

ORNL/M-6582

**Rapid Assessment of
Potential Habitats or
Occurrences of Threatened
and Endangered (T&E)
Vascular Plants on the
East Bear Creek Valley Site
for a Proposed On-Site
Waste Management Facility**

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VASCULAR PLANTS AT THE EAST BEAR CREEK VALLEY SITE
FOR A PROPOSED ON-SITE WASTE MANAGEMENT FACILITY**

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INTRODUCTION

The U.S. Department of Energy proposes to construct an on-site waste disposal facility on the Oak Ridge Reservation (ORR). East Bear Creek Valley is the preferred location for the facility. The proposed site (Fig. 1) is located immediately north of Bear Creek Road and west of the Oak Ridge Y-12 Plant, in administrative grid locations D10, D11, E10, and E11 of U.S. Geological Survey Map S-16A.

An assessment of the site was made to identify possible concerns related to plant species listed for protection by the State of Tennessee or the federal government. Dr. Larry Pounds walked through the site on April 1, 2, and 7, 1998, to gather information for the assessment. Information was also obtained from the databases and files maintained by the Oak Ridge National Environmental Research Park. Observation of threatened and endangered (T&E) plants was difficult during this early field work because many species were just emerging from the ground at the time. Further field visits were made on May 20 and 23 because of changes in the project site map. Specific locations of the T&P plants found are not shown on the map. These data are available through the project. In this assessment, “project site” will refer to the facility footprint or battery area, as indicated on the accompanying map (Fig. 1).

PROJECT SITE DESCRIPTION

The portion of the site north or east of Haul Road is almost entirely in natural vegetation. Hardwoods (oaks, hickories, yellow poplar, red maple, sweet gum, and many other species) dominate in most areas. In the area east of Haul Road, the forest is bisected by a cleared utility right-of-way. In a few disturbed upland areas, Virginia pine dominates. Some areas, particularly hilltops, are mixed hardwoods and pines. The most common pine in these areas is yellow pine with white pine and Virginia pine also present. At least one hemlock is on the site. Red cedars are occasional. Wetlands occur along streams and at the heads of streams. There are no major areas of rock outcrop.

Much of the area south of Haul Road is in buildings, lawns, gravel, or pavement. The area west of the “gate two” road and south of a road paralleling Haul Road is largely loblolly pine plantation. In one section of the plantation, most of the pines are dead, presumably because of pine bark beetle infestation. In the plantation area, wetlands are found along two northern tributaries of Bear Creek (i.e., NT-5 and NT-6) and in another low area. On the eastern side of the plantation is a mowed utility right-of-way that contains some native plant species of open sites. South of the plantation is a riparian zone along Bear Creek. Dominant species include privet, alder, and Nepal grass.

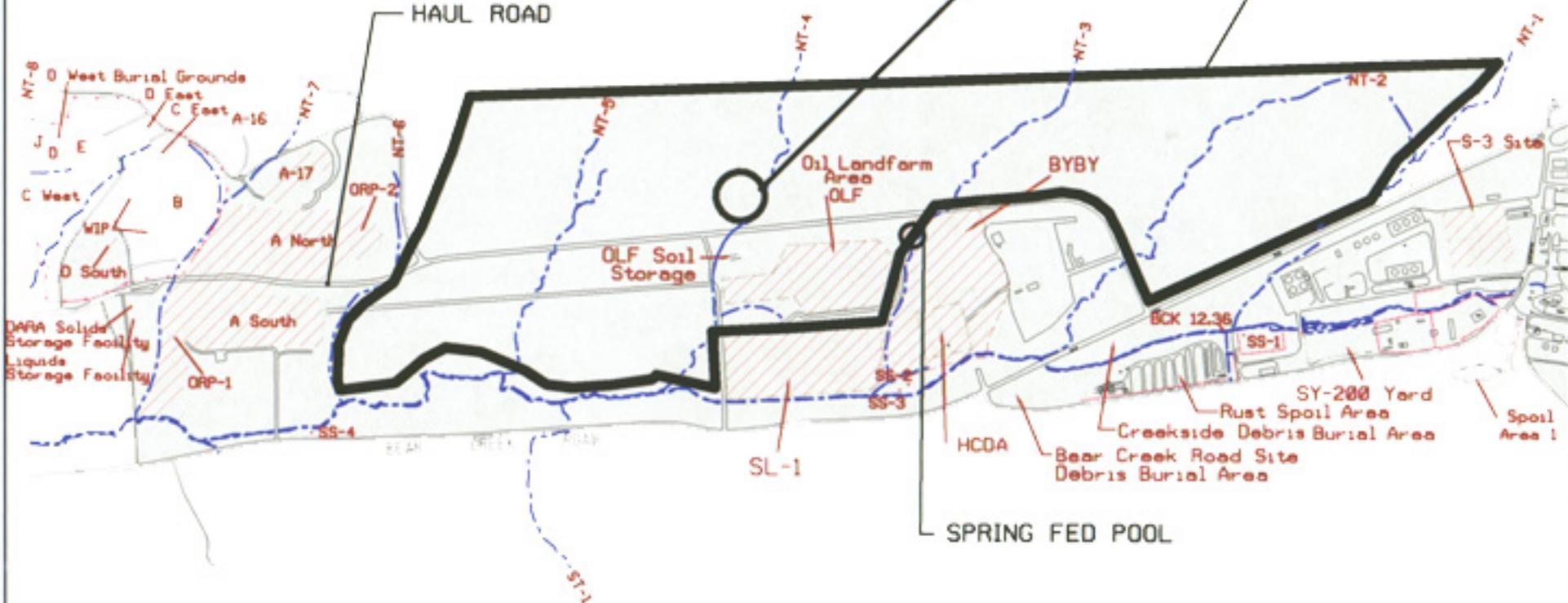
1:10' PLAN



APPROX. LOCATION DISPOSAL FACILITY

BATTERY LIMIT

HAUL ROAD



EAST BEAR CREEK VALLEY PLAN

NOTE: SPECIFIC RARE PLANT LOCATION DATA IS AVAILABLE THROUGH THE PROJECT

FIGURE 1



EAST BEAR CREEK VALLEY SITE
BOTA SURVEY
DOE - Oak Ridge Reservation - Oak Ridge, Tennessee



DRAWN DATE:
AUGUST 3, 1998
Figure 1a.dwg

PRE-ASSESSMENT SITE INFORMATION

Botanical exploration has occurred in the project site in the past (see Awl et al. 1996), and part of the area had a rare plant survey for a proposed site for the Sanitary Sewer Upgrade Soil Storage Project (1991). The result of this earlier work was that one state-listed plant was reported from the project site, and three other state-listed species were reported from nearby areas in habitat similar to that found at the site.

OCCURRENCES OF T&E PLANT SPECIES NEAR OR ON THE PROJECT SITE

Maps with specific plant locations identified as indicated in the following text are available from the project.

Tuberclad rein-orchid (*Platanthera flava* var. *herbiola*, Tennessee threatened) is found along the western boundary of the project site. This plant occurs here in a wetland that lies just outside of the project site. A natural area (NA 28) has been designated around this population (see Awl et al. 1996, and Pounds et al. 1993). This population was seen during the current field work. A new occurrence of this species on the project site was found during the current field work along NT-6 south of Haul Road.

Ginseng (*Panax quinquefolius*, Tennessee special concern) is found in hardwood forests throughout the Oak Ridge Reservation (ORR) and is known from several places in the Bear Creek Valley area. During the April field work, it was too early in the season to detect this plant. During the May field work, an earlier report of ginseng in the project area was confirmed. Ginseng is on the Tennessee list more because of the need to control the harvest of the plant for long-term conservation purposes than because of its current rarity (see Awl et al. 1996).

Pink lady's-slipper (*Cypripedium acaule*, Tennessee endangered) is known from near the east boundary of the project site. It occurs there in mixed pine-hardwood forest. There are several areas of potential habitat for this plant in the project site. This plant was detectable at the time of the April field work but was not found on the site. It is easier to detect later, however, when in flower. Pink lady's-slipper is on the Tennessee list more because of the need to control the loss of plants as a result of digging for replanting rather than because of its current rarity (see Awl et al. 1996).

Purple fringeless orchid (*Platanthera peramoena*, Tennessee special concern) is found in wetlands about a mile west of the project site. Plants that might be members of this species were found during the current assessment in the central loblolly pine plantation wetland and in the utility right-of-way east of Haul Road along NT-2. These plants can be identified in July if they bloom.

GEOGRAPHICAL AREAS OF PARTICULAR CONCERN FOR LISTED PLANTS OR PLANT COMMUNITIES

The following plant species or communities were found on the site. Specific location information is available from the project.

- (1) A tubercled rein-orchid (Tennessee threatened) population in a wetland (NA 28, an ORR Natural Area). This area is downslope from a potential borrow pit. Strict use of “best management practices” (BMPs) would be needed to protect the plants and wetland during construction and operation of a borrow pit near here.
- (2) A tubercled rein-orchid (Tennessee threatened) population in a wetland along NT-6, south of Haul Road.
- (3) A reference area (RA 5) (see Awl et al. 1996, and Pounds et al. 1993). This area was chosen to be a reference area because it is a high-quality example of a forested wetland and because a large population of Carolina quillwort (*Isoetes caroliniana*), an uncommon species, is found here.
- (4) A wetland in the central area of the pine plantation. There are emerging orchid leaves here that could be purple fringeless orchid (Tennessee special concern). There is an, as yet, unidentified woody plant found here. It would be useful to revisit this area later in the season to determine if rare species are present.
- (5) A wetland along NT-2 in a cleared utility right-of-way. Unidentified orchids are growing here that might be the purple fringeless orchid (Tennessee special concern). These plants can be identified in July.
- (6) A cleared utility right-of-way on the eastern side of the pine plantation. Orchid leaves are found here in a sunny dry habitat. This habitat is unusual for orchids with the type of leaf seen here. It is not clear what species this is. It would be useful to revisit this area later in the season to determine if rare species are present.

SUMMARY AND CONCLUSIONS

No federally listed plant species are known from or are likely to be found on the project site. The clearing of hardwood forest for the project would eliminate some habitat for the state-listed ginseng. The clearing of mixed pine-hardwood forest would eliminate some habitat for the state-listed pink lady’s-slipper. If all habitats for these two species are eliminated in the project area, large areas of habitat on the ORR will remain for these species. Reservation-wide planning is needed to ensure that sufficient habitat is maintained for these species. There are two potentially impacted wetland areas (i.e., NA 28 and RA 5) that were previously recommended for special protection (Pounds et al. 1993) in part

because of rare plants. Protection of these and other wetlands in the site and careful application of BMPs in areas near wetlands are recommended. Visits to the project site later in the growing season could determine if listed plants occur in certain areas mentioned in the previous sections of this report.

REFERENCES

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