MOUNT RAINIER GLACIER PAGE 2002

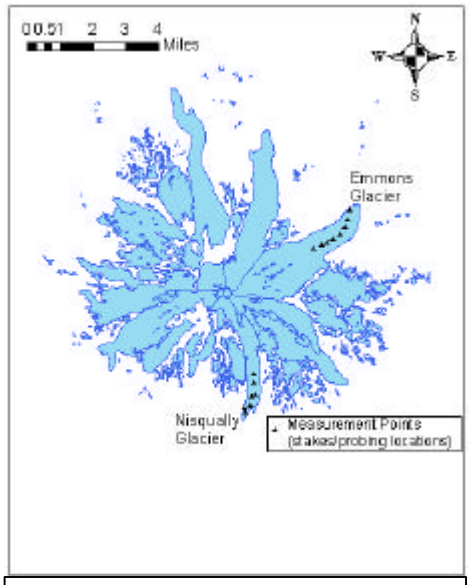

Figure 1. Glacier cover of Mount Rainier and locations of monitored glaciers.

	Elevation Feet	Accumulation inches w.e.	Standard Deviation	N
Emmons Glacier	7000	52	20	8
	6600	71	35	13
	6206	91	19	5
	6150	63	24	18
	6020	61	14	5
	5770	58	24	15
	5412	55	30	6
	5350	45	26	10
Nisqually Glacier	6900	122	8	2
	6610	102	19	2
	6190	108	16	9
	5965	75	65	5
	5642	112	16	9
	5250	117	26	8

Table 1. Accumulation on Mount Rainier Glaciers, Spring 2002. Determined from probing snow depth on each elevation contour N times. Standard deviation represents the variation in snow depths from changes in the underlying ice surface topography and drifting.

This year the North Cascades National Park glacier monitoring team began developing methods for monitoring mass balance annually on Mount Rainier glaciers. This program is a cooperative venture between Mount Rainier National Park, the US Geological Survey, and North Cascades National Park. The program includes annual air photography of the mountain and field measurements on Nisqually Glacier and Emmons Glacier. In late April we measured bulk density of the snowpack, probed snow depths, and placed ablation stakes on the lower Nisqually (April 23) and Emmons (April 25) glaciers below 8000 feet. Bulk density of the snowpack on Nisqually Glacier at 5642 feet was 0.48. On Emmons Glacier at 6150 feet the density was 0.57. Accumulation was quite variable on the lower glacier surfaces due to uneven topography of the underlying ice surface and wind drifting. Probing was extremely difficult on the upper Nisqually Glacier due to ice layers and our probe freezing into the snowpack.

Accumulation (Table 1) shows little or no correlation to elevation for Nisqually Glacier, but shows an increasing trend to ~6200 feet and decreasing trend above on Emmons. Four ablation stakes were placed on Nisqually Glacier at 6900, 6610, 6190, and 5642 feet. Three stakes were placed on Emmons Glacier at 6600, 6150, and 5770 feet. We will return in mid June to check ablation and place an additional stake near the terminus of each glacier. In addition we will probe snow depth higher on the mountain. On a fall visit (late September/early October) we will record final ablation measurements from the stakes.