

Scotch Broom Ecological Impact Study Update

Field Transplant Experiment

In October 2019, 180 plots were established across two sites in riparian areas along the Hoh River (see Table 1). Sixty plots were uninvaded with Scotch broom (*Cytisus scoparius*), sixty plots were designated as invaded with Scotch broom, and the remaining sixty plots had Scotch broom removed by local crew members with the 10,000 Years Institute using a cut stump treatment. Grass was removed from half of the plots to determine if grass invasion limits riparian plant establishment.

In November, crew members gathered and transplanted black cottonwood (*Populus trichocarpa*), willow (*Salix* sp.), and red alder (*Alnus rubra*) seedlings. Within each plot, 15 seedlings were planted (5 cottonwood, 5 willow, and 5 alder). Crew members tagged and measured the heights and stem diameters of each seedling in December.

Site	Plots	Uninvaded Plots	Scotch Broom Invaded Plots	Scotch Broom Removed Plots	Transplanted Seedlings per Plot	Transplanted Seedlings per Site
Elk Creek Floodplain	90	30	30	30	15 seedlings: 5 Cottonwood 5 Willow 5 Alder	1,350 seedlings: 450 Cottonwood 450 Willow 450 Alder
Baker Bar	90	30	30	30	15 seedlings: 5 Cottonwood 5 Willow 5 Alder	1,350 seedlings: 450 Cottonwood 450 Willow 450 Alder
Total	180	60	60	60	--	2,700 seedlings: 900 Cottonwood 900 Willow 900 Alder

Table 1: Study design for field transplant experiment

Competitor Exclusion Experiment

In October 2019, 80 plots were established across three sites in riparian areas along the Hoh River. Each plot contained at least one already-established willow or alder (see Table 2). Crew members and volunteers recorded the Scotch broom maximum heights, stem counts, and stem diameters; recorded the focal riparian plant stem counts and stem diameters; and removed Scotch broom from half of the plots.

Site	Plots	Willow Plots	Scotch Broom Removed in Willow Plots	Alder Plots	Scotch Broom Removed in Alder Plots
G&L Bar	40	24	12	16	8
Morgan's Crossing	34	26	13	8	4
Baker Bar	16	8	4	8	4
Total	80	58	29	32	16

Table 2: Study design for competitor exclusion experiment