

**GEORGE MASON UNIVERSITY
COLLEGE OF SCIENCE
DEPARTMENT OF BIOLOGY SEMINAR**

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***“Balancing the Needs of Bears and Foresters:
A Methodology to Identify Specific Forest
Management Goals that Regionally
Benefit an Umbrella Species”***

The balance between economics and conservation continues to be tenuous. Without ways to implement sustainable use in areas with critical wildlife habitats, either human or wildlife communities tend to suffer. Through the utilization of ESRI software, as well as select programming software, we present a novel way to identify and evaluate industry-specific forest characteristics for wildlife. We used data collected on radiotelemetered black bears from 1988 to 2015 to develop a habitat model throughout Louisiana and Arkansas based on the Mahalanobis distance statistic. Utilizing advanced lidar processing of point cloud data and Forest Inventory Analysis data, we then determined specific forest and tree metrics for overlapping areas of high predicted habitat quality and areas currently used by bears. Our analysis indicated that bears utilized forests that had a mean canopy height of 9.9-21.0 ft and mean canopy density of 55.0 - 66.4%. Texas oak and sugarberry were prevalent throughout the high quality bear habitat. Average stand age of the hardwood forests was 43yrs with the majority of trees having a diameter of 11". Softwood forest stand age averaged 35.7yrs with the majority of trees having a diameter measuring 5". While these results can be incorporated into ecological forest management plans, they can specifically inform the forest industry about creating or maintaining quality bear habitat while also considering their primary management priorities.

**TUESDAY October 17, 2017
3:00-4:15 PM
Innovation Hall Room 207**