

Leveraging Community Science to Increase Knowledge of Understudied Species in Montana

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Understanding species range and habitat associations is imperative for assessing the conservation status of the species and identifying Species of Concern. Global status assessments used by the IUCN and NatureServe and state status assessments by the Montana Natural Heritage Program (MTNHP) to identify rare or threatened species are based on measures of rarity, of which geographic range extend is a core metric. Delineating range and assessing the area occupied by a species is often difficult for species that lack sufficient observation data. Although structured surveys performed by natural resource professionals can provide these data, resources to perform these surveys are often limited. Use of tools that allow the public to report observations of organisms have increased significantly in use over the past decade and have the potential to provide a significant number of observation records of both common and rare species. MTNHP has begun to vet and import species observation data from eBird and iNaturalist, two well used community science applications. We have imported 1,782,651 records from these sources representing 1,075 species. We have used these data to review range for all vertebrate species and to increase geographic coverage of observations use in predicted habitat suitability modeling. Currently MTNHP is tracking approximately 7,600 invertebrate species of which 8.7% have range polygons and 0.6% have predicted habitat models. Community science applications provide a rich source of data to begin to address these deficiencies as well as engaging members of the public in actionable science without incurring significant costs to agencies.