The past decade has seen many changes at Plymouth State. In 2003, Plymouth State College became Plymouth State University. The change in name reflected other transitions. As state funding for education declined, PSU forged new partnerships and community connections in the Lakes Region and the North Country. Similarly, new initiatives in finding federal and state funding, as well as building PSU’s endowment, were set in place. Many of the University’s academic and residential buildings were renovated, and Langdon Woods Residential Complex, the University’s US Green Building Council Leadership in Energy and Environmental Design (LEED) gold-certified residence hall, was built. PSU’s unique location between New Hampshire’s Lakes Region and White Mountains made it increasingly obvious that the natural environment should be the focus of a new center at Plymouth State. But it takes people, ideas, and infrastructure to create a center.
THE BOYD HALL INITIATIVE

In January 2001, trustees and staff of the University System of New Hampshire (USNH) introduced the Knowledge Economy Education Plan (KEEP) for New Hampshire. This plan was designed to seek state bonding totaling $185 million to complete capital renovations to the USNH science, engineering, and technology facilities over a period of six years. In the spring of 2001, the New Hampshire legislature appropriated $100 million in capital funds to support the first phase of the KEEP initiatives, including $16.5 million dollars for reconstruction of Plymouth State’s Boyd Hall, which housed both the foreign language department and the natural science department, including biology, chemistry, meteorology, and physics. Boyd Hall, named for innovative science professor Robert L. Boyd, was built in 1968 to provide more space for science laboratories and offices than was available in Rounds Hall. Professor Boyd was known not only for his field trips to Langdon Woods, a forest between the campus and the Baker River, where students studied the habitats of precisely measured plots, but also for the campus landscaping he designed. By 2001, Boyd Hall was in need of renovation and expansion. The University System of New Hampshire and the New Hampshire legislature helped make that happen.

Also in January 2001, Angela Matthews was hired as director of development. Among other responsibilities, she was tasked with finding fund-raising volunteers for several projects, including the equipping of Boyd Hall. Important connections between PSU and the people who would help create the Center for the Environment were made shortly
thereafter. In the summer of 2001, Bertha Fauver of Plymouth, NH, a longtime supporter of both the University and lake conservation organizations, hosted a luncheon meeting attended by then-Plymouth State president Donald Wharton, Angela Matthews, and Will Abbott, then-director of the Squam Lakes Natural Science Center. Bertha Fauver’s goal for the luncheon was “connecting people and ideas” (Fauver, personal communication, 10/15/09). The gathering over lunch acknowledged the important connections that could be made among various constituencies such as PSU, the Squam Lakes Natural Science Center, the Squam Lakes Association, and Lakes Region community members. This meeting did indeed lead to the connection of people and ideas.

**THE PRESIDENT’S COUNCIL FORMED**

Also during the spring and summer of 2001, Plymouth State administrators and alumni identified potential members of what would become the President’s Council. Key alumni were on the list, but there also was a need for local representation by community members. Among other area residents, New Hampshire legislator Reverend Sidney Lovett was invited to serve. He had been involved in the campaign for PSU’s Silver Center for the Arts, and he understood the cultural, social, and educational contributions the University makes to surrounding communities. The University’s administration was also eager to forge more academic and professional connections with the Lakes Region and the North Country of New Hampshire.

The first meeting of the President’s Council was held on December 4, 2001. Eighteen alumni and community members participated, along with Plymouth State administration and staff members. Council members agreed that the mission of this new group was to “build endowment and develop other financial resources through diversification” (Minutes, President’s Council, 12/4/01). The council agreed that the initial project would focus on funding to equip the renovated Boyd Science Center, among several other projects. During a discussion about funding strategies, Lovett suggested the need for a limnologist at PSU. According to Lovett, the fund-raising should not be just about equipping Boyd Hall. PSU should connect more fully with the Lakes Region, as the Lakes Region should connect with PSU. He clarified the need for the University to serve as a center for scientific research, particularly in the study of the area’s streams, ponds, and lakes.

On the day of the President’s Council’s first meeting, the council toured Boyd Hall with Wavell Fogleman, chair of the natural science department, and met with Mitchell/Guirgola Architects of New York City. Angela Matthews presented a draft of “A Case for Boyd
Hall—Center for Study of the Natural Sciences.” The council ultimately set a five-year, $5-million-fund-raising goal through the Expanding Our Reach campaign and scheduled its next meeting on Friday, April 26, 2002, at 7:30 a.m., the day before the groundbreaking at Boyd Hall. At that meeting, it was announced that the Expanding Our Reach campaign had enlisted key council members, PSU administrators, staff, and faculty. Core faculty would bring the campaign to other faculty and staff.

THE IDEA EXPANDS

By the summer of 2002, the conversation about an environmental focus for Plymouth State included not only PSU administrators but also faculty from the natural science department, representatives of community organizations, and community volunteers. For example, Lovett held a breakfast meeting in Holderness, NH, where there was discussion of possible collaboration on a species identification project for White Oak Pond. Professor Richard Fralick of the natural science department had already been involved in studying freshwater jellyfish at White Oak Pond. The Squam Lakes Association was interested in having student interns do research on water quality and invasive milfoil in the Squam Lakes ecosystem.

At the December 6, 2002 meeting of the President’s Council, there was discussion of the use of funds from the Expanding Our Reach campaign for equipment for Boyd Hall. There was a goal of $1.2 million toward that end, assisted by a $500,000 earmark from the National Oceanic and Atmospheric Administration (NOAA) for the meteorological program at Boyd Science Center. The President’s Council minutes noted that: “The President reported on the ‘Center for the Study of Lakes, Mountains and Forests,’ which is a proposed center that will focus some of the Department of Science’s research and student internships on the needs of the lakes, forests, and mountains of NH.” As part of its commitment to enhancing education in environmental issues, the graduate studies program held a summer institute and field experience for science teachers in the summer of 2003.

In August 2003, Plymouth State College officially became Plymouth State University. Also in the fall of 2003, the newly reconstructed Boyd Science Center opened, with 54,400 square feet renovated and an additional 35,600 square feet providing room for new offices, classrooms, and laboratories, including a greenhouse, a 1,400-liter aquarium, and climate-controlled research space (Plymouth Week, August 22–28, 2005, p. 1). The newly created biological sciences department joined the other natural sciences housed in Boyd.
CONCEPTUALIZATION OF THE CENTER

That fall, a retreat was held at Dartmouth College’s Minary Conference Center on Squam Lake. Supported in part by a grant from the New Hampshire Charitable Foundation, this event led to the conceptualization of an environmental center, and to its official name. PSU administrators and faculty, non-profit organizations, state agencies, and experts in the field came together on Saturday, October 25, 2003 to brainstorm ways in which Plymouth State could best provide environmental services and outreach to the Lakes Region and the North Country. Joshua Hamilton, at the time director of the Center for Environmental Health Sciences at Dartmouth College, strongly recommended the center’s name be simple yet descriptive. The group agreed on the Center for the Environment. Also in attendance were Kathy Lambert (Hubbard Brook Research Foundation), Bill Smith (Yale School of Forestry, retired), Rick Van de Poll (Ecosystem Management Consultants), Chris Devine (Squam Lakes Association), Will Abbott (Squam Lakes Natural Science Center), Martha Hill (New Hampshire Charitable Foundation and Plymouth State alumna), Nancy Christie (New Hampshire Lakes Association), Harry Vogel (Loon Preservation Committee), Gordon Marshall (Lake Sunapee Protective Association), the Reverend Sidney Lovett (President’s Council, Squam Lakes resident), and science faculty from PSU, including Christopher Chabot, Wavell Fogleman, Richard Fralick, Eric Hoffman, James Koermer, Leonard Reitsma, Larry Spencer, Mark Turski, and Warren Tomkiewicz.
The following day, Sunday, October 26, 2003, the natural science department faculty met with President Wharton, Provost Barry, and Director of Development Angela Matthews to discuss ways to integrate the Center for the Environment into the Boyd Science Center. Even though the footprint of Boyd Hall had been expanded, space was clearly an issue. However, the faculty agreed on the importance of the center, and in so doing, gave up lab and office space designated for their own use. The “Report on Retreat of Natural Sciences Department” (October 27, 2003) proposed a timeline for creation of this center. It suggested that a search committee for the director, consisting of two faculty members, one representative from a non-profit organization, and one representative from advancement (formerly development), should be in place by November 5, 2003, and advertisements placed by December 1, 2003. The new director was to be selected and begin work by September 1, 2004, at the latest.

The search began in earnest in December 2003. The search committee consisted of Larry Spencer (biological sciences, PSU), chair of the committee; Chris Devine (Squam Lakes Association); Angela Matthews (advancement, PSU); Katherine Donahue (anthropology, PSU); and Martha Hill (NH Charitable Foundation).

FIRST DIRECTOR HIRED

In the spring of 2004, Jeffrey “Steve” Kahl, director of the Senator George J. Mitchell Center for Environmental and Watershed Research at the University of Maine was selected as director of PSU’s Center for the Environment. Kahl, who received his BA in zoology, his master’s in geological sciences, and his PhD in watershed geochemistry from the University of Maine, has a national reputation for his research on acid rain and water quality in lakes and streams. The New Hampshire Charitable Foundation and other funds supported a retreat at the Minary Center to introduce Kahl and to clarify and prioritize the goals of CFE. The meeting was held June 25 and 26, 2004. On Friday night and Saturday morning, the meeting was attended by Gene Likens, director of the Cary Institute of Ecosystem Studies, Millbrook, NY, members of environmental non-governmental organizations and state agencies, and Plymouth State administrators and faculty. On June 26, a luncheon with a larger group of attendees from the Lakes Region was held at Church Landing in Meredith, NH. Gene Likens gave the keynote address.

By September 10, 2004, the President’s Council announced that the Expanding Our Reach campaign was at $4.8 million, very close to its $5 million goal. At that meeting, Steve Kahl and Provost Ginny Barry
gave a presentation on the Center for the Environment. Provost Barry provided background on its formation, and Kahl discussed his vision for the center. It would be, he said, an important addition to PSU as a regional comprehensive university. The center would provide outreach opportunities, as it would not be “just about science,” but it would also focus on research on lake and forest ecosystems and provide graduate education in environmental science.

THE CENTER OPENS

New faculty and staff members joined the center. Christine Hoch, and later Shaughn Bolton, shared duties as administrative assistant between the center and the biology department. Mary Ann McGarry, a science educator with an EdD from the University of Maine, joined the CFE faculty and later the BS program in Environmental Science and Policy. In November 2004, a grant from the Davis Conservation Foundation helped provide support for the position of outreach and development coordinator, and on February 14, 2005, June Hammond Rowan was hired to fill that position. Hammond Rowan, who has a master’s in geography from the University of Colorado, had been a town planner
in Plymouth and Berlin, NH, and worked as a water resources planner with the state of New Hampshire. Center Director Kahl, Outreach Coordinator Hammond Rowan, and McGarry worked in collaboration with others in developing a new graduate program. In April 2005, the MS in Environmental Science and Policy was approved by the Plymouth State faculty, and in June 2005, this multidisciplinary graduate program incorporating the natural, physical, and social sciences with other disciplines was approved by the USNH System Academic Planning Council.

To enhance CFE’s academic and research programs, additional faculty members were hired. In the spring of 2005, Brian Eisenhauer, an environmental sociologist in the social science department whose PhD is from Utah State, was appointed to the position of associate director of the Center for the Environment. Eisenhauer’s research and publications have focused on natural resource and environmental sociology, natural resource management, place attachment, and methods of community-based research. Prior to joining CFE, he included students in research assessing exhibits at the Squam Lakes Natural Science Center and assessed program effectiveness of the Natural Resources Outreach Coalition in a project funded by the New Hampshire Department of Environmental Services (DES). Also in the fall of 2005, Kevin McGuire, a hydrologist who received his PhD in forest engineering from Oregon State, was hired for a joint position at the Hubbard Brook Experimental Forest and PSU. The position was co-funded by PSU and the Northeastern Research Station (now Northern Research Station) of the US Forest Service (USFS) in Durham, NH, with additional funds coming from the New Hampshire Charitable Foundation. The position would allow him time to do work on the Northeastern Research Station’s projects at Hubbard Brook as well as to teach at PSU. He represented Hubbard Brook on a National Science Foundation-funded Long Term Ecological Research project then under way with researchers from Cornell, Syracuse, and Dartmouth (Plymouth State News, 10/11/05). That fall, the first group of graduate students entered the Environmental Science and Policy program.

**CHANGES AND GROWTH**

In the fall of 2005, President Wharton announced he would retire at the end of the academic year, and Sara Jayne Steen was named the 14th president of PSU in June 2006. In the spring of 2007, Steve Kahl announced that he was leaving CFE. Looking back, he said he was proud of a number of accomplishments during his tenure as director. Among other projects, he cited the contribution of CFE outreach
and service as part of the regional mission of the University, the USFS Hubbard Brook hydrology partnership, partnerships with the Squam Lakes Association and other organizations, the creation of the Environmental Research Laboratory, and the growth of the graduate program (personal communication, 10/6/09).

Patrick Bourgeron was hired as director in February 2008. Well-regarded as an ecosystem scientist, he came from the University of Colorado Institute of Arctic and Alpine Research (INSTAAR), where he had served as research fellow since 1997. Prior to working at INSTAAR, he was an ecologist for the Nature Conservancy. In announcing his hiring, President Sara Jayne Steen said that “Dr. Bourgeron is a well-respected scientist, collaborator, and leader. We can expect to see wonderful partnerships generating exciting work that will benefit New Hampshire,” (Update from the Center for the Environment, Spring, 2008, Vol. 4, No. 1, p. 1).

There would be other changes as well. In the spring of 2008, Angela Uhlman replaced Shaughn Bolton as administrative assistant. CFE administration and staff moved from Boyd Hall to offices on the second floor of Russell House, where the Center for Rural Partnerships, the Institute for New Hampshire Studies, and the PSU Admission Office are housed.

In the fall of 2008, the Bachelor of Science in Environmental Science and Policy major was created, and with it a new Department of Environmental Science and Policy, housed in Boyd Science Center and chaired by Professor of Natural Science Education Warren Tomkiewicz. In December 2008, Kevin McGuire left Plymouth State, and in August, 2009, Mark Green was hired as assistant professor of hydrology with the
Patrick Bourgeron stepped down as CFE director in the summer of 2010. Brian Eisenhauer was appointed interim director, and June Hammond Rowan was appointed interim associate director. Along with Eisenhauer and Hammond Rowan, CFE has the following core faculty and staff: Mark Green, assistant professor of hydrology; Betsy Ayotte, financial manager and program coordinator for master of science programs; Aaron Johnson, senior laboratory technician; and Angela Uhlman, administrative assistant. There are also three research professors: Lisa Doner, a climatologist specializing in climate-watershed interactions in lacustrine systems; Kimberly Duncan, an environmental chemist; and Douglas Earick, an environmental educator. Other faculty members include Katherine Donahue (Anthropology), Jeremiah Duncan (Atmospheric Science and Chemistry), Michele Pruyn, Kerry Yurewicz, and Leonard Reitsma (all of the Department of Biological Sciences), Warren Tomkiewicz (Environmental Science and Policy), Scott Bailey (jointly appointed with the USDA, Forest Service), Mary Ann McGarry (Environmental Science and Policy), Tom Shevenell (an environmental consultant), and Geoff Wilson, who also works with the Hubbard Brook Research Foundation (HBRF).
STUDENTS

As of May 2010, 34 students have been accepted into the MS in Environmental Science and Policy program. Twenty have been full-time students, 14 have been part-time. Fourteen students have graduated as of the summer of 2010. Both undergraduate and graduate student interns have been supported in doing research with partners such as the US Forest Service, the Town of Meredith, the Newfound Lake Region Association, the Rey Center, and the Squam Lakes Association (SLA), and the Squam Lakes Conservation Society (SLCS). Chris Devine, executive director of the SLA, who has a background in geology and hydrology, was instrumental in setting up internships with the SLA. By 2010, four students also had internships at the SLCS. Many of these projects have led to graduate theses, with topics including land use in the Lake Waukewan watershed and work on decision support modeling. Also, undergraduate and graduate students have worked with faculty and regional partners in order to create a master watershed plan for the Newfound Lake region; on assessing, and changing, homeowners’ lawn care behavior in order to reduce nutrient runoff from those lawns; and analyzing landscape controls on stream chemistry variability in the Hubbard Brook Experimental Forest.

GRANTS AND PARTNERSHIPS

Beginning in September 2005, an earmark from NOAA provided funding for CFE’s mission, outreach, salaries, and student support. From those funds, CFE created a number of smaller seed grants to promote environmental research across campus. These grants also promoted graduate and undergraduate research. A subsequent earmark in 2006 continued the support of students and outreach. A grant from the Environmental Protection Agency to determine the effectiveness of the Clean Air Act in surface waters of the US supported CFE research with partners at University of New Hampshire Water Resources Research Center; the University of Maine Water Resources Research Institute; and Dartmouth College.

DES has been another important partner with CFE. The two groups collaborated in the spring of 2006 to create an environmental research laboratory in Boyd Science Center to provide freshwater analysis services not only for Plymouth State but also for federal, state, and local water monitoring programs. This collaboration led to funding in 2009 for expanding the Volunteer Lake Assessment Program and Volunteer River Assessment Program in New Hampshire’s North Country. CFE adjunct faculty member Tom Shevenell, who has had a private environmental consulting firm, assisted with creation of the lab.
Adam Baumann and Janet Towse, both graduate students, served as senior laboratory technicians. More recently, Aaron Johnson was hired as senior laboratory technician. Johnson has an MS in Water Resources and an MPA in environmental policy and natural resources management from Indiana University.

The White Mountain National Forest (WMNF), the USFS Northern Research Station, and US Geological Survey have been long-standing partners in research. These agencies have provided opportunities for CFE to engage in hydrologic research projects at the Hubbard Brook Experimental Forest and the Ore Hill Mine, providing excellent hands-on research opportunities for graduate students. The WMNF has recently been working with CFE and its students on water quality monitoring and a project to understand aluminum in the soils and water of the forest.

Over time, CFE has received funding for environmental research projects such as:

• studying the protection of waterways by reducing the use of road salt (funding from DES),
• studying remote ponds and their response to acid rain (funding from the New Hampshire Electric Cooperative),
• working with a group of partners on developing a watershed master plan for the Newfound watershed (funding from DES),
• working with the Rey Center in Waterville Valley to monitor vegetation on an altitudinal gradient,
• conducting a four-year project “Changing Homeowner’s Lawn Care Behavior to Reduce Nutrient Runoff in New England’s Urbanizing Watersheds,” funded by the US Department of Agriculture Cooperative State Research, Education, and Extension Service,
• researching the social, economic, and ecological effects of second home development in the Northern Forest region,
• sampling water isotopes to create a database on the hydrology of the White Mountains and nearby areas.

In recent years, CFE’s outreach mission has resulted in involvement with statewide conferences. The New Hampshire Water Conference was an initiative led by CFE. Held in 2007 and 2008, it merged with the New Hampshire Watershed Conference in 2009 and CFE remains a key organizer and host of the event. In July 2008, CFE hosted the Integrated Design, Integrated Development Conference in partnership with the New Hampshire Chapter of the American Institute of Architects, the Jordan Institute, and Granite State Landscape Architects.
Local communities including Berlin, Sandwich, Holderness, Grantham, and Canaan, as well as the Coos Symposium, have benefitted from working with CFE in planning and research efforts, occasionally in tandem with the Plymouth State Center for Rural Partnerships. CFE has also partnered with the Baker River Watershed Association, the North Country Council, and the Appalachian Mountain Club on research projects.

The Hubbard Brook Research Foundation has also been an important partner. Geoff Wilson of HBRF has served as adjunct faculty for CFE and from 2007–2009 Mary Ann McGarry served as director of education for HBRF. Working together, CFE and HBRF have received a major grant from the National Science Foundation (NSF) to provide an important research opportunity for undergraduate students through the Hubbard Brook Research Experience for Undergraduates (REU). According to the spring 2008 CFE newsletter, the grant would, for the next three years, enable eight students from US colleges and universities to conduct summer research at Hubbard Brook to learn the societal relevance of ecology and ecosystem science.
CFE SCHOLARSHIPS AND FELLOWSHIPS

CFE has benefited from the generosity of a number of donors, including Joe White ’68 and Gail Heffernan White ’66, who have been generous donors to CFE since 2005. Their careers as teachers and organic farmers cultivated a deep appreciation of the natural environment. In 2007, the Whites’ annual support was formalized into the Joe and Gail White Graduate Fellowship, the purpose of which is to support a full- or part-time graduate student in environmental science and policy.

In 2006, Sid Lovett made a donation to CFE to assist in the documentation of CFE’s work. In 2009, this fund was endowed through the creation of the Sid Lovett Fund for the Center for the Environment for the purpose of supporting the production of professional, high-quality materials developed from student and faculty research. Funds are to be used for printing costs, producing posters for conferences, and expenses for publication and reprints of journal articles by faculty and students, and for similar communications.

The James W. Tethers Scholarship Endowment was established at PSU in 2007 through a gift from the James W. Tethers Educational Fund of the New Hampshire Charitable Foundation, Manchester Region. This fund was established in memory of James W. Tethers, who worked at the Southern New Hampshire Planning Commission for 29 years and served as chief planner. The purpose of the fund is to support scholarships for New Hampshire graduate students studying urban, regional, community, or environmental planning or geography.

Each year, CFE makes awards from these funds to support students and faculty. These funds along with donations from Rockywold Deephaven Camps and other donors provide assistance supporting the work of CFE.
CONCLUSION

It has taken less than 10 years to carry out what was, in 2001, a dream created at a summer luncheon. It took many people to carry out that dream, including Plymouth State administrators and faculty, members of the University Advancement office and of the President’s Council, and dedicated community members and partners. As former director of development Angela Matthews has said, “…Ginny (Barry) and Don (Wharton) grasped a vision and brought it to fruition. My work in facilitating the process would have gone nowhere without their commitment to a new vision for the University.” (Angela Matthews, personal communication, 11/3/2009). Friends of PSU, such as Bertha Fauver, connected people and ideas. Representatives of organizations such as the Squam Lakes Natural Science Center and the Squam Lakes Association helped develop those ideas. Critical funding from Plymouth State University, private groups such as the New Hampshire Charitable Foundation and the Davis Conservation Foundation, state funding such as that from the DES, and federal funds from NOAA, the EPA, and NSF all contributed to the success of CFE and of the research done by its members and its students. Linda Madorma, an alumna of the Environmental Science and Policy program, said that the design of the MS program, through its combination of course work, internship, and research opportunities, “gave me a lot of direction in life” (Madorma, personal communication, 2/16/10). There is still a clear need for fundraising to support the Environmental Science and Policy graduate program as well as CFE’s research and partnership efforts. But Plymouth State has built its Center for the Environment on the foundation created by partnerships with representatives of the Lakes Region and the North Country. Brian Eisenhauer has said: “These are the kinds of partnerships that the Center for the Environment will focus on …We want to embody the Plymouth State mission ‘to serve,’ not only for the benefit of the region, but for the students to apply their academic knowledge in answering important questions for our region.” (Plymouth State News, 9/17/10).

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THE MISSION

Established in 2004, Plymouth State University’s Center for the Environment seeks to address environmental issues in northern New England through scientific research, education, and collaboration. We engage on- and off-campus partners to develop projects that provide science-based knowledge to assist in making informed decisions. We provide the next generation of educators, researchers, and leaders with a comprehensive environmental education that includes real-world research experience and fosters a thorough understanding of the natural, human, and built environment.