

ANNUAL REPORT
FISCAL YEAR 2021

MAY 1, 2020 – APRIL 30, 2021





*Mount Washington Observatory
2021 Annual Meeting*

Virtual Town Hall

*June 29, 2021
7-8:30 p.m.*

Agenda

Welcome Remarks: *Gary MacDonald, Chair*

Election of New Trustees: *Paul Fitzgerald, Board Secretary*

Proposed Motion (if no nominations from the floor): “To direct the Secretary to cast one ballot for the election of New Trustees as proposed by the Governance Committee.”

Re-election of Trustees: *Paul Fitzgerald*

Proposed Motion (if no nominations from the floor): “To direct the Secretary to cast one ballot for the re-election of Trustees as proposed by the Governance Committee.”

Treasurer’s Remarks: *Beth Newhouse, Board Treasurer*

Updates: *Donna Dunn, Interim Executive Director &
Gary MacDonald, Chair*

Questions from Members

Adjourn

Dear Members,

We're all quite familiar with the many phrases and adjectives describing the unprecedented year of 2020-21. At Mount Washington Observatory, we discovered that "constantly changing" was the phrase that fit best. Pandemic changes, fiscal changes, changes in education and research, changes in location, and changes in our outreach.

Change was nearly the only constant during the past year. The other was your support. While it was a challenging year in so many ways, the continued financial support of our members was essential to continuing our work in weather and climate.

The changes validated the incredible resilience of the organization, and particularly the staff. Observers working in our summit weather station, led by Director of Summit Operations Rebecca Scholand, collaborated on ever-changing protocols to keep our summit staff safe. The respect they showed each other was extraordinary, and the year passed without a single case of COVID-19 on the summit.

At the same time, the summit team never stopped working to better understand our weather and climate. They completed two very important data research projects: the Temperature Database Project and Visibility Data Analysis.

Change was nearly the only constant during the past year. The other was your support.

These research projects have generated many more questions and leave us with lots more research to do. Read more about the scope of this work on page 10 and at mountwashington.org/research.

Staff were dealt a major change in the sudden loss of our beloved summit cat Marty last fall. He was with us for over a decade, and this change was an

emotional one for our staff and Marty's followers. We worked with the Conway Area Humane Society and, this spring, welcomed Nimbus to life at 6288'. He is settling in, catching mice and trying to mooch people food whenever possible. We are delighted Nimbus will continue the legacy of a cat residing at our summit weather station.

In "the valley," there have been many changes as well. As covered in this report, Education quickly adapted to pandemic needs and created multiple virtual programs. The success of these endeavors was both surprising and rewarding. Director of Science and Education Brian Fitzgerald spearheaded the changes – you have most likely 'met' him on Zoom during our monthly Science in the Mountains program.

The pandemic raised all kinds of questions on the financial front. Director of Finance and Administration Brenda Sullivan took the lead on accessing available relief funds. With two closed museums, limited educational programs and a virtual Seek the Peak event, we really didn't know what our financial position would be at the end of the year. We received two PPP loans that helped us through. Brenda's stewardship and the actions of the staff, combined with your support, resulted in a positive fiscal year-end that we never imagined possible at the start of the pandemic.

Our largest annual fundraiser, Seek the Peak, was ably led and transformed to a virtual event last summer by Director of Marketing and Communications Krissy Fraser. How do you take an event that people know and love and do it in a very different way? Krissy made it happen. While we couldn't all gather on Mount Washington, we

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MISSION

Mount Washington Observatory is a private, nonprofit, member-supported institution with a mission to advance understanding of the natural systems that create Earth's weather and climate. It serves this mission by maintaining a weather station on the summit of Mount Washington, performing weather and climate research, conducting innovative science education programs, and interpreting the heritage of the Mount Washington region.

PURPOSE

Mount Washington Observatory exists to gather, disseminate and analyze daily weather data; to contribute to the critical, long-term weather and climate record essential to scientific understanding of weather and climate in a unique, extreme environment.

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celebrated the success of the virtual event with a special flag raising at sunrise on the summit last fall (see photo on page 6).

The pandemic emphasized what we already knew – that a strong focus on development is critical for Mount Washington Observatory. We are committed to constantly and consistently engaging with our donors and members. Stephanie Fitzgerald became our Director of Development this year. Her leadership in this arena gives stability to our efforts.

The Board of Trustees initiated a process of evaluating our programs. The evaluation was based on the “dual bottom line” of all nonprofits – delivery on our mission and financial viability. This assessment took nearly five months to complete. The outcome: a number of significant, visible changes.

Most visible was the closure of the Weather Discovery Center museum in North Conway. This decision by the Board of Trustees was based on detailed information, deliberate debate, and thoughtful consideration. A few of our exhibits moved to our Extreme Mount Washington museum on the summit. A few are moving to the Intervale Scenic Vista Visitor’s Center. Most exhibits are now on permanent loan to the McAuliffe-Shepard Discovery Center in Concord. We’ve extended our reach into the community, helping a much larger audience learn about the weather and Mount Washington Observatory. McAuliffe-Shepard even rebuilt the famous “Shaky Shack,” and it is rapidly becoming a visitor favorite.

Part of this change to the building in North Conway was the need to relocate our library and archives from the basement to the second floor. This shift meant a renovation would be needed for our administrative office. Visible soon will be a new space for the team – as well as some of the incredible pieces in our library collection.

What isn’t visible is the extraordinary work of the staff to make these moves happen. Everyone has cleaned, sorted, tossed, dismantled and moved literally tons of materials. The domino effect was present. Boxing and storing the contents of the library was a major effort that required cleaning out storage areas to accommodate these materials. The renovation necessary to move the library upstairs required emptying offices, boxing files and moving furniture. Staff found the meaning of all those things in that job description line of “other duties,” including Technology and Operations Manager Pete Gagne, who in one day was taking office cubicles apart in the morning and moving the snowcat to base by the afternoon. In this entire process, Director of Technology Keith Garrett kept us connected while we worked from home, dismantled the museum and office spaces, and moved to temporary space. We look forward to the day later this summer when we can settle into one place.

It has been a monumental year for Mount Washington Observatory. A year of change. A year of big decisions, constantly changing needs and opportunities, and great accomplishments.

We are looking forward to the future. We know the work of this year makes new things possible. We have started the 2022 fiscal year working on a new strategic plan. We will soon move into newly renovated office space. We anticipate new research opportunities. All of this is possible through your support. All is possible with the donations and sponsorships that keep this amazing, resilient nonprofit working on the science and research of weather and climate in our unique part of the world – no matter the changes and challenges we face.

Yours,

DONNA FRENCH DUNN
Interim Executive Director

STAFF

Marty Basch *Windswept Editor*
Jackie Bellefontaine *Education Specialist & Weather Observer*
Jay Broccolo *Weather Observer & Meteorologist*
Charlie Buterbaugh *Development Coordinator*
Dr. Peter Crane *Curator*
David DeCou *Weather Observer & Meteorologist*
Linda & Hank Dresch *Volunteer Coordinators*
Donna Dunn *Interim Executive Director*
Brian Fitzgerald *Director of Science & Education*
Stephanie Fitzgerald *Director of Development*
Krissy Fraser *Director of Marketing & Communications*
Pete Gagne *Technology & Operations Manager*
Keith Garrett *Director of Technology*
Jared Grace *Museum Manager*
Craig Hill *Snowcat Operator*
Ryan Knapp *Weather Observer & Meteorologist*
Jon Powers *Snowcat Operator*
Sam Robinson *Weather Observer*
Rebecca Scholand *Director of Summit Operations*
Brenda Sullivan *Director of Finance & Administration*
Nicole Tallman *Weather Observer & Education Specialist*

OFFICERS & BOARD OF TRUSTEES

Chairman: Gary MacDonald *Conway, NH*
Vice Chairman: Rob Kirsch *Concord, NH*
Treasurer: Beth Newhouse *Berlin, NH*
Secretary: Paul T. Fitzgerald *Laconia, NH*

Ed Bergeron *North Conway, NH*
Alexandra Breed *Gilford, NH*
Erica Broman *Longmeadow, MA*
Michelle Cruz *Conway, NH*
Ty Gagne *Hampton, NH*
John Gorman *Boston, MA*
Drew Landry *Keene, NH*
Michael Matty *South Hadley, MA*
Jack Middleton *Freedom, NH*
Peter Middleton *Portsmouth, NH*
Beth Newhouse *Gorham, NH*
Ken Rancourt *Center Conway, NH*
Marsha Rich *Chichester, NH*
Bruce Soper *Newbury and New London, NH*
Mary Stampone *Dover, NH*
Karen Umberger *Kearsarge, NH*
Brian Underwood *Rye, NH*
Howie Weymss *Randolph, NH*
Albert W. Wheeler *Cumberland Center, ME*

LIFE TRUSTEES

Dr. Charles W. Burnham *Durango, CO*
Brian K. Fowler *Grantham, NH*
Guy Gosselin *Merrimack, NH*
Christopher Hawkins *Lancaster, NH*
Kenneth Jones *Amherst, NH*
Gail Langer *Harpswell, ME*
Gail Paine *Intervale, NH*
Leslie Schomaker *Jackson, NH*
Kendall D. Smith *Melrose, MA*
Dr. Bryant F. Tolles, Jr. *Concord, NH*
Dr. Mark Van Baalen *Rockport, ME*

FISCAL YEAR 2021 REPORTING

May 2020 through April 2021

REVENUE



| | | |
|--|--------------------|-------|
| Summit | \$251,203 | 15% |
| Retail | \$7,115 | 0.5% |
| Education | \$70,116 | 4% |
| Advancement | \$659,542 | 39.5% |
| Administration | \$143,698 | 9% |
| PPP & NERF Grants | \$540,810 | 32% |
| Total Operating, Loan & Grant Revenue | \$1,672,483 | |

EXPENSES



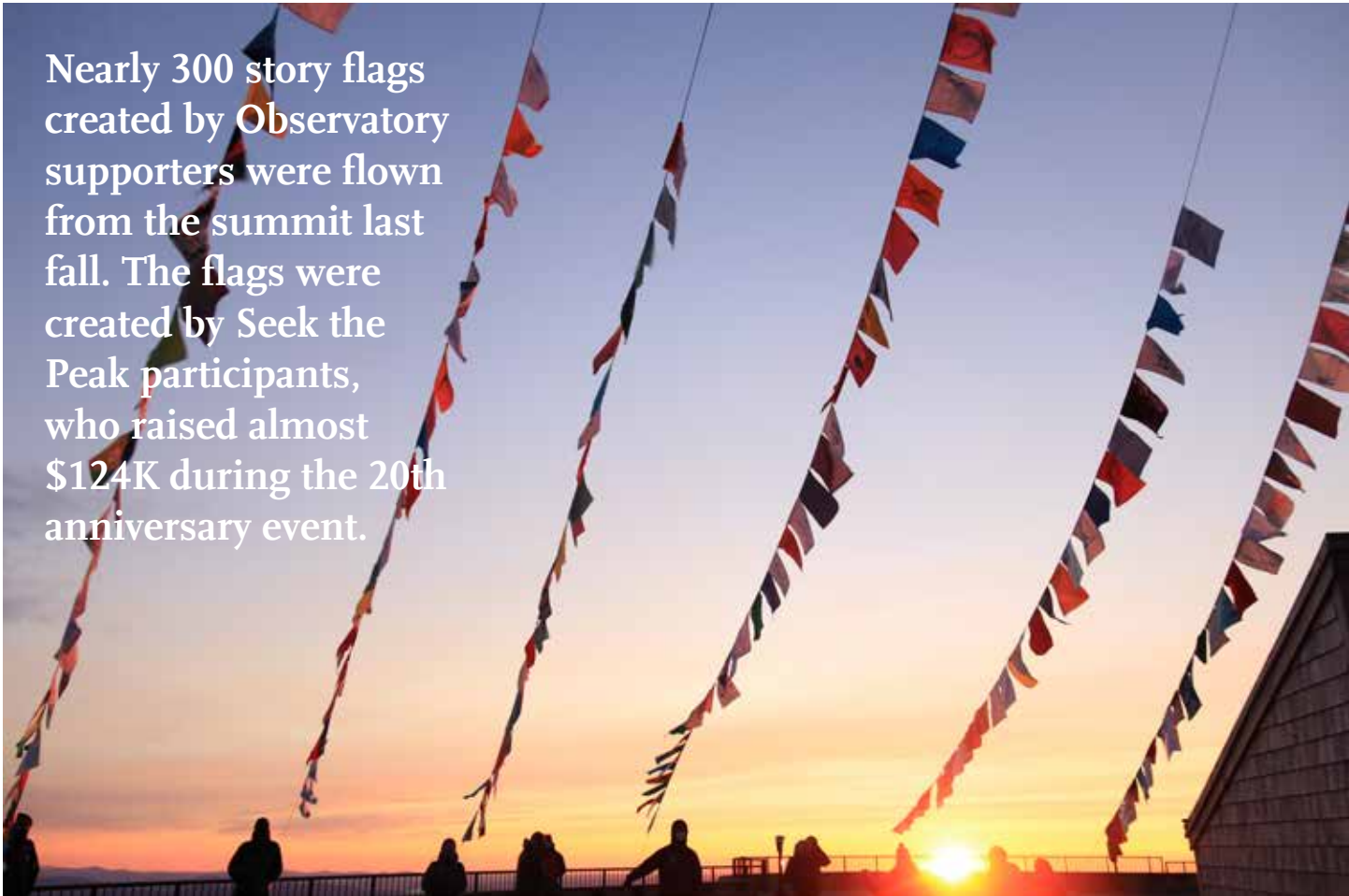
| | | |
|---------------------------------|--------------------|-----|
| Summit | \$528,927 | 36% |
| Retail | \$8,594 | 1% |
| Education | \$123,757 | 8% |
| Advancement | \$225,353 | 16% |
| Administration | \$561,084 | 39% |
| Total Operating Expenses | \$1,447,714 | |



RELIABILITY OF OUR SUPPORTERS

During a year defined by change, the consistent generosity and determination of Mount Washington Observatory supporters allowed us to continue moving our mission forward.

- While many nonprofits experienced substantial loss of membership during Fiscal Year 2021, our membership retention rate held strong at 80%.
- During our Year-End Appeal, donations increased 20% over the prior year. This included 175 additional donations.
- With the pandemic continuing to loom in early May 2020, we announced a shift in the 20th anniversary Seek the Peak, our largest fundraiser, to a virtual event. Over 300 hikers registered to participate around the country, and many shared their hikes on social media. Participants responded enthusiastically to the call for story flags reflecting their hike of choice and years supporting the event. Nearly \$124,000 was raised to support Mount Washington Observatory's work.
- Thanks to the generosity of a handful of donors and the help of Berlin City Auto Group, we were able to raise \$86,000 for new vehicles, including a 4x4 truck essential for providing reliable transportation and safety for observers, staff and guests – critical to conducting our ongoing work on the summit.



Nearly 300 story flags created by Observatory supporters were flown from the summit last fall. The flags were created by Seek the Peak participants, who raised almost \$124K during the 20th anniversary event.

80%
of members renewed
in Fiscal Year 2021

More than
4,000
donors supported our
nonprofit with gifts

Number of
states* represented
by donors:
50

*Gifts were also received from residents of Washington, D.C., Canada, and the UK.

**Gifts made in honor
or memory of:**

- | | |
|----------------------|---------------------|
| James P. Barnes | Peter Kasnet |
| Marty & Jan Basch | Laurie Kinne |
| Jackie Bellefontaine | Richard A. Kirsch |
| William Bowden | Francis O. Lathrop |
| Douglas A. Boyle | Douglas Lawson |
| William Bradstreet | Jack Lockwood |
| Christopher Brown | Michael Lombardi |
| Michael Bruce | Peter Lovely |
| Alton E. Burrill | Mike Micucci |
| Barbara Caldwell | Jack Middleton |
| Tom Cannon | Brian Newman |
| Victor F. Clark | Gary Newman |
| Robert Clausen | Mark Norton |
| Robert B. Coleman | Ed O'Malley |
| Dean Collinson | Walter "Bud" Palmer |
| Peter Crane | Bob Perreault |
| Dave Dick | Anthony S. Poltrack |
| Don Discenzo | Ayla Queiroga |
| Nick D'Orsaneo | Jerry Richter |
| Ginger Drury | Trish Roberts |
| Priscilla Dube | Frank Seabury |
| William Eastham | Michele Tallman |
| Mary Fain | G. Ernest Temple |
| Karen Franke | Jean Tewksbury |
| Ty Gagne | Robert H. Twigg |
| Keith Garrett | William Wallace |
| Luna Giesting | Bradford & Barbara |
| Allen Giles | Washburn |
| Philip T. Gravink | John J. Wasner |
| Carol Helm | Jane White |
| William T. Housum | Gannon Winn |
| John Howe | Jean Yearsley |
| Holly Huhn | Marty the Cat |
| Ruth S. Innes | Anonymous |

Making MWOBS Part of his Legacy

Member Richard Bates' fascination with the White Mountains began before he'd ever seen their snow-capped ridges. During a weekend trip to the Allegheny Mountains, he recalls his University of Maryland roommate saying the landscape would resemble the Whites if the mountains were doubled in size. His roommate, hailing from Berlin, NH, added, "If you ever get a chance to go up to New Hampshire, it will touch you in a way you won't fully understand. But you'll let it happen."

And happen it did. Richard eventually visited Jackson, NH, developed a passion for Mount Washington, completed several overnight stays as a summit volunteer, all while making MWOBS' mission and work a core part of his earth science classes as a teacher in Maryland. In doing so, he has inspired countless students to value data and insights into Earth's weather and climate. Now that Richard is retired from teaching, he has decided to leave a lasting legacy for weather and climate research, innovative science education, and understanding the unique, extreme environment of Mount Washington, by including MWOBS in his estate plans. We are so grateful!

If you're interested in learning more about our Legacy Society, visit [our website](http://ourwebsite) or reach out to giving@mountwashington.org.



Richard Bates at the summit, a high point in his journey as an earth science educator.

ADAPTABILITY OF OUR STAFF

As in-person educational programming was paused and office work went virtual, we leveraged new ways to advance projects, continue outreach, and in some instances, grow our audience.

- With more than a decade of experience in distance learning, Mount Washington Observatory adapted quickly during the pandemic, leaning into virtual platforms as a critical way to communicate the science of meteorology and climatology to our audiences.
- Staff conducted 83 virtual education programs during Fiscal Year 2021, made possible by our members and donors, a NASA Space Grant, support from MathWorks and The Ham Foundation, and hard work by our team.
- Our “Science in the Mountains” virtual lecture series built a strong following, averaging 250 attendees per program. We hosted 11 programs that were attended by 2,753 people and generated an equal amount of attention on YouTube.
- We embraced remote working, leveraging the flexibility afforded by virtual communications platforms to continue and strengthen collaboration among our summit and valley staff.
- Our staff adapted to change, rolling up their sleeves as we completed several moving projects: preparing the first floor of our building in North Conway (the former Weather Discovery Center) to be leased and occupied, moving museum displays, reopening our Extreme Mount Washington summit museum (which, after being closed for a year, was opened on schedule for summer 2021), and emptying the second floor of our North Conway building so it could be renovated to house the Gladys Brooks Memorial Library and Archives.
- Our observers took it upon themselves to manage their exposure to COVID-19, changing policies and procedures to ensure their own and colleagues’ safety, and the year passed without a single case on the summit.

Virtual Programs at a Glance

38

Distance learning programs with libraries, science centers, schools, and third-party streaming services. **1,900** estimated participants.

29

‘Home of the World’s Worst Weather Live’ Virtual Classroom programs. **928** unique attendees and over **4,800** YouTube views.

11

Science in the Mountains virtual lecture programs. Over **2,700** attendees and an equivalent total YouTube views.

5

WeatherX ‘Chat with a Scientist’ programs with **100** estimated participants.

83

virtual programs offered in Fiscal Year 2021

928

unique Virtual Classroom attendees*

2,753

Science in the Mountains virtual lecture attendees

*Attendees include individuals and classrooms. An estimated 21 schools participated in the Virtual Classroom programs.

Our “Home of the World’s Worst Weather Live” Virtual Classroom series brought the science and excitement of Mount Washington to middle school classrooms and students, with an open invitation for anyone to join the free programs using Zoom.

MWOBS education staff conducted 29 Virtual Classroom programs mainly from our summit weather station – attended by 928 unique attendees, including 21 schools. This included nearly a full year’s worth of weather, climate, and climate change curriculum tied to the Next Generation Science Standards.

Consistent attendees included students from Kim Mathison and Peter Malkin’s sixth grade classrooms at Conway Elementary School. Mathison said well over 100 questions were asked by students in the two classrooms during the course of their participation.

“I’d say that’s a score!” Mathison said. “Over 100 questions asked by curious students and answered by your knowledgeable meteorologists. It was always informative and interesting to view and learn from your weekly topics.”

Shown at top right, Kim Mathison’s students wave from Conway Elementary School to our summit weather station. Waving back from the observation deck are, left to right, Weather Observer & Meteorologist David DeCou, Weather Observer & Education Specialist Nicole Tallman, Weather Observer & Meteorologist Ryan Knapp, Weather Observer & Meteorologist Jay Broccolo, Weather Observer Sam Robinson, Director of Summit Operations Rebecca Scholand, and Weather Observer & Education Specialist Jackie Bellefontaine.



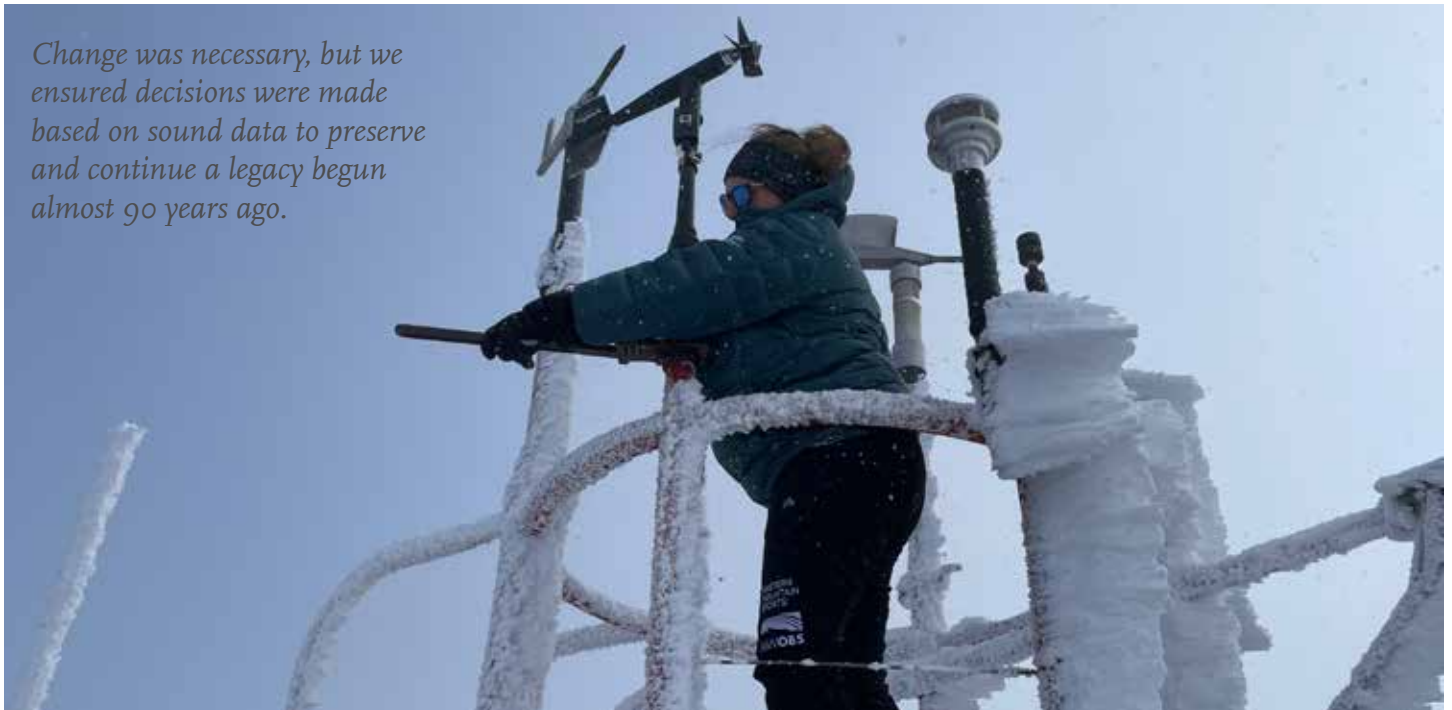
“Our students have benefited deeply from your Virtual Classroom programs, and we are grateful for the diversity of your weekly programming.”

-Kim Mathison, sixth grade teacher



FOCUSED ON OUR MISSION

Change was necessary, but we ensured decisions were made based on sound data to preserve and continue a legacy begun almost 90 years ago.



- Extensive analyses of project costs vs. revenues were conducted to support data-driven organizational restructuring decisions, aimed at keeping Mount Washington Observatory focused on our mission.
- Our observers continued to provide weather observations every hour, every day, while frequently problem solving instrumentation, data collection and communications in the face of extreme weather.
- Daily higher summits forecasts were uninterrupted. Our data set grew through Observers' disciplined work on the summit. Analysis of historic data records continued, and we have assured no missing "gold"* data for over three years.
- Vital support allowed us to maintain consistent operation of our [mesonet stations](#), which collect weather data in the region's harsh alpine environments and support forecasting across complex terrain.
- Research projects completed last year include:
 - **Visibility Data Exploration:** Observers Jay Broccolo and Sam Robinson produced a report detailing an exploration and initial analysis of long-term visibility trends.
 - **Temperature Database Project:** Staff and researchers developed a research-grade temperature dataset for our historic temperature records that date back to 1935.
 - **FAA Anemometer Evaluation:** Staff aided in the evaluation of ice-resistant anemometers for use in other extreme weather regions like Juneau, Alaska on behalf of the Federal Aviation Administration.
- With funding from the National Science Foundation, the WeatherX project to develop and test data science curriculum for rural middle schoolers moved through its second of three years. Teachers in northern NH and ME tested two different units in the past year. Students explored a 2015 Mount Washington extreme weather event. They also gathered weather data for personal weather journals to learn data analysis and graphing skills while getting to know "normal" and "extreme" weather in their local communities.

*Gold data meaning official or primary.

Our staff continued to provide weather observations every hour, every day, in the face of Mount Washington's extremes.

8,670

observations reported to NWS for nationwide forecasting models

1,460

specialized forecasts produced, reviewed, and published

Over
1,000

hours dedicated to safe transport of summit staff and vehicle maintenance





Mount Washington Observatory

P.O. Box 2310

North Conway, NH 03860

603 356 2137

mountwashington.org