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## **ACOUSTIC ASSESSMENT OF YEAR-ROUND BAT ACTIVITY AND DISTRIBUTION IN MONTANA AND SURROUNDING AREAS (POSTER)**

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Montana's bat species face an array of conservation issues including wind energy development and disease. A collaborative project between state and federal agencies was initiated in 2011 to collect baseline data prior to the arrival of White-nose Syndrome and help inform surveillance and future mitigation strategies. In the last 6 years, we deployed a network of Song Meter ultrasonic acoustic detector/recorder stations at 76 sites across the region for an average of 1.8 years per station. Each detector recorded nightly bat passes across all seasons. To date 9.5 million sound files have been recorded. Using automated scrubbing and identification software we identified call sequences and generated initial species identifications, then hand confirmed species presence by month at each site. Over 54,000 bat passes have been reviewed by hand and used to track activity of all species at each site. To date we have 2,770 new records of monthly species presence, regular winter activity of 3 resident species, and year-round presence of 1 species previously considered migratory. Through integrating National Oceanographic and Atmospheric Association weather station with our call data, we have found positive correlations in activity with temperature and barometric pressure, and negative correlations with wind speed. Our experiences with these data highlight the importance of: (1) maintaining common settings across recording devices and consistent processing standards; (2) maintaining publicly available call libraries that can be reanalyzed using the latest software and made available to software developers; and (3) making standards used for species determinations available for peer review.