



**FINAL STUDY REPORT**  
**Bismarck Plant Materials Center**  
**Bismarck, North Dakota**

## **Evaluation of Western Sand Cherry, *Prunus besseyi***

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### **ABSTRACT**

*The need for additional tree and shrub species that would provide fruit for human consumption and be suitable for windbreak plantings has been identified by NRCS Plant Materials Committees in North Dakota, South Dakota, and Minnesota. Western sand cherry is one such shrub adapted to the Northern Great Plains. Very few cultivars of the species are currently available. The goal of the study was to find seed sources that would produce long lived plants with abundant, tasty fruit. Seed was collected in 2011 from a wide geographic area including North Dakota, South Dakota, Minnesota, Montana, and Nebraska. Collections were from shrubs in natural areas and shelterbelts that exhibited high yields of large, tasty fruit. The collected fruit was processed to clean seed and is being stored in a cooler at low temperature and humidity at the Bismarck Plant Materials Center. The seed was accessioned and information on each collection site was recorded. No further work was done on the collections.*

### **INTRODUCTION**

Western sand cherry (*Prunus besseyi*) has potential to be beneficial for agroforestry markets (fruits and preserves), windbreaks and wildlife. It is a shrub native from the central Great Plains to the Canadian Prairie Provinces. It is found on rocky cobbly sites, usually on side slopes. It prefers sites with some bare soil as it does not compete with aggressive vegetation such as smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), crested wheatgrass (*Agropyron cristatum*) or suckering shrubs. Associated plants in natural sites are snowberry (*Symphoricarpos albus*) and poison ivy (*Toxicodendron radicans*). Western sand cherry spreads slowly from basal sprouts and does not sucker far from the plant. Fruit is usually scarce on plants in the wild because of berry consumption by rodents and other wildlife. As with many *Prunus*, seed exhibits high incidences of seed weevils, sometimes exceeding 50% damaged seed. A very similar species is eastern sand cherry (*Prunus pumila*). Both species can be found in the eastern part of the Dakotas and western Minnesota.

Twenty-four named releases of western sand cherry have been identified. See Table 1 for a list. Most are releases from the early 20<sup>th</sup> century. None are listed in the National Plant Germplasm Storage. As of 2011, only 'Pawnee Buttes', 'Hansen's dwarf cherry' (Lawyer Nursery in Montana), and a purple leaf sand cherry in the ornamental trade (*P. pumila* X *P. cerasifera*) are available in the commercial market. Pawnee Buttes is the only improved commercial cultivar. It is described as a ground cover version of sand cherry.

**Table 1.** Named releases of western sand cherry

Sioux (1913 Cornell )	Compass	St. Anthony	Monmoor
Brooks (Cornell)	Zumbra	Golden Boy	Champa (from Sioux)
Black Beauty (Cornell)	Sapa	Honeywood	Heideman Black (1913)
Oka	Opata	South Dakota Ruby	Heideman Red (1913)
Tom Thumb	Nicollet	Mando	Heideman Yellow(1913)
Rocky Mountain Cherry (1913)	Tomahawk (1913)	*Pawnee Butte ®	*Hansen's Dwarf Cherry ®

\*Registered by Botanic Gardens Conservation Int.

## MATERIALS AND METHODS

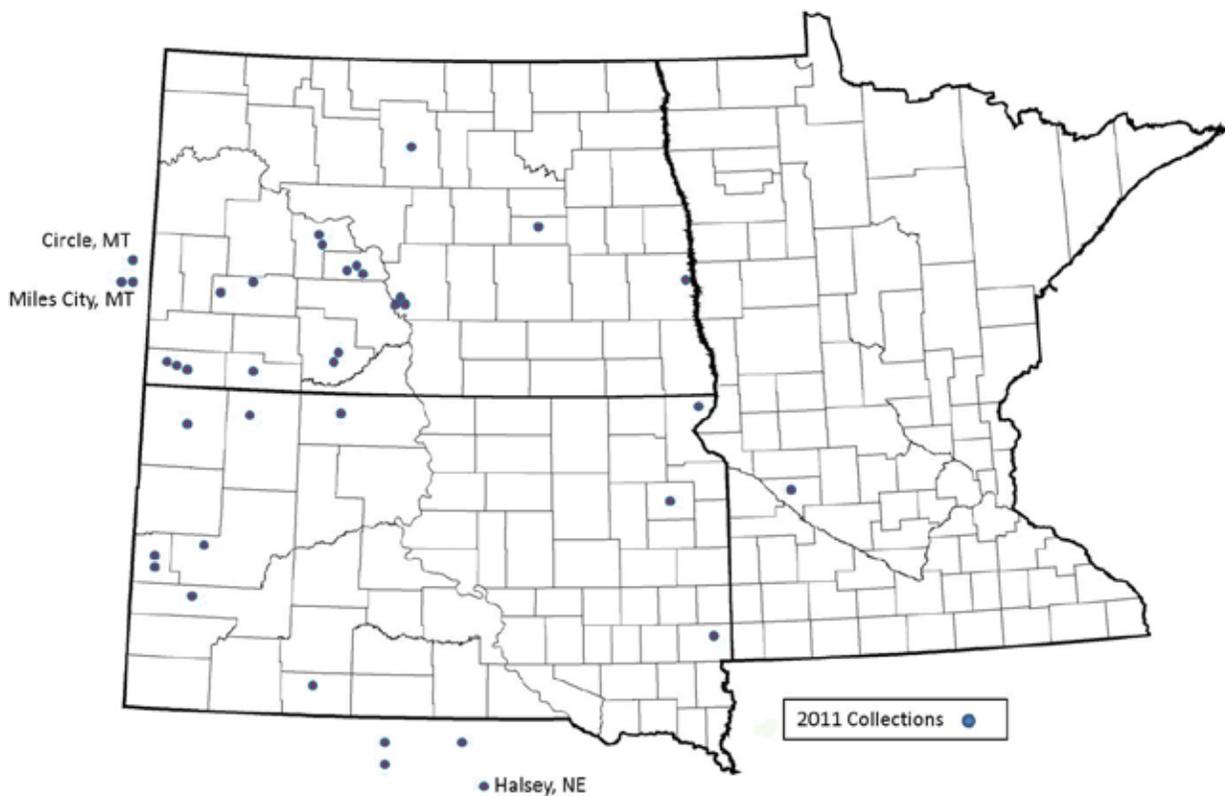
Cherries were collected in 2011 from 38 sites; 19 in North Dakota, 3 in Montana, 11 in South Dakota, 1 in Minnesota, and 4 in Nebraska. Collections were made from native stands and conservation plantings. See Table 2 for collection site information. A map showing collection locations is found in Figure 1. Fruits were processed down to clean seed. Seed is being stored at low humidity and temperature in a cooler at the Bismarck Plant Materials Center. Many of the collections have fewer than 100 seeds each.

**Table 2.** Evaluation of western sand cherry (*Prunus besseyi*) seed collection sites includes native and nonnative. Collections made by USDA-NRCS Plant Materials Center, Bismarck, North Dakota.

Accession	Quarter	Section	Township	Range	State	Planting type
9094360		3	14	54	ND	windbreak
9094361		6	140	54	ND	windbreak
9094362					MT	windbreak
9094363	NW	15	138	80	ND	Lincoln-Oakes Nursery
9094364	SW	15	138	80	ND	Lincoln-Oakes Nursery
9094365	NW	8	129	91	ND	windbreak
9094366					ND	native stand
9094367					ND	native stand
9094368					ND	native stand
9094369					ND	native stand
9094370					ND	native stand
9094371	SW	36	149	74	ND	wildlife
9094372	NE	17	184	73	ND	wildlife
9094373					SD	native stand
9094374					SD	native stand
9094375	SW	20	2	12	SD	windbreak
9094376					SD	native stand
9094377					SD	native stand
9094378					SD	windbreak
9094379					SD	native stand
9094380	SW	23	23	21	SD	wildlife
9094381					SD	native stand
9094382					NE	native stand
9094383					NE	native stand
9094384					NE	native stand
9094385					NE	windbreak
9094386	NW	18	125	15	SD	wildlife

**Table 2.** (Continued) Evaluation of western sand cherry (*Prunus besseyi*) seed collection sites includes native and nonnative. Collections made by USDA-NRCS Plant Materials Center, Bismarck, North Dakota.

Accession	Quarter	Section	Township	Range	State	Planting type
9094387	NW	27	152	84	ND	windbreak
9094388	SE	35	144	84	ND	windbreak
9094389	NE	18	144	85	ND	windbreak
9094390	SE	16	138	80	ND	Lincoln-Oakes Nursery
9094391	NE	2	117	53	SD	Big Sioux Nursery
9094392					ND	wildlife
9094393					ND	wildlife
9094394					ND	wildlife
9094395		10	119	42	MN	windbreak
9094404					NE	Bessey Nursery
9094401					MT	orchard
9094402					MT	orchard
9094414					ND	orchard
9094415					ND	orchard



**Figure 1.** Evaluation of western sand cherry (*Prunus besseyi*). The map shows sites of seed collections made in 2011 by the USDA-NRCS Plant Materials Center, Bismarck, North Dakota.

## RESULTS AND DISCUSSION

Due to changing priorities, staffing, land availability, commercial alternatives, short life of the plant and funding, the study was terminated. With development of sour cherries that continues today, there are many varieties of highly productive, edible fruit cherries on the market. The need for sand cherry is currently small. For conservation purposes, a viable alternative would be to find commercial sour cherry varieties capable of withstanding conservation field conditions. Some varieties of sour cherry develop dense thickets which could be beneficial for wildlife and snow management. Height can reach 10 feet and large quantities of fruit are possible. Black chokeberry (*Aronia melanocarpa*) is a species that is adapted to conservation plantings in the Dakota's and Minnesota and produces large amounts of edible fruit. Cultivars are available in the market. Chokeberry is currently being processed for food, wines and pharmaceuticals.

## CONCLUSION

Over the past century, 24 named varieties of sand cherry have been released. Currently only 2-3 ornamental varieties are on the market. Public and research interest appears limited at this time. Western sand cherry seed collected for this study are being stored in a cooler at the Bismarck Plant Materials Center. Seed is available for future research upon request. Amounts range from a dozen seeds to several grams.

Thanks to Field Offices and other agency staff and individuals who assisted with seed collection.

## LITERATURE CITED

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