

H5.2 OLDFIELD

Oldfield habitats originate from cultivated land and are associated with the farming industry in the past.



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Plate H5.2.1: Alders growing in an oldfield, St. Marys River Valley, Pictou County (Unit 572). Photo: R. Merrick.

FORMATION

The oldfield habitat has been with us since the Europeans immigrated to the province's shores. In lowland areas, the first settlers cut and burned vast areas that were originally forested, in order to grow crops for themselves and their livestock. When abandoned, these fields rapidly return to a forest condition.

PHYSICAL ASPECTS

1. *Bedrock*: predominantly sedimentary and volcanic rocks.
2. *Soils*: variable but usually deep sandy to clay loams; soil horizons have been lost due to ploughing.
3. *Relief*: mostly flat to gently rolling topography
4. *Drainage*: imperfect to well drained.

ECOSYSTEM

The field habitat results from the human activities associated with food production on a relatively large scale. Cultivated fields and livestock pasture are the active forms of this habitat; old, abandoned fields soon revert to a forested habitat. Cultivated plant species and weed species dominate the habitat.

SUCCESSIONAL SEQUENCE

A fallow field is one which has been recently cultivated, but allowed to remain idle. With the cessation of tillage, the vegetation of open fields quickly reverts to an annual, followed by a perennial herb and grass community. On soils of poor nutrient status, *Polytrichum* mosses may become dominant in the development of a continuous ground cover.

In the succession of field to forest, the vegetation of neglected fields becomes interspersed with shrubs. Some tree species invade the abandoned field at an early stage. Young White Spruce seedlings may be seen growing among the tall grasses and perennials. If left undisturbed for several years, the field will generally revert to a White Spruce Forest (in H6.2). Where seed sources are available, oldfields can be colonized by White Pine. On wetter sites, Larch will exhibit similar characteristics to White Spruce, when colonizing these fields.

PLANTS

Pastures are grass-dominated fields, for livestock grazing during the summer months. Common pasture grass species include blue-grass (*Poa* spp.), bent-grass (*Agrostis* spp.), Timothy (*Phleum pratense*) and fescues (*Festuca* spp.). Many of the perennial grasses persist until trees dominate.

Secondary successional broad-leaved plants include Sheep-sorrel (*Rumex*), Spurry (*Spergula*), plantains (*Plantago* spp.), goldenrods (*Solidago* spp.), Yarrow (*Achillea*), Dandelion (*Taraxacum*) and thistles (*Sonchus*; *Cirsium*). Some of the long-persistent perennial herbs including Wild Strawberry (*Fragaria*), White Clover (*Trifolium*) and Pearly Everlasting (*Anaphalis*) are common. The shrub community composed of such plants as Juniper (*Juniperus*), raspberry (*Rubus* spp.), willow (*Salix* spp.), Meadowsweet (*Spiraea*) and Alder (*Alnus*), precedes the encroachment by conifers and early-successional hardwoods such as the aspens (*Populus* spp.).

ANIMALS

The animals present depend upon intensity of cultivation or the duration of neglect, as well as on site conditions and successional stage of regrowth. In the monoculture condition, invertebrates are few. The invertebrate fauna of abandoned fields is largely composed of insects and spiders. Many of the soil organisms are introductions from Europe, especially slugs and earthworms. Toads, Leopard Frog, Pickerel Frog, Eastern Smooth Green Snake, Northern Red-belly Snake and Maritime Garter Snake may be common. Many bird species forage in the habitat but nest in adjacent woodlands.

On moist, poorly drained sites in early succession with a higher diversity of invading plants, birds include Bobolink, Common Snipe, American Woodcock and Northern Harrier. Small mammals include Common and Short-tailed shrews, Meadow Voles and Meadow Jumping Mice. As the site succeeds into a later stage, dense alder growth provides habitat for many species of warbler, flycatcher and sparrow. High invertebrate populations in the alder succession attract insectivorous species. The Bobolinks disappear, snipe declines and the woodcock increases.

On drier upland sites in early succession, birds include Savannah Sparrow and Bobolink, and the mammals are generally similar to those found in moister conditions, with the exception of the Meadow Jumping Mouse. The diversity of species

increases as forest regeneration proceeds. Ruffed Grouse, Ring-necked Pheasant and Chipping Sparrow are common woodland species, while Junco and White-throated Sparrow inhabit the edge. Mammal diversity increases to include Red-backed Vole, Snowshoe Hare and White-footed or Deer mice. Hawks and owls hunt for small mammals in the open areas; bear and deer are attracted by the old or wild apple trees.

SPECIAL FEATURES

- Succession from abandoned field to forest.
- Garden escapes; plants from old gardens surviving in a natural habitat.
- Tansy Ragwort and Cinnabar Moth in northern Nova Scotia.
- See Introduced Plants in Topic T12.10.

DISTRIBUTION IN NOVA SCOTIA

The field habitat is abundant throughout the province, generally wherever settlement has taken place but particularly in Region 500. Over two million acres are known to have been cleared throughout Nova Scotia at the end of the nineteenth century. Less than 500,000 thousand acres of cleared land are actively worked by farmers today.



Associated Topics

T4 Colonization, T9 Soils, T10.2 Successional Trends in Vegetation, T10.4 Plant Communities in Nova Scotia, T10.5 Seed-bearing Plants, T10.6 Trees, T12.1 Colonization by People, T12.10 Plants and Resources

Associated Habitats

H6.2 Softwood Forest

Additional Reading

- Eastern Ecological Research (1978) *Cape Breton Highlands National Park: Ecological Land Classification*. Parks Canada.
- Daubenmire, R. (1968) *Plant Communities: A Textbook of Plant Synecology*. Harper and Row, New York.
- Nichols, G.E. (1918) "Vegetation of northern Cape Breton." *Trans. Conn. Acad. of Arts Sci.* 22.
- Scott, F. (1972) Pastures, Hayfields and Oldfields. Nova Scotia Museum, Halifax. (*Environmental Studies Series*).

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