Shawn David Taylor

Research Ecologist Post-doc - USDA-ARS Jornada Experimental Range
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Work Experience

ORISE Postdoctoral Fellow | USDA-ARS Jornada Experimental Range | Dr. Dawn Browning | Las Cruces, NM
Nov. 2020 - Present

- Continuation of duties and accomplishments for Research Ecologist GS-408-11 below.

Research Ecologist GS-408-11 | USDA-ARS Jornada Experimental Range | Dr. Dawn Browning | Las Cruces, NM
Nov. 2019 - Oct. 2020, 40 hrs/week

- Developed and published original research.
- Used simulation models and three years of drone imagery to determine the detection limits of remote sensing land surface phenology models.
- Used deep learning models to identify crop phenological stages from PhenoCam imagery. This will serve as a ground truth for remote sensing models of croplands.
- Implemented and evaluated ecological models of grassland growth. https://github.com/sdtaylor/GrasslandModels
- Utilized large (500GB+) climate datasets to model grasslands under future climate scenarios.
- Ran workflows on ARS high performance clusters (SciNet).
- Wrote an R package to access and visualize local long-term monitoring data. https://github.com/sdtaylor/phenometr

Research Associate | University of Florida | Dr. Ethan White | Gainesville, FL
Aug. 2015 - Nov. 2019

- Developed and published original research on ecological forecasting.
- Wrote a python package for phenological modelling https://github.com/sdtaylor/pyphenology
- Developed the data pipeline for automatic weekly phenology forecasts utilizing NOAA CFSv2 data https://phenology.naturecast.org/

Lab Manager | Agricultural Research Station | Dr. Beth Newingham | Reno, NV
May - August 2015
- Lab purchasing & field prep.
- Surveys of post-fire restoration throughout the Great Basin.

Biological Science Technician | GS-404-5 | U.S. Forest Service | Idaho, Montana, Oregon, Utah
May - October 2012, April 2013 - November 2014, 40 hrs/week
- Botanist surveying riparian vegetation throughout the Columbia Basin.
- Tech in 2012. Crew lead in 2013. Supervisor of 4 crews in 2014.

Systems Engineer | Bright Technologies | Reno, NV
2006-2009
- Design, testing, & installation of storage area networks (SANs) for film and television post production.

Education

PhD in Ecology | Dec. 2019 | University of Florida | Gainesville, FL | White Lab
Disseration: Forecasting plant phenology: an assessment of data sources and estimators, and a fully automated implementation
- Making near term phenology forecasts. http://phenology.naturecast.org

BS in Ecology and Conservation Biology | 2012 | University of Idaho | Moscow, ID
- Senior Thesis: Influences of soil and spatial properties on Bromus tectorum distribution after fire

AS in Computer Networking | 2005 | Truckee Meadows Community College | Reno, NV

Publications

Google Scholar

8 Taylor, Shawn D., and Dawn M. Browning. 2021. Multi-Scale Assessment of a Grassland Productivity Model. Biogeosciences 18 (6): 2213–20. https://doi.org/10.5194/bg-18-2213-2021 [Code, Data & Code Archive

7 Prince, K., Taylor, S., & Angelini, C. 2020. A global, cross-system meta-analysis of polychlorinated biphenyl biomagnification. Environmental Science & Technology. https://doi.org/10.1021/acs.est.9b07693

6 Taylor, S.D., Marconi, S. 2020. Rethinking global carbon storage potential of trees. A comment on Bastin et al. (2019). Annals of Forest Science 77, 23. https://doi.org/10.1007/s13595-020-0922-z [Code, Data & Code Archive, Preprint]

5 Taylor, S.D., White, E.P., 2019. Automated data-intensive forecasting of plant phenology throughout the United States. Ecological Applications. https://doi.org/10.1002/eap.2025 [Code, Code Archive, Preprint]

4 Taylor, S.D. 2019. Estimating flowering transition dates from status-based phenological observations: a test of methods. PeerJ 7:e7720 https://doi.org/10.7717/peerj.7720 [Code, Code Archive, Preprint]

3 Taylor, S.D., J.M. Meiners, K. Riemer, M.C. Orr, E.P White. 2019. Comparison of large-scale citizen science data and long-term study data for phenology modeling. Ecology 100 (2): e02568. https://doi.org/10.1002/ecy.2568.[Preprint,Code]

2 Harris, D.J., S.D. Taylor, E.P. White. 2018. Forecasting biodiversity in breeding birds using best practices. PeerJ, 6:e4278 https://doi.org/10.7717/peerj.4278 [Code, Code Archive, Preprint]

1 White, E.P., G.M. Yenni, S.D. Taylor, E.M. Christensen, E.K. Bledsoe, J.L. Simonis, S.K.M. Ernest. 2018. Developing an automated iterative near-term forecasting system for an ecological study. Methods in Ecology and Evolution https://doi.org/10.1111/2041-210X.13104 [Website, Data, Code, Preprint]

Preprints

Taylor, SD and White, EP, 2020. Influence of climate forecasts, data assimilation, and uncertainty propagation on the performance of near-term phenology forecasts. bioRxiv, https://doi.org/10.1101/2020.08.18.256057 [Code, Data & Code Archive]

Taylor, SD and Guralnick, RP, 2019. Opportunistically collected photographs can be used to estimate large-scale phenological trends. bioRxiv, 794396. https://doi.org/10.1101/794396 [Data & Code Archive]

Taylor, SD. 2018. NEON NIST Data Science Evaluation Challenge: Methods and Results of Team Shawn. PeerJ Preprints 6: e26967v1. https://doi.org/10.7287/peerj.preprints.26967.

Software

Christensen, E.M., Yenni, G.M., Ye, H., Simonis, J.L., Bledsoe, E.K., Diaz, R., Taylor, S.D., White, E.P. and Ernest, S.M. 2019. portalr: An R Package for Summarizing and Using the Portal Project Data. Journal of Open Source Software 4 (33): 1098. https://doi.org/10.21105/joss.01098. [Repo]

Taylor, S.D. 2018. pyPhenology: A python framework for plant phenology modelling. The Journal of Open Source Software 3: 827. https://doi.org/10.21105/joss.00827 [Repo, Docs]

McGlinn, D., H. Senyondo, S.D. Taylor, M. Pohlman, and E.P. White. 2015-present. rdataretriever: R Interface to the Data Retriever. https://cran.r-project.org/web/packages/rdataretriever/index.html

Posters & Presentations

Taylor, S.D. and Browning, D.M. 2020. Interactive long-term forecasts for the phenology and productivity of Western rangelands. Ecological Society of America Conference 2020.

Taylor, S.D. and White, E.P. 2018. Evaluation of a near term plant phenology forecast. Phenology Conference 2018. Melbourne, VIC, Australia. Best Student Poster.

Taylor, S.D. and White, E.P. 2018. Evaluation of a near term plant phenology forecast. F1000Research, 7:1274 (poster) (https://doi.org/10.7490/f1000research.1115951.1)

Taylor, S.D. and White, E.P. 2016. Ecological Forecasting and Scale. Gordon Research Conference: Unifying Ecology Across Scales. University of New England. Biddeford, ME. (Poster)

Taylor, S.D. and Newingham, B.A. 2012. Influences of soil and spatial properties on Bromus tectorum distribution after fire. Annual Meeting of the Society of Range Management, Spokane, WA. (Presentation)

Invited Talks

Ecological Forecasting: Concepts, Recommendations, and Examples. LTER Metacommunities Working Group. Boulder, CO. Nov. 5, 2018. Organizer: Eric R. Sokol.
Can we forecast plant phenology like the weather? March, 2020. Univ. of Texas, El Paso Ecology and Evolutionary Biology Seminar.
The pipeline of phenological data in large scale automated forecasts. Ecological Society of America Conference 2020. Session: "Innovation in the Integration and Analysis of Large Phenological Datasets."

Workshops Tought

Weekly R Meetup. Various presentations & ongoing R Help Desk. University of Florida. Jan. 2018 - May 2019
7 Week Data carpentry workshop Jan. 1 - March 8, 2018 Blog Post
Data Carpentry, Utah State University, September 29-30, 2017
Software Carpentry, University of Florida, May 25-26, 2017
Data Carpentry, University of Florida, October 17-18, 2016
Software Carpentry, University of Florida, August 17-18, 2016

Certifications & Trainings

Near Term Ecological Forecasting Workshop Boston, Massachusetts - (7/2018)

Instructor Training Data Carpentry - (7/2016)

Honors & Grants

2017 NSF GRFP Honorable Mention
2016 Carl Storm Underrepresented Minority Fellowship (Travel Grant)
2012 Outstanding Ecology and Conservation Biology Nominated
2012 Henry & Ingeborg Legoll Scholarship
2011 Research Award for Undergraduates NSF Idaho EPSCoR

Skills

R, Python, SQL, Git, ArcGIS, QGIS, UNIX/Linux, parallel programming, high performance clusters.
Botany. Fluency in most plants of the Western U.S. Expert in the Inland Northwest.