**Avian Radar Track Identification Using Machine Learning Models (Poster)

Marco Salvo*, Boone and Crockett Wildlife Conservation Program, University of Montana, Missoula
Michael Clawson, Boone and Crockett Wildlife Conservation Program, University of Montana, Missoula
Jon McRoberts, Boone and Crockett Wildlife Conservation Program, University of Montana,Missoula
Joshua Millspaugh, Boone and Crockett Wildlife Conservation Program, University of Montana,Missoula

*Indicates Presenter

**Indicates Student Presentation

Avian radar systems are increasingly used to understand bird movement and migration and prevent bird mortality from aircraft, wind turbines, and other anthropogenic sources. One limitation of avian radar systems is they do not automatically identify bird attributes, such as bird species or flock size, which would be useful for understanding spatial and temporal patterns of bird activity. Instead, radar collects information about tracked targets (i.e. shape, size, speed), which may allow identification of targets to different levels of classification basedon bird morphology or flock size. Using machine learning, we classified tracks recorded by MERLIN DeTect radar systems at Ellsworth Air Force Base to different levels of bird type and quantity. Through field observations, we created a dataset of 4,225 ground truthed tracks by identifying radar tracks to bird species and quantity, then assessed the accuracy of track classification from tracked target covariates. Initial results indicate we can classify radar tracks well of some bird groups (e.g., songbirds and columbids), and model structure is important to the accuracy of our predictions.