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EDUCATION

2005 – Ph.D., San Diego State University and University of California, Santa Barbara, Geography.

1998 – MES, Virginia Commonwealth University, Environmental Studies.

1994 – MPH, Medical College of Virginia, Public Health.

1992 – BA, University of Mary Washington, English/communications.

PROFESSIONAL EXPERIENCE

2011-current – Adjunct Professor, Geography, San Diego State University, CA.

2007-current – Senior Research Scientist, Conservation Biology Institute, La Mesa, CA.

2007-2008 – Postdoctoral Fellow, Biology, San Diego State University, CA.

2005-2007 – Postdoctoral Fellow, Forest & Wildlife Ecology, University of Wisconsin, Madison, WI.

1998-1999 – GIS Analyst/Environmental Planner, Vanasse Hangen Brustlin, Williamsburg, VA.

1995-1998 – Publications writer, Alliance for the Chesapeake Bay, Richmond, VA.

SELECT RESEARCH EXPERIENCE

2015 – Fire modeling in the California desert. DRECP.

2015 – 2019 – Balancing fire risk with resource protection under global change. USGS Western Ecological Research Station.

2014 – Land use planning and wildfire. University of California, Berkeley.

2011-2012 – Decision support for climate change adaptation and fire management strategies for at-risk species in southern California. California Landscape Conservation Cooperative.

2011-2015 – Collaborative Research: Do microenvironments govern macroecology? National Science Foundation.

2009-2013 – Understanding and improving fire management for Marine Corps Base Camp Pendleton. Department of Defense.

2008-2013 – Urban growth and fire risk modeling. USGS Western Ecological Research Center.

2008-2012 – Quantitative Assessment of the effect of fuel manipulation projects on fire behavior and urban loss. USGS Western Ecological Research Center.

2008-2011 – The persistence of biodiversity in southern California under future land-use change scenarios. National Science Foundation.

PEER-REVIEWED PUBLICATIONS

Journal Article: In Review or Revision

Syphard, A.D., Butsic, V., Keeley, J.E., Bar-Massada, A, Tracey, J. Setting priorities for private land conservation in fire-prone landscapes: Are fire risk reduction and biodiversity conservation competing or compatible objective?

Syphard, A.D., Keeley, J.E. 2016. Historical reconstructions of California wildfires vary by data source.

Franklin, J., Serra-Diaz, J.M., **Syphard, A.D.**, Regan, H.M. Global change and terrestrial plant community dynamics.

Franklin, J., Serra-Diaz, J.M., **Syphard, A.D.**, Regan, H.M. Linking big data across scales for understanding plant community dynamics.

Butsic, V., **Syphard, A.D.**, Keeley, J.E., Bar Massada, A. Modeling the impact of private land conservation on wildfire risk in San Diego County, CA.

Davis, F.W., Sweet, L.C., Serra-Diaz, J.M., McCullough, I.M., Dingman, J.R.,Flint, A.L., Flint, L.E., Franklin, J., **Syphard, A.D.**, Regan, H.M., Moritz, M.A., Hannah, L., Redmond, K., Sork, V.L. Changing windows of opportunity for tree recruitment in Mediterranean-climate landscapes.

Journal Article

49 McCullough, I.M., Davis, F.W., Dingman, J.R., Flint, L.E., Flint, A.L., Serra-Diaz, J.M., **Syphard, A.D.**, Moritz, M.A., Hannah, L., Franklin, J. 2016, in press. High and dry: high elevations disproportionately exposed to regional climate change in Mediterranean-climate landscapes. Landscape Ecology.

48 Serra-Diaz, J.M., Franklin, J., Sweet, L., McCullough, I.M., **Syphard, A.D.**, Regan, H.M., Flint, L.E., Flint, A.L., Dingman, J.R., Moritz, M.A., Redmond, K. Hannah, L., Davis, F.W. 2015. Averaged 30-year climate change projections mask opportunities for species establishment. In press. Ecography.

47 Serra-Diaz, J.M., Dillon, W.W., Franklin, J., **Syphard, A.D.**, Davis, F.W., Meentenmeyer, R.K. 2015. Divergent signals in early indicators of tree species range change under global change. Global Ecology and Biogeography. In press.

46 Alexandre, P.M., Stewart, S.I., Mockrin, M.H., Keuler, N.S., **Syphard, A.D.**, Bar Massada, A., Clayton, M.K., Radeloff, V.C. 2015. The relative impacts of vegetation, topography and spatial arrangement on building loss to wildfires in case studies of California and Colorado. Landscape Ecology. DOI 10.1007/s10980-015-0257-6.

45 Hannah, L., Flint, L.,**Syphard, A.D.**, Moritz, M.A. and Hall, A, Buckley, L.B. 2015. Place and Process in Conservation Planning for Climate Change: a reply to Keppel & Wardell-Johnson. Trends in Ecology and Evolution 169: 5347.

44 Serra-Diaz, P., Scheller, R.M., **Syphard, A.D.**, Franklin, J. 2015. Disturbance and climate microrefugia mediate tree range shifts during climate change. Landscape Ecology 2015: 1-15.

43 Conlisk, E., **Syphard, A.D.**, Franklin, J., and Regan, H.M. 2015. Predicting the impact of fire on a vulnerable multi-species community in a dynamic vegetation model. Ecological Modelling 301: 27-39.

42 **Syphard, A.D.**, Keeley, J.E, 2015. Location, timing, and extent of wildfire varies by cause of ignition. International Journal of Wildland Fire 24: 37-47.

41 Keeley, J.E., and **Syphard, A.D.** 2015. Different fire-climate relationships on forested and non-forested landscapes in the Sierra Nevada ecoregion. International Journal of Wildland Fire 24: 27-36.

40 Moritz, M.A., Batllori, E., Bradstock, R.A., Gill, A.M., Handmer, J., Hessburg, P.F., Leonard, J., McCaffrey, A., Odion, D., Schoennagel, T, **Syphard, A.D.** Learning to coexist with fire. 2014. Nature *5*15: 58-66.

39 Penman, T.D., Collins, L., **Syphard, A.D.**, Keeley, J.E., Bradstock, R.A. 2014. Relative influence of fuels, weather and the built environment on the exposure of property to wildfire in San Diego, California. PLoS ONE 10):e111414

38 **Syphard, A.D.**, Brennan, T.J., Keeley, J.E., 2014. The role of defensible space for residential structure protection during wildfires. International Journal of Wildland Fire 23: 1165-1175.

37 Hannah, L., Flint, L.,**Syphard, A.D.**, Moritz, M.A. and Hall, A, Buckley, L.B. 2014. Fine-scale modeling of vegetation response to climate change. Trends in Ecology and Evolution 29: 390-397.

36 **Syphard, A.D.**, Bar Massada, A., Butsic, V., and Keeley, J.E. 2013. Land use planning and wildfire: development policies influence future probability of housing loss. PLoS ONE 8(8): e71708.

35 Franklin, J., Regan, H.M., and **Syphard, A.D.** 2013. Linking spatially explicit species distribution and population models to plan for the persistence of species under global change. Environmental Conservation 41: 97-109.

34 **Syphard, A.D.**, Regan, H.M., Franklin, J., Swab, R.M., and Bonebrake, T.C. 2013. Does functional type vulnerability to multiple threats depend on spatial context in Mediterranean-climate ecosystems? Diversity and Distributions 19: 1263-1274.

33 Beltran, B.J., Franklin, J., **Syphard, A.D.**, Regan, H.M., Flint, L.E., Flint, A.L., 2013. Effects of climate change and urban development on the distribution and conservation of vegetation in a Mediterranean Type Ecosystem. International Journal of Geographical Information Science 28: 1561-1589.

32 Bonebrake, T.C., **Syphard, A.D.**, Regan, H.M., Franklin, J., Anderson, K.E., Mizerek, T., Winchell, C. 2014. Fire management, managed relocation and land conservation options for a rare shrub species under global change. Conservation Biology 28: 1057-1067.

31 Serra-Diaz, P., Franklin, J., Ninyerola, M., Davis, F.D., **Syphard, A.D.**, Regan, H.M., Ikegami, M. 2013. Species-specific exposure to climate change in time and space: from climate velocity to bioclimatic-velocity. Diversity and Distributions 20: 169-180.

30 Franklin, J., Davis, F.W., Ikegami, M., **Syphard, A.D.**, Flint, L.E., Flint, A.L., Hannah, L. 2012. Modeling plant species distributions under future climates: how fine-scale do climate projections need to be? Global Change Biology 19: 473-483.

29 Conlisk, E., **Syphard, A.D.**, Franklin, J., Flint, L., Flint, A., Regan, H.M. 2013. Uncertainty in assessing the impacts of global change with spatially dynamic population models. Global Change Biology18: 858-869.

28 Bar-Massada, A., **Syphard, A.D.**, Stewart, S.I., Radeloff, V.C. 2012. Wildfire ignition modeling: a comparative study in the Huron National Forest, Michigan, USA. International Journal of Wildland Fire 22: 174-183.

27 Price, O.F., Bradstock, R.A., Keeley, J.E., **Syphard, A.D.** 2012. Antecedent fire area has no effect on wildfire area in coastal southern California. Journal of Environmental Management 113: 301-307.

26 **Syphard, A.D.**, Keeley, J.E., Bar Massada, A., Brennan, T.J., Radeloff, V.C. 2012. Housing arrangement and location determine the likelihood of housing loss due to wildfire. PLoS ONE 7: e33954. doi:10.1371/journal.pone.0033954.

25 Conlisk, E., Lawson, D., **Syphard, A.D.**, Franklin, J., Flint, A., Flint, L., Regan, H.M. 2012. The roles of dispersal, fecundity, and predation on the population viability of an oak species (Quercus engelmannii) under global change. PLoS ONE 7(5): e36391. doi:10.1371/journal.pone.0036391.

24 Regan, H.M. **Syphard, A.D.**, Franklin, J., Swab, R. Markovchick, L. Flint, A., Flint, L., Zedler, P. 2012. Evaluation of assisted colonization strategies under climate change for a rare, fire-dependent plant. Global Change Biology 18: 936-947.

23 Scheller, R.M., Spencer, W.D., Rustigian, H., **Syphard, A.D.**, Ward, B.W., Strittholt, J.R. 2011. Using stochastic simulation to evaluate competing risks of wildfires and fuels management on an isolated forest carnivore. Landscape Ecology 26: 1491-1504.

22 **Syphard, A.D.**, Clarke, K.C., Franklin, J., Regan, H.M.., McGinnis, M. 2011. Forecasts of habitat loss and fragmentation due to urban growth are sensitive to source of input data. Journal of Environmental Management 92: 1882-1893.

21 **Syphard, A.D.**, Keeley, J.E., Brennan, T.J. 2011. Comparing the role of fuel breaks across southern California national forests. Forest Ecology and Management 26: 2038-2048.

20 **Syphard, A.D.**, Keeley, J.E., Brennan, T.J. 2011. Factors affecting fuel break effectiveness in the control of large fires in the Los Padres National Forest, California. International Journal of Wildland Fire 20: 764-775.

19 **Syphard, A.D.**, Scheller, R.M. Ward, B.C. Spencer, W.D. Strittholt J.R. 2011. Simulating landscape-scale effects of fuels treatments in the Sierra Nevada, California, USA. International Journal of Wildland Fire 20:364-383.

18 Bar Massada, A., **Syphard, A.D.**, Radeloff, V.C., Hawbaker, T.J., Stewart, S.I. 2011. Effects of ignition models on the spatial patterns of simulated fires. Environmental Modelling & Software 26: 583-592.

17 Sturtevant, B.R., Scheller, R.M., Miranda, B.R., Shinneman, D., **Syphard, A.D.** 2010. Simulating dynamic and mixed-severity fire regimes: A process-based fire extension for LANDIS-II. Ecological Modelling 220: 3380-3393.

16 **Syphard, A.D.**, Franklin, J. 2010. Species' traits affect the performance of species' distribution models for plants in southern California. Journal of Vegetation Science 21: 177-189.

15 **Syphard, A.D.**, Franklin, J. 2009. Differences in spatial predictions among species distribution modeling methods vary with species traits and environmental predictors. Ecography 32: 907-918.

14 **Syphard, A.D.**, Radeloff, V.C., Hawbaker, T.J., Stewart, S.I. 2009. Conservation threats due to human-caused increases in fire frequency in Mediterranean climate ecosystems. Conservation Biology 23: 758-769.

13 **Syphard, A.D.**, Stewart, S.I., McKeefry, J., Hammer, R., Fried, J., Holcomb, S., Radeloff, V.C. 2009. Assessing housing growth when census boundaries change. International Journal of Geographic Information Science 23: 859-876.

12 Hawbaker, T.J., Radeloff, V.C., **Syphard, A.D.**, Zhu, Z., Stewart, S.I. 2009. Detection rates of the MODIS active fire product. Remote Sensing of the Environment 112: 2656-2664.

11 **Syphard, A.D.**, Radeloff, V.C., Keuler, N.S., Taylor, R.S., Hawbaker, T.J., Stewart, S.I., and Clayton, M.K. 2008. Predicting spatial patterns of fire on a southern California landscape. International Journal of Wildland Fire 17: 602 - 613.

10 **Syphard, A.D.**, Yang, J., Franklin, J. He, H.S., Keeley, J.E. 2007. Calibrating a forest landscape model to simulate high fire frequency in Mediterranean-type shrublands. Environmental Modelling & Software 22: 1641-1653.

9 **Syphard, A.D.**, Radeloff, V.C. Keeley, J.E. Hawbaker, T.J. Clayton, M.K.Stewart, S.I., Hammer, R.B. 2007. Human influence on California fire regimes. Ecological Applications 17: 1388-1402.

8 **Syphard, A.D.**, Clarke, K.C., Franklin, J. 2007. Simulating frequent fire and urban growth in southern California coastal shrublands, USA. Landscape Ecology 22: 431-445.

7 **Syphard, A.D.**, Franklin, J., Keeley, J.E. 2006. Simulating the effects of frequent fire on southern California coastal shrublands. Ecological Applications 16: 1744-1756.

6 Franklin, J, **Syphard, A.D.**, He, H.S., Mladenoff, D.J. 2006. The effects of altered fire regimes on patterns of plant succession in the foothills and mountains of southern California. Ecosystems 8: 885-898.

5 **Syphard, A.D.**, Clarke, K.C., Franklin, J. 2005. Using a cellular automaton model to forecast the effects of alternate scenarios of urban growth on habitat fragmentation in southern California. Ecological Complexity 2: 185-203.

4 Akcakaya, R., Franklin, J., **Syphard, A.D.**, Stephenson, J. 2005. Viability of the sage sparrow under altered fire regimes: integrated landscape and metapopulation modeling. Ecological Applications 15: 521-531.

3 **Syphard, A.D.**, Franklin, J. 2004. The effect of aggregation of landscape attributes on the simulation of fire disturbance and succession using the LANDIS model. Ecological Modelling 180: 21-40.

2 **Syphard, A.D.**, Garcia, M. W. 2001. Human- and beaver- induced wetland changes in the Chickahominy River watershed from 1953 to 1994. Wetlands 21: 342-353.

1 Franklin, J., **Syphard, A.D.** Mladenoff, D.J. He, H.S., Simons, D.K., Martin, R.P., Deutschman, D., O'Leary, J.F. 2001. Simulating the effects of different fire regimes on plant functional groups in Southern California. Ecological Modelling 142: 261 - 283.

Book Chapter

4 Holmes, P.M., **Syphard, A.D.** 2015. Land use change in an urbanizing world: a comparison between City of Cape Town, South Africa and Los Angeles County, CA. In The Biology of Mediterranean Type Ecosystems. Oxford University Press. In press.

3 Halsey, R.W., **Syphard, A.D.** 2015. High intensity fire in chaparral: Cognitive dissonance in the shrublands. In DellaSala, D.A., Hanson, C.T. (eds.) The Ecological Importance of Mixed-Severity Fires Nature's Phoenix. Elsevier Inc. pp. 177-209.

2 Keeley, J.E., **Syphard, A.D.**, and Fotheringham, C.J. 2013. The 2003 and 2007 wildfires in southern California. In: Boulter, S., J. Palutikof, D.J. Karoly, D. Guitart (eds.) Natural Disasters and Adaptation to Climate Change. Oxford: Cambridge University Press. 204p.

1 Miller, C.,Abatzoglou, J., Brown, T., **Syphard, A.D.** 2011. Wilderness fire management in a changing environment. In: The Landscape Ecology of Fire.

Edited by Don McKenzie, Carol Miller, Don Falk, and Lara-Karena Kellogg. Pp. 269-294.

FIRST-AUTHOR PRESENTATIONS AND INVITED LECTURES

The role of microenvironments, competition, and disturbance in mediating species' response to climate change. International Association for Landscape Ecology World Congress. Portland, OR. 2015.

Trends in chaparral landscape conversion. Invited speaker at the 2nd Southern California Chaparral Symposium, USFS. Arcadia, CA. 2015.

Fire in Southern California: Balancing fire ecology & management. Invited speaker at the California State Parks Annual Meeting. Marshall, CA. 2015.

Plant species persistence under climate change in the context of multiple threats. California Native Plant Society. San Jose, CA. 2015.

Fire at the wildland-urban interface: Lessons from southern California. MEDECOS Conference XII. Olmue, Chile. 2014.

Webinar: A tale of two fires: fire ecology and management with an eye to the future in S. California. 2013.

The Wildland Urban Interface and fire in southern California USA. 5th annual FUME meeting, Toledo, Spain. 2013.

The role of fire and fuels management in chaparral restoration. Invited lecture at USFS chaparral restoration workshop. Pasadena, CA. 2013.

Balancing fire ecology and management. Invited lecture to Sierra Club Santa Margarita. 2013.

From intervention to prevention: How can fire distribution models inform management and conservation? Fire and strategic plan workshop, San Diego County, CA, 2013.

Land use planning to reduce housing loss to wildfire in southern California. Association for Fire Ecology, Portland OR, 2012.

Analysis of geographic influence on reducing wildfire risks and ecological impacts. San Diego partners for Biodiversity meeting, San Diego, CA, 2011.

Land use planning to reduce wildfire risk in southern California. MEDECOS Conference XII. Los Angeles, CA. 2011.

A modeling framework for assessing adaptation strategies for plants threatened by climate, land use, and altered fire regimes in Mediterranean-type ecosystems. 7th European Conference on Ecological Modelling – Riva del Garda, Italy. 2011.

Evaluating the relative impact of climate change and other threats to the persistence of rare plant species in southern California. Invited lecture, U.S. Fish and Wildlife Service, U.S. Geological Survey and California Department of Fish & Game,

Bridging the Gap climate change communications workshop, Sacramento, CA. 2010.

Does translocation of a rare fire-dependent plant mitigate the effects of climate change? Invited lecture, Tecate cypress symposium, Rancho Jamul Ecological Preserve, CA. 2010.

Humans alter the spatial pattern of fire in Mediterranean ecosystems. Invited lecture, Department of Geography, San Diego State University

The role of pre-fire fuel management on reducing impacts of large fires in the Los Padres National Forest, California. 4th International Fire Congress – Savannah, GA. 2009.

Modeling interactions among humans, fire, and vegetation in California. Invited lecture, Department of Biology, San Diego State University. 2008.

Humans alter the spatial pattern of fire in Mediterranean ecosystems. Pacific Coast Fire Conference: Changing Fire Regimes, Goals and Ecosystems. California Association of Fire Ecology – San Diego, CA. 2008.

Southern Sierra Nevada Fisher Baseline Assessment and Prediction of Future Habitat Conditions Under Changing Fire Regimes. Association for Fire Ecology Regional Conference 2008 – Tucson, AZ. 2008.

Interactions among humans, fire, and vegetation on southern California landscapes. Invited lecture, Department of Botany, University of California, Riverside. 2007.

Modeling and mapping human influence on California fire regimes. Invited lecture, University of Wisconsin-Madison, Chaos and Complex Systems Seminar. 2007.

Using global satellite data to predict human influence on fire in Mediterranean ecosystems. 4th International Wildland Fire Conference – Seville, Spain. 2007.

Humans and fire in California: predicting influences and simulating impacts. Invited lecture, Department of Geology & Geography, University of West Virginia. 2006.

Predicting spatial patterns of fire in a southern California landscape. Third International Fire Ecology & Management Congress – San Diego, CA. 2006.

Effects of human activities on California fire regimes. International Association for Landscape Ecology Annual Meeting – San Diego, CA. 2006.

Simulating the combined effects of urban growth and high fire frequency on native shrublands in southern California. Association of American Geographers Annual Meeting – Chicago, IL. 2006.

Simulating the effects of frequent fire on the distribution of dominant plant functional types in southern California shrublands. Society for Conservation Biology Annual Meeting – Brasilia, Brazil. 2005.

Simulating alternate scenarios of habitat fragmentation in California native shrublands using a cellular automaton urban growth model. Ecological Society of America Annual meeting - Portland OR. 2004.

Modeling alternate scenarios of urban growth on habitat fragmentation in southern California. The 19th Annual Symposium International Association Landscape Ecology- Las Vegas, NV. 2004.

Modeling long-term effects of altered fire regimes and urbanization on vegetation succession. International Association for Landscape Ecology World Congress - Darwin, Australia. 2003.

Simulation modeling of the long-term effects of altered fire regimes on vegetation succession in the Peninsular Ranges of San Diego County. Fire Conference: Managing Fire and Fuels in the Remaining Wildlands and Open Spaces of the Southwestern United States - San Diego, CA. 2003.

AWARDS

2002-2005 –NASA Earth System Science Fellowship

2002 – "Ecosystem Management in Cultural Landscapes" training in Europe, funded by FIPSE.

2002 – McFarland Scholarship, San Diego State University

SELECTED PROFESSIONAL ACTIVITIES

Peer Review

- Amnio
- Applied Geography
- Applied Vegetation Science
- Conservation Biology
- Conservation Letters
- Diversity and Distributions
- Ecography
- Ecology
- Ecology and Society
- Ecological Applications
- Ecological Modelling
- Ecoscience
- Ecosphere
- Ecosystems
- Environmental Modelling & Software
- Environmental Monitoring and Assessment
- Forest Ecology & Management
- Forest Science
- Global Change Biology
- International Journal of Wildland Fire
- Journal of Applied Geography

- Journal of Environmental Management
- Journal of Vegetation Science
- Landscape and Urban Planning
- Landscape Ecology
- Maryland Sea Grant
- Nature Climate Change
- Plant Ecology
- Proceedings National Academy of Sciences (PNAS)
- PLoS ONE
- 2008 Climate change impacts assessment
- Science of the Total Environment

Outreach

- **External PhD and masters student committees**: Oregon State University Environmental Sciences Program; Prescott, AZ masters program
- **Peer and scientific review**: Regular peer review for scientific journals; scientific reviewer for Cal Fire Vegetation Treatment Program EIR; Guest Editor ESA Ecological Applications; review panel of vegetation models for LANDFIRE project; Maryland Sea Grant
- **Teaching**: Population biology in Spanish at ECOSUR, Chiapas MX; GEOG 570 Environmental Conservation Practice; GEOG GIS labs
- **Member**: NCEAS working group, Global climate change and adaptation of conservation priorities; Vegetation/Fuels Fire Committee for the San Diego County Forest Area Safety Taskforce (FAST); Ecosystems and Wildfires working groups for San Diego County Focus 2050 project; EU FUME project, Forest fire under climate, social and economic changes; Stakeholder Committee for Southern California Climate Adaptation Project, EcoAdapt; Organizing committee for California chaparral restoration workshop
- **Knowledge transfer**: Webinar: A tale of two fires: fire ecology and management with an eye to the future in S. California; Blog: Conservation and housing loss to wildfire. Invited Panelist, community planning workshop for Cal Fire's Forest and Range Assessment.

Recent Media

2015 "Developers want to build in high-risk wildfire areas," Voice of San Diego
2014 "Overwhelming cause of California wildfires: humans," National Geographic
2013 "Forests healing slowly from Cedar Fire," San Diego Union Tribune
2013 "How to Live with Wildfires in Southern California", USGS Top Story
2013 "Living with Fire: The USGS Southern California Wildfire Risk Project" USGS YouTube Channel; several television broadcasts in San Diego and Los Angeles
2013, "Burning question: how will climate change impact western wildfires?" NBC News

2013, "Adapting to the new reality of increased wildfire danger," KPBS national public radio.Radio and TV interviews.