From 08/10/2000 to 08/18/2000, Seth Hoffmann (Boston University) along with two members of the Canadian Center for Remote Sensing acquired ground truth data in Kejimkujik (Keji) National Park. Keji has over 300km² of dense mixed forest cover representative of the larger surrounding region. We were able to make measurements at 28 sites and along a 1.5 km transect, all together covering a thin 14.5km swath along the eastern portion of the forest. Resources for this campaign included one AccuPAR, one camera with a hemispherical lens, and three LAI-2000s. Measurements were made using both the single- and double-LAI-2000 method. The internal model used by the LAI-2000 is geared towards gap fraction analysis of broadleaf areas. The CCRS processing of needle forest areas used the equation,

\[ L = (1 - \alpha) L_e \gamma_E / \Omega_E \]  

as given in Chen (1996) to derive the LAI of a plant canopy. Here, L denotes LAI; \( \alpha \) is the woody-to-total plant area ratio; \( L_e \) is the effective LAI measured by the instrument; \( \gamma_E \) is the needle-to-shoot area ratio; and \( \Omega_E \) is the foliage element clumping index.

In keeping with the requirements of the CCRS Landsat LAI map validation program, measurements at all sites covered 30m. For each site, the ground was examined to determine slope. At sites with moderate slopes, in-canopy measures with the LAI-2000s were made along and across the slope. Measurement tracks were aligned perpendicular to- and parallel to the solar plane at sites with no observable slope. Four measurements were made along each track. The two tracks crossed each other at the sites’ center. AccuPAR measurements were taken along a random direction at an average distance of
every 2m. A minimum distance of 100m separated individual sites from each other. Preliminary results from CCRS analysis (White et. al 2000) support their empirically derived algorithm (Chen and Cihlar, 1996; Brown et al., 2000) for generating LAI from the AVHRR.

References


