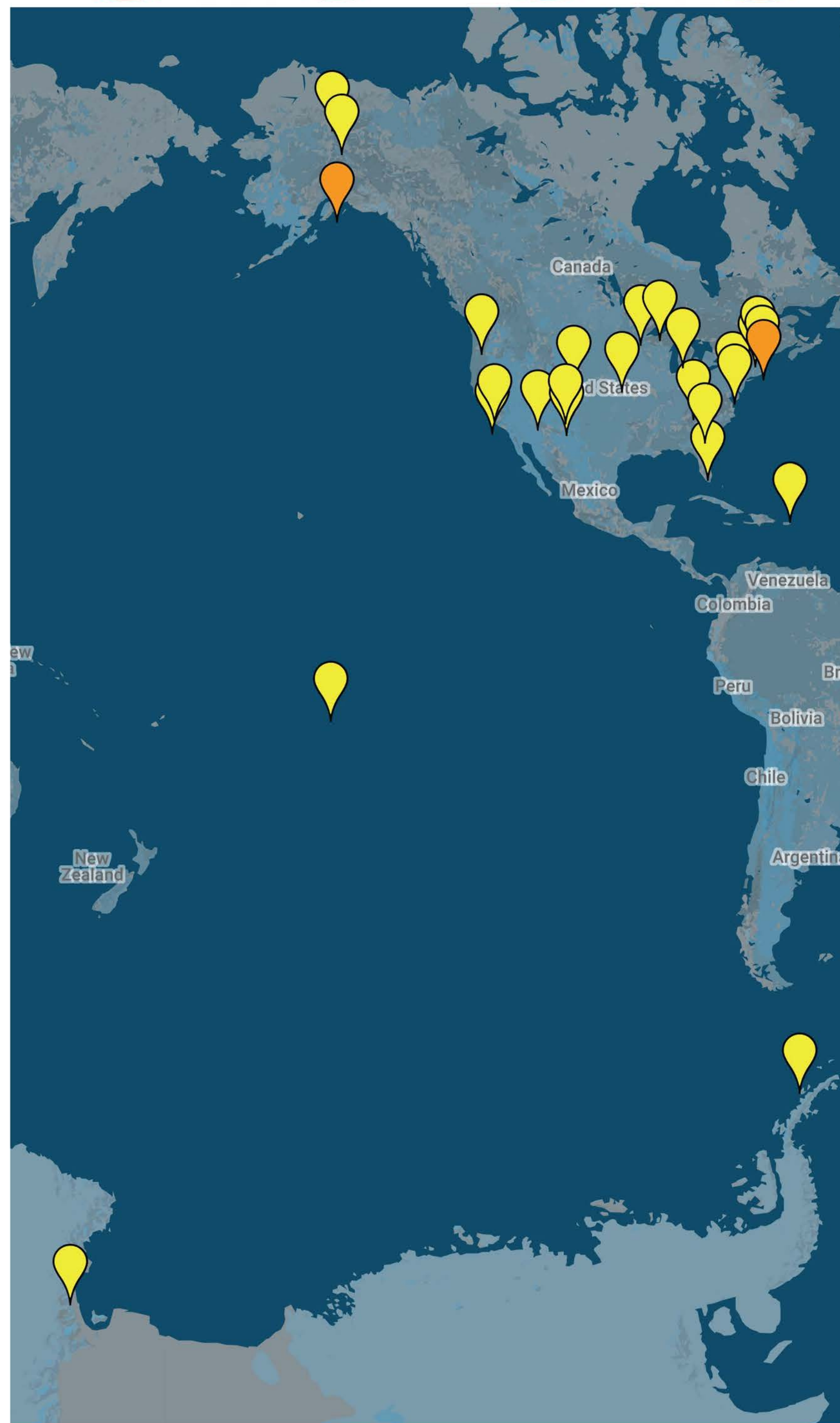




# U.S. Long Term Ecological Research Network



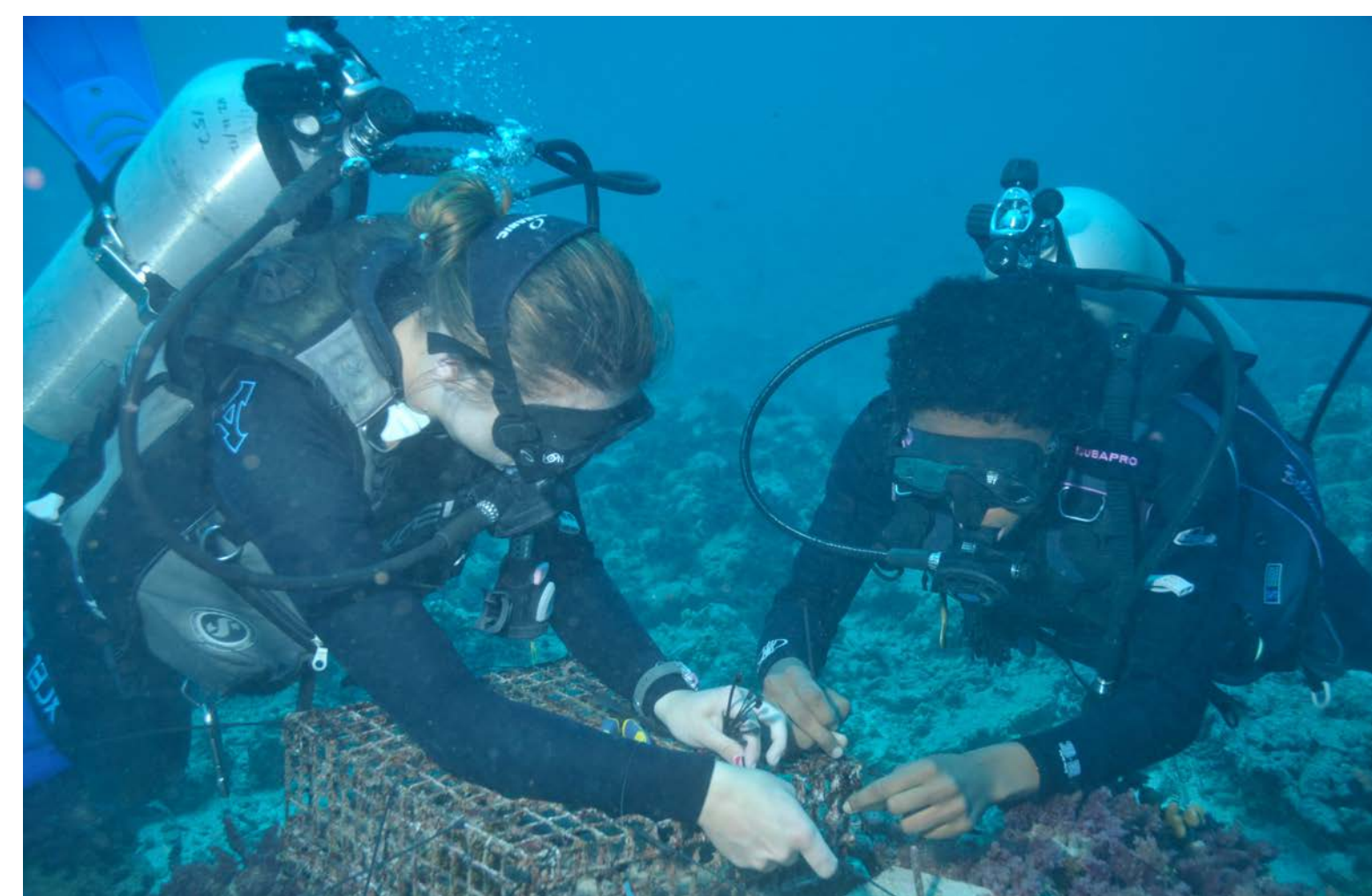
The Long-Term Ecological Research (LTER) Network consists of 25 sites (soon to be 27) with a rich history of ecological inquiry, collaboration across a wide range of research topics, and engagement with students, educators, and resource managers.

## The power of long-term research

Long-term studies grounded some of the most fundamental discoveries of **ecological theory**. As the science evolves, they continue to serve as the gold-standard for developing and testing new hypotheses.



Credit: CDR LTER



Credit: MCR LTER

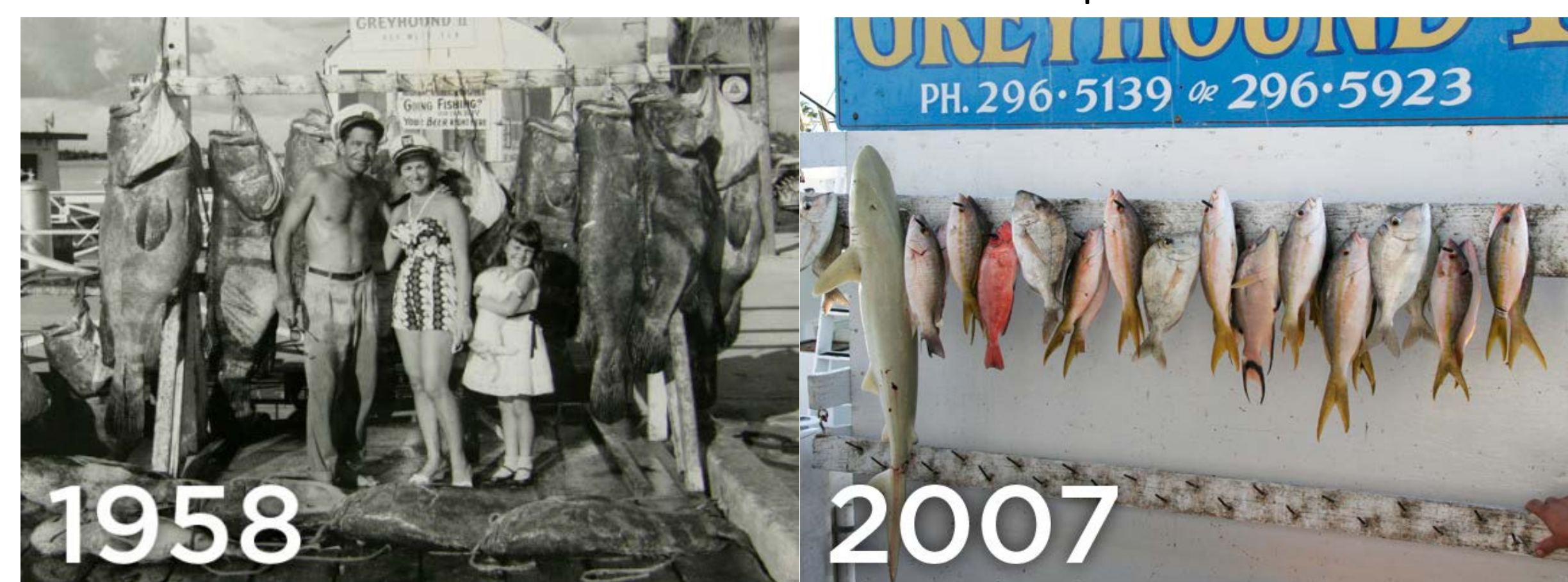
Long-term studies serve as pre-treatment controls for the natural experiments offered by rare and **extreme events**, including wildfires, El Niños, and hurricanes.

Ecosystems are experiencing conditions with no natural precedent. Long-term manipulation experiments combined with simulation modeling help answer the **what-if questions**.



Credit: HFR LTER

Long-term data reveal **shifting baselines** and place current ecosystem conditions in the broader historical context of past conditions.



Credit: Smithsonian Institution Ocean Portal

## The practice of LTERs



Credit: US Forest Service - Northern Research Station

### Long-Term Experiments

LTER sites maintain experimental manipulations that test potential influences on ecosystem change, such as nutrient inputs, biodiversity, temperature, and precipitation. The experiments serve as a resource to the entire ecological research community.

### Long-Term Observations

Each site maintains long-term records of key parameters for that ecosystem, providing critical context for shorter-term studies and cross-system comparisons.



Credit: Erika Zambello/LTER Network



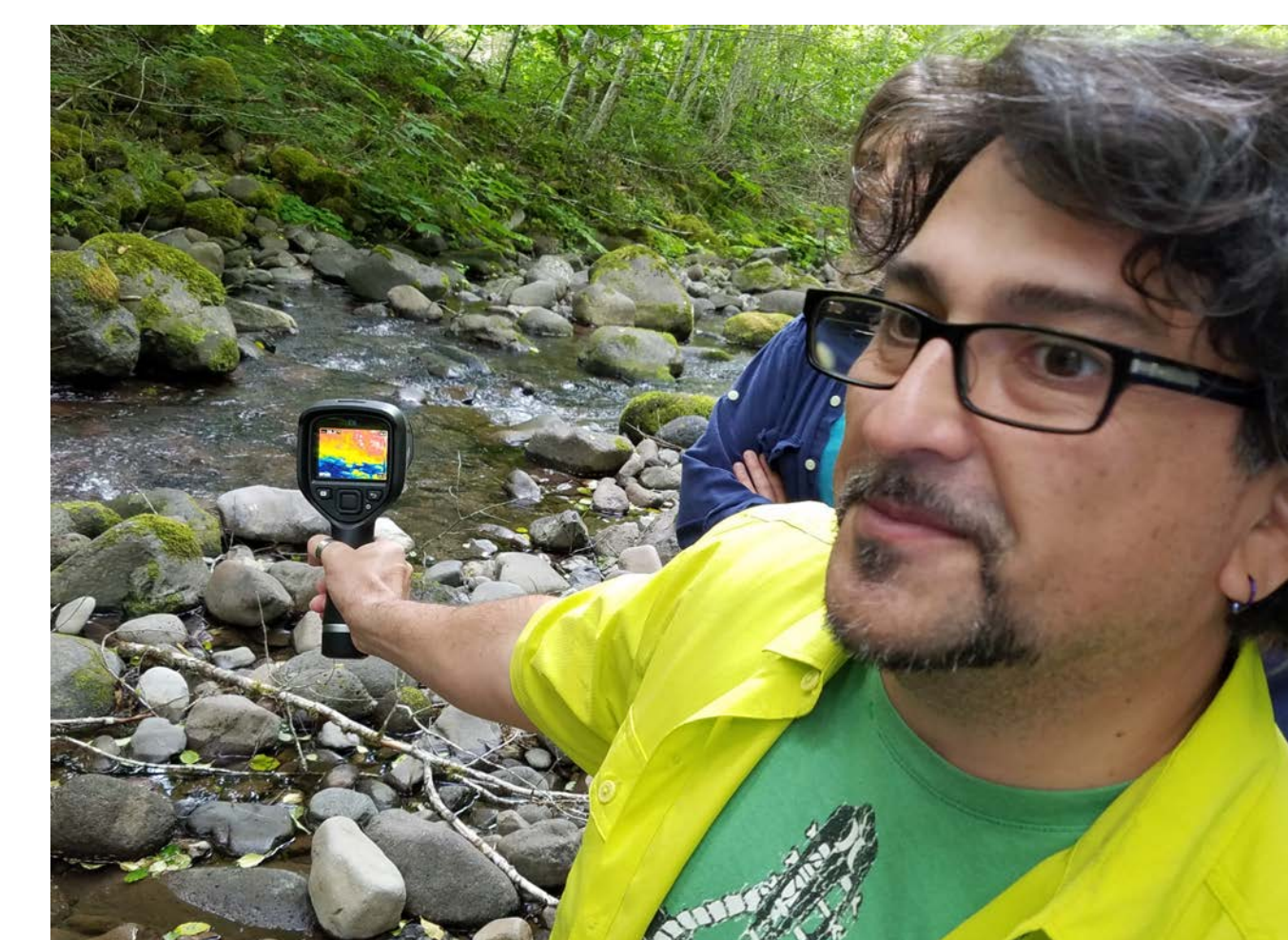
Credit: Liz Duff/PIE-LTER

### Long-Term Relationships

Over time, LTER sites build trusting relationships with resource managers, educators, and landowners in their regions. Individual investigators can capitalize on those relationships to get new projects off the ground fast.

### Expanding Opportunities

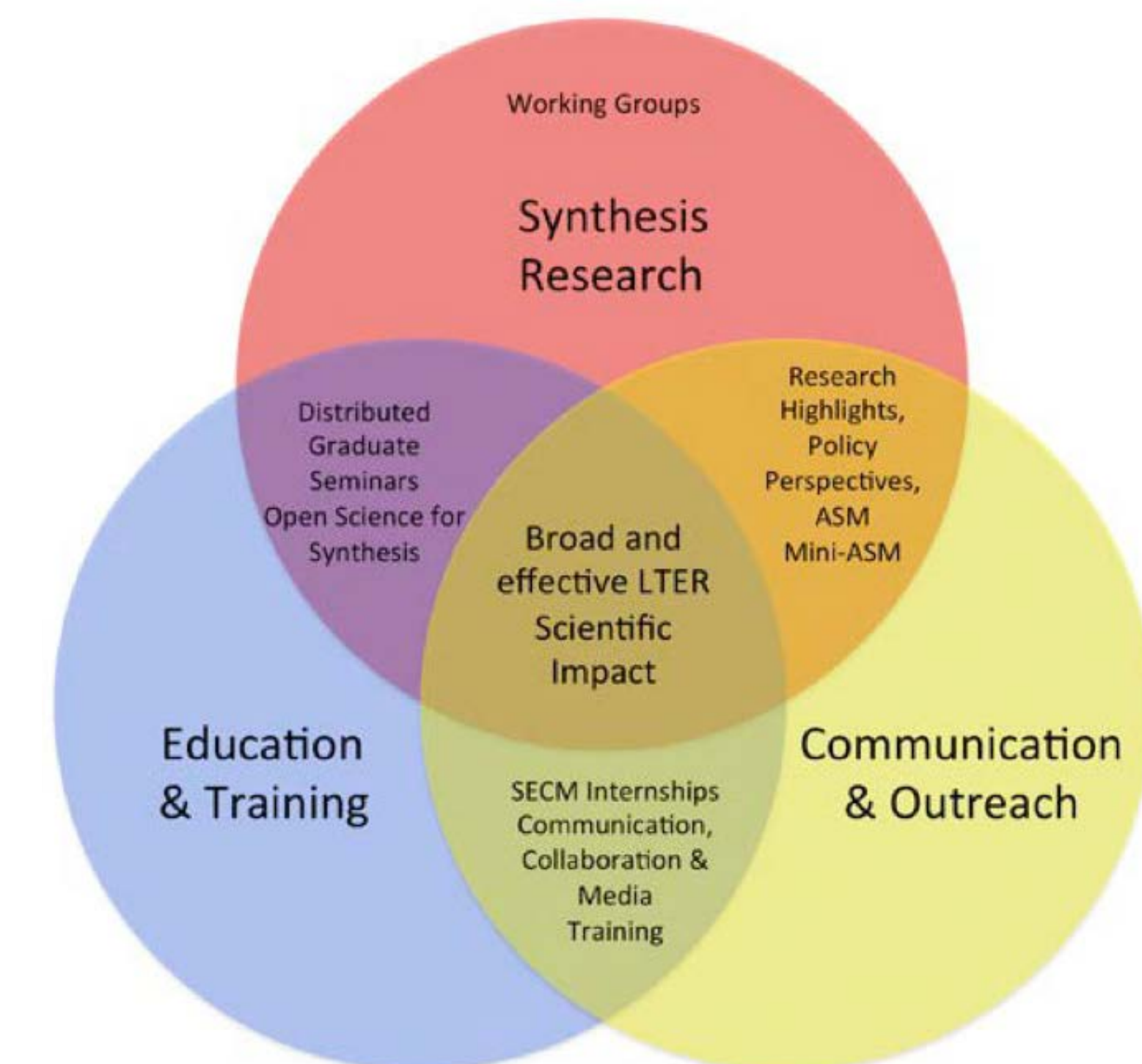
Bringing together diverse groups of researchers with sustained data collection and ecosystem manipulation experiments, these sites allow each new generation of scientists to apply new tools and explore new questions in systems where the context is well understood, shared, and thoroughly documented.



Credit: Marty Downs/LTER-NCO

## US LTER Network By the numbers

25 sites  
37 years  
2,300 investigators  
>5,911 public datasets  
>16,000 journal articles



The LTER Network Communications Office is a hub for catalyzing scientific synthesis and facilitating engagement with the Network.

Long-term ecological and environmental studies allow us to better understand the inherent variability of natural systems, to discern trends and shifting baselines, and to witness rare events and unanticipated ecological surprises.

--Hughes et al. Bioscience, 2017



Network Communications Office: 805-893-7549 | [nco@lternet.edu](mailto:nco@lternet.edu) | [nco.lternet.edu](http://nco.lternet.edu)

This material is based upon work supported by the **National Science Foundation** under **DEB#1545288**, 10/1/2015-9/30/19). Any opinions, findings, conclusions, or recommendations expressed in the material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.