The exception is slow-growing black spruce \textit{[Picea mariana (Mill.) B.S.P.]}. Black spruce may have as many as 100 rings per inch.

Tree height is measured by triangulation with a clinometer. Again, conifers claim the extreme range. The eastern white pine \textit{(Pinus strobus L.)} attains heights of 100 feet or more and mature black spruce rarely exceeds 50 feet. The height and age are then used to determine the site index. The site index is the predicted height of a tree at 50 yr of age based on the growth curves derived for the species.

**Results and Conclusion**

On a typical day in the woods, three or four species plots are described. Currently, more than 400 species plots are on file. The joint field experience divides the effort between soil scientists and foresters and simultaneously increases the information exchange. The technology transfer enlarges the experience for both disciplines, maximizing team efficiency. Much forest land is observed and discussed leading to a better understanding of soil-tree relationships and forest management.

The main purpose of our site-index data collection is to revise the woodland suitability tables on the Soil Interpretations Record for our major soil series. Other uses are possible, however. The data are entered on a spreadsheet program on our office microcomputer as well as filed by soil series and species. Copies are distributed to cooperating agencies as soon as is possible. Much of the analysis remains to be done. Preliminary trends indicate the project is a success however. The soil pedon descriptions alone have contributed significantly to the documentation required for the soil survey. Moreover, important forest management decisions are being influenced by our data. The decisions include: whether or not to convert a soil site to a different species; the optimal rotation age for a species on a given soil site; and the best time of year to harvest the trees on a soil site. The questions in forest management of “what to grow” and “when to harvest” are often contingent upon the soil. As foresters make these decisions daily on thousands of acres, our cooperation as soil scientists will lead to more efficient forest management decisions.

**Probable Extent of Miocene Salmon Basin Lake**

Karl W. Hipple¹

Badlands and vertical white bluffs are striking landscape features of the Lemhi and Salmon River Valleys, which converge and intersect at Salmon, ID. These features are overshadowed by the prominent mountain peaks of the Beaverhead Mountains of the Bitterroot Range (Continental Divide) that fill the skyline east of Salmon, and to a lesser extent the more subdued peaks of the Salmon River Mountains to the west of Salmon. The badlands and white bluffs are, however, a record of the lake which occupied the Salmon Basin during Miocene (Fig. 1).

Geologic history and climate of this area is complex and has varied widely over time. Average annual precipitation ranges from about 8.5 inches at Salmon

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