

Seed-Bank Project 2006 Activities

by Doris Ames 2006-Oct

This summer we began a new project to conserve native orchid species. This involves the collection of native orchid seed capsules in Manitoba for long-term storage in Canada's national seed-bank in Saskatoon. The seed-bank's more formal name is Plant Gene Resources of Canada. Although we believe that conservation of their habitat is the best way to protect native orchids, we also know that long-term seed storage will improve our ability to respond to rapid environmental changes that may be harmful to them. Since 25% of Canada's vascular plants are considered rare and there are many orchid species among them NOCI believes it is important to conserve their genetic biodiversity by storing some of their seeds in an appropriate facility.



SB01: this first slide shows Dr. Richard St-Pierre, who is in charge of wild plant conservation at the seed bank, on site at Woodridge Bog in June. He is helping us get started with the project and showing us how to put protective cages on the orchids.



SB02: we used homemade cages made of chicken wire of two different sizes to protect the orchids from predators (mostly white-tailed deer) when their seed capsules were ripening. I have a couple of samples here with me today. The larger ones have 2" holes and were used for larger plants like the Showy lady's-slipper shown here and for orchids that have larger pollinators like moths or butterflies, as do many species in the genus *Platanthera*.



SB03: the smaller cages with 1" holes were used to protect smaller orchids with smaller pollinators like this Heart-leaf twayblade that is pollinated by fungus gnats. We also tended to use smaller cages on the 5 self-pollinating species.



SB04: Richard St-Pierre and Doris Ames installing a cage on this Loesel's Twayblade at the edge of Hwy 203 near Woodridge Bog and marked it with flagging tape. We are able to report that the fellow mowing the grass in August did not mow down the cage but instead carefully drove around it and we were able to collect some very nice seed capsules from it in September.



SB05: Doris Ames at Brokenhead Wetlands marking down locations of caged orchids.



SB06: Dr. St-Pierre in the Brokenhead Wetlands fen area.



SB07: we gathered orchid seeds at a number of locations in southeastern Manitoba this summer. It is important that we gather seeds from each species at different locations to ensure the preservation of genetic diversity. This is a photo of a wonderful black-spruce bog off Hwy#308 that is home to 11 kinds of native orchids among them hundreds of Grass-pink or Calopogon orchids. We have proposed that this bog be designated an ecological reserve as it is home to many rare plants and animals.



SB08: this is a photo of a Calopogon with 8 flowers. We put a cage on this orchid and happily went back in August to collect seed capsules from this wonderful specimen. Unfortunately when we got back the entire spike was missing and judging by the great number of meadow vole tunnels I think they beat us to it! As Robbie Burns said "the best laid plans o' mice an' men gang aft agley" and he wasn't kidding. In this case Mousie was the big winner.



SB09: Here is another example of herbivory, this time likely caused by Sandhill Cranes. That day cranes were dancing everywhere in this gravel pit and throwing things at each other that looked suspiciously like orchid blossoms. You can see that one of the flower spikes was bitten off and removed and the other spike is bitten off and lying inside the cage. The yellow flagging tape is all snipped up into short sections as well. I suppose the birds can get at the orchids with their long skinny beaks. Maybe we will have to put some cheesecloth over the cage so they can't see the seed capsule. Out of sight out of mind! *Spiranthes romanzoffiana* outside the cage had their spikes bitten off as well but I noticed they made no effort to gather Lousewort blossoms. Nothing but the best for them!



SB10: Moccasin-flower with seed capsule in a cage at a forest near Contour. This was the one seed capsule we managed to collect from Moccasin-flowers this year. Most plants were heavily damaged by late spring frosts and did not produce seed capsules even though there were many pretty flowers in some places. Those plants not in a cage were often bitten off by deer.



SB11: Rose pogonia plants with intact seed capsules at Contour. We gathered these when they were a bit green and it was a good thing because on our next visit nearly every other one at the site had been bitten off by cranes or meadow voles likely. There were cranes there all summer and when Richard and I were there in late August the whole ground was riddled with mouse tunnels.



SB12: This was an example of a nice specimen of Moccasin-flower in a bog near Hadashville. Unfortunately it did not produce seed capsules.



SB13: Calypso seed capsules successfully harvested near Hadashville.



SB14: Iris helping to install cage on a large round-leaved orchid in the Sandilands.



SB15: close-up of orchid in a cage at Sandilands.



SB16: Richard St-Pierre installing cages in Sandilands.

We installed cages in May and June and collected seed samples after August 15th. We learned a lot about how to judge when seed capsules were ripe enough not to rot but before they broke open or dehisced. Sometimes we made the mistake of leaving them too long and then predators were more liable to get them. I am amazed that orchids survive at all when I see how they are eaten by so many predators: insects, white-tailed deer, meadow voles, sandhill cranes, etc., and that is if they survive late-spring frosts, drought, and hot weather. It is no wonder they are rare. We managed to collect seeds from 17 species of orchids at 15 different locations this first summer but much remains to be done. We need to collect seeds from plants of the other Manitoba species at many different locations and in other parts of the province including up north in Churchill. It will take us years to complete this project and the mileage expenses will be heavy. If you would like to make a financial contribution to this project to conserve Manitoba's orchid species we would be very grateful. Please let us know that you would like your donation to go to this project specifically.