

vegetation within simulated plots in terms of suitability as habitat for each animal species. Existing field data on animal habitat use will be analyzed to develop the classification functions. The result will be a listing or map of the proportion of the modeled area that represents suitable habitat for each animal species.

Understanding community responses to land-use and climate change requires analyses at several spatial scales. Stand-level simulations will be done by averaging the results from several independent model plots. Interactions among vegetation patches involving shading, seed dispersal, and probability of animal colonization will be simulated by running ZELIG in transect mode. These runs will be used primarily to examine the influence of patch size, edge characteristics, and patch juxtapositioning on community structure. The simulations of real landscapes (H. J. Andrews Experimental Forest, Oregon Cascades, and Drift Creek Basin, Oregon Coast Range) will produce maps of plant and animal species diversity under the various silvicultural, disturbance, and climate-change scenarios.

#### **Old-Growth Research at the H. J. Andrews Experimental Forest**

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The H. J. Andrews Experimental Forest is located 80 km east of Eugene, Oregon, in the western Cascade Mountains. It has been a major site for research on old-growth forest and stream ecosystems since its establishment in 1948. More than half of the 6,400-ha site remains pristine old growth. The site and research program are managed jointly by the USDA Forest Service's Pacific Northwest Research Station and Willamette National Forest, and by Oregon State University (OSU). Funding comes from these sources and the National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA), and elsewhere. The Andrews Forest is one of 18 NSF-sponsored Long-Term Ecological Research (LTER) sites in the United States where basic research programs on ecosystem structure and