

Thought Lab 3.2: Forest Habitat and Bird Biodiversity

Answers to Analysis Questions

1. Communities in mixed stands are more diverse and have a greater abundance of species than communities in pure stands.
2. The reason that mixed stands have greater biodiversity is because these forests, with a higher variety of trees, will provide larger possibilities for habitats, and in turn support a greater number of niches. With more habitat and niches available, more species will be attracted to the area.
3. Your answer must describe the accuracy of three of the methods.
 - Count stations being separated by 250 m ensures that two researchers are not counting the same individual at the same time.
 - Count stations being 100 m from the edge of the study area ensures that species counted are located within the boundaries of the study area rather than on the outside of the study area (if surveyors hear a bird, they do not have to guess if it is on the proper side of the boundary).
 - All birds heard or seen during a 10-minute early morning count ensures that maximum numbers of individuals in a given area are recorded.
 - Observers are tested beforehand to ensure that they can accurately identify the birds that they are likely to encounter by sight, call, and song. Observers have to know what they are counting to ensure that the diversity numbers are accurate and sources of error are reduced.
 - Counts are taken twice, once in early June and once in late June. Bird surveys are to be conducted during the breeding season, which is mid-May to late June for most species. It is important to have sampling occurring on at least two different days to have a sufficient sample size and to ensure that the weather or some other factor is not skewing results.
 - Observers count at each station only once, and for the second survey, different observers are at each station. This distributes potential observer error equally between stations.
4. A bird study would be helpful in identifying appropriate conservation measures when planning when and where to harvest trees. Information from bird surveys will produce data that indicate if there are any threatened or endangered bird species in a given stand.
5. The patchy burning of a forest fire creates new habitat and niches for forest organisms.