LOGAN T. BERNER

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RESEARCH SPECIALIZATIONS

Forest ecology, Arctic ecology, climate change, ecoinformatics, remote sensing, dendroecology

EDUCATION

2017	Ph.D.	Forest Ecosystems and Society	Oregon State University
2010	M.S.	Environmental Science	Western Washington University
2007	B.S.	Environmental Science	University of Alaska Southeast

PROFESSIONAL EXPERIENCE

2023 – present	Affiliate Professor of Environmental Science	University of Alaska Southeast
2023 – present	Adjunct Professor of Environmental Science	University of Alaska Southeast
2019 – present	Assistant Research Professor of Forest Ecology	Northern Arizona University
2017 – present	Owner and Lead Scientist	EcoSpatial Services L.L.C.
2017 – 2019	Postdoctoral Researcher	Northern Arizona University
2014 – 2017	NASA Earth and Space Science Fellow	Oregon State University
2013 – 2014	Graduate Research Assistant	Oregon State University
2011 – 2013	Research Assistant	Woods Hole Research Center
2010 – 2011	Remote Sensing / Geospatial Analyst	University of Hawai'i
2010	Research Analyst III	Western Washington University
2008 – 2010	Graduate Research / Teaching Assistant	Western Washington University
2005 – 2008	Research Assistant / Technician	University of Alaska Southeast

GRANTS

Summary as of 2024-01-10 Total funding to PI's institutions: ~$4.6 million

2023 – 2029	NSF Long-Term Ecological Research Program | Co-Investigator *Changing disturbances, ecological legacies, and the future of the Alaskan forest*	$946,479
2022 – 2025	NASA Arctic Boreal Vulnerability Experiment | Co-Investigator *Drivers and Impacts of Reburning in boreal forest Ecosystems (DIRE)*	$895,498
2022 – 2025	NASA Arctic Boreal Vulnerability Experiment | Co-Investigator *Mapping and modeling attributes of an arctic - boreal biome shift: Phase-3 applications within the ABoVE domain*	$440,000
2021 – 2024	NSF Arctic System Science Program | Co-Investigator *Collaborative Research: Climate warming and increasing wildfire in the boreal forests of Northwestern North America: Will vegetation change slow the feedback?*	$1,099,399
2021 – 2024	NSF Navigating the New Arctic | Principal Investigator *Collaborative Research: Fate of the Caribou: from local knowledge to range-wide dynamics in the changing Arctic*	$717,941
2021 – 2024	NASA New Investigator Program | Principal Investigator *Mapping plant biomass distribution and change across the rapidly warming Arctic*	$372,581
2021 – 2024	NASA Orbiting Carbon Observatory Science Team | Principal Investigator *Diagnosing and Attributing Arctic-Boreal Carbon Fluxes using In Situ and Satellite CO_2 Monitoring Network*	$92,579
2015 – 2017	NASA Earth and Space Science Fellowship Program | Principal Investigator *Integrating satellite and surface observations to assess drought impacts on forest carbon and water cycling across the western United States*	$90,000

AWARDS

2021	ARCS Foundation: Champion of the Environment	---
2019	Oak Ridge National Laboratory DAAC: Staff Favorite Data Contributor	---
2018	Northern Arizona University: Most Promising Postdoctoral Researcher	$2,000
2016 – 2018	AAAS/Science: Program for Excellence in Science	---
2013 – 2015	Achievement Rewards for College Scientists (ARCS): Foundation Scholar	$18,000
2011	ESRI & SCGIS International Mapping Contest: Best Map by a Volunteer	---
2007	University of Alaska Southeast: Outstanding Graduate in Environmental Science	---

FELLOWSHIPS and SCHOLARSHIPS

2019	G2P2POP Research Coordination Network Lab Exchange in Finland	$3,000
2013	Oregon State University Dick Waring Forest Ecology Scholarship	$5,000
2013	NSF POLARIS Project Fellowship in Russia	---
2009	Ras Al Khaimah Environmental Science Graduate Fellowship in the UAE	$2,000
2008	NSF POLARIS Project Fellowship in Russia	---
2006	NSF Research Experience for Undergraduates Fellowship in Alaska	$4,000
2001 – 2002	Rotary International Long-Term Youth Exchange Fellowship in Russia	---

PUBLICATIONS (PEER REVIEWED)

Summary as of 2024-05-28 Total papers: ~65 H-Index: 30 Google Scholar Citations: 6,303

Lead Author:

2024 **Berner, L.T.**, et al. K. M. Orndahl, M. Rose, M. Tamstorf, M. F. Arndal, H. D. Alexander, E. R. Humphreys, M. M. Loranty, S. M. Ludwig, J. Nyman, S. Juutinen, M. Aurela, K. Happonen, J. Mikola, M. C. Mack, M. R. Vankoughnett, C. M. Iversen, V. G. Salmon, D. Yang, J. Kumar, P. Grogan, R. K. Danby, N. A. Scott, J. Olofsson, M. B. Siewert, L. Deschamps, E. Lévesque, V. Maire, A. Morneault, G. Gauthier, C. Gignac, S. Boudreau, A. Gaspard, A. Kholodov, M. S. Bret-Harte, H. E. Greaves, D. Walker, F. M. Gregory, A. Michelsen, T. Kumpula, M. Villoslada, H. Ylänne, M. Luoto, T. Virtanen, B. C. Forbes, N. Hölzel, H. Epstein, R. J. Heim, A. Bunn, R. M. Holmes, J. K. Y. Hung, S. M. Natali, A.-M. Virkkala, and S. J. Goetz. The Arctic Plant Aboveground Biomass Synthesis Dataset. *Scientific Data* **11**:305.

2023 **Berner, L.T.**, J.J. Assmann, S. Normand, and S.J. Goetz. LandsatTS: an R package to facilitate retrieval, cleaning, cross-calibration, and phenological modeling of Landsat time-series data. *Ecography*, e06768.

2022 **Berner, L.T.** and C. Schädel. Soil moisture impacts the tundra carbon balance in a changing climate. *Global Change Biology* 00, 1-3.

2022 **Berner, L.T.** and S.J. Goetz. Response to letter to the editor on "Satellite observations document trends consistent with a boreal biome shift. *Global Change Biology*, 28, e9-e10.

2022 **Berner, L.T.** and S.J. Goetz. Satellite observations document trends consistent with a boreal forest biome shift. *Global Change Biology*, 28, 3275–3292.

2020 **Berner, L.T.**, R. Massey, P. Jantz, B.C. Forbes, M. Macias-Fauria, I.H. Myers-Smith, T. Kumpula, G. Gauthier, L. Andreu-Hayles, B. Gaglioti, P.J. Burns, P. Zetterberg, R. D'Arrigo, and S.J. Goetz. Summer warming explains widespread but not uniform greening in the Arctic tundra biome. *Nature Communications*, *11*, 4621.

2018 **Berner, L.T.**, P. Jantz, K.D. Tape, and S.J. Goetz. Tundra plant aboveground biomass and shrub dominance mapped across the North Slope of Alaska. *Environmental Research Letters*, 13, 035002.

2017 **Berner, L.T.**, B.E. Law, A.J.H. Meddens, and J.A. Hicke. Tree mortality from fires, bark beetles, and timber harvest during a hot and dry decade in the western United States (2003-2012). *Environmental Research Letters*, 12, 065005.

2017 **Berner, L.T.**, B.E. Law, and T.W. Hudiburg. Water availability limits tree productivity, carbon stocks, and carbon residence time in mature forests across the western United States**.** *Biogeosciences*, 14, 365-378.

2016 **Berner L.T.** and B.E. Law. Plant traits, productivity, biomass and soil properties from forest sites in the Pacific Northwest, 1999–2014. *Scientific Data*, 3, 160002.

2015 **Berner, L.T.** and B.E. Law. Water limitations on forest carbon cycling and conifer traits along a steep climatic gradient in the Cascade Mountains, Oregon. *Biogeosciences*, 12, 6617-6635.

2015 **Berner, L.T.**, H.D. Alexander, M.M. Loranty, P. Ganzlin, M.C. Mack, S.P. Davydov, and S.J. Goetz. Biomass allometry for alder, dwarf birch and willow in boreal forest and tundra ecosystems of northeastern Siberia and north-central Alaska. *Forest Ecology and Management*, 337, 110-118.

2013 **Berner, L.T.**, P.S.A. Beck, A.G. Bunn, and S.J. Goetz. Plant response to climate change along the forest-tundra ecotone in northeastern Siberia. *Global Change Biology*, 19, 3449-3462.

2012 **Berner, L.T.**, P. S. A. Beck, M.M. Loranty, H.D. Alexander, M.C. Mack and S.J. Goetz. Cajander larch (*Larix cajanderi*) biomass distribution, fire regime and post-fire recovery in northeastern Siberia. *Biogeosciences*, 9, 3943-3950.

2011 **Berner, L.T.**, P. Beck, A. Bunn, A. Lloyd and S. Goetz. High-latitude tree growth and satellite vegetation indices: Correlations and trends in Russia and Canada (1982-2008). *Journal of Geophysical Research Biogeosciences*, 116.

Contributing Author:

2024 Villoslada, M., **L.T. Berner**, S. Juutinen, H. Ylänne, and T. Kumpula. Upscaling vascular aboveground biomass and topsoil moisture of subarctic fens from Unoccupied Aerial Vehicles (UAVs) to satellite level. *Science of the Total Environment* **933**:173049.

2024 Burrell, A.L., S. Cooperdock, S. Potter, **L.T. Berner**, R. Hember, M.J. Macander, X.J. Walker, R. Massey, A.C. Foster, M.C. Mack, S.J. Goetz, and B. Rogers. The predictability of near-term forest biomass change in boreal North America. *Ecosphere* 15:e4737.

2023 Frost, G. V., M. J. Macander, U. S. Bhatt, **L. T. Berner**, J. W. Bjerke, H. E. Epstein, B. C. Forbes, M. J. Lara, R. Í. Magnússon, P. M. Montesano, G. K. Phoenix, S. P. Serbin, H. Tømmerik, C. Waigl, D. A. Walker, and D. Yang. 2023. Tundra Greenness. *NOAA Arctic Report Card 2023*.

2023 Law, B.E., **L.T. Berner**, C. Wolf, W.J. Ripple, E.J. Trammell, and R.A. Birdsey. Southern Alaska's Forest Landscape Integrity, Habitat, and Carbon Are Critical for Meeting Climate and Conservation Goals, *AGU Advances*, 4(6), e2023AV000965.

2023 Massey, R., B. M. Rogers, **L. T. Berner**, S. Cooperdock, M. C. Mack, X. J. Walker, and S. J. Goetz. Forest composition change and biophysical climate feedbacks across boreal North America. *Nature Climate Change*, DOI:10.1038/s41558-023-01851-w.

2023 Frost, G. V., M. J. Macander, U. S. Bhatt, **L. T. Berner**, J. W. Bjerke, H. E. Epstein, B. C. Forbes, S. J. Goetz, M. J. Lara, R. Í. Magnússon, G. K. Phoenix, S. P. Serbin, H. Tømmervik, O. Tutubalina, D. A. Walker, and D. Yang. Tundra greenness [in "State of the Climate in 2022"]. *Bulletin of the American Meteorological Society* 104:S305–S308.

2023 Walker, X.J., K. Okano, **L.T. Berner**, R. Massey, S.J. Goetz, J.F. Johnstone, and M.C. Mack. 2023. Shifts in ecological legacies support hysteresis of stand type conversions in boreal forests. *Ecosystems*.

2023 Mildrexler, D.J., **L.T. Berner**, B.E. Law, R.A. Birdsey, and W.R. Moomaw. Protect large trees for climate mitigation, biodiversity, and forest resilience. *Conservation Science and Practice*, e12944.

2023 Massey, R., **L.T. Berner**, A.C. Foster, S.J. Goetz, and U Vepakomma. Remote sensing tools for monitoring forests and tracking their dynamics. *Boreal Forests in the Face of Climate Change: Sustainable Management*, Springer - Nature, Chapter 26: 637-655.

2022 Frost, G. V., M. J. Macander, U. S. Bhatt, **L. T. Berner**, J. W. Bjerke, H. E. Epstein, B. C. Forbes, S. J. Goetz, M. J. Lara, G. K. Phoenix, S. P. Serbin, H. Tømmervik, D. A. Walker, and D. Yang. Tundra greenness. *NOAA Arctic Report Card 2022*.

2022 Thoman, R. L., M. L. Druckenmiller, T. A. Moon, L. Andreassen, E. Baker, T. J. Ballinger, **L. T. Berner**, et al. (2022), The Arctic, *Bulletin of the American Meteorological Society*, 103(8), S257-S306.

2022 Law, B.E., **L.T. Berner**, D.J. Mildrexler, R. Bloemers, and W.J. Ripple. Strategic Reserves in Oregon's Forests for Biodiversity, Water, and Carbon to Mitigate and Adapt to Climate Change. *Frontiers in Forests and Global Change*, 5, 1028401.

2022 Foster, A.C., … **L.T. Berner** et al. Disturbances in North American boreal forest and Arctic tundra: impacts, interactions, and responses. *Environmental Research Letters* 17:113001.

2022 Orndahl, K.M., M.J. Macander, **L.T. Berner**, and S. Goetz. Plant functional type aboveground biomass change within Alaska and northwest Canada mapped using a 35-year satellite time series from 1985-2020. *Environmental Research Letters*:115010.

2022 Frost, G.V, M.J. Macander, U.S. Bhatt, **L.T. Berner**, J.W. Bjerke, H.E. Epstein, B.C. Forbes, S.J. Goetz, M.J. Lara, R.I. Magnússon, T. Park, G.K. Phoenix, J.E. Pinzon, S.P. Serbin, H. Tømmervik, C.J. Tucker, D.A. Walker, and D. Yang. Tundra greenness [in "State of the Climate in 2021"] Bulletin of the American Meteorological Society 103 S291–S3.

2021 Law, B.E., **L.T. Berner**, P.C. Buotte, D.J. Mildrexler, and W.J. Ripple. Strategic Forest Reserves can protect biodiversity in the western United States and mitigate climate change. *Communications Earth & Environment* **2**:254.

2021 Frost, G.V., M.J. Macander, U.S. Bhatt, **L.T. Berner**, J.W. Bjerke, H.E. Epstein, B.C. Forbes, S.J. Goetz, M.J. Lara, T. Park, G.K. Phoenix, S.P. Serbin, H. Tømmervik, D.A. Walker, and D. Yang. Tundra greenness. *NOAA Arctic Report Card 2021*.

2021 Walker, X., H.D. Alexander, **L.T. Berner**, M.A. Boyd, M.M. Loranty, S. Natali, and M.C. Mack. Positive response of tree productivity to warming is reversed by increased tree density at the Arctic tundra-taiga ecotone. *Canadian Journal of Forest Research*, 51 (9), 1323 - 1338.

2021 Boyd, M.A., **L.T. Berner**, A.C. Foster, S.J. Goetz, B.M. Rogers, X.J. Walker, and M.C. Mack. Historic declines in productivity portend trembling aspen death during a contemporary leaf miner outbreak in Alaska. *Ecosphere, 12, e03569.*

2021 Frost, G.V., M.J. Macander, U.S. Bhatt, H.E. Epstein, **L.T. Berner**, J.W. Bjerke, B.C. Forbes, S.J. Goetz M.J. Lara, T. Park, G.K. Phoenix, M.K. Raynolds, H. Tømmervik, and D.A. Walker. 2021. Tundra greenness [in "State of the Climate in 2020"]. Bull. Amer. Meteor. Soc., 102 (8), S290–S292.

2021 Gaglioti, B., **L.T. Berner**, B.M. Jones, K.M. Orndahl, A.P. Williams, L. Andreu-Hayles, R.D. Arrigo, S.J. Goetz, and D.H. Mann. Tussocks enduring or shrubs greening: Alternate responses to changing fire regimes in the Noatak River Valley, Alaska, *Journal of Geophysical Research: Biogeosciences*, *126*, e2020JG006009.

2021 Mekonnen, Z.A., W.J. Riley, **L.T. Berner**, N.J. Bouskill, M.S. Torn, G. Iwahana, A.L. Breen, I.H. Myers-Smith, M.G. Criado, and Y. Liu. Arctic tundra shrubification: a review of mechanisms and impacts on ecosystem carbon balance, *Environmental Research Letters*, *16*(5), 053001.

2020 Frost G.V., U.S. Bhatt, H.E. Epstein, I.H. Myers-Smith, G.K. Phoenix, **L.T. Berner**, J.W. Bjerke, B.C. Forbes, M.J. Macander, S.J. Goetz, J.T. Kerby, T. Park, M.K. Raynolds, H. Tømmervik and D.A. Walker. Tundra greenness. *NOAA Arctic Report Card 2020, 68-78.*

2020 Mildrexler, D.J., **L.T. Berner**, B.E. Law, R.A. Birdsey, and W.R. Moomaw. Large Trees Dominate Carbon Storage in Forests East of the Cascade Crest in the United States Pacific Northwest, *Frontiers in Forests and Global Change*, *3*(127).

2020 Andreu-Hayles, L., B. Gaglioti, **L.T. Berner**, K. Anchukaitis, S. Goetz, and R. D'Arrigo. A narrow window of summer temperatures associated with shrub growth in Arctic Alaska, *Environmental Research Letters, 15*, 105012.

2020 Verdonen, M., **L.T. Berner**, B.C. Forbes, and T. Kumpula. Periglacial vegetation dynamics in Arctic Russia: Decadal analysis of tundra regeneration on landslides with time series satellite imagery, *Environmental Research Letters*, *15*, 105020.

2020 Thomas, H.J.D., A.D. Bjorkman, I.H. Myers-Smith, … **L.T. Berner** et al. Global plant trait relationships extend to the climatic extremes of the tundra biome, *Nature Communications, 11*(1), 1351.

2020 Andersen, J.K., … **L.T. Berner** et al. The Arctic, *Bulletin of the American Meteorological Society*, *101*(8), S239-S286, doi:10.1175/BAMS-D-20-0086.1.

2020 Frost, G.V., U.S. Bhatt, H.E. Epstein, **L.T. Berner**, J.W. Bjerke, B.C. Forbes, S.J. Goetz, M.J. Lara, M.J. Macander, G.K. Phoenix, M.K. Raynolds, H. Tømmervik, and D.A. Walker. Tundra greenness [in "State of the Climate in 2019"]. *Bulletin of the American Meteorological Society*, *101*(8), S272-S274.

2020 Buotte, P.C., B.E. Law, W.J. Ripple, and **L.T. Berner**. Carbon sequestration and biodiversity co-benefits of preserving forests in the western United States. *Ecological Applications,* e02039, 1-11.

2020 Kattge, J., G. Bönisch … **L.T. Berner** et al. TRY plant trait database – enhanced coverage and open access. *Global Change Biology* 26:119-188.

2020 Myers-Smith, I. H., J. T. Kerby, … **L.T. Berner** et al. Complexity revealed in the greening of the Arctic. *Nature Climate Change* 10:106-117.

2019 Thomas, H. J. D., I. H. Myers-Smith, … **L.T. Berner** et al. Traditional plant functional groups explain variation in economic but not size-related traits across the tundra biome. *Global Ecology and Biogeography* 28:78-95.

2019 Frost, G. V., U. Bhatt, H. Epstein, D. Walker, M. K. Raynolds, **L.T. Berner**, J. W. Bjerke, A. L. Breen, B.C. Forbes, S. J. Goetz, C. M. Iversen, M. J. Lara, M. J. Macander, G. K. Phoenix, A. V. Rocha, V. G. Salmon, P. E. Thornton, H. Tømmervik, and S. D. Wullschleger. Tundra greenness. *NOAA Arctic Report Card 2019*, 48-57.

2019 Hughes, M.K., A. Olchev, A.G. Bunn, **L.T. Berner**, M. Losleben, and E. Novenko. Different climate response of spruce and pine growth in northern European Russia. *Dendrochronologia, 56, 125601*

2019 Boyd, M.A., **L.T. Berner**, P. Doak, S.J. Goetz, B.M. Roders, D. Wagner, X.J. Walker, and M.M. Mack. Impacts of climate and insect herbivory on productivity and physiology of trembling aspen (*Populus tremuloides*) in Alaskan boreal forests. *Environmental Research Letters*. 14, 085010.

2019 Thomas, H.J.D., I.H. Myers-Smith, … **L.T. Berner** et al. Traditional plant functional groups explain variation in economic but not size-related traits across the tundra biome. *Global Ecology and Biogeography*, 28, 78-95.

2018 Bjorkman, A.D., I.H. Myers-Smith, … **L.T. Berner** et al. Change in plant functional traits across a warming tundra biome. *Nature*. 562, 57-62.

2018 Law, B.E., T.W. Hudiburg, **L.T. Berner**, J. Kent, P.C. Buotte, and M.E. Harmon. Land use strategies to mitigate climate change in carbon dense temperate forests. *Proceedings of the National Academy of Science*, 115, 3663-3668.

2018 Anderegg, L.D.L., **L.T. Berner**, G. Badgley, M.L. Sethi, B.E. Law, J. HilleRisLambers. Within-species patterns challenge our understanding of the Leaf Economic Spectrum. *Ecology Letters*, 21, 734-744.

2018 Bjorkman A.D., I.H. Myers-Smith, … **L.T. Berner** +103 other authors. Tundra Trait Team: A database of plant traits spanning the tundra biome. *Global Ecology and Biogeography*, 27, 1402-1411.

2018 Rogers, B.M., K. Solvik, E.H. Hogg, J. Ju, J.G. Masek, M. Michaelian, **L.T. Berner**, and S.J. Goetz. Detecting early warning signals of tree mortality in boreal North America using multi-scale satellite data. *Global Change Biology*, 24, 2284-2304.

2018 Loranty, M.M., **L.T. Berner**, E.D. Taber, H. Kropp, S.M. Natali, H.D. Alexander, S.P. Davydov, and N.S. Zimov Understory vegetation mediates permafrost active layer dynamics and carbon dioxide fluxes in open-canopy larch forests of northeastern Siberia. *PLoS One*,13, e0194014.

2017 Webb, E.E., K. Heard, S.M. Natali, A.G. Bunn, H.D. Alexander, **L.T. Berner**, A. Kholodov, M.M. Loranty, J.D. Schade, V. Spektor, and N. Zimov. Variability in above- and belowground carbon stocks in Siberian larch watershed. *Biogeosciences*, 14, 4279-4294.

2017 Kropp, H., M. Loranty, H.D. Alexander, **L.T. Berner**, S.M. Natali, and S.A. Spawn. Environmental constraints on transpiration and stomatal conductance in a Siberian Arctic boreal forest. *Journal of Geophysical Research Biogeosciences*, 122.

2016 Loranty, M.M, W. Lieberman-Cribbin, **L.T. Berner**, S.M. Natali, S.J. Goetz, H.D. Alexander, and A. Kholodov. Spatial variation in vegetation productivity trends, fire disturbance, and soil carbon across arctic-boreal permafrost ecosystems. *Environmental Research Letters*, 11.

2014 Guay, K., P.S.A. Beck, **L.T. Berner**, S.J. Goetz, W. Beurmann, and A. Baccini Vegetation productivity patterns at high northern latitudes: a multi-sensor satellite data assessment. *Global Change Biology*, 20, 3147-3158.

2014 Loranty, M.M., S.M. Natali, **L.T. Berner**, S.J. Goetz, R.M. Holmes, S.P. Davydov, N.S. Zimov, and S.A. Zimov. Siberian tundra ecosystem vegetation and carbon stocks four decades after wildfire. *Journal of Geophysical Research Biogeosciences*, 119.

2014 Loranty, M.M., **L.T. Berner**, S.J. Goetz, Y. Jin, and J.T. Randerson. Vegetation controls on northern high latitude snow-albedo feedback. *Global Change Biology*, 20, 594-606.

2013 Bunn, A.G., M.K. Hughes, A.V. Kirdyanov, M. Losleben, V.V. Shishov, **L.T. Berner**, A. Oltchev, and E.A. Vaganov. Comparing forest measurements from tree rings and a space-based index of vegetation activity in Siberia. *Environmental Research Letters*, 8.

2010 Lloyd, A.H., A.G. Bunn and **L.T. Berner**. A latitudinal gradient in tree growth response to climate warming in the Siberian taiga. *Global Change Biology*, 17, 1935-1944.

2009 Hood, E. and **L. Berner**. Effects of changing glacial coverage on the physical and biogeochemical properties of coastal streams in southeastern Alaska. *Journal of Geophysical Research Biogeosciences*, 114, G03001.

DATA SETS (PUBLICLY ARCHIVED)

Summary as of 2024-05-28 Total data sets: 16 Total downloads: >3,000

2024 **Berner, L.T.**, (53 coauthors) et al. The Arctic Plant Aboveground Biomass Synthesis Dataset, Pan-Arctic, 1998-2022, *Arctic Data Center*, https://doi.org/10.18739/A2K931783.

2024 Wong, R., **L. Berner**, P. Sullivan, C. Potter, and R. Dial. 2024. Pixel walking along the boreal forest–Arctic tundra ecotone: Large scale ground-truthing of satellite-derived greenness (Normalized Difference Vegetation Index (NDVI)); 2020, *Arctic Data Center,* https://doi:10.18739/A22805121

2023 Chen, D., X. Zhu, M. Kogure, E.E. Hoy, X. Xu, N.H. F. French, **L.T. Berner**, et al. Field Data on Soils, Vegetation, and Fire History for Alaska Tundra Sites, 1972-2020. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2177

2023 **Berner, L.T.,** K.M. Orndahl, and P. Burns. Plant aboveground biomass by functional group for alpine tundra and mountain birch woodlands in northern Finland, 2022. *Arctic Data Center*. https://doi.org/10.18739/A2QV3C526

2023 Massey, R., B.M. Rogers, **L.T. Berner**, S. Cooperdock, M.C. Mack, X.J. Walker, and S.J. Goetz. Deciduous Fractional Cover and Tree Canopy Cover for Boreal North America, 1992-2015. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2296

2022 **Berner, L.T.**, and B.E. Law. Spatial Data Identifying Strategic Reserves in Oregon's Forests for Biodiversity, Water, and Carbon to Mitigate and Adapt to Climate Change, *PANGAEA*, https://doi.org/10.1594/PANGAEA.951206

2022 **Berner, L.T.** and S.J. Goetz. ABoVE: Landsat Vegetation Greenness Trends, Boreal Forest Biome, 1985-2019. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2023

2021 **Berner, L.T.**, B.E. Law, P. Buotte, D. Mildrexler, and W. Ripple. Spatial Data Identifying Strategic Forest Reserves that can Protect Biodiversity in the Western United States and Mitigate Climate Change. *PANGAEA*, https://doi.pangaea.de/10.1594/PANGAEA.939125

2021 **Berner, L.T.**, R. Massey, and S.J. Goetz. ABoVE: Landsat Tundra Greenness and Summer Air Temperatures, Arctic Tundra, 1985-2016. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1893

2021 **Berner, L.T.**, R. Massey, and S.J. Goetz. Landsat tundra greenness and summer air temperatures, Arctic tundra biome, 1985-2016. *Arctic Data Center*. doi:10.18739/A21Z41T76.

2021 Gaglioti B. and **L.T. Berner**. Tussocks enduring or shrubs greening: Alternate responses to changing fire regimes in the Noatak River Valley, Alaska, 2017-2020. *Arctic Data Center*. https://doi.org/10.18739/A2DV1CP69

2020 Buotte, P.E., B.E. Law, W. Ripple, and **L.T. Berner**. Preservation Ranking and Vertebrate Species Richness, Western USA, 2020-2099. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1803

2018 **Berner, L.T.**, P. Jantz, K.D. Tape, and S.J. Goetz. ABoVE: Gridded 30-m Aboveground Biomass, Shrub Dominance, North Slope, AK, 2007-2016. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1565

2017 **Berner, L.T.**, B.E. Law, A.J. Meddens, and J.A. Hicke. Tree Mortality from Fires and Bark Beetles at 1-km Resolution, Western USA, 2003-2012. *ORNL DAAC*, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1512

2016 **Berner, L.T.**, P.S.A. Beck, M.M. Loranty, H.D. Alexander, M.C. Mack, and S.J. Goetz. Siberian Boreal Forest Aboveground Biomass and Fire Scar Maps, Russia, 1969-2007. *ORNL DAAC*, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1321.

2015 Law B.E. and **L.T. Berner**. NACP TERRA-PNW: Forest Plant Traits, NPP, Biomass, and Soil Properties, 1999-2014. *ORNL DAAC*, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1292

SOFTWARE

2023 **Berner, L.T.**, J.J. Assmann, S. Normand, and S. J. Goetz. LandsatTS software package for R (v1.1.1). Zenodo. https://doi.org/10.5281/zenodo.7863923.

PRESENTATIONS

Oral Presentations at Professional Conferences (incomplete list)

2021 **Berner, L.T.** and S.J. Goetz, Vegetation greenness trends consistent with a boreal biome range shift. *American Geophysical Union Fall Meeting*, New Orleans, LA.

2021 **Berner, L.T.**, Climate warming causes widespread greening in the Arctic. *Environmental Research 2021*, Online (*INVITED*).

2019 **Berner, L.T.** and S.J. Goetz, Recent trends in forest productivity and tree cover across the boreal forest biome. *American Geophysical Union Fall Meeting*, San Francisco, CA.

2018 **Berner, L.T.**, R. Massey, P. Jantz, B. Forbes, M. Macias-Fauria, G. Gauthier, B. Gaglioti, L. Andreu-Hayles, P. Burns, R. D'Arrigo, and S. Goetz, Rapid warming leads to greening of the tundra biome. *American Geophysical Union Fall Meeting*, Washington D.C.

2017 **Berner, L.T.**, P. Jantz, S.J. Goetz, Tundra plant biomass distribution and environmental constraints on the North Slope of Alaska. *American Geophysical Union Fall Meeting*, New Orleans, LA.

2013 **Berner, L.T.**, P.S. Beck, A. Bunn, and S. Goetz, Impacts of climate change on plant productivity in the Cajander larch woodlands of northeastern Eurasia. *American Geophysical Union Fall Meeting*, San Francisco, CA.

2011 **Berner, L.T.**, P.S. Beck, M.M. Loranty, H.D. Alexander, M.C. Mack, and S.J. Goetz, Quantifying post-fire forest biomass recovery in northeastern Siberia using hierarchical multi-sensor satellite imagery and field measurements. *American Geophysical Union Fall Meeting*, San Francisco, CA.

Oral Presentations at *Seminars, Workshops, and Other Professional Meetings (incomplete list)*

2024 **Berner, L.T.**, Climate change impacts on tundra ecosystems across the Arctic. *Alaska Coastal Rainforest Center*, Juneau, Alaska (*INVITED*)

2023 **Berner, L.T.**, Next generation plant biomass maps for the Arctic tundra biome. *Permafrost Discovery Gateway*, webinar. *(INVITED)*

2022 **Berner, L.T.**, Collaboratively developing the next generation of tundra biomass maps for the Arctic. *Department of Energy Next Generation Ecosystem Experiments (NGEE) Arctic All Hands Meeting*, virtual meeting. (*INVITED*)

2021 **Berner, L.T.**, Spectral greening in the Arctic tundra biome. *Arctic Hub*, webinar. (*INVITED*)

2019 **Berner, L.T.**, R. Massey, P. Jantz, B. Forbes, M. Macias-Fauria, G. Gauthier, B. Gaglioti, L. Andreu-Hayles, P. Burns, R. D'Arrigo, and S. Goetz, Greening of the tundra biome. *University of Lapland Arctic Center*, Rovaniemi, Finland. (*INVITED*)

2019 **Berner, L.T.**, R. Massey, P. Jantz, B. Forbes, M. Macias-Fauria, G. Gauthier, B. Gaglioti, L. Andreu-Hayles, P. Burns, R. D'Arrigo, and S. Goetz, Greening of the tundra biome. *Toolik Field Station All Scientist Meeting*, Portland, OR. (*INVITED*)

2018 **Berner, L.T.**, S.J. Goetz, P. Jantz, K.D. Tape, P. Burns, and R. Massy, Greening of the tundra biome. *Lawrence Berkeley National Laboratory*, Climate Seminar, Berkeley, CA. (*INVITED*)

2018 **Berner, L.T.**, R. Massey, P. Jantz, B. Forbes, M. Macias-Fauria, G. Gauthier, B. Gaglioti, L. Andreu-Hayles, P. Burns, R. D'Arrigo, and S. Goetz, Observed patterns of Arctic tundra vegetation productivity. *National Academies of Sciences*, Workshop on Understanding Northern Latitude Vegetation Greening and Browning, Washington D.C. (*INVITED*)

2017 **Berner, L.T.**, P. Jantz, K.D. Tape, and S.J. Goetz, Plant and shrub aboveground biomass mapped across northern Alaska. *Google Earth Engine Workshop*, Flagstaff, AZ.

Poster Presentations (incomplete list)

2016 **Berner, L.T.** and B.E. Law, Multiscale assessment of water limitations on forest carbon cycling in the western United States, *American Geophysical Union Fall Meeting*, San Francisco, CA.

2015 **Berner, L.T.** and B.E. Law, The TERRA-PNW Dataset: A new source for standardized plant traits, forest carbon cycling, and soil property measurements from the Pacific Northwest US, 2000-2014, *American Geophysical Union Fall Meeting*, San Francisco, CA.

2015 **Berner, L.T.**, H.D. Alexander, M.M. Loranty, P. Ganzlin, M.C. Mack, S.P. Davydov, and S.J. Goetz, New biomass allometry equations for widespread shrub species in northern Siberia and Alaska, *2015 Arctic Observing Open Science Meeting*, Seattle, WA.

2015 Law, B.E., **L.T. Berner**, Z. Yang, A. Schmidt, and P. Ciais, Long-term observations and analysis for an integrated carbon observing system, *Ecological Society of America*, Baltimore, MD.

2012 **Berner, L.T.**, A. Bunn, P.S.A. Beck, and S.J. Goetz, Climate change and Cajander Larch growth response at local and regional scales in northeastern Siberia. *American Geophysical Union Fall Meeting*, San Francisco, CA.

2010 **Berner, L.**, A. Bunn, P. Beck, A. Lloyd and S. Goetz, Evaluation of High-Latitude Boreal Forest Growth Using Satellite-Derived Spectral Vegetation Indices. *American Association of Geographers*, Washington D.C.

2010 **Berner, L.**, A. Bunn, A. Lloyd and P. Beck, Remote Monitoring of High-Latitude Conifer Growth Using the Satellite-Derived Normalized Difference Vegetation Index. *State of the Arctic*, Miami, FL.
2007 **Berner, L.**, M. Habermann, E. Hood, R. Fatland, M. Heavner and E. Knuth, Providing a tour of a glacial watershed. *American Geophysical Union*, San Francisco, CA.
2007 **Berner, L.** and S. Pyare, Evaluation of Predictive Bioclimatic Distribution Models for Boreal Toads in Alaska. *Alaska Wildlife Society*, Juneau, AK.
2006 **Berner, L.** and E. Hood, Hydrologic and Biogeochemical Effects of Glacial Recession in Southeast Alaskan Watersheds. *American Geophysical Union*, San Francisco, CA.
2006 **Berner, L.** and E. Hood, The Influence of Changing Glacier Coverage on the Physical Hydrology and Hydrochemistry of Coastal Watersheds in Southeast Alaska. *NOAA Educational Partnership Program Education and Science Forum*, Tallahassee, FL.
2006 **Berner, L.** and S. Pyare, Modeling the Distribution of Western Toads (*Bufo boreas*) Using a Statewide Amphibian Occurrence Database. *Alaskan Amphibian Conference*, Juneau, AK.

Presentations by Colleagues
Over 50 co-authored oral and poster presentations since 2007, primarily at the *American Geophysical Union Fall Meeting*, but also at the *Ecological Society of America Annual Meeting*, *Geological Society of America Annual Meeting*, and other professional meetings.

TEACHING and STUDENT ENGAGEMENT

Undergraduate courses
2024 *Environmental Science 375: Current topics - Arctic terrestrial ecosystems and climate change*
University of Alaska Southeast, spring semester, 2 credit hours (instructor of record)
2008 *Environmental Science 442: Introduction to Remote Sensing*
Western Washington University, fall semester, 3 credit hours (graduate teaching assistant)

Field expeditions
2023 Faculty instructor for *POLARIS* expedition by the Woodwell Climate Research Center that occurred over three weeks in the Alaskan Yukon – Kuskokwim Delta.
2022 Guest instructor for *Northern Environments Field Research Methods* course at University of Eastern Finland that occurred over 10-day in northern Finland.
2019 Guest instructor for *Northern Environments Field Research Methods* course at University of Eastern Finland that occurred over 10-day in northern Finland.

Guest lectures
2024 *Careers in Environmental Science* course at University of Alaska Southeast
2023 Early career researcher group at Pacific Northwest National Laboratory
2023 *Careers in Environmental Science* course at University of Alaska Southeast
2023 *Earth Observation Research and Applications* course at Northern Arizona University
2022 *Careers in Environmental Science* course at University of Alaska Southeast
2021 *Dendroecology* course at Northern Arizona University
2021 *Earth Observation Research and Applications* course at Northern Arizona University
2021 *Careers in Environmental Science* course at University of Alaska Southeast
2020 *Dendroecology* course at Northern Arizona University
2019 *Dendroecology* course at Northern Arizona University
2019 *Earth Observation Research and Applications* course at Northern Arizona University
2011 *Introduction to Remote Sensing* course at University of Hawaii Hilo

Other activities
2019 Judge for Northern Arizona University Undergraduate Research and Design Symposium

2018 Judge for American Geophysical Union Outstanding Student Paper Awards
2018 Judge for Northern Arizona University Undergraduate Research and Design Symposium

STUDENT ADVISING and MENTORING *(co-advised with *Scott Goetz, §Xanthe Walker)*

Post-doctoral researcher mentoring

2024 – present	§Jeremy Forsythe	Northern Arizona University	Boreal forest wildfires
2023 – present	*Kathleen Orndahl	Northern Arizona University	Arctic environmental change

PhD student advising

2023 – present	*Skye Salganek	Northern Arizona University	PhD Ecological Informatics

Graduate research committees

2021 – present	Jeralyn Poe	Northern Arizona University	PhD Ecological Informatics
2022 – 2024	Russel Wong	Alaska Pacific University	MS Environmental Science
2021 – 2023	Betsy Black	Northern Arizona University	MS Biology

Undergraduate student mentoring

2015	Alex Westcott	Western Washington University	BS Environmental Science

Highschool student mentoring

2020 – 2022	Zoe Gutherman	Somers Highschool	Science fair projects

OUTREACH ACTIVITIES

General audience articles

2023 Rotbarth, R., D.J. Cooper, **L.T. Berner**, and R. Dial, "The world's boreal forests may be shrinking as climate change pushes them northward", *The Conversation* (link).
2022 **Berner, L.T.** and S. Goetz, "Satellite Observations Indicate a Boreal Forest Biome Shift is Underway", *ARCUS Witness Community Highlights* (link).
2021 **Berner, L.T.**, P. Burns, and R. Dial, "Unraveling the Mysteries of Arctic Greening and Browning", *NASA Earth Observatory Notes from the Field* (link).

General audience presentations

2022 University of Alaska Southeast Evening at Egan Public Lecture Series, "Watching a warming Arctic from space." Juneau, Alaska. In person, live streamed, and video recorded (link).
2020 Tetlin National Wildlife Refuge Webinar, "Monitoring vegetation with the normalized difference vegetation index." Online.
2015 ARCS Foundation Luncheon lecture, "Western forests in a warming world." Corvallis, Oregon.
2008 USFS Mendenhall Glacier Visitor Center Fireside Chat, "Mendenhall on the move." Co-lecture with Drs. Cathy Connor, Matt Heavner and Eran Hood. Juneau, Alaska.

Television interviews

2022 CBC News segment, "Climate change could send Canada's boreal forest creeping northward. Here's why."
2021 Fox10 Phoenix news segment, "NAU studying ways to save caribou populations." [live]
2021 Arizona Family (CBS Channel 5) news segment, "NAU researchers studying climate change effect on caribou."
2021 ABC15 Arizona news segment, "NAU researchers saving Santa's reindeer."

Radio interviews

2022 KTOO Juneau Afternoon program, "Watching a warming Arctic from space." Juneau, Alaska.

2022 KINY Capital Chat program, “Watching a warming Arctic from space.” Juneau, Alaska.
2022 KNAU Arizona Public Radio news segment, “NAU study shows world’s forests shifting due to climate change.” Flagstaff, Arizona.
2021 KTAR News and Arizona Sports news segment, “NAU researchers saving Santa’s reindeer.” Phoenix, Arizona.

Podcast interviews
2023 United States GLOBE Office, “North America Phenology Campaign Scientist Q&A: Dr. Logan Berner.”
2023 Polish Capital Radio Stand for Earth episode, “Field diaries from the Arctic.” Warsaw, Poland.
2022 USGS Eyes on Earth episode, “Eyes on Earth Episode 72 – Northward Shift of the Boreal Forest.”

Article interviews
2022 EOS article, “Boreal Trees May Grow Faster Due to Climate Change.”
2022 CBC News article, “Climate change is warming Canada's great expanse of boreal forest, bringing greater risk of fire and disease.”
2022 EOS article, “Satellites Reveal Slow Shift of the Entire Boreal Biome.”
2022 The Wildlife Society article, “Interdisciplinary effort to understand caribou challenges.”
2021 NASA Earth Expeditions article, “Too Remote, Too Wild, and Too Cold: Helping Satellites See Arctic Greening with Boots on the Ground.”
2020 PBS NOVA article, “Tongass National Forest is 'America's Last Climate Sanctuary.'”
2020 NASA Goddard News article, “Warming temperature are driving Arctic greening.”
2020 Eye on the Arctic article, “Global warming is making the Arctic greener.”
2020 EOS article, “Drones Help Bridge the Gaps in Assessing Global Change.”

Geospatial data and/or visualization
2023 Smithsonian traveling museum exhibit, “Knowing Nature: Stories of the Boreal Forest.”
2022 Financial Times article, “The ancient subarctic forests at risk from climate change and war.”
2022 CBC News article, “Climate change is warming Canada's great expanse of boreal forest, bringing greater risk of fire and disease.”
2022 Science news article, “The Forest Forecast.”
2020 NASA Goddard video, “Arctic greening driven by warmer temperatures.”
2019 National Geographic article, “The Arctic is heating up.”

Photography
2024 AGU Advances default journal cover
2022 Financial Times article, “The ancient subarctic forests at risk from climate change and war.”
2022 EOS article, “Satellites Reveal Slow Shift of the Entire Boreal Biome.”
2022 The Wildlife Society article, “Interdisciplinary effort to understand caribou challenges.”
2021 NASA Earth Expeditions article, “Too Remote, Too Wild, and Too Cold: Helping Satellites See Arctic Greening with Boots on the Ground.”
2020 Eye on the Arctic article, “Global warming is making the Arctic greener.”
2020 NASA Goddard News article, “Warming temperature are driving Arctic greening.”

Media coverage (incomplete list)
2024 Oregon Public Broadcasting article, “Federal judge finalizes protections for large trees east of the Cascades.”
2023 EOS, “To meet climate goals, protect the Tongass and Chugach forests.”
2023 Mongabay article, “Study identifies priority forests in Oregon for max conservation benefit.”
2023 Sierra article, “Campaign urges agencies to keep big trees standing.”

2022 National Public Radio article, "Biden will order a study of old-growth forests in an Earth Day executive action."
2022 Washington Post article, "Biden to issue Earth Day order to safeguard old-growth forests."
2022 Mother Jones article, "Why Old-Growth Forests Matter So Much in the Fight Against Climate Change."
2022 National Geographic article, "Why old-growth forests matter."
2022 Oregon Public Broadcasting article, "Biden will order study of old-growth forests in Earth Day executive action."
2022 Popular Science article, "You may need to read dozens of books each year to offset that new e-reader."
2021 The New Yorker article, "To Counter Climate Change, We Need to Stop Burning Things."
2021 Oregon Public Broadcasting article, "Oregon scientists call for more forest protection to fight climate change, save species."
2020 Oregon Public Broadcasting article, "Eastern Oregon trees are playing an outsized role in curbing climate change: study."
2017 News Channel 21 article, "OSU study: Carbon benefits in forest management change."
2013 Klipsun Magazine article, "If trees could talk: What growth rings reveal."
2011 ArcWatch Magazine article, "Mapping invasive trees in Hilo, Hawaii, using GIS."

PEER REVIEW ACTIVITIES

Reviewer for scientific journals
- Arctic Science
- Biogeosciences (2)
- Communications Earth & Environment (3)
- Ecology
- Ecosystems (2)
- Environmental Research Letters (7)
- European Journal of Forest Research
- Forests
- Forest Ecology and Management
- Geophysical Research Letters
- Global Change Biology (7)
- International Journal of Wildland Fire
- Journal of Geophysical Research
- Journal of Hydrology (2)
- Nature Communications (2)
- Nature Ecology and Evolution
- PlosOne
- Remote Sensing
- Remote Sensing of Environment (3)
- Science (4)
- Scientific Reports

Panel reviewer for proposals
- NASA Earth & Space Science Fellowship Program (2)
- NASA Biodiversity & Ecological Forecast Program (2)

Ad hoc reviewer for proposals
- NSF Geographic and Spatial Science Program
- NSF Arctic System Science Program
- Austrian Academy of Sciences (2)
- UK Natural Environment Research Council
- German Research Foundation

External reviewer for PhD dissertations
- University of Helsinki, Finland

Other reviews
- Univ. of California Climate Feedback Program
- Montana Climate Assessment 2017

PROFESSIONAL MEETING ORGANIZATION

2022 Navigating the New Arctic Annual Community Meeting
Co-Moderator, "Arctic Observing Systems & Technology" sessions
2021 American Geophysical Union Fall Meeting
Co-Chair, "Advances in understanding vegetation shifts in the Arctic" session
2021 International Boreal Forest Research Association Meeting
Co-Chair, "Projections of future changes in boreal forest productivity and demographics" session

2021 International Boreal Forest Research Association Meeting
Chair, "Observed changes in boreal forest productivity and demographics" session
2021 NASA Arctic – Boreal Vulnerability Experiment Science Team Meeting
Co-Chair, "Vegetation dynamics and distribution" session

COMMUNITY COORDINATION and COMMITTEES

2019 – present Toolik Field Station Environmental Data Center Science Advisory Committee
2017 – 2019 Coordinator for the NAU SICCS Ecoinformatics Seminar Series

INTERNATIONAL FIELD WORK and STUDY EXPERIENCE

2022	Finland (Lapland)	3 weeks	Field work and guest instructor for field course
2019	Finland (Lapland)	3 weeks	Field work and guest instructor for field course
2013	Russia (Siberia)	1 month	Fieldwork
2012	Russia (Siberia)	1 month	Fieldwork
2010	Russia (Siberia)	1 month	Fieldwork
2009	Russia (Northwest)	1 month	Fieldwork
2008	United Arab Emirates	2 months	Technical Assistance
2008	Canada (NWT)	1 month	Fieldwork
2008	Russia (Western)	1 month	Fieldwork
2001	Russia (Far East)	10 months	Rotary Student Exchange

CERTIFICATIONS

PADI Open Water Diver, AHA First Aid CPR AED (lapsed), DOI Helicopter & Aviation Safety (B-3; lapsed), DOI Helicopter Transport of External Cargo (A-219; lapsed), Wilderness First Responder and CPR (lapsed)

PROFESSIONAL AFFILIATIONS

2017 – present Member of the NASA Arctic Boreal Vulnerability Experiment Science Team
2016 – present Member of the American Association for the Advancement of Science
2006 – present Member of the American Geophysical Union