Ten signature publications from HFR LTER-V selected to showcase impact, diversity of authors, and use of long-term data.

Melillo, J. M., et al. 2017. Long-term pattern and magnitude of soil carbon feedback to the climate system in a warming world. Science 358: 101-105.

Frey, S. D., et al. 2014. Chronic nitrogen additions suppress decomposition and sequester soil carbon in temperate forests. Biogeochemistry 121: 305-316.

Barker Plotkin, A. et al. 2013. Survivors, not invaders, control forest development following simulated hurricane. Ecology 94: 414-423.

These three high-profile papers synthesize >20 yrs of response to disturbance (hurricane) and stress (N saturation; soil warming) from experiments initiated in LTERI. Each revealed surprises: a four-phase pattern of soil organic matter decay and carbon fluxes to the atmosphere with warming; enhanced soil C stocks in N-enriched soils via suppressed decomposition; despite large-scale and intense canopy damage, surviving saplings, understory vegetation, and damaged trees allowed the forest to resist changes in ecosystem processes and invasion.

Van Diepen, L. T. A., et al. 2017. Fungi exposed to chronic nitrogen enrichment are less able to decay leaf litter. Ecology 98: 5-11.

This post-doc lead study was the first to test if and how fungal behaviors relevant to a critical ecosystem process evolve in response to long-term environmental change.

Thompson, J. R., et al. 2013. Changes to the Land: Four Scenarios for the Future of the Massachusetts Landscape. Harvard Forest. ISBN: ISBN: 978-6159-85268.

The report describing the pilot project for the scenario development and modeling approach that was central to LTER-V received extensive media coverage, informs policy at the state level, and was published in multiple peer-reviewed journal articles

Duveneck, M. J., et al. 2017. Recovery dynamics and climate change effects to future New England forests. Landscape Ecology 32: 1385-1397.

Scaling to New England using an ecophysiological model calibrated with long-term HFR flux and plot data, this post-doc lead study predicted that climate change will influence C accrual, but continued recovery will have larger impacts on composition.

Wehr, R., et al. 2016. Seasonality of temperate forest photosynthesis and daytime respiration. Nature 534: 680-683.

New isotopic instrumentation at the EMS tower partitioned photosynthesis and respiration, providing the first robust evidence of the inhibition of leaf respiration by light (the Kok effect), and revising our understanding of forest-atmosphere C exchange.

Keenan, T.F., et al. 2014. Net carbon uptake has increased through warming-induced changes in temperate forest phenology. Nature Climate Change 4: 598–604.

Combining long-term ground observations, satellite indices, and ecosystem-scale CO_2 flux measurements, this post-doc lead study showed a trend toward earlier springs and later autumns with resulting enhancement of forest C uptake.

Foster D.R. et al. 2014. Hemlock: A Forest Giant on the Edge. Yale University Press.

In a narrative that spans millennia of ecological change, the authors explore hemlock forests and the invasive hemlock woolly adelgid that threatens them, and profiles the people and places behind more than a century of HFR research.

Lovett, G. M., et al. 2016. Nonnative forest insects and pathogens in the United States: Impacts and policy options. Ecological Applications 26: 1437-1455.

This SPE-lead synthesis showed that invasive forest insects cause >$2 billion in damage each year in the U.S., and current efforts to prevent invasions are not effective. An Associated Press feature was picked up by > 200 media outlets.