CLASS C

1) NAME

Cirsium vulgare (Savi) Tenore - Bull thistle

2) DESCRIPTION AND ACCOUNT OF VARIATION

Biennial from a fleshy taproot; 1 1/2-5 feet tall, branched above; stems very prickly and winged by leaf bases that extend downward; basal leaves up to 1 foot long, deeply-lobed and spine-tipped, upper surface coarse hairy; stem leaves smaller, 2 1/2 to 8 inches long; flower heads 1 1/2 to 2 inches in diameter, clustered at ends of branches, purple; seeds 1/8 to 1/16 inch long, gray with dark length-wise lines, somewhat flattened, with a circle of feathery white hairs about 1 inch long attached at top end.

3) ECONOMIC IMPORTANCE

a. Detrimental---Bull thistle is a weedy species in old fields, roadsides and waste places. Possible contaminate of certified seed crops.
b. Beneficial---No beneficial uses have been reported.

4) GEOGRAPHICAL DISTRIBUTION

Bull thistle is a naturalized introduction from Europe. It occurs throughout the United States and north into Canada from Newfoundland to British Columbia.

5) HABITAT

a. Climatic requirements---No specific information available. Due to its broad distribution, bull thistle must be adapted to a wide range of climates.
b. Substratum---Bull thistle is most vigorous on heavier soils and soils with a high nitrogen content.
c. Communities in which the species occurs---Bull thistle is found in fields, pastures, meadows and along transportation right-of-ways. It will not survive in cultivated fields.

6) HISTORY

Bull thistle has long been naturalized in North America. It is a native of the Old World, having been introduced by impure seed or some other accidental means.

7) GROWTH AND DEVELOPMENT

a. Morphology---The presence of a "thistle down" on the seeds is important because wind is the only means of natural dissemination.
b. Perennation---Bull thistle overwinters in the rosette stage.
c. Phenology---Bull thistle reproduces by seed only. The plant overwinters as a rosette and resumes growth in the spring. With the coming of summer the plants growth rate increases and puts up a large flowering

stem. The plant flowers from June to September. The seeds are dispersed, germinate and grow into rosettes in the fall.

8) REPRODUCTION

a. Floral biology---The flowers are visited by many insects facilitating cross-pollination.

b. Seed production and dispersal---Bull thistle is a prolific seed producer. An average plant probably produces several thousand seeds. Seeds are dispersed by wind. The "thistle down" of the seed helps to carry it long distances.

c. Viability of seeds and germination---It is believed the seeds do not survive long in the soil

d. Vegetative reproduction---No vegetative reproduction has ever been reported.

9) HYBRIDS

No hybrids have been reported.

10) Population Dynamics

Bull thistle responds favorably to an increased soil fertility, particularly nitrogen. It has thus become a major problem in pastures or other places that have been improved by the use of fertilizers. The weed can readily become established and spread in soils of high fertility that are bare of vegetation at the end of summer.

11) RESPONSE TO HERBICIDES AND OTHER CHEMICALS

Chemical control of the seedling stage is very effective. The use of 2,4-D or 2,4-DB is recommended.

12) RESPONSE TO OTHER HUMAN MANIPULATION

Hand hoeing, providing that most of the root is removed, is effective against isolated plants. Mowing is variable in its effect, but if done just as the first flowers are opening the best results will be achieved. Repeated tillage is very effective against established stands of bull thistle. To prevent establishment of bull thistle, it is necessary to provide a dense perennial pasture or cover so that seedlings will not survive.

13) RESPONSE TO PARASITES

a. Insects and other nondomestic animals---The seed head fly, Urophora stylata F., a native of Europe has been introduced to North America as a biocontrol agent. The larvae are capable of destroying up to 100% of the achenes of the flower head attacked. The galls formed by the larvae become a metabolic sink, diverting resources from the rest of the plant and reducing overall seed production.

Recently, a strain of the weevil, Rhinocyllus conicus, has been introduced into British Columbia from Europe. Studies indicate the impact of the fly and weevil together will destroy more seed than either one alone.

b. Microorganisms and viruses---No reports found of any promising biocontrol agents.

14) LITERATURE CITED

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