctic science in 1993 as director of the ARCSS Program and in 1996, after returning to Michigan State University, began my own ITEX field research at Barrow.