

Christopher Daly

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EDUCATION

Oregon State University	Ph.D. (General Science)	1994
University of Colorado	M.A. (Forest Geography)	1984
University of California at Davis	B.S. (Atmospheric Sciences)	1978

PROFESSIONAL EXPERIENCE

2011- Professor (Sen. Res.), CBEE, College of Engineering, Oregon State University
2007- Chief Scientist, Northwest Alliance for Computational Science and Engineering
2008-2011 Professor (Sen. Res.), Dept. of Geosciences, Oregon State University
2004-2008 Associate Professor (Sen. Res.), Dept. of Geosciences, Oregon State University
1997-2004 Assistant Professor (Sen. Res.), Dept. of Geosciences, Oregon State University
1997- Director, PRISM Climate Group
1994-1997 Post-Doctoral Research Associate, Oregon State University
1990-1994 Teaching/Research Assistant, Oregon State University
1985-1990 Senior Research Scientist, Systems Applications International
1981-1984 Teaching/Research Assistant, University of Colorado 1978-1981
Marine Meteorologist, Oceanroutes, Inc.

PROFESSIONAL ACTIVITIES

Daly's professional background spans a unique combination of disciplines, including meteorology and climatology, geography, ecology, and process and statistical modeling. Drawing from this background, he has developed and advanced an emerging discipline termed "geospatial climatology," the study of the spatial and temporal patterns of climate and their relationships with geographic features. Geospatial climatologists seek to understand the features and processes that control climate patterns, such as elevation, rain shadows, coastal proximity, atmospheric layering (inversions), cold air drainage, and others. Daly developed PRISM, a novel approach to the mapping of climate that brings meteorological intelligence and geographical analysis to the statistical interpolation of climate. The PRISM approach is now widely accepted, and a 1994 paper describing the initial version of PRISM has been cited in over 3,400 peer-reviewed journal articles.

Daly founded and directs Oregon State University's PRISM Climate Group, a recognized world leader in spatial climate analysis. He developed and continues to update digital maps of long-term normals and daily and monthly time series for the conterminous US, downloaded approximately 750,000 times per month from the PRISM Web site. He developed the first-ever detailed climate and species suitability maps for the People's Republic of China, aiding Oregon grass seed growers in creating a multi-million dollar market for their seeds in China. Daly has also been updating official NOAA extreme precipitation maps that provide guidance used by states, counties, and municipalities to determine building codes and regulations. In 2012, he released a new official USDA Plant Hardiness Zone Map, the key plant selection guide for

horticulturalists, nurseymen, and gardeners; this map received 20 million online accesses in the first two weeks of release. Daly has an ongoing relationship with the USDA Risk Management Agency, which oversees the federal crop insurance program. In an effort to improve the integrity and efficiency of the claims process, the RMA asked Daly and his group to provide high-quality spatial weather and climate data on a daily basis for every farm in the lower 48 states. In addition, PRISM long-term climate datasets are being used in conjunction with soils data and a water balance model to establish zones of crop suitability to provide greater accuracy and spatial detail in crop insurance underwriting.

HONORS & AWARDS

- 2019 Rated by PLOS Biology as being in the top 2 percent of all researchers worldwide in his discipline (meteorology), based on publication history and citations by other authors.
- 2017 First-authored paper “High-resolution precipitation mapping in a mountainous watershed: ground truth for evaluating uncertainty in a national precipitation dataset”, was one of the journal’s top 20 most downloaded recent papers in 2017. The journal stated: “Your article generated immediate impact and helped to raise the visibility of International Journal of Climatology.”
- 2017 Co-authored paper “Biomass production of herbaceous energy crops in the United States: field trial results and yield potential maps from the multiyear Regional Feedstock Partnership” was one of Global Climate Change Biology: Bioenergy’s “Top Downloaded Article 2017-2018”, recognizing that the paper is a top 20 most read paper from the journal.
- 2012 ARS Excellence in Information Award: Presented to the OSU PRISM Climate Group and selected USDA/ARS employees for contribution to the successful design, development, and implementation of the 2012 USDA Plant Hardiness Zone Map.
- 2012 Environmental Systems Research Institute international award: Special Achievement in GIS, presented to the OSU PRISM Climate Group and the USDA/ARS Office of National Programs for outstanding work in developing and communicating the 2012 USDA Plant Hardiness Zone Map for the United States and Puerto Rico.
- 2010 American Institute of Biological Sciences: Distinguished Scientist Award, presented collectively to the LTER (Long Term Ecological Research) Network. The HJ Andrews Experimental Forest is an active participant in LTER, and Daly is PI for Climate.
- 2004 American Meteorological Society annual award: “Outstanding Contribution to the Advance of Applied Meteorology,” presented to Daly at the AMS National Meeting banquet, January 15, Seattle, WA.

GRANTS RECEIVED (active last 5 years, only dollars awarded to PI Daly are shown)

- 2010-2023, Improving RMA underwriting and oversight, USDA RMA, \$23,200,000
- 2021-2023, Develop an updated plant hardiness map, USDA ARS, \$607,511
- 2021-2022, SNOTEL weather data QC and editing portal, USDA NRCS, \$300,000

2021-2022, NIFA SAS forage species mapping, USDA NIFA, \$123,000
2018-2021, Agricultural water usage on the West Coast, USDA NIFA, \$104,498
2017-2018, Extreme precipitation maps for Texas, NOAA NWS HDSC, \$74,499

PUBLICATIONS (last 5 years)

- Rupp, D.E., C. Daly, M.K. Doggett, J.I. Smith, and B. Steinberg. 2022. Mapping an observationbased global solar irradiance climatology across the conterminous United States. *Journal of Applied Meteorology and Climatology* 61(7): 857-876.
<https://doi.org/doi:10.1175/JAMC-D-21-0236.1>
- Daly, C., Doggett, M.K., Smith, J.I., Olson, K.V., Halbleib, M.D., Dimcovic, Z., Loiselle, R.A., Ryan, A.D., Pancake, C.M., Kaspar, E.M. 2021. Challenges in observation-based mapping of daily precipitation across the conterminous United States. *Journal of Atmospheric and Oceanic Technology*. 38(11): 1979-1992.
<https://doi.org/10.1175/JTECH-D-21-0054.1>
- Rupp, D.E., Shafer, S.L., Daly, C., Jones, J.A., Higgins, C.W. 2021. Influence of anthropogenic greenhouse gases on the propensity for nocturnal cold air drainage. *Theoretical and Applied Climatology*, <https://doi.org/10.1007/s00704-021-03712-y>.
- Rupp, D. E., Shafer, S. L., Daly, C., Jones, J. A., & Frey, S. J. K. 2020. Temperature gradients and inversions in a forested Cascade Range basin: Synoptic- to local-scale controls. *Journal of Geophysical Research: Atmospheres*, 125, e2020JD032686.
<https://doi.org/10.1029/2020JD032686>.
- Smith, A.B., ... Daly, C., + others. 2019. Ecoregional context, genetic affinity and withinspecies variation in response to climate. *Nature Climate Change*, 9(10), <https://doi.org/10.1038/s41558-019-0584-8>.
- Daly, C., Halbleib, M., Hannaway, D.B., Eaton, L. M. 2017. Environmental limitation mapping of potential biomass resources across the conterminous United States. *Global Change Biology: Bioenergy*, <https://doi.org/10.1111/gcbb.12496>.
- Volk, T.A., Berguson, B., Daly, C., Halbleib, M., Miller, R., Rials, R. + others. 2017. Poplar and shrub willow energy crops in the United States: field trial results from the multiyear Regional Feedstock Partnership and yield potential maps based on the PRISM-ELM model. *Global Change Biology: Bioenergy*, <https://doi.org/10.1111/gcbb.12498>.
- Lee, D.K., Aberle, E., Anderson, E., Baldwin, B., Baltensperger, D., Barrett, M., Bonos, S., Bouton, J., Brummer, C., Burks, Payne, Chen, C., Daly, C. + others. 2017. Biomass production of herbaceous energy crops in the United States: field trial results and yield potential maps from the multiyear Regional Feedstock Partnership. *Global Change Biology: Bioenergy*, <https://doi.org/10.1111/gcbb.12493>.
- Strachan, S. and C. Daly. 2017. Testing the daily PRISM air temperature model on semi-arid mountain slopes. *Journal of Geophysical Research Atmospheres*, 122, 5697-5715.
<https://doi.org/10.1002/2016JD025920>.

Daly, C., Slater, M., Roberti, J.A., Laseter, S., and L. Swift. 2017. High-resolution precipitation mapping in a mountainous watershed: Ground truth for evaluating uncertainty in a national precipitation dataset. *International Journal of Climatology*.
<https://doi.org/10.1002/joc.4986>.