WINDBREAK-HABITAT DEMONSTRATION PLOT

Misty D. Janes, Clinton C. Shock, Monty D. Saunders, and Stuart Love
Malheur Experiment Station
Oregon State University
Ontario, Oregon, 1999

Introduction

On many farms and ranches, there are small pieces of ground that are inconvenient or unprofitable for planting with crops, and these areas may become overrun with weeds. The Oregon Department of Fish and Wildlife's Ontario office helps farmers and ranchers develop windbreaks that are adapted to the climate and attract wildlife. Malheur Experiment Station is cooperating with the Oregon Department of Fish and Wildlife by providing a demonstration plot to show interested individuals shrubs and trees useful for windbreaks and wildlife habitat plantings. The purpose of the demonstration plot is to show plant characteristics, growth patterns and rates, and adaptability to this area.

Methods

A 50-ft X 360-ft parcel of land (0.41acre) adjoining Clark Boulevard on the west side of the station was planted with trees and shrubs. The ground was disced and furrowed for water just prior to the planting of trees/shrubs so that the weed barrier fabric would lie properly. The trees and shrubs were planted in three rows, each 360 ft long. During March and April 1996, three strips of 6-ft wide polypropylene weed barrier fabric were laid down, and seedlings were planted in the middle of the fabric to reduce moisture loss and eliminate most weed competition around the plants. In all, 16 species were planted (Table 1).

Between the rows, "Covar" sheep fescue was planted in May 1996 in an attempt to reduce weeds. Sheep fescue is an aggressive competitor which forms a drought-tolerant erosion control cover that survives with as little as 10 inches of annual precipitation. The areas where grass was planted were sprayed during the first year after planting for broadleaf weeds, and again early in the second year. The type of spray was determined after considering the susceptibility and compatibility of adjacent shrubs and crops.

The windbreak-habitat trees and shrubs were irrigated occasionally, 3 to 4 times a year. The types of trees and shrubs chosen are types that require little additional water above the 10 inches per year precipitation received in the Western Treasure Valley.

In June 1999, assessment of the windbreak was conducted to assess each species' adaptability to this area, measure growth over 3 years' time, and estimate its value to

wildlife. Width measurements were taken through the middle of the plant, where the measurement would represent the average width of each plant. The height of each plant was measured. Average heights and widths were calculated for each specie.

Results and Discussion

Average plant height ranged from less than 1.5 feet for green ash to over 7 feet for honey locust (Table 2).

Multi-flora rose and woods rose provided cover close to the ground, rose hips for upland birds to eat, and opportunities for deer to browse. The plants themselves had dense foliage and produced bright pink flowers in the spring.

Golden currant provided large berries for wildlife to eat and opportunities for deer to browse. The plants had sparse foliage, but provided some cover close to the ground.

Skunk sumac grew well and has replaced other species that have died during 3 years' time. It provided cover close to the ground, berries, and branches for nesting.

Tatarian honeysuckle provided lots of large berries, and cover and browsing opportunities. It had dense, dark green foliage, bright red berries, and pink flowers in the spring and early summer.

Cotoneaster provided cover and berries for animals to eat.

Caragana had cover in its branches and produced berries, as well as browsing opportunities. It had a tall, narrow growth habit.

Russian olive has thick foliage, many branches, and cover close to the ground. Fruiting has not yet occurred, because the trees are still young.

Lilac provided cover close to the ground and nesting opportunities for small birds. It had very dense foliage and attractive flowers.

Smooth sumac branched prolifically for cover and produced berries.

Honey locust provided cover and nesting opportunities. It also provided shade, although it did not have many branches yet.

Green ash may eventually provide cover and nesting opportunities. It started growing late in the spring, and had far less growth than honey locust.

The previously mentioned shrubs and trees are deciduous. Rocky Mountain juniper, an evergreen, had dense foliage which provided good cover close to the ground and

nesting opportunities. Eastern red cedar's evergreen foliage is not as dense as Rocky Mountain juniper but could also provide nesting opportunities. Eastern red cedar spread out over the ground while Rocky Mountain juniper grew more vertically.

Chinese elm came up by itself from seed blown across the road; therefore, it was judged to be very hardy. It had thick foliage, and provided cover close to the ground. With time, Chinese elm will provide little cover at the ground level. Dozens of Chinese elms were cut out of this windbreak-habitat area to lower the competition with other species.

Austrian pine, an evergreen, grew slowly, had sparse foliage, and did not provide good cover.

Table 1. Species list for the Windbreak-Habitat Demonstration Plot, Malheur Experiment Station, Oregon State University, Ontario, Oregon, 1999.

Row	# of plants	Common name	Scientific name	In-row spacing (ft)
1	10	Multi-flora rose	*Rosa multiflora*	6
	10	Golden currant	*Ribes aureum*	6
	9	Skunk sumac	*Rhus trilobata*	6
	10	Tatarian honeysuckle	*Lonicera tatarica*	6
	9	Cotoneaster	*Cotoneaster acutifolia*	6
	11	Woods rose	*Rosa woodsii*	6
2	10	Caragana	*Caragana arborenscens*	3
	2	Skunk sumac	*Rhus trilobata*	6
	6	Russian olive	*Elaeagnus angustifolia*	6
	2	Skunk sumac	*Rhus trilobata*	6
	10	Lilac	*Syringa vulgaris*	6
	2	Smooth sumac	*Rhus glabra*	6
	12	Honey locust	*Gleditsia triacanthos*	10
	1	Green ash	*Fraxinus lanceolata*	10
	1	Skunk sumac	*Rhus trilobata*	10
	8	Green ash	*Fraxinus lanceolata*	10
3	4	Rocky Mountain juniper	*Juniperus scopulorum*	10
	1	Green ash	*Fraxinus lanceolata*	10
	1	Eastern red cedar	*Juniperus virginiana*	10
	1	Rocky Mountain juniper	*Juniperus scopulorum*	10
	1	Eastern red cedar	*Juniperus virginiana*	10
	9	Rocky Mountain juniper	*Juniperus scopulorum*	10
	1	Green ash	*Fraxinus lanceolata*	10
	1	Chinese elm	*Ulmus parvifolia*	10
	4	Green ash	*Fraxinus lanceolata*	10
	8	Austrian pine	*Pinus nigra*	10

Table 2. Average height and width by species in the Windbreak-Habitat Demonstration Plot, Malheur Experiment Station, Oregon State University, Ontario, Oregon, June, 1999.

Species	Average height (ft)	Average width (ft)
Multi-flora rose	4.27	4.49
Golden currant	3.54	4.17
Skunk sumac	4.33	5.18
Tatarian honeysuckle	3.74	4.3
Cotoneaster	3.54	4.95
Woods rose	5.25	4.72
Caragana	5.22	3.12
Russian olive	5.74	5.32
Smooth sumac	3.58	2.7
Lilac	6.2	5.35
Honey locust	9.19	7.15
Green ash	3.64	1.41
Eastern red cedar	3.12	2.7
Rocky Mountain juniper	3.67	2.79
Chinese elm	3.54	3.9
Austrian pine	2.99	2