# Vegetation Ecology Meets LANDFIRE Data
## *Meet NatureServe's Marion Reid*
## *Ecologist, Project Manager, LF Collaborator*

*Vegetation ecologist Marion Reid is the [NatureServe](#) project manager overseeing a multi-year year effort to support the LANDFIRE team in new mapping of the U.S. of ecological systems and National Vegetation Classification (NVC) Groups, and is contributing to the development of a Guidebook to the NVC for BLM.*

*Marion has been with the Network of Natural Heritage Programs and NatureServe since the early 1990's, and manages the Ecology program for the latter's western U.S. office. She coordinates within the western and other U.S. regions in the development of the USNVC and was actively involved in the development of the current USNVC hierarchy and its concepts. She is one of the co-authors of the [International Vegetation Classification](#), the [US-NVC](#), and the [classification of terrestrial ecological systems for the U.S.](#)*

*Marion currently serves on the USNVC Peer Review Board as a Regional Editor, and coordinates peer review of proposed revisions to the NVC for the cool semi-desert regions of the west. [Contact Marion.](#)*

### Tell us about your work at NatureServe. How does LF figure into it?

My work has been highly varied over the past 20+ years, but all of it has been focused around vegetation ecology in the western U.S. including Alaska and Hawai'i. I've worked closely with a number of Federal, State, Academic and NGO staff on developing classifications, implementing those in maps, and the methods/applications of assessing conservation status of vegetation types, all at a variety of thematic and spatial scales ranging from local to region-wide. I began working with LANDFIRE in the early 2000's on the first iterations of the auto-keys (also called "sequence tables") including helping to pilot the methods for those keys; the keys are used to automate labeling of well over 300,000 vegetation plots to the vegetation types chosen for mapping. My staff and I were involved in the first iterations of Biophysical Settings (BpS) model development in the west, and coordinated an expert-workshop-based systematic review of the ecological systems concepts prior to the development of the keys and models.
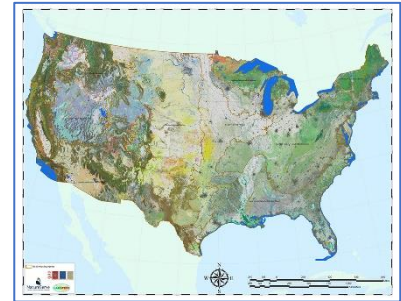
Between 2010-12, we worked closely with The Nature Conservancy's Jim Smith, and USGS and USFS staff to evaluate the performance of those auto-keys, using a process of applying expert labels to vegetation plots followed by comparing those to the labels derived from the auto-keys. I managed the work of NatureServe ecologists for this "improvements" effort, and I think we identified some important next steps for LANDFIRE that are now being implemented in the [ReMap](#) effort.

Since late 2013 I've been NatureServe's project manager for our ongoing ecology support to ReMap, including the development of a new set of auto-keys for CONUS, both to ecological system

and NVC Groups. I'm also assisting with the development of range maps for both systems and groups to aid the mappers in their process.

### *NatureServe has collaborated with LF for more than a decade. What is the value of this collaboration to various natural resource communities (conservation, wildland fire, resource management, etc.)?*

LANDFIRE and the National Gap Analysis Program (GAP) adopted the classification of terrestrial ecological systems as their base thematic units for mapping. The classification was developed by NatureServe and our network of natural heritage programs not just for the U.S. but also all of Latin and South America and temperate and boreal Canada. We've continued to work across the Americas to describe and map the units in the classification, develop criteria for measuring their ecological integrity, assess their conservation status using the IUCN ecosystem red-listing methodology, and develop methods for assessing their climate change vulnerability. Collaborating with LANDFIRE and GAP to provide our ecological expertise and information about the ecosystems of the U.S. has resulted in a wealth of spatial and descriptive information about the distribution and dynamics of terrestrial ecosystems that benefits many people working across multiple disciplines.


National Vegetation Map

### *What is your favorite LANDFIRE product?*

The LANDFIRE Reference Database, without a doubt. It is an amazing resource for vegetation information, and one of the only vegetation plot databases I am aware of that is comprehensive for the U.S.  Ecologists from all sorts of endeavors and places have contributed plots to it. Since it contains labels to vegetation type and floristic composition data for many, many geo-referenced samples it can be mined for all sorts of information.

We've used it to derive locations for a suite of exotic annual weeds for use in predictive modeling of distribution of those species across the intermountain west. It can be used to look at floristic composition across many plots for a specific vegetation type. From the stand-point of the NVC, it now provides a resource for deeper understanding of the distribution and composition of NVC Groups, a level in the NVC hierarchy. We would love for LANDFIRE to be talking with the developers of VegBank to figure out how the LFRDB can contribute to the VegBank national archive of vegetation plots so they can be available to the broader ecology community for use with the NVC.

### *You've had a full career and are about to retire (congratulations!). What's next for you?*

Hopefully I can continue to contribute to the development of the NVC in the west, but I want to focus some energy on volunteering and involvement with our local open space program (stuff like raptor and bat monitoring) and with folks working towards wilderness designations in Utah.  And then…. A year-long trip to New Zealand, Australia, Tasmania, Chile, and Patagonia, where I hope to reconnect with graduate school colleagues working on the conservation of forests in the southern Andes.

## *More from Marion*

**Reid, M.,** M. Harkness, G. Kittel, K. Schulz and P. Comer. 2016. Documenting relationships between BLMs special status species and their habitats. Report prepared for the Bureau of Land Management by NatureServe, Arlington VA. 35p + Appendices and Data Tables.

Comer, P.J., D.P. Braun, **M.S. Reid**, R.S. Unnasch, J.P. Hak, K.A. Schulz, and J. Rocchio. 2016. Great Basin National Park: Natural Resource Condition Assessment. Natural Resource Report NPS/GRBA/NRR— 2016/1105. National Park Service, Fort Collins, Colorado. URL: https://irma.nps.gov/DataStore/Reference/Profile/2225729

**Reid, M.,** P. Comer, B. Lundberg, J. Smith, J. Drake, D. Faber-Langendoen, M. Harkness, G. Kittel, S. Menard, C. Nordman, M. Pyne, K. Schulz, L. Sneddon, and J. Teague. 2015. Developing Auto-Keys for LANDFIRE Vegetation Mapping: 2014-2015 CONUS Project Report. Report prepared for Inter-Agency LANDFIRE Program by NatureServe, Arlington VA. 69p + Appendices and Data Tables. url: https://landfire.gov/evt.php

Kearsley, M. J. C., K. Green, M. Tukman, **M. Reid,** M. Hall, T. J. Ayers, and K. Christie. 2015. Grand Canyon National Park-Grand Canyon / Parashant National Monument vegetation classification and mapping project. Natural Resource Report NPS/GRCA/NRR—2015/913. National Park Service, Fort Collins, Colorado. 75pp + Appendices.

Crist, P., **M. Reid,** H. Hamilton, G. Kittel, S. Auer, M. Harkness, D. Braun, J. Bow, C. Scott, L. Misztal, and L. Kutner. 2014. Madrean Archipelago Rapid Ecoregional Assessment Final Report. NatureServe technical report to the Bureau of Land Management. NatureServe, Arlington, VA. 155pp + Appendices.

Faber-Langendoen, D., J. Drake, S. Gawler, M. Hall, G. Kittel, S. Menard, C. Nordman, M. Pyne, **M. Reid,** L. Sneddon, K. Schulz, J. Teague, M. Russo, K. Snow, P. Comer. 2012. *Macrogroups and Groups for the Revised U.S. National Vegetation Classification*. NatureServe, Arlington, VA. + Appendices.

Comer, P.J., **M. Reid,** K. Snow, M. Pyne, S. Menard, L. Sneddon, C. Nordman, J. Teague, G. Kittel, K. Schulz, J. Drake, M. Hall, A. McKerrow, A. Davidson, D. Long, B. Lundberg, C. Toney, G. Meier, and J. Smith. 2012. LANDFIRE Improvements – analysis of auto- key performance for the United States. Report to inter-agency LANDFIRE. Eleven reports and contingency tables organized by GeoArea.

**About Nature Serve ….**We provide the scientific knowledge that supports informed decisions. Together, with our Network of over 80 programs, we collect decision-quality data about imperiled species and entire ecosystems, transform that data into knowledge products and visualizations, and provide meaning through expert analyses and support to guide decision-making, implement action, and enhance conservation outcomes.