

PLANTAGO CORDATA Lam.  
Heart-leaf Plantain

FAMILY: Plantaginaceae

HABIT: Herbaceous perennial, 10-50 cm.; flowering April, May; fruiting June, July.

SIMILAR SPECIES: *Plantago cordata* bears a general resemblance to *Plantago major* and *P. rugelii*. *P. cordata* is generally a much larger plant than these two species, however. When the leaves of *P. cordata* are fully grown, the blades are 10-30 cm. long. The leaves of the latter two species can grow to 20 cm. long but are generally much shorter. The leaf of *P. cordata* has its major veins appearing to diverge from the midvein above the base of the leaf; in the latter two species, the lateral veins diverge from the midvein at the base of the leaf. In addition, *Plantago cordata* has a thickened elongated root; these other two species are fibrous-rooted.

TOTAL RANGE: OH and s. Ontario to WI and MO, and occasionally to NY, VA, NC, GA and AL.

STATE RANGE (as of 2008): Post-1980 records are from Adams, Hardin, and Mahoning counties. There are pre-1980 records from Auglaize, Champaign, Clark, Erie, Franklin, Logan, Lorain, Lucas, Madison, and Scioto Counties.

HABITAT: This species usually is rooted in circumneutral to basic rock or pebble substrates of clear, slow moving streams. It also grows in mud-bottomed streams and in wooded floodplains. It only infrequently grows in full sun. The Adams County population is in and around a small stream with a dolomite substrate (Jones and Filbert, 1981).

HAZARDS: *Plantago cordata* apparently has few natural enemies. Tessene (1969) has observed cysts on its leaves and dodder growing on the plant, but with little detrimental effect.

The main cause for its decline is habitat destruction. It is adapted to undisturbed stream environments, and is apparently unable to tolerate severe modifications of its habitat. The most probable hazards are water pollution and siltation. Increased water flow, resulting from clearing the surrounding woods may affect the establishment of seedlings. The seedling stage is very vulnerable.

Seeds are released in early summer. They adhere to each other by a sticky floating placenta, and are dispersed by water. They break dormancy in a short time, and must germinate and root quickly or they will die (Tessene, 1969). The young seedlings are very vulnerable to uprooting by floods (Jones and Filbert, 1981).

In addition to the above hazards, this plant may be picked for human uses. It has medicinal (Meagher et al., 1978) and food (Steyermark, 1963) uses, and is

offered for sale as a garden plant (Tessene, 1969).

RECOVERY POTENTIAL: The adult plants are very hardy. They are resistant to flooding (Jones and Filbert, 1981), submergence, and occasional drought (Tessene, 1969). They have been successfully established in transplanted populations (Meagher et al., 1978). The seeds are well adapted for water dispersal. *P. cordata* has the lowest known reproductive potential of any *Plantago* species (Primack, 1976). Establishing new populations may be difficult.

INVENTORY GUIDELINES: Collect complete, mature specimens, including the roots. Avoid over-collecting.

COMMENTS: *Plantago cordata* is a very specialized member of its genus, and is in danger of extirpation from Ohio. Although certainly extirpated from most of its original locations, it should be sought in streams flowing over limestone or dolomite substrates, and along streams in swamp woods.

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