

THE DISTRIBUTION AND STATUS OF BOG BLUEGRASS (*POA PALUDIGENA*) IN INDIANA

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INTRODUCTION

Bog bluegrass (*Poa paludigena* Fern. & Wieg.) is a little known and presumed rare grass of the cool temperate regions of eastern North America. Although there were several collections of the grass in the early 1900's from many States ranging from Wisconsin to New York, today very few extant populations are known. Because of concern among conservation biologists regarding the global status of bog bluegrass, a status survey grant program was initiated by the U.S. Fish and Wildlife Service (USFWS). The Division of Nature Preserves, Indiana Department of Natural Resources (IDNR), received a grant in 1988 to determine the status of bog bluegrass in Indiana. The results of that survey are reported herein.

METHODS

Initially, historical collecting sites of bog bluegrass were visited to determine current population status. The location of new sites with potential bog bluegrass habitat was determined by checking soil surveys, aerial photographs, and the Indiana Natural Heritage Program (INHP) database located at the IDNR in Indianapolis. Sites were visited during the peak of anthesis and seed-formation (from mid-May through the end of June). In most cases, vouchers were taken and deposited in the Deam Herbarium at Indiana University (IND).

DISTRIBUTION

In Indiana, bog bluegrass is confined primarily to the northern half of the State, in areas defined by Homoya, *et al.* (1985) as the Northern Lakes, Central Till Plain, and Northwestern Morainal natural regions. There are some exceptions to the northern distribution, with populations occurring in Dubois, Jackson, Fayette, and Owen Counties. Figure 1 shows the county distribution of bog bluegrass in Indiana. All of the populations, with one exception, occur in formerly glaciated areas, most within the zone of Wisconsinan glaciation. The southern Indiana populations occur in an area of pre-Wisconsinan glaciation. The one exception, in Dubois County, is extremely close to the glacial border.

Occurrence of bog bluegrass in any given locality is dependent upon the presence of appropriate habitat. In all cases, that habitat consists of a highly organic substrate (e.g., muck) saturated by constant ground water seepage. Habitats with these conditions are commonly called seep springs, seepage swamps, or fens. Prime conditions exist in a seep community where a sparse canopy exists, such as formed by tamarack (*Larix laricina* (DuRoi) K. Koch), black ash (*Fraxinus nigra* Marsh), alder (*Alnus serrulata* (Ait.) Willd. and *A. rugosa* (DuRoi) Spreng.), yellow birch (*Betula lutea* Michx. f.), or poison sumac (*Rhus vernix* L.).



FIGURE 1. County distribution of bog bluegrass (*Poa paludigena*) in Indiana.

Bog bluegrass normally does not form free-standing solitary clumps but grows on hummocks formed by other vegetation or on saturated rotting logs that have fallen into the seepage community. Species that it characteristically associates with include skunk cabbage (*Symplocarpus foetidus* (L.) Nutt.), marsh marigold (*Caltha palustris* L.), fowl-meadow grass (*Glyceria striata* (Lam.) Hitchc.), swamp saxifrage, (*Saxifraga pennsylvanica* L.), swamp betony (*Pedicularis lanceolata* Michx.), showy lady's slipper (*Cypripedium reginae* Walt.), and several sedges (e.g., *Carex hystrix* Muhl., *Carex leptalea* Wahlenb., and especially *Carex bromoides* Schkuhr).

STATUS

Charles Deam was the first to collect *Poa paludigena* in Indiana (Deam 31117 IND). The collection was made in 1920 from a tamarack swamp in Lagrange County. Twenty years later in his *Flora of Indiana*, Deam (1940) reported the grass from only three counties, viz., Lagrange, St. Joseph, and Dubois. At the inception of the Indiana Natural Heritage Program in 1978, a total of seven historical collections of the grass had been made in the State, including all in the counties listed above plus Elkhart County. The most recent collections were made in 1946 (Potzger 10239 BUT).

Poa paludigena was listed as extirpated (Bacone and Hedge, 1980) in Indiana until 1982, when *Poa paludigena* was rediscovered at an historical site in Dubois County (Homoya, 1983). Since then, over twenty extant populations have been discovered or rediscovered, many of them in 1988 as part of the status survey sponsored by the USFWS. Bog bluegrass is currently listed as watchlist (> 20 sites), the lowest level of official listing by the INHP.

The success at locating new sites is not due to an increase in the number of populations of bog bluegrass in recent times, but to the effort made in inventory. The species was probably overlooked in the past, primarily because of the rather inhospitable environment that it inhabits. Although bog bluegrass is truly an uncommon plant, it is not rare and could certainly be found at additional sites with further inventory efforts.

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