

COUGARS AND CITIZEN SCIENCE: EVALUATING ACCURACY OF DATA COLLECTED BY STUDENT VOLUNTEERS ON COUGAR ECOLOGY-PRELIMINARY FINDINGS

BRIAN N. KERTSON, Wildlife Science Group, College of Forest Resources, Box 352100, University of Washington, Seattle, WA 98195, USA, bkertson@u.washington.edu
CHRISTIAN E. GRUE, Washington Cooperative Fish and Wildlife Research Unit, School of Aquatic and Fishery Sciences, Box 355020, University of Washington, Seattle, WA 98195, USA, cgrue@u.washington.edu

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Abstract: Field investigations of cougar (*Puma concolor*) often face challenges stemming from budget limitations and staffing shortages. Citizen science is the use of trained volunteers to collect scientific data and information on wildlife and their habitats as a means to meet research and management objectives. If citizen science is to be accepted as a viable resource to assist wildlife biologists in cougar research and management activities, questions of data quality must be addressed. As part of an ongoing investigation of citizen science data quality, we evaluated the ability of 3rd, 5th, and 8th grade student volunteers from the Cle Elum/Roslyn School District to collect accurate scientific data and information on cougar ecology as part of the Washington Department of Fish and Wildlife's Project CAT (Cougars and Teaching). Students were evaluated setting up and completing winter track transect surveys and spring habitat plots. Citizen scientists and researchers conducted 100 meter track transect surveys during the winter from student homes in an attempt to characterize wildlife distribution (focusing on cougar prey species) in different densities of residential development. In the spring, students and researchers quantified and characterized wildlife habitat in the Project CAT study area focusing on attributes of ungulate ecology and winter range. Student citizen scientists received eight hours of training for set up and completion of winter work and 5 hours for spring habitat plots. Training was provided in the classroom and field by teachers with advanced training provided by *NatureMapping* Program partners and project researchers. We used paired t-tests, frequency distributions, and descriptive statistics to compare citizen scientist and researcher datasets. Preliminary results of the Year 1 winter and spring evaluations indicate the ability of student citizen scientists to set up experiments and collect accurate scientific data are variable. Citizen scientist datasets did not differ from researchers for several tasks, but students struggled with portions of setting up experiments, track identification, plant identification, and the concept of scientific bias. Overall, the use of K-12th grade students working as citizen scientists to assist biologists and managers with cougar research and management objectives appears to hold promise. Logistical concerns (volunteer training, coordination, and supervision) may pose a greater challenge to the use of citizen scientists in investigations of cougar than concerns of data quality. Beyond scientific data collection, the greatest benefit of utilizing students as citizen scientists stems from increased community support for, and understanding of, cougar ecology, conservation, and research objectives.