

Annual Report for Period:03/2003 - 03/2004**Submitted on:** 01/30/2004**Principal Investigator:** Yanai, Ruth D.**Award ID:** 0235650**Organization:** SUNY Col Env Sci&Forestry**Title:**

Biotic Control of Calcium Supply: Distinguishing Sources to Regrowing Forests

Project Participants**Senior Personnel****Name:** Yanai, Ruth**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Fisk, Melany**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Blum, Joel**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Hamburg, Steve**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Arthur, Mary**Worked for more than 160 Hours:** Yes**Contribution to Project:****Post-doc****Name:** Hane, Elizabeth**Worked for more than 160 Hours:** Yes**Contribution to Project:****Graduate Student****Name:** Lilly, Paul**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Ritchie, Karen**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Nezat, Carmen**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Acker, Marty

Worked for more than 160 Hours: Yes

Contribution to Project:

Name: Ash, Amanda

Worked for more than 160 Hours: Yes

Contribution to Project:

Name: Boley, Jeremy

Worked for more than 160 Hours: Yes

Contribution to Project:

Undergraduate Student

Name: Phillips, Erick

Worked for more than 160 Hours: Yes

Contribution to Project:

Erick provided field work support during the summer only.

Name: Ross, Noam

Worked for more than 160 Hours: Yes

Contribution to Project:

Noam provided support in our field work over the summer.

Name: Just, Allan

Worked for more than 160 Hours: Yes

Contribution to Project:

Allan provided support for our field work over the summer.

Name: Clark, Heather

Worked for more than 160 Hours: Yes

Contribution to Project:

Heather provided support during the summer for our field work.

Name: O'Donnell, Emily

Worked for more than 160 Hours: Yes

Contribution to Project:

Emily began as summer field help, and has continued to assist us with the lab work.

Name: Coria, Alexandria

Worked for more than 160 Hours: Yes

Contribution to Project:

Alexandria supported the project over the summer by assisting with field work.

Technician, Programmer

Name: Vadeboncoeur, Matthew

Worked for more than 160 Hours: Yes

Contribution to Project:

Other Participant

Research Experience for Undergraduates

Organizational Partners

USFS Northeast Forest Experiment Station

USFS White Mountain National Forest

Other Collaborators or Contacts**Activities and Findings****Research and Education Activities:**

We collected soil samples in Maine (International Paper), New York (Finch-Pruyn and IP), and Pennsylvania (public lands) and analyzed them to determine the importance of apatite in the parent materials. We also collected soils and surveyed vegetation in six stands of different ages in New Hampshire. We have engaged 6 graduate students and 6 undergraduate students in these research activities.

Findings:

We have finished analyzing the samples from the 10 widely distributed sites, which showed that apatite is important in all the sites with igneous or metamorphic parent materials. The two sites in Pennsylvania, which developed on sandstones, did not have significant apatite. Apatite can be an important source of Ca, and it has been overlooked in previous budgets.

Training and Development:

Six graduate and six undergraduate students gained experience in general research techniques including soil sampling, sample processing, and data analysis.

Outreach Activities:

We presented results from our sampling efforts at Washington State University in April 2003, as well as at meetings at the Hubbard Brook Experimental Forest in New Hampshire in July 2003, the annual meeting of the Ecological Society of America in Savannah GA in August 2003, and the All-Scientists Meeting of the NSF Long-Term Ecological Research network in Seattle WA in September 2003. We presented a paper at the SAF meeting in Buffalo in October 2003, which we submitted for publication in the Journal of Forestry in December 2003. We will be making another presentation at the Ecosystems Center in the beginning of March 2004.

Journal Publications

R.D. Yanai, J.D. Blum, S.P. Hamburg, M.A. Arthur, C.A. Nezat, and T. Siccama, "New insights into calcium depletion in northeastern forests.", Journal of Forestry, p. , vol. , (). Submitted

S.P. Hamburg, R.D. Yanai, M.A. Arthur, J.D. Blum, and T.G. Siccama, "Biotic control of Ca cycling in northern hardwood forests: acid rain and aging forests.", Ecosystems, p. 399, vol. 6, (2003). Published

Books or Other One-time Publications**Web/Internet Site****URL(s):**

<http://envstudies.brown.edu/research/calcium/>

Description:

Login Information:

username: Acer

password: saccharum

Other Specific Products

Contributions

Contributions within Discipline:

Our information changes our understanding of Ca sources and Ca supply.

Contributions to Other Disciplines:

Our focus on distinguishing the behavior of young and old stands has implications for interpreting changes in streamwater chemistry over time.

Contributions to Human Resource Development:

See education and development, above.

Contributions to Resources for Research and Education:

Through publications and presentations, as described above.

Contributions Beyond Science and Engineering:

Special Requirements

Special reporting requirements: None

Change in Objectives or Scope: None

Unobligated funds: less than 20 percent of current funds

Animal, Human Subjects, Biohazards: None

Categories for which nothing is reported:

Any Book

Any Product

Contributions: To Any Beyond Science and Engineering