6859 G-000-702 .9

RESULTS OF SURVEYS FOR SPRING CORAL-ROOT HAMILTON COUNTY FOR FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

07/11/94

RUST
6
REPORT

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

RESULTS OF SURVEYS FOR SPRING CORAL-ROOT HAMILTON COUNTY, OHIO

PREPARED BY:
RUST Environment & Infrastructure Inc.
PROJECT NO. 72740.000

July 11, 1994

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Spring Coral-root (*Corallorhiza wisteriana*) is an orchid that is listed as threatened by the Ohio Department of Natural Resources. Under CERCLA regulations (Section 121), the Fernald Environmental Management Project (FEMP) site must meet the substantive requirements of the Federal Endangered Species Act of 1973, the Ohio Revised Code of 1975, the Ohio Division of Wildlife Order of 1976, and the Ohio Endangered Plant Law of 1978. As such, RUST Environment & Infrastructure, Inc. (RUST) has completed field surveys at the FEMP site in order to determine the presence or absence of Spring Coral-root.

Spring Coral-root blooms in April and May and grows in semi-shade in a variety of mesic deciduous woods, such as forested wetlands and wooded ravines. Such habitats exist at the FEMP site in the woodlands located north of the site (part of which have been delineated as forested wetlands) and along Paddys Run, a stream flowing along the western boundary of the site. Surveys for Spring Coral-root were conducted by three biologists from RUST on May 18 and 19, 1994, in the habitats specified previously.

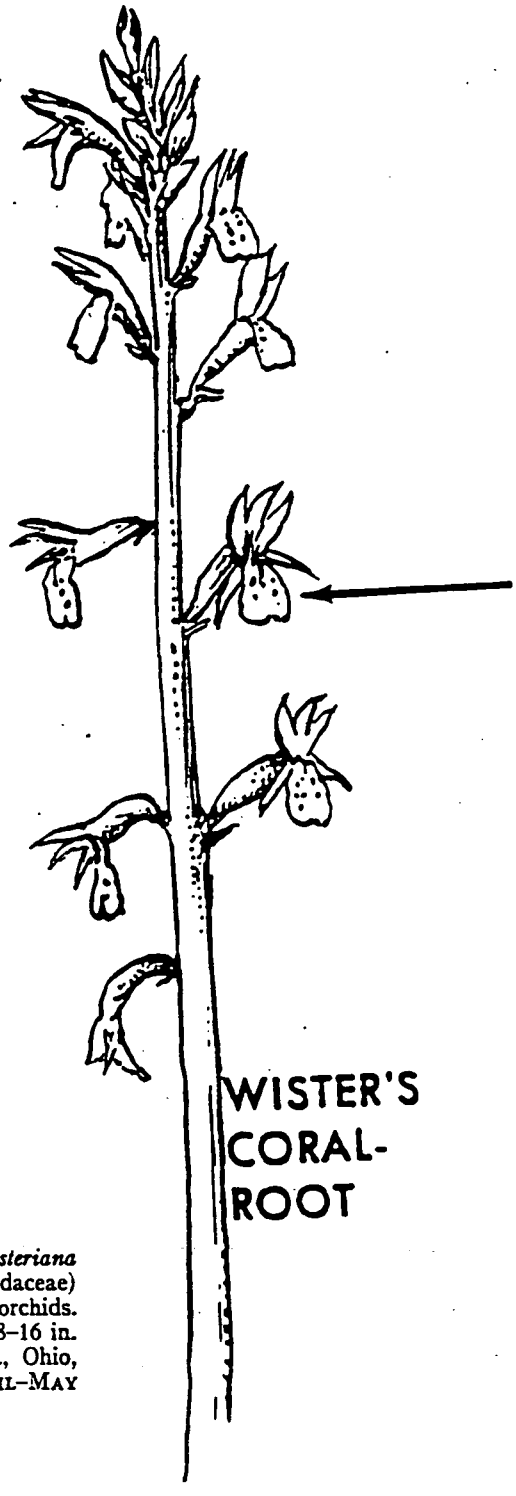
2.0 SURVEY METHODS

Prior to conducting the field sampling, each of the team members were given taxonomic descriptions of Spring Coral-root and identifying characteristics of the species. Examples of this information are provided in Appendix I. On May 18, 1994, the northern portion of the site was surveyed for the presence of Spring Coral-root. A total of ten transects (oriented from east to west) were walked by RUST in the woodlands north of the site. Additionally, RUST walked the perimeter of the northern pine plantation. Despite the presence of suitable habitat near the western edge of the northern woodlands, Spring Coral-root was not observed at any of the locations surveyed. All transect locations are shown on Figure 1.

On May 19, 1994, areas along Paddys Run, the northeastern woodland, the southern pine plantation, and the southeastern woodland were surveyed by RUST. A portion of Paddys Run was inaccessible due to the presence of the Inactive Flyash Pile and was not included in the survey. Spring Coral-root was not observed in any of the habitats surveyed. Most of the habitat along Paddys Run appeared to be too disturbed and dry to support growth of the species. The most suitable habitat for this species that was surveyed on this day was the woodland located in the southeast portion of the site; however, this woodland appeared too dry to support the Spring Coral-root.

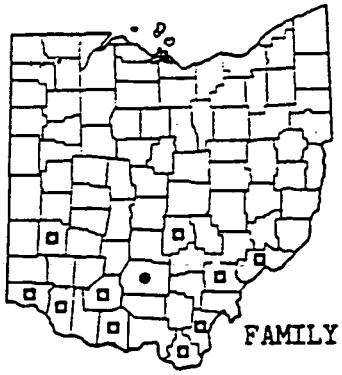
3.0 RESULTS AND CONCLUSIONS

Despite actively searching for Spring Coral-root at the FEMP site, this orchid was not observed in any of the habitats surveyed at the FEMP site. Flowering in Spring Coral-root is believed to be triggered by a combination of natural factors such as air temperature, soil moisture, and photoperiod, which are not well understood. It may be that site conditions were not right for flowering to occur this year but underground rhizomes may exist in a semi-dormant state. However, the woodlands observed at the FEMP site are dominated by elms, maples and buckeye trees and did not contain any beech trees, which are often found in association with several species of saprophytes such as Indian-Pipe, Beechdrops, and Pinesap. Thus, the woodlands at the FEMP site are not thought to provide the mesic conditions necessary to support a population of Spring Coral-root.



WISTER'S CORAL-ROOT

WISTER'S CORALROOT *Corallorhiza wisteriana*
ORCHID FAMILY (Orchidaceae)
Coralroots are leafless, tawny- or purple-stemmed orchids. This species has a broad white lip spotted with red. 8–16 in. See others on p. 242. Woods. Missouri, s. Indiana, Ohio, Pennsylvania, New Jersey south. APRIL–MAY



CORALLORHIZA WISTERIANA Conrad
Spring Coral-root

FAMILY: Orchidaceae.

HABIT: Herbaceous perennial, 1-4.5 dm. high; flowering mid April-mid May.

SIMILAR SPECIES: This species and the equally rare C. trifida (Early Coral-root) are very similar and bloom at the same time. However, C. wisteriana has brightly-colored flowers and is found only in southern Ohio while C. trifida has pale flowers and is known only from northeast Ohio. These two species are the only spring-blooming coral-roots in the state.

TOTAL RANGE: FL to TX, n. to PA, OH, s. IN, IL, and MO; also in the western mountains from SD to MT, s. to central Mexico.

STATE RANGE: Formerly scattered over the southern half of the state, with pre-1960 records from 10 counties: Adams, Athens, Clermont, Fairfield, Gallia, Hamilton, Highland, Lawrence, Montgomery, and Washington. Last collected from a single site in Ross County in 1974. The exact location of this population is not known.

STATE STATUS: 1980-Endangered, 1982-E, 1984-E.

HABITAT: In semi-shade in a variety of mesic deciduous woods.

HAZARDS: Drying and compaction of the forest floor; like most coral-roots, it is sensitive to soil disturbance because of its relationship with mycorrhizal fungi (see Comments).

RECOVERY POTENTIAL: Probably very poor, judging from the great disparity between its present-day and pre-1960 distribution in the state.

INVENTORY GUIDELINES: Flower stalks only should be collected; rhizomes should be left in the soil.

COMMENTS: This genus lives for most of its life as an underground saprophyte. There seems to be a symbiotic relationship of this genus with mycorrhizal fungi that enwrap the rhizome. Thus, coral-roots are nearly impossible to cultivate or to transplant and are very sensitive to soil disturbance. Individual plants do not bloom every year. Long periods may pass between blooming. An abundance of flowers may be found one year; another year, merely a few flower stalks; yet other years no flowers at all are produced. The underground rhizomes, though, still persist in a semi-dormant state all this time. Flowering appears to be triggered by a combination of natural factors, such as air temperature, soil moisture, and photoperiod, as yet poorly understood. Because of its early blooming time and its inconspicuous appearance, this species easily may be overlooked. Therefore, it should be sought elsewhere in southern Ohio.