2008 Progress Report
Hybrid Poplar Initial Evaluation Planting
Field 17, Aberdeen PMC
Loren St. John, Team Leader

The purpose of the Hybrid Poplar Initial Evaluation Planting is to evaluate accessions of hybrid poplar currently being grown in Oregon and Washington for adaptability to northern Utah and the Upper Snake River Plain of southeast Idaho. Hybrid poplar used for fiber, fuel and other lumber products is becoming a large agroforestry business in Oregon, Washington, and western Idaho. Presently there is no commercial production of hybrid poplar in southeast Idaho or northern Utah.

Five accessions of hybrid poplar considered to be very productive and the most cold tolerant were obtained from Mount Jefferson Farms, Salem, Oregon. These accessions were planted in a complete randomized block design with 'Imperial', 'Siouxland', 'Robust', and 'Canam' poplar as standards of comparison. The cuttings planted were dormant, 9 inches long and approximately 3/4 inch in diameter. The standards of comparison were collected at the PMC after spring growth had initiated.

Weed barrier material was installed in the clean-tilled field prior to planting. The cuttings were then hand planted through the weed barrier on May 28, 1998 so that only one bud was above the soil surface. Planting a cutting with only one bud above the soil surface increases the chance that the cutting will develop a single trunk which is desirable for wood production. Weed control needs were minimal because of the installation of weed barrier material. On June 1, 1999 forty-three plots were re-planted that failed to establish the first growing season. The evaluation planting is irrigated with a solid-set handline sprinkler system.

Between-row weed control was accomplished with mechanical cultivation between 1998 and 2000. The between-row area was seeded to a mixture of 'Durar' hard fescue and 'Bighorn' sheep fescue (3.5 pounds PLS per acre of each species) in June, 2001. The grass seeding is well established and controlling weeds.

In March, 2008 before buds began to break dormancy, the trees were pruned to remove all side branches up to a height of 20 – 25 feet on the trees that were well established to encourage a single dominant trunk that is preferred for saw logs. No more than 50 percent of the branches on a single tree were removed. During the growing season sprouts and side branches below the prune line were removed periodically.

The plots were evaluated on September 17, 2008 and the data is summarized in Table 1. An Abney Level was used to measure plant height. Accession no. 9076418 (OP-367) continued to have the best survival. 9076418 (OP-367) was the tallest (mean plant height 18.7 m – 60.0 feet) and also had the largest D.B.H. (mean 36.9 cm – 14.5 inches). This accession continues to appear to be the best adapted to the soil and climate in the Snake River Plains of southeastern Idaho. Accession no. 9076418 (OP-367) also had the best vigor rating from the original planting in 1998. No destructive pests were observed on the plants this year.

Of the plots re-planted in 1999, Robust poplar continued to have the best survival and the tallest average height. Siouxland had the largest mean D.B.H. (21.9 cm – 8.6 inches) of the plots that were re-planted in 1999.

The planting will again be pruned during dormancy in late winter 2009 to reduce side branching and will be evaluated next fall. A summary of the annual evaluations from 1998 to 2009 will be prepared and the plots will be maintained indefinitely to evaluate longevity of the accessions.

Table 1.
2008 Evaluation Data
1998 Hybrid Poplar Initial Evaluation Planting

Accession Number	Number Survived	Percent Survival	Plant Height (m) Minimum	Mean	Maximum	D.B.H. [1/] Mean (cm)	Vigor [2/]
9076418 (OP-367)	8	88.9	17.3	18.7	20.1	36.9	1.3
9076419 (184-411)	1	11.1	--	--	12.8	15.2	4.0
9076420 (50-197)	0	0.0	--	--	--	--	9.0
9076421 (52-225)	4	44.4	15.5	17.6	19.8	14.7	6.0
9076422 (15-29)	2	22.2	7.6	17.4	17.3	11.7	7.4
Canam	2	22.2	6.4	10.2	14.0	14.1	5.5
Robust	3	33.3	16.1	16.8	17.3	25.2	3.0
Siouxland	5	55.5	14.0	16.3	17.3	25.2	3.4
Imperial	5	55.5	12.8	14.1	15.5	27.3	3.6

Re-planted Hybrid Poplar 1999

Accession Number	Number Re-planted	Percent Survival	Plant Height (m) Minimum	Avg.	Maximum	D.B.H. [1/] Mean (cm)	Vigor [2/]
9076418 (OP-367)	1	0	--	--	--	--	9.0
9076419 (184-411)	8	12	--	--	13.4	16.3	5.0
9076420 (50-197)	8	0	--	--	--	--	9.0
9076421 (52-225)	1	0	--	--	--	--	9.0
9076422 (15-29)	4	0	--	--	--	--	9.0
Canam	7	42	11.2	12.3	14.0	16.7	7.3
Robust	6	83	12.8	15.3	17.0	21.0	5.0
Siouxland	4	50	14.0	14.6	15.2	21.9	6.0
Imperial	4	0	--	--	--	--	9.0

[1/] D.B.H. is diameter at breast height (1.4 m from ground surface)
[2/] Rated 1 – 9, with 1 best, 9 worst