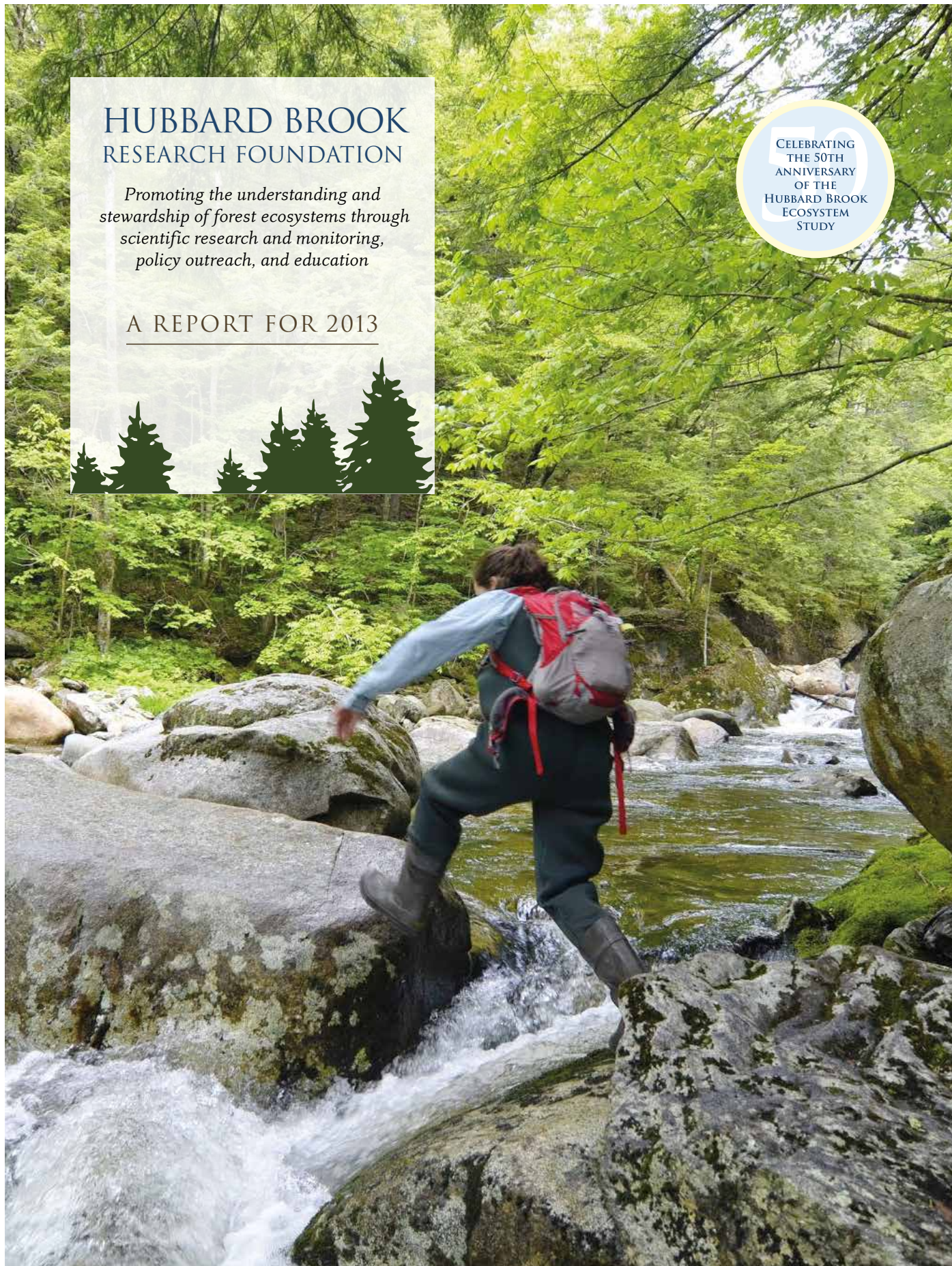


HUBBARD BROOK RESEARCH FOUNDATION

*Promoting the understanding and
stewardship of forest ecosystems through
scientific research and monitoring,
policy outreach, and education*

A REPORT FOR 2013

CELEBRATING
THE 50TH
ANNIVERSARY
OF THE
HUBBARD BROOK
ECOSYSTEM
STUDY



LETTER FROM HUBBARD BROOK

These research findings provide the raw material for education and policy programs that deliver authentic data to students, policymakers, land managers, and members of the public who care deeply about our natural world.



Temperate forests of northeastern North America are changing, with potentially harmful effects on water yield and quality, the diversity and abundance of plants and animals, and the regional economy. The region and the nation need the ecosystem services these forests provide, and scientists at Hubbard Brook have been working for nearly 60 years to better understand forest ecology with the goal of sustaining these valuable natural assets.

At the 8,000-acre Hubbard Brook Experimental Forest in Woodstock, New Hampshire, long-term studies of air, water, soils, plants, and animals have produced major discoveries about human and natural disturbances to the forested landscape. In a unique public-private partnership, scientists from scores of research institutions and the USDA Forest Service have collaborated to discover the existence and origins of acid rain; to reveal the effects of lead, salt, and nitrogen pollution in streams and lakes; and to identify the causes of change in populations of birds and other animals. These research findings provide the raw material for education and policy programs that deliver authentic data to students, policymakers, land managers, and members of the public who care deeply about our natural world. Hubbard Brook's influence is widespread, thanks in part to the many preeminent forest ecologists who have or are performing research at Hubbard Brook or who now occupy positions of leadership at research universities, government agencies, and public interest groups. Hubbard Brook helped create a new paradigm of "ecosystem thinking"—a model for integrated research and problem-solving that can reveal how nature works and point to methods for sustaining forest productivity.

This annual report provides a snapshot of the ways that the Hubbard Brook Research Foundation supports the science at Hubbard Brook with policy outreach, education programs, and housing and other facilities for scientists. Please consider visiting us at Hubbard Brook to see first-hand the extraordinary work that occurs at this special place.

Sincerely,

A handwritten signature in blue ink that reads "David Sleeper".

David Sleeper
Executive Director
May 2014

Founded in 1993, the Hubbard Brook Research Foundation (HBRF) works to sustain and enhance the Hubbard Brook Ecosystem Study in New Hampshire, in partnership with the USDA Forest Service/Northern Research Station, the National Science Foundation's Long-Term Ecological Research Network (LTER), the Hubbard Brook Consortium, and many colleges, universities, and other research institutions.



Our goals are:

- To sustain and expand long-term ecological monitoring and research at the Hubbard Brook Experimental Forest.
- To bridge the gap between ecosystem science and public policy by enhancing the exchange of information among scientists, policy-makers, and land managers.
- To foster public understanding of the functions of ecosystems and their importance to society.

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HUBBARD BROOK CONSORTIUM

The Hubbard Brook Consortium is a group of research and educational institutions that supports the work at Hubbard Brook, with special emphasis on field research opportunities for undergraduates, facilities, and public outreach events. Consortium members include the Cary Institute of Ecosystem Studies, Cornell University, Dartmouth College, Plymouth State University, Syracuse University, USDA Forest Service/Northern Research Station, and Wellesley College.

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Woodstock, VT 05091
Tel: (802) 432-1042

Pleasant View Farm and Mirror Lake Campus
25 Dobson Hill Road
Thornton, NH 03285
Tel: 603-726-8911
Fax: 603-726-4451

Hubbard Brook Experimental Forest
Robert S. Pierce Laboratory
Operated by the USDA Forest Service
Ian Halm, *Site Manager*
Tel: 603-726-8902





SCIENCE AND POLICY

A key mission of the Hubbard Brook community is to bring state-of-the-art science to bear on the environmental dilemmas of our time. This was true for discussions about clear-cutting in the 1960's and acid rain in the decades that followed, and it remains true today for vexing problems including climate change, forest pests and pathogens, and mercury and nitrogen pollution.

◀ *Pamela Templer, a Hubbard Brook scientist from Boston University, describes her soil-warming experiment.*

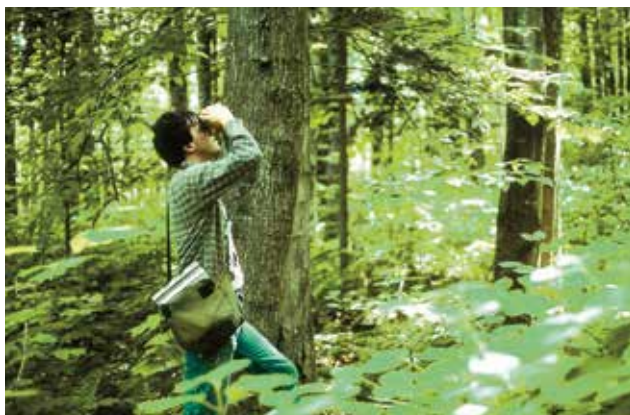


Science Links

HBRF launched its hallmark **Science Links program** in 2001 in an effort to bridge the gap between ecosystem scientists and policymakers. To date, Science Links projects have addressed acid rain, nitrogen and mercury pollution, long-term ecological monitoring, and community responses to carbon emissions. A new Science Links Migratory Birds Project, done in collaboration with the Science Policy Exchange, will explore multiple stresses on bird populations caused by threats including climate change, atmospheric pollution, wildlife pathogens, and development pressures. The Science Policy Exchange, which HBRF helped to launch in 2012, leverages the scientific resources of six world-class research institutions and four Long-Term Ecological Research (LTER) sites. Along with HBRF, the founding institutions are: the Cary Institute of Ecosystem Studies, Harvard Forest, the MBL Ecosystems Center, Syracuse University, and the University of New Hampshire.



HBRF's science and policy projects are supported by the USDA Forest Service, Northeastern States Research Cooperative, and the National Science Foundation.



Hubbard Brook Roundtables/ Forest Science Dialogues

Hubbard Brook Roundtables use facilitated dialogues to bring together scientists with business leaders, citizen-groups, government officials, and local decision-makers in order to share information on timely environmental issues. Past roundtables have covered wood biomass energy, payments for ecosystem services, forest carbon sequestration, and winter climate change. Roundtables produce op-ed pieces, scientific articles, white papers, and other communications vehicles; they also sometimes lead to demonstration projects, including a community woodshed project to supply sustainably harvested wood chips and a web-based marketplace for watershed services. Recently Hubbard Brook scientists met with members of the snowmobiling community to discuss winter climate change and how the sport might promote new land-management practices in order to adapt to a warming world. In late 2013, HBRF received a two-year, \$265,000 grant from the National Science Foundation to expand the roundtable series by conducting communications training for scientists and by holding a series of dialogues with community stakeholders.



Participants in a Hubbard Brook Roundtable with a special focus on winter climate change and its effects on the region's snowmobiling industry.



EDUCATION

Meteorological, hydrological, and chemical data collected at the Hubbard Brook Experimental Forest create the foundation for our outreach to schools. The long-term record provides raw material for mathematical and scientific analyses in support of the required curriculum. In 2013, HBRF educators hosted four teachers and twelve undergraduate students in the Research Experience for Teachers (RET) and Research Experience for Undergraduates (REU) programs. Participants learned techniques for collecting and analyzing data from preeminent Hubbard Brook scientists. All middle school science teachers in one district have now participated in the RET program and are implementing these skills in the classroom. In addition, HBRF educators conducted professional development programs for more than 50 NH elementary, middle, and high school teachers. The goal was to build vertical science literacy related to weather, atmosphere, and climate using data from the Hubbard Brook Ecosystem Study. With the forest serving as the study setting for lessons in ecology, economics, social studies, math, and literature and with dynamic presentations given by Hubbard Brook scientists, this training has the potential to improve environmental literacy for hundreds of students across the state. HBRF educators also presented data-based lessons at the NH Science Teachers' Association Conference in November 2013.



- Education project partners and sponsors include the Betsy and Jesse Fink Foundation, GLOBE, the National Science Foundation, NH DES, NH Fish and Game, NH Project Learning Tree, Northeastern States Research Cooperative, Plymouth State University, and the USDA Forest Service.

50th Anniversary Celebration

In July 2013, the 50th anniversary of the Hubbard Brook Ecosystem Study was marked by a day-long celebration looking back on the people and science of Hubbard Brook, and looking forward toward the critical issues and challenges facing the Northern Forest and the global environment. The celebration included keynote lectures by Gene Likens of the Cary Institute of Ecosystem Studies, a co-founder of the Study; Fred Krupp, President of the Environmental Defense Fund; and Ann Bartuska, USDA Deputy Under Secretary for Research, Education and Economics. The program also featured five forward-thinking "Herb Talks" (modeled after "Ted Talks" and named for the late Herb Bormann, another Hubbard Brook co-founder along with Bob Pierce and Noye Johnson) by John Battles, University of California, Berkeley; Charles Driscoll, Syracuse University; Nicholas Rodenhouse, Wellesley College; Lindsey Rustad, USDA Forest Service; and Kathy Fallon Lambert, Harvard Forest. The



celebration was attended by more than 250 researchers, students, Hubbard Brook alumni, and friends and included a dedication of the Pleasant View Farm dormitory and campus to Herb and Christine Bormann, a "Founders' dinner" that included multiple generations from the four founding families, and many good memories, conversations, and plans for the next 50 years. Videos of the talks are available at the HBRF website, www.hubbardbrookfoundation.org.



50th anniversary weir cake prepared by Hubbard Brook Advisory Council Member, Alison Chase.



FACILITIES

HBRF's facilities include housing, classroom, laboratory space, and storage for a diverse group of principal investigators, field technicians, and students based at home institutions across the country. Our goal is to provide comfortable, convenient, efficient, and affordable facilities for large-scale field studies at Hubbard Brook. In conjunction with the Forest Service's Robert S. Pierce Ecosystem Laboratory, Hubbard Brook facilities are commensurate with the world-class nature and collaborative spirit of the Study itself.

F. Herbert and Christine Bormann Ecosystem Campus at Pleasant View Farm

Pleasant View Farm, known by generations of researchers and students for its dormitory-style farmhouse, provides the backdrop for the camaraderie and creative thinking for which Hubbard Brook is so well known. Pleasant View Farm is where scientific arguments are sharpened, volleyball championships are contested, and field techniques and traditions are handed down to new generations of young scientists. In 2013, Pleasant View Farm was filled to capacity due to the renewal of HBRF's signature education initiative, the Research Experience for Undergraduates (REU) program. The REU program enables undergraduate students from around the country to live and work at Hubbard Brook for ten weeks.



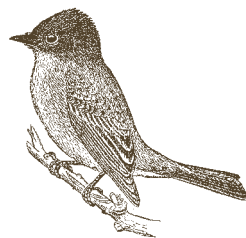
Mirror Lake Conservation Campus

In 2013, HBRF implemented a business plan designed to protect the Mirror Lake facility while optimizing its use and availability for scientists during the summer field season. During this inaugural year of the plan, we succeeded in hitting our targets by nearly doubling rental income, and we accommodated a record number of more than 150 scientists and students. As a result, we were able to reinvest rental income in repairs, upgrades, and improvements to the facility.

During off-peak seasons at Mirror Lake, HBRF hosted retreats for the Environmental Defense Fund, the Roxbury Environmental Empowerment Project, RTI International, and the Logan Science Journalism Program with participating journalists from the *New York Times*, *Wired Magazine*, *Mother Jones*, public radio's Marketplace program, and other media outlets.

Stay at Hubbard Brook

Bring your organization for a private eco-retreat to Hubbard Brook. Lodging is available at both Pleasant View Farm and the private cottages on Mirror Lake. HBRF facilities are available for short-term rentals in the spring and fall. With advance planning, educational tours of the Hubbard Brook Experimental Forest can be arranged.



OUR DONORS



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50th ANNIVERSARY OF THE HUBBARD BROOK ECOSYSTEM STUDY

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Michael and Ethel Weinberger
Cynthia L. and David H. Wood
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¹ In honor of F. Herbert Bormann

² In honor of Helaine Dreyfus Gants

³ In honor of Gene Likens

⁴ In honor of Robert S. Pierce

HUBBARD BROOK RESEARCH FOUNDATION

December 31, 2012 and 2013

ASSETS	2013	2012
Current Assets		
Cash and cash equivalents	\$ 88,036	\$ 184,961
Pledges receivable	\$ 21,703	\$ 31,720
Grants receivable	\$ 56,440	\$ 22,438
Other receivables	\$ 3,735	\$ 1,129
Prepaid expenses	\$ 1,171	\$ 1,112
Total current assets	\$ 171,085	\$ 241,360
Property and equipment		
Buildings and improvements	\$ 1,929,421	\$ 1,921,801
Equipment	\$ 68,682	\$ 68,682
Land	\$ 470,200	\$ 470,200
	\$ 2,468,303	\$ 2,460,683
Less accumulated depreciation	\$ 634,262	\$ 573,511
Total property and equipment	\$ 1,834,041	\$ 1,887,172
Long-term grants and pledges receivable	\$ 2,000	\$ 12,932
Total Assets	\$ 2,007,126	\$ 2,141,464

LIABILITIES AND NET ASSETS

Current liabilities		
Accounts payable and accrued liabilities	\$ 15,964	\$ 21,103
Deferred income	\$ 54,691	\$ 34,245
Current portion-Long term debt	\$ 15,581	-
Total current liabilities	\$ 86,236	\$ 55,348
Long term debt	\$ 468,788	\$ 614,909
Total Liabilities	\$ 555,024	\$ 670,257
Net Assets		
Unrestricted	\$ 1,340,971	\$ 1,282,992
Temporarily restricted	\$ 111,131	\$ 188,215
Total net assets	\$ 1,452,102	\$ 1,471,207
Total liabilities and net assets	\$ 2,007,126	\$ 2,141,464

STATEMENT OF ACTIVITIES AND CHANGES IN NET ASSETS

Revenue and support		
Contributions and grants	\$ 432,365	\$ 721,532
Rental income	\$ 90,800	\$ 64,695
HBRF consortium dues	\$ 67,500	\$ 89,460
Donated services	-	-
Other income	\$ 19,461	\$ 6,247
Total revenues and support	\$ 610,126	\$ 881,934
Expenses		
Program costs:		
Facilities	\$ 205,665	\$ 168,960
Education	\$ 228,616	\$ 337,778
Total program expenses	\$ 434,281	\$ 506,738
Supporting services expense		
Management and general	\$ 185,813	\$ 192,174
Fundraising	\$ 9,137	\$ 9,739
Total supporting services	\$ 194,950	\$ 201,913
Total expenses	\$ 629,231	\$ 708,651
Change in net assets	\$ (19,105)	\$ 173,283
Net assets, beginning of year	\$ 1,471,207	\$ 1,297,924
Net assets, end of year	\$ 1,452,102	\$ 1,471,207

Note: These schedules should not be confused with HBRF's 2013 audited financial statements. That report, including footnotes and the auditor's opinion, is available upon request or may be found on the HBRF website.

