

## PERSONAL PROFILE

Ms. Hulme Foss is an experienced biologist in public, academic and private consulting arenas. In her work with all of the sectors, Ms. Hulme Foss has been able to gain a strong knowledge base in communicating with various stakeholders, such as regulating agencies, private landowners, non-profit land trusts, and public land management agencies. She has studied and applied range science in order to influence management decisions in subalpine meadows, Central Valley vernal pool grasslands, Bay Area parks and foothill oak woodlands and savannas. Her major research interests are: understanding change (e.g. fire, climate and grazing) in rangeland environments; documenting biodiversity of native components within rangelands; and applying rangeland science to management decisions.

## EDUCATION

**B.S.** Conservation and Resource Studies, 2010, University of California, Berkeley. *Summa Cum Laude*

**M.S. Candidate** Range Management, anticipated 2016, University of California, Berkeley

## WORK EXPERIENCE

- **Graduate Student Researcher:** University of California, Berkeley, CA (Sept 14- present; 10 hrs/week). Conducts botanical surveys of Tejon Ranch and residual dry matter assessments of parks. Leads rare plant status review and data analysis for the Natural Resource Condition Assessment for 2 national parks.
- **Integrated Pest Management Intern:** East Bay Regional Parks, CA (Jun 14-Aug 14; 40hr/wk). Led field surveys of targeted invasive plants. Created GIS products of surveyed and historic plant locations, and presented results to County Ag. Commissioner.
- **Staff Biologist:** Condor Country Consulting, Inc., Martinez, CA (Feb 13- May 14; 40hr/wk). Led CEQA, NEPA and local HCP documentation, as well as associated GIS mapping and field surveys for small and large scale projects. Conducted vegetation/landscape mapping, rare plant surveys and special-status wildlife surveys.
- **Staff Biologist and GIS Analyst:** Vollmar Natural Lands Consulting, Berkeley, CA (Oct 09- Jan 13; 40hr/wk). Managed multiple projects with multiple preserves. Coordinated field efforts, lead report creation, analyzed numerical and geographic data, creating maps and completing reports for baseline surveys, wildlife monitoring, floristic inventories, plant community mapping and grassland monitoring.
- **Biological Technician:** Yosemite National Park, CA (Jul 11-Sep 11; Jul 12- Sep 12; 40hr/wk). Conducted botanical surveys of subalpine meadows and developed survey protocols in order to quantify effects of pack stock use of sub-alpine meadows within the Tuolumne watershed. Led unknown species identification and managed GIS data.
- **Field Assistant:** University of California, Berkeley, CA (Mar 09 – Sep 09; 10 hr/wk). Conducted surveys for Foothill Yellow-Legged Frog (*Rana boylei*) adults and egg masses on northern California Rivers. Assisted in setting up *in situ* studies on the growth rate of tadpoles reared in different temperature streams.
- **Research Assistant:** University of California, Berkeley, CA (Sep 08 – May 09; 6 hr/wk). Researched the naturally-occurring greenhouse gases released from various soil samples from Alaskan marshes and Kansas prairie ecosystems. Created a protocol for measuring the chemical formula of soil as related to soil microbial production of certain gases.

- **Research Assistant:** University of California, Berkeley, CA (Sep 08 – Dec 08; 3 hr/wk). Conducted life cycle studies of spider mites within controlled temperature environments.
- **Outdoor Education Director:** Devil’s Gulch Ranch, Nicasio, CA (May 07 – Sep 07; Jun 08 – Sep 08; 60 hr/wk). Created and led nature and primitive skills lessons for students aged 6 to 16 within oak woodland, annual grassland, riparian and ranch ecosystems.
- **Environmental Compliance Intern:** Sonoma County Water Agency, CA (May 08 – Aug 08; 20 hr/wk). Assisted in CEQA and NEPA report creation, as well as water quality sampling, fish seining and crab trapping within the Russian River.

#### **VOLUNTEER EXPERIENCE**

- **Stewardship Volunteer:** Save Mount Diablo, Walnut Creek, CA (Dec 14- present; variable hrs). Surveys preserved properties for wildlife and botanical species of interest and creates GIS products in order to enhance management decisions.
- **Rare Plant Treasure Hunt:** California Native Plant Society, CA (April 14-present; variable hrs). Leads group surveys for rare plants in the Sierra Nevada and Bay Area, teaching map-reading skills and rare plant identification to interested individuals.
- **Cultural Forestry Management:** Karuk Tribe, Humboldt County, CA (Mar 10; 40 hrs). Conducted forestry surveys of culturally important species and other forest species for land management recommendations.
- **President and House Manager:** Berkeley Student Cooperative, CA (Jan 08 –May 10). Managed finances, acted as main conflict manager, and ran general house and manager meetings of over 60 residents. Implemented new oversight checks on managers.
- **Rotaract President:** Sir Francis Drake High School, CA (Jan 09-May 10; 5 hr/wk). Created a volunteer group. Organized invasive weed removal trips and fundraising efforts for environmental causes.
- **TUNZA UN Environmental Youth Program Representative:** Bangalore, India (Oct 05; 60 hrs). Served as one of five US representatives at the 2005 International Conference.

#### **PROFESSIONAL TRAINING**

- Targeted Grazing, Society of Range Management (2014-ongoing)
- Mastering the Second Edition of the Jepson Manual Workshop, Jepson Herbarium (2013)
- California Vegetation Rapid Assessment Workshop, CNPS (2013)
- Rare Plants of the Bay Area, EBRP (2013)
- Poaceae Workshop, Jepson Herbarium (2012)
- Rare Plants of the Central Valley, CNPS (2012)
- Birding by Ear, Audubon Society (2012)
- Identification & Ecology of the Fairy Shrimp and Tadpole Shrimp of California, Oregon and Washington – VNLC workshop (2010, 2012)
- California Red-Legged Frog Workshop, Elkhorn Slough Training Program (2012)
- California 50 Plant Families Workshop, Jepson Herbarium (2011)
- Non-Violent Communication, Berkeley Student Cooperative (2010, 2009 and 2008)
- Community Disaster Response Training, Berkeley City Fire Dpt. (2010, 2009)

## AWARDS and MEMBERSHIPS

- **Hazardous Fuel Treatment Demonstration Science Advisory Committee** Lead Range Scientist (2014-ongoing)
- **Society of Range Management** Regional Meeting Scholarship (2014)
- **Russell L. Rustici Chair** awardee (2014)
- **California Native Plant Society** East Bay Chapter Member (2014-ongoing)
- **Society for Range Management** Western Section Member (2014-ongoing)
- **Environmental Science Scholarship** University of San Francisco (2014)
- **Phi Beta Kappa** Lifetime Member (2010)
- **Marin Environmental Youth of the Year** (2006). Marin Conservation League.
- **Bob Franceschini Scholarship** (2006). Sir Francis Drake High School Foundation
- **Dean's Scholarship** (2006). Full tuition scholarship at University of British Columbia

## PROJECT SPECIFIC EXPERIENCE

### *Conservation and Land Management*

- **Natural Resource Condition Assessment, Pt. Reyes National Park and Golden Gate National Recreation Area, CA, 2014.** Reviewed National Park rare plant data for gaps and errors. Created database for analysis with R and the Geospatial Modelling Environment. Created rare plant chapters for NRCAs for both parks, which detail current status, trends and threats of rare plants within Park boundaries. Role: Lead Chapter Author
- **Franklin Canyon Biological Resources Report, Muir Heritage Land Trust, Hercules, CA, 2012.** Compiled floristic, wildlife and plant community mapping for preserve management and trail alignment. Coordinated and conducted habitat and vegetation mapping across 480 acre site to prioritize areas for management concern. Researched and created multiple map figures with topographical, slope, geology, soil, floristic, wildlife, plant communities and regional land use. Applied physical factors and plant communities to potential special-status wildlife and plant species on the site. Role: Lead Field Biologist and Co-Project Manager.
- **Multiple Baseline Condition Reports, California Rangeland Trust, CA, 2009-2012.** Conducted multiple baseline surveys of large ranches acquiring conservation easements to ensure preservation in perpetuity of the properties. Mapped infrastructure, points of interest and created management recommendations for ranches in Lake, Merced, Amador and San Luis Obispo Counties. Role: Project Manager.
- **JCR Ranch Management Plan, JCR Ranch/California Rangeland Trust, Merced County, CA, 2010.** Created a land management plan for grazing and other land uses to maintain biological diversity of a large ranch in high quality vernal pool habitat. Conducted multiple site visits and interview with landowner to compile historic and current conditions as related to land management. Role: Lead Field Biologist and Project Manager.
- **Sonoma County Water Project, Sonoma County Water Agency, Sonoma County, CA. 2008.** Assisted in preparation of environmental compliance documentation, riverine system monitoring and CEQA/NEPA documentation. Reviewed and help create EIR, Negative Declaration Reports and other regulatory documents. Field surveys included macroinvertebrate trapping, fish seining, special-status fish identification and water quality measurements on the Russian River and tributaries. Role: Assistant Environmental Scientist.

*Research Projects*

- **Hazardous Fuels Treatment Demonstration, Riverside and Shaver Lake, CA, 2014-ongoing.** Creating research design and analysis to capture effects of targeted goat grazing as a fire fuel reduction method as compared to mastication and hand grubbing. Role: Lead Range Scientist
- **Sub-alpine Meadow Vegetation Baseline Study, Yosemite National Park, Tuolumne and Mariposa Counties, CA, 2011-2012.** Conducted vegetation surveys of understory, meadow and riparian systems. Surveys included identification to species of co- and sub-dominant species using a variety of botanical keys, GIS mapping of stock and human impacts and wetland habitat with meadows. Role: Biological Technician.
- **Vernal Pool Creation Study, Central Valley Project Improvement Act, Central Valley, CA, 2009-2011.** Surveyed the physical characteristics of created versus natural vernal pools and conducted field surveys on the hydrology, invertebrates, water quality, vegetation and site condition by several methods during the second year. Assisted in data analysis in order to examine historic trends and success of vernal pool restoration and creation at ten project sites (~500 pools) in the Sacramento Valley. Role: Project Ecologist.
- **Foothill Yellow-Legged Frog Surveys and Life Cycle Study, University of California, Berkeley, Northern California, 2009.** Conducted surveys for Foothill Yellow-Legged Frog (*Rana boylei*) adults and egg masses on Northern California rivers, including the Trinity, Eel, Rubicon and American Rivers. Conducted study protocol measuring growth rate of tadpoles reared in different temperature streams along the Eel River in order to identify optimal temperature for rearing. Researched water temperature data on dam-regulated rivers in comparison to unregulated tributaries in California, as applies to amphibian life cycles. Role: Research Field Technician.
- **Vernal Pool Predictive Mapping Study, Central Valley Project Improvement Act, Central Valley, CA, 2011-2012.** Managed GIS digital data to predict special-status vernal pool species occurrences using CNDDB and contributing consultant data. Role: GIS Analyst.
- **Greenhouse Gas Emission Research, University of California, Berkeley, CA, 2008-2009.** Ran soil samples from Alaska, Kansas and California wetlands and grasslands through a gas chromatography-mass spectrometer machine. Created protocol measuring soil chemistry. Role: Research Assistant.
- **Invertebrate Ecology Research, University of California, Berkeley, CA, 2008.** Conducted life cycle surveys of Pacific and Willamette spider mites in controlled temperature environments. Role: Research Assistant.

*Biological Surveys and Monitoring*

- **Concord Naval Weapons Station Sensitive Biological Surveys, Contra Costa County, CA, 2013.** Conducted twice weekly nesting bird, protocol-level California tiger salamander drift fence and rare plant surveys. Bird surveys include nest, egg, hatchling and adult identification to species. Individual adult tiger salamanders were identified using spot patterning and compared to multi-year dataset. Rare plant surveys included three surveys timed to capture peak, late and summer bloom periods. All plants encountered were identified to the lowest justifiable taxon. Role: Project Biologist.

- **I-80 High Occupancy Vehicle Expansion Project, Solano County, CA. 2013.** Conducted wetland delineation, rare plant and land cover type surveys throughout project area. Compiled data into ArcGIS format with high quality cartography with easily understandable data display. Assisted in writing Natural Environment Study describing potential project impacts to sensitive biological resources.
- **Environmental Stewardship Foundation (ESF) Preserve Monitoring, ESF, Placer, Sacramento and El Dorado Counties, CA. 2010-2012.** Conducted multiple surveys of 13 preserves every year for human impacts, general biological setting and potential management issues. Created GIS mapping and report for each preserve. These preserves include riparian corridors, open grasslands, vernal pool systems and foothill woodland systems of varying sizes up to 315 acres. Role: Lead Field Biologist and Co-Project Manager.
- **Montezuma Wetland Mitigation Preserve Monitoring, Montezuma Wetlands, LLC, Solano County, CA. 2009-2012.** Monitored within a 600-acre mitigation preserve supporting Conservancy fairy shrimp, vernal pool tadpole shrimp, vernal pool fairy shrimp, Swainson's hawk and several rare plant species. Conducted rare plant, invasive species and dip net surveys for large branchiopods and identified other aquatic invertebrate taxa. Also conducted range management surveys to understand ideal grazing management for site. Assisted in annual monitoring reports. Role: Project Ecologist.
- **Roseville Preserve Monitoring, City of Roseville, Placer County, CA. 2010-2012.** Monitored 22 preserves for large branchiopods and aquatic invertebrate fauna, vernal pool botany, invasive species, and potential management issues. Also assisted in creating GIS map products and report creation. Role: Lead Field Biologist.
- **Wilcox Ranch Biological Preserve Monitoring, Solano Land Trust, Solano County, CA. 2010-2011.** Conducted water quality sampling and surveys for California tiger salamander, large branchiopods and aquatic invertebrates on preserved vernal pool land. Role: Biologist.
- **Rancho Arroyo Seco Sensitive Biological Resource Surveys, Amador County, CA, 2009-2010.** Conducted surveys for adult and larval California tiger salamanders on 16, 000-acre ranch. Surveys included drift fence surveys, including identification of amphibian and mammal populations travelling area, as well as seine and dip net surveys. The project site is on a woodland, grassland and lone manzanita stands with scattered vernal pools within the grassland. Role: Project Biologist.
- **Millerton Newtown and Tesoro Viejo Biological Monitoring, Fresno County, CA, 2012.** Organized and conducted protocol-level surveys for western burrowing owl, Swainson's hawk, western pond turtle, large branchiopods and rare plants within oak woodland, annual grassland and wetland habitats. Coordinated work with sub-contractors and created reports documenting survey findings. Role: Assistant Manager and Field Biologist.

*Botanical Surveys and Wetland Delineation*

- **Tres Vaqueros Botanical Survey, Tres Vaqueros Windfarms, LLC, Alameda County, CA, 2011.** Surveyed site for special-status plant species and created list of all occurring plant species on the site. Mapped native plant stands and created GIS maps of natural resources on the site. Role: Ecologist.

- **Walker Ridge Botanical Surveys, Lake and Colusa Counties, CA, 2010-2011.** Conducted botanical surveys for special-status plant species within the right-of-way for potential wind turbine installment and road work on Walker Ridge. The survey area occurs within a serpentine area with chaparral, cypress, grassland and wetland habitats. Created GIS maps with special-status plant and plant community information and assisted in document preparation. Role: Ecologist.
- **Wetland Delineation Surveys, MACTEC, Contra Costa County, CA, 2009-2010.** Conducted wetland delineation surveys of waterways that were slated to be dredged for flood safety. Assisted in document and map creation for multiple sites in Contra Costa County. Role: Biologist.