

# Acidic Shrub Fen

State Rank: S3 - Vulnerable



Acidic Shrub Fen with mixed shrubs — sweet gale, leatherleaf, buttonbush, and water-willow on sphagnum. Photo: Patricia Swain, NHESP.

**Description:** Acidic Shrub Fens (ASF) typically occur along pond margins, often at the edges of peat mats where the peat may be weak. ASF are primarily composed of low-growing, interwoven shrubs with patches of sphagnum moss growing at the shrub bases. Although acidic peatland communities, the plants of ASF are often in contact with pond water or have other surface or groundwater connectivity: some nutrients are present in the water and available to the plants. Standing water is present throughout much of the growing season. Peat mats are quaking and often unstable.

**Characteristic Species:** Dense, low growing (<1m tall) shrubs make up the dominant layer of Acidic Shrub Fens. Leatherleaf, sweet gale, water-willow, and meadow-sweet are typical, sometimes with scattered taller highbush blueberry, red maples, alder, and/or sweet-

Acidic Shrub Fens are dominated by low-growing shrubs on weak peat. These acidic peatland communities experience some groundwater and/or surface water inputs, but no calcareous seepage.

pepperbush. Herbaceous plants may be abundant and diverse, or quite sparse. The layer often includes St. John's-worts and arrowheads. Typical graminoids include sedges, cotton-grasses, and beak-rushes.

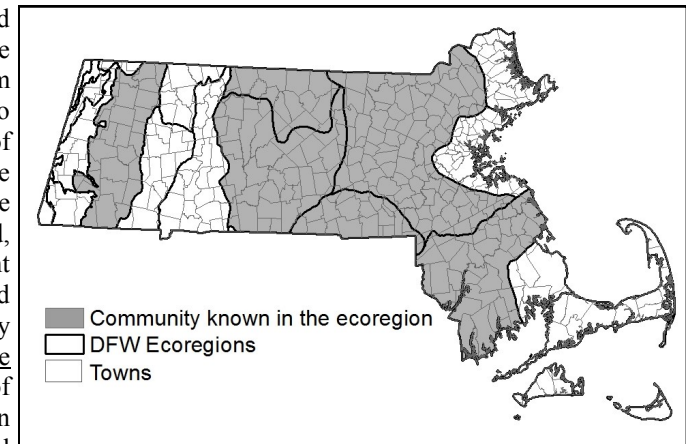
**Differentiating from Related Communities:** Acidic Shrub Fens are primarily composed of low-growing, interwoven shrubs with patches of sphagnum moss growing at the shrub bases. Dense water-willow and sweet gale are indicative and characteristic. ASF are wetter with a less well-developed sphagnum mat than other acidic peatlands. Acidic Graminoid Fens are differentiated by the abundance of graminoid and herbaceous species and lack of extensive shrubs. Level Bog communities receive



Water-willow, a viney shrub of ASF. Photo: Troy Evans, GSMNP, Bugwood.org.

little or no stream flow and they are isolated from the water table, making them the most acidic (pH ~3 to 4) and nutrient-poor of peatland communities. The sphagnum peat tends to be deep and well developed, graminoids may be present but not dominant, and shrubs are dominated by leatherleaf. Kettlehole Level Bogs are a subset of Level Bogs that occur in kettleholes in sandy glacial outwash. They are typically small (<3 acres), round, and lack inlets and outlets. Highbush Blueberry Thickets are dominated by tall (2m or more) dense shrubs of the blueberry family with other deciduous species. Shrub Swamps lack peat, are often more diverse than ASF, and are not dominated by blueberries or other ericaceous plants. They are often dense and tall.

**Habitat for Associated Fauna:** Due to the extended periods of saturation, lack of nutrients, and the high acidity and low oxygen content of the water, acidic peatlands are inhospitable to many animal species, including most amphibians and reptiles. Winged animals and large terrestrial animals can use peatlands as part of their habitat and then move on when conditions are unfavorable. Many species of dragonflies and damselflies inhabit acidic peatlands, especially where there is adjacent open water



**Examples with Public Access:** Lowell-Dracut-Tyngsboro SF, Dracut; Quaboag WMA, Brookfield; Upton SF, Upton; Tully Lake property (USACE), Royalston; Mud Pond-Horseshoe Pond Bog, Farmington River WMA, Otis.



Acidic Shrub Fen with water-willow turned red in the fall. Photo: Michael W. Nelson, NHESP.

