

FILE COPY

Date: December 20, 1993

To: Jim Nissen
US Fish and Wildlife Service
Randy Urich
Corps of Engineers

From: Marc A. Schultz
County Resource Agent
UW-Extension, La Crosse County

Re: Summer and Fall of 1993 Swamp White Oak Project

As discussed in the draft memo of May 21, 1993 regarding the Swamp White Oak Project, monitoring of the 1992 and 1993 plantings took place during the summer and fall of 1993. This was a time of unprecedented high water extending through mid to late July and causing the inundation of most of the planting sites for up to a four week time period. Site visits were made by myself and members of the US Army Corps of Engineers Forestry team. The Forestry Technicians reported that during the peak of high water on the Mississippi that the site at No-Name was completely submerged above the top of the four foot tree shelters and that the rest of the sites including Birthday Cake, Gibbs, Shelter, Swampwhite, and Black River sites were also under varying stages of inundation. The impact on Pool 7 was particularly severe because the Black River experienced a 100 year flood early in the summer and the Mississippi River experienced a 16 to 20 year flood following that 100 year flood. As far as Pool 7 is concerned this meant that the water came up with the 100 year flood on the Black and stayed up or rose higher in Pool 7 with the rise of the Mississippi.

On June 10, 1993 all the sites were checked and on Shelter island all of the trees had sprouted. On Birthday Cake Island all of the trees except 39, 46, and 160 had sprouted. On Gibbs all had sprouted, on Swampwhite all had sprouted. There was however more erosion on this island and the lettered trees which are last years quill trees were well ahead of the transplants. On No-Name all had sprouted and the lettered trees were

well ahead of the transplants. At the confluence of the Black, all had sprouted. Attached is a compilation by number or letter of the shelters and their condition as of July 29. The G directly adjacent to the shelter number in parenthesis indicates that the was either a green sprout or green leaves on the tree. The SW indicates that there was still standing water and the T means that the shelter was severely tipped and had to be re-established. There were a few shelters that were either washed away directly or parts of the island eroded away and the tree and tree shelter were lost. Leaves that had developed prior to inundation were dried and crinkled and there were not any trees with green vegetation that had developed prior to inundation.

A site visit was made by Randy Urich and Marc Schultz in late August and at that time it was found that approximately 70% of the trees had developed new sprouts or leaves. Those trees which had emerged from the water earliest had developed substantial leaves on them.

The fall of 1993 proved to be a fairly mild fall with a hard freeze not occurring until the second week of October. Considering that all the trees were in tree shelters even that freeze did not kill them. Many of the trees were observed as green and still growing after that time. There were several fall site visits that were made by Marc Schultz and by Randy Urich to determine the condition of the trees. While many of the trees did sprout new leaves in many cases it was only a single whorl of four or five leaves. However, there were numerous cases where 3, 4, 5, even 6 inches of stem growth was observed. All taking place since July 29. Green attached leaves were observed on the trees as late as the first of November indicating that the tree shelters may provide an extended growing season in years when the trees would require such conditions.

Trees observed in very late November showed many of the leaves were still on and the leaf color ranged from dark green with some red to bright red and in a few cases some of the leaves had dropped off. On December 14, 1993 the tree that was planted at the Brice Prairie Club House and enclosed in a tree shelter still had leaves attached to the stem however the leaves were a deep brown and obviously dead at that time.

The island that suffered the most damage from the flood was Swampwhite Island where a good portion of the island actually eroded away. Erosion was observed at some sites around the base of the tube. Soil material was washed away around the roots of the transplanted tree. Possibly some type of ground cover fabric would help alleviate this problem. These water velocities and depths should not be anticipated to occur very often.

It was a discouraging summer and an encouraging fall given the response of the trees to the severe conditions experienced by them. It still remains to be seen whether or not the trees will survive the winter and re-sprout and grow next spring. Certainly much of the 1993 growing season for root development and stem development was lost. The growth and survival of the trees will be monitored through 1994 beginning with ice out through the growing season and into next fall. If there is more than a 50% survival of the 1992-93 trees that would be very fortunate.

MAS/sam/575MS