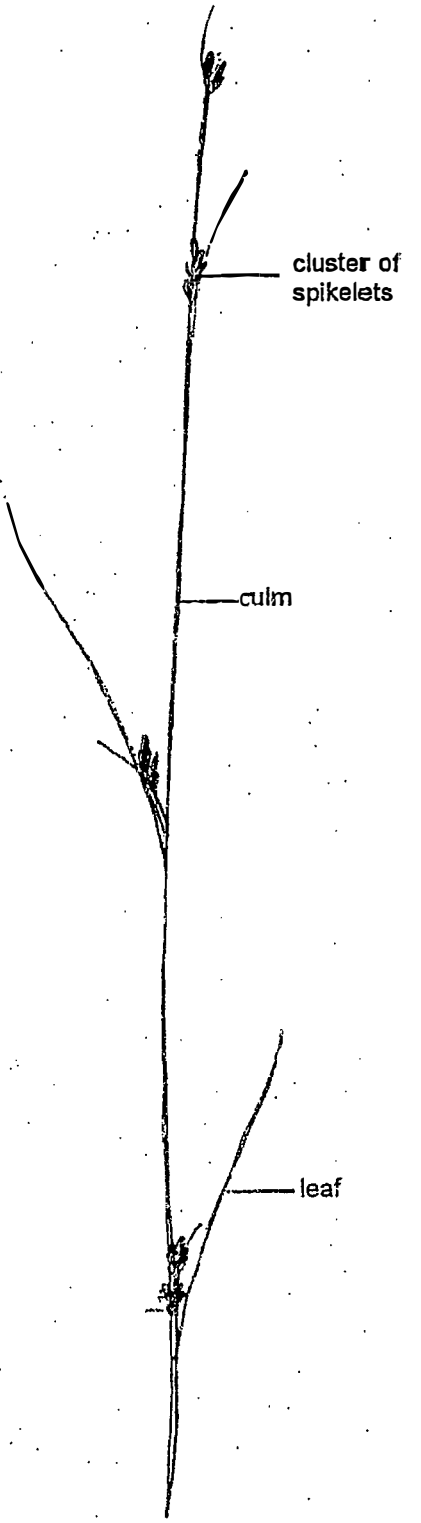
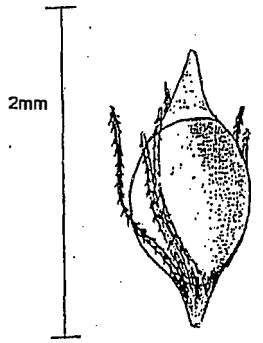
Knieskern's beaked-rush

DESCRIPTION: Knieskern's beaked-rush (*Rhynchospora knieskernii*) was listed as a threatened species on July 18, 1991, pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Knieskern's beaked-rush belongs to the sedge family and is endemic to the Pinelands region of New Jersey. This grass-like plant was generally considered to be an annual species; however, it is currently suspected to be a short-lived perennial in locations where habitat conditions are stable, allowing uninterrupted growth year after year. Knieskern's beaked-rush grows from 1.5 to 60 centimeters high (0.6 to 24 inches), has slender culms (stems) branching from the base, and short, narrowly linear leaves. Small spikelets (flower clusters) are numerous and occur at distant intervals along the entire length of the culm. The achene (fruit) is obovate, narrow at the base, 1.1 to 1.3 millimeters long (0.04 to 0.05 inches), and equal in length to the six downwardly-barbed or rarely, upwardly-barbed attached bristles. Fruiting typically occurs from July to September (U.S. Fish and Wildlife Service, 1993).

HABITAT: Knieskern's beaked-rush is an obligate hydrophyte (wetland plant) that occurs in groundwater-influenced, constantly fluctuating, successional habitats. An early successional species and colonizer, Knieskern's beaked-rush is intolerant of competition, especially from e woody species. It is found on naturally occurring earlye successional habitats and disturbed areas such as burns,e bog-iron deposits, gravel and clay pits, road cuts, mowede roadsides, utility and railroad rights-of-way, clearede home sites, eroded areas, cleared edges of Atlantice white-cedar swamps, wheel ruts, and muddy swalese (Gordon, 1993; U.S. Fish and Wildlife Service, 1993;e Radis, 1995). In the past, fire may have played ane important role in creating and maintaining suitablee habitat for Knieskern's beaked-rush. Occurrence recordse indicate that this plant is found in wet open areas withine fire-dependent open pitch-pine forests. Periodice disturbance, either natural or human-induced, whiche maintains a damp-to-wet site in an early ecologicale successional stage, may be necessary for the successfule colonization, establishment, recruitment, ande maintenance of this species.e



Flowering / fruiting culm (stem)



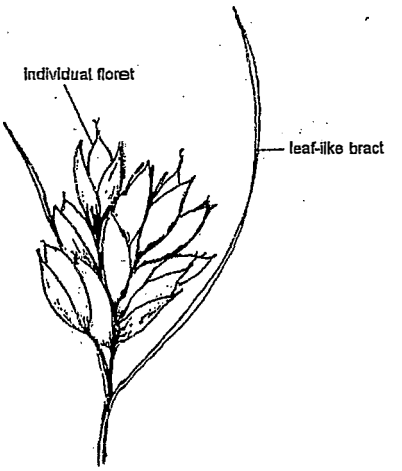
Achene (fruit) with six barbed bristles

Human-disturbed sites exhibit some of the same characteristics as bog-iron sites, including a high water table, temporary inundation, and open, early-successional habitat with relatively bare substrate. Plant species associated with Knieskern's beaked-rush include warty panic-grass (*Panicum verrucosum*), poverty-grass (*Aristida longispica*), and spatulate-leaved sundew (*Drosera intermedia*) (Gordon, 1993).

THREATS: Originally, the primary threat to the species was the loss of wetlands to urban and agricultural development. However, current State and federal wetland protection laws have reduced the loss of wetlands over time. Presently, vegetative succession is a major factor threatening Knieskern's beaked-rush. Human-induced threats to the species include alteration of wetland hydrology, off-road vehicle activity, trash dumping, and possibly roadside grading (U.S. Fish and Wildlife Service, 1993). Gordon (1993) found that fire can be both beneficial and detrimental to the species depending on the timing, duration, and intensity of the burn.

SURVEY REQUIREMENTS: The Service requests that a qualified biologist conduct a comprehensive search for Knieskern's beaked-rush in any potentially suitable early successional wetlands or disturbed wet areas that may be impacted by project activities. Surveys should be conducted from July to September. Random transect surveys are inappropriate since the species may be present in small wet pockets, which may be overlooked by this survey method. Please report in writing the survey method used, the qualifications of the surveyor, and the results of the survey to:

U.S. Fish and Wildlife Service
New Jersey Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, New Jersey 08205
Telephone: 609/646-9310
Facsimile: 609/646-0352



Cluster of spikelets

LITERATURE CITED

Gordon, T. 1993. Monitoring and Survey of *Rhynchospora knieskernii* in New Jersey - 1992. New Jersey Office of Natural Lands Management, Trenton, New Jersey. 9 pp.

Radis, R. 1995. Monitoring and survey research on *Rhynchospora knieskernii* Carey in New Jersey. 16 pp.

U.S. Fish and Wildlife Service. 1993. Knieskern's Beaked-Rush (*Rhynchospora knieskernii*) Recovery Plan. Hadley, Massachusetts. 40 pp.