***Lye Brook By Year***

***Year*** ***Title*** ***Objective*** ***Sub Project Title*** ***Start and End***

**1982**

*Biological and Chemical Survey of Selected Surface Waters in Lye Brook*

*Wilderness Area*

Determine the present biological and chemical characteristics of

principal water bodies in and around Lye Brook Wilderness Area

so that changes to air quality related values (AQRV) can be

documented

Water chemistry of water bodies 3/1/82 Ongoing

Macroinvertebrate communities 4/1/93 10/3/95

Stream fish communities 4/1/93 10/3/95

Fish tissue analysis 4/1/94 10/3/94

Surficial sediment 4/1/94 7/20/94

Vernal pool chemistry 3/1/96 1/1/97

**1988**

*Fine Aerosol Monitoring*

Determine concentrations and composition of fine aerosols

(PM-2.5) of relevance to light scattering, light absorption, human

health and biological effects. Data available for use in

conjunction with other biological, physical and chemical

variables in trend and relationship assessments.

IMPROVE 9/1/88 Ongoing

NePART 9/1/88 5/1/95

Partner Network 1/1/00

*Incidence of ozone and its effects on vegetation in Lye Brook Wilderness Area*

To monitor ozone concentrations near and within Lye Brook

Wilderness (LBW) and relate these concentrations to the degree

of injury to vegetation within LBW.

Ozone effects on vegetation in the Lye Brook 4/1/88 8/30/95

Wilderness Area

Monitoring ozone concentrations 5/30/89 9/1/94

*Particulate Matter Monitoring*

Determine compliance with (PM-10) National Ambient Air

Quality Standards; determine concentrations and composition of

fine aerosols (PM-2.5) of relevance to light scattering, light

absorption, human health and biological effects. 9/1/88

**1991**

*Amphibian Survey and Monitoring*

To document the occurrence of amphibian species at each study

site; establish a baseline data set on their distributions and

abundances; and to monitor reproductive status in relation to

environmental conditions.

Drift Fences 4/15/91 Ongoing

Egg-mass Counts 4/15/91 12/31/96

General inventory 4/15/91 12/30/96

Stream Survey 4/15/93

*Forest Bird Surveys*

The primary goal is to conduct habitat-specific monitoring of

forest interior breeding birds and to determine trends over time. 6/1/91 Ongoing

*Forest Health Monitoring*

Annual remeasurements of forest plots to determine the condition,

trends and relationship to stressors using the same plot design as

in the National Forest Health Monitoring Program (NFHM).

Forest Health Monitoring 6/1/91 Ongoing

*Forest Pest Monitoring*

Monitoring trends in major insect pest populations, and

documenting the occurrence of damage to forests.

Forest Damage Survey 6/1/91 Ongoing

*Ozone Bioindicator Plant Monitoring*

Detect ozone injury on sensitive native plants, record first

occurrence data for each species, and evaluate the maximum

severity of the damage. 6/1/91

*Tree Phenology Monitoring*

Annual measurements of tree phenology to establish the timing of

developmental events and trends, especially as they relate to

changes in weather or insect and disease occurrence.

Fall color and leaf drop 7/15/91

**1993**

*Lichens and air quality in the Lye Brook Wilderness Area*

Collect lichens for a lichen species list; collect lichens for

elemental analysis; study the health and distributions of species

most sensitive to air pollution; and assess the effects of air quality 7/1/93 8/30/93

*Lye Brook Area Ecological Land Type Classification*

To classify ecological communities in the Lye Brook Area based

on an integration of soils, vegetation & physiographic data, that

will lead to mapping of these units within the area. 2/26/93 12/31/95

**1994**

*Clean Air Status and Trend Network (CASTNet)*

To provide site specific data meteorology, dry deposition of sulfur

and nitrogen species, wet deposition of major ions, and ozone. To

provide air quality data specific to the Lye Brook Wilderness

Area, a Class I Wilderness Area, to support research on the effects

of air pollution on the Air Quality Related Values (AQRV) of the

wilderness area.

Meteorology 1/1/94 5/1/2007

Ozone Monitoring 1/1/94 3/31/2007

Dry Deposition 4/6/94 5/1/2007

Wet Deposition 7/4/95 5/1/2007

*Effects of acidic deposition on terrestrial and aquatic ecosystems of Class I*

*Wilderness Areas.*

Determine the distribution of areas sensitive to deposition of

sulfur and nitrogen; determine the current status of sensitive areas

utilizing atmospheric deposition of nitrogen; determine the

degree of base cation leaching and aluminum mobilization (use

soil, vegetation, land use history assocations to identify

impacts); verify deposition thresholds; and assess impacts to

terrestrial and aquatic ecosystems if under the PSD process. 5/1/94 10/18/96

*Ozone Bioindicator Plant Monitoring*

Detect ozone injury on sensitive native plants and evaluate the

amount and severity of foliage injury. 6/1/91

*High Elevation Pond Sensitive Species Survey*

Ten year sampling intervals 1/1/1994 Ongoing

**1995**

*Lye Brook - Wildlife*

Quantify wildlife habitat type and extent. 1/1/95 12/31/95

***Year*** ***Title*** ***Objective*** ***Sub Project Title*** ***Start and End***

**1999**

*Long-term soil monitoring*

Detect changes in soils due to human caused impacts (i.e. climate

change, air pollution, forest management) at two forested sites in

Vermont

Feasibility study for long term soil monitoring 10/1/99 Ongoing

*Paleostratigraphy of mercury in lakes and ponds*

Assess mercury and methyl mercury in sediment cores from lakes

and ponds in and around Lye Brook Wilderness Area.

Paleostratigraphy of mercury in Branch Pond 6/1/99 12/31/99

**2000**

*Development of Soil Climate Analysis Network (SCAN) sites*  9/13/00 Ongoing

*Tree nutrition status on long-term soil monitoring plots*

To determine the content of major elemental nutrients in tree

foliage, twigs and wood for use in initial characterization of the

long-term soil monitoring sites, and for application in the New

England Governors/Eastern Canadian Premiers Forest

Sensitivity Mapping Project. 7/1/00 10/31/00

**2001**

*National Visitor Monitoring*

Annual collection of visitor trends, including numbers and dates 1/1/2001 Ongoing

**2002**

*Biomolecular Indicators of Acid Stress*

Investigate the effects of air quality, especially acid deposition,

on terrestrial and aquatic ecosystems. Specific objectives include

assessingn the diversity and community structure of soil bacteria

(nitrifiers and methanotrophs) in different acid depostion

environments; develop a biomolecular method for determining

ecosystem acid stress; and validate the PnET-BGC

forest-soil-water model on field, GIS and remote sensing data then

regionally apply the model. 6/10/02 6/11/02

**2004**

*Campsite Monitoring*

Five year sampling intervals 1/1/2004

**2005**

*Stream sampling* 1/1/2005

**2007**

*Throughfall Study* 1/1/2007

**2009**

*Long Term Wilderness Management Challenge Monitoring*

Ten year sampling intervals to manage for wilderness

characteristics such as primeval experience, solitude, etc.

Includes an Air Quality plan for camping. 1/1/2009

**2013**

*Fish Stocking Monitoring* 1/1/2013

*Lichen Survey*

Lichens surveyed by Forest Service subcontractors8/1/2013

**2014**

*Recreation Effects at Bourne Pond*

Fishing survey 1/1/2004

**Start year unknown**

*Aerial Surveys for Insects and Disease (same as Forest Pest Monitoring above?)*

Aerial surveys in the Green Mountain National Forest for

insect pest and disease conditions as a joint effort between the

Northeastern Area State and Private Forestry and the Vermont

Department of Forests, Parks and Recreation Ongoing

*Forest Health Plots (FIA?)* Ongoing

*Impaired Stream Monitoring*

Monitoring of acid precipitation impaired streams outside of the Lye

Brook Wilderness area: Bourne Pond Brook and Lye Brook as part of

TMDL regulation. Five year sampling due limited funding.

*Pond Core Monitoring*

Examine diatom and chrysophyte communities as part of TMDL

assessment. Goal is for alkalinity of 2.5 1/1/2001?

*Non-native Plant Survey*