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INTERAGENCY RIPARIAN/WETLAND PLANT DEVELOPMENT PROJECT

Second Quarter 1994 Progress Report

Project Staff

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Introduction

Work this quarter (FY 94) concentrated on the cleaning and storage of wetland seed collections, propagation of wetland plants in the greenhouse, willow collections, professional meetings, data evaluation, technical training, and Total Quality Management Training.

Corvallis PMC Wetland Coordinated Study

We are working on a wetland coordinated study with the Corvallis PMC in which we are comparing collection techniques, establishment techniques, maintenance criteria, and accessions of ELPA3 from the Corvallis and Aberdeen area. We will be looking at the interactions of accessions, wild transplants, greenhouse plugs, and wetland environment. Plants from Corvallis will be planted and monitored at the Aberdeen site, and Aberdeen plants will be planted at the Corvallis site. The seeds have been stratified and both sites are scheduled to plant the seeds in April.

Analysis of Evaluation Data

Six species of wetland plants (SCAC, SCMA, SCPU3, JUBA, CANE2, and ELPA3) were planted in created wetland ponds located on the Aberdeen PMC during the summer of 1992. These species were divided into two groups: the saturated soil group (ELPA3, JUBA, and CANE2), and the standing water group (SCAC, SCMA, and SCPU3). Two ponds were dedicated to each group. One pond was planted with accessions of wild transplants, and the other was planted with the same accessions of greenhouse grown plugs.

Wetland plants of each accession of each pond were evaluated for survival, height, basal width, rhizomatous spread, vigor, shoot density, and above ground biomass production. Measurements for each of these factors were averaged and compared within and between the same accession. Data of each species were also compared between treatments.

Survival of SCPU3 greenhouse propagated plugs was significantly greater than wild transplants. The opposite was true of SCMA and CANE2. Rhizomatous spread of CANE2, JUBA, and SCPU3 was significantly greater in greenhouse grown plugs versus wild transplants. Other species showed no significant difference in spread. Above ground biomass production was greater in the greenhouse grown plugs for all species except ELPA3. Flowering was greater in wild transplants versus greenhouse plugs for JUBA and ELPA3. SCAC and SCPU3 was the opposite. Other species showed no significant difference.

For each accession (wild and greenhouse) the mean survival, height, width, rhizome spread, flowering %, vigor, shoot density, and biomass categories were ranked from best to worst. The ranks of the categories for each accession were then averaged to give an overall ranking. The top Five ranking accessions for each species and both treatments (wild and greenhouse plugs) are as follows:

	Greenhouse Grown	Wild Transplants
SCAC	9057597 Hagerman WMA, ID	9057614 Modoc NWR, CA
	9057608 Malheur NWR, OR	9057634 Stillwater, NV
	9057634 Stillwater, NV	9067393 Ogden Bay WMA, UT
	9057577 Ft. Boise WMA, ID	9057582 Bruneau River, ID
	9067395 Bear River MBR, UT	9057597 Hagerman WMA, ID
SCMA	NA	NA
SCPU3	9057635 Mahala Slough, NV	NA
	9057610 Malheur NWR, OR	
	9057642 Railroad V. WMA, NV	
	9057648 Market Lake WMA, ID	
	9057578 Ft. Boise WMA, ID	
JUBA	9057580 Roswell WMA, ID	9057580 Roswell WMA, ID
	9057632 Stillwater NWR, NV	9057632 Stillwater NWR, NV
	9057609 Malheur NWR, OR	9057613 Modoc NWR, CA
	9057589 Minidoka NWR, ID	9057617 Minidoka NWR, ID
	9057617 Railroad V. WMA, NV	9057583 CJ Strike WMA, ID
ELPA3	9067387 Ruby Lake NWR, NV	9057581 Montour, ID
	9057604 Cow Lakes, OR	9057585 Bruneau Dunes, ID
	9057607 Malheur NWR, OR	9057601 Ponderosa SP, ID
	9067389 Mud Lake WMA, ID	9067390 Willard Bay SP, UT
	9057585 Bruneau Dunes, ID	9057604 Cow Lakes, OR
CANE2	9057612 Modoc NWR, CA	9057639 Ruby Lake NWR, NV
	9057606 Malheur NWR, OR	9057655 Willard Bay SP, UT
	9057592 Market Lake WMA, ID	9057650 Trout Creek, NV
	9057647 Trout Creek, NV	9057652 Lone Pk. Nursery. UT
	9057652 Ruby Lake NWR, NV	9067382 Grays Lake NWR, UT

These data are still being analyzed and should be complete by the next progress report. We will keep you posted as to our findings.

USBR Seagull Bay

A new nursery of willows and cottonwoods will be going in at Seagull Bay. The old nursery, at Fenstermaker Bay, has been very difficult to maintain. A broken soaker hose has caused many of the trees to die. The new nursery will have better irrigation and easier access. We will be putting in 75 cuttings. Three species have been collected, 25 of each, Laurel Willow, White Willow, and Souixland Cottonwood.

Willow Collections

There has been some concern about using Black Willow in our plantings since it is not native to the intermountain region. Scoulers Willow has also been looked at because it's habitat is more of a drier upland species. For these reasons and after discussions with several cooperators, we have decided to drop these species.

Four new species, for testing and increase, are in the process of being collected. The species are Salix drummondiana, Salix amygdaloides, Salix lemmonii, and Populus trichocarpa. At least ten accessions of each will be collected. The same procedures that were developed last year will be used to plant and evaluate these cuttings. As of now, we have 26 of the projected 40 collections done. The Lemmon Willow has been somewhat difficult to collect due to the elevation it grows at. Several cooperators have assisted us with sites, identification, and collecting. We appreciate your help tremendously!

ID DOT

A planting demonstration using the Stinger will be conducted on May 10-11 on a small section of Beaver Creek, in the Centennial range, near the Montana border. We are going to collect some large cuttings of native willow species to be planted with "The Stinger" on a riprapped section. We will be using this project for a demonstration ID DOT Environmental Planners.

Cutting Trials

A storage life study is underway. We are collecting cuttings to be stored over the next six months and then grown out monthly thereafter, to see how long these cuttings will remain viable. We will be looking at root growth and hormonal treatments.

USBR H-Drain Project, Paul, ID

The H-Drain Constructed Wetland System is in cooperation with the Minidoka Project, USBR, Burley, Idaho. This project deals with the planting of both wetland plants and willows in a CWS designed and constructed by the USBR. Last November we planted about 2000 plants in the drain. This spring we visited the site and found that most of the plants had been vandalized. USBR is going to fence the site and try to educate the public on the purpose of the planting.

As of now, 1000 Coyote willow cuttings have been collected and will be planted in the CWS to test their effectiveness in nutrient removal. We have also planted several thousand wetland plants in the greenhouse that will also be planted this spring.

PMC Created Wetland Ponds

We are considering transplanting some or all of the SCMA and SCPU3 from the PMC created wetland ponds to the USBR H-Drain site this spring. For some reason, the SCMA accessions died back in the ponds soon after being planted in the summer of 1992. The few surviving plants then spread rhizomatously throughout their section of the ponds making it impossible to identify the accessions. These plants would be of great value at the H-Drain site, but are of little value to us as far as evaluation of individual accession success is concerned. They may be able to give us some information on spread as a species. Please let us know if you have any comments with this proposal.

Poulson Constructed Wetland System Demonstration Site (CWS)

The Final Polishing Filter which was constructed last November sustained some damage this spring due to run off. We should be able to get the damage repaired when Phase 2 of the construction begins. Bids for phase 2 will be solicited in June with construction to be completed in August. The top three accessions of each of the six species from our created wetland pond evaluations were planted in the greenhouse during February. These plants are scheduled to be planted in a completely randomized block design as soon as Phase 2 has been completed. Data will be collected on spread, growth, reproduction, and nutrient uptake.

USBR Smith/Sterling

Construction at these two sites is nearly complete. Due to weather conditions last fall, they were unable to complete a retaining wall and head gate at the Smith site. These will be completed as soon as the water level drops this summer. Willow cuttings have been collected and plants are being propagated at this time. We have scheduled planting at both sites for this summer.

Nature Conservancy Constructed Wetland System, Hagerman, ID

Construction of the Nature Conservancy Constructed Wetland System is almost complete. Planting of the Primary Grass Filter and the Shallow Wetland will be started the 3rd week in April. Several hundred ELPA3, JUBA, SCPU3, and SCMA from the project will be used on the site in addition to plants grown by Express Farms at Melba, ID.

Planting Wetland Plants - Training Opportunities

With all the CWS's we are involved with this season, there will be ample opportunities, for anyone who is interested, to gain knowledge and experience in the collection, propagation, and planting of wetland plants. This would be a great opportunity to get out of the office, breath some fresh air, and let mother earth ooze up between your toes. Please let us know if you, our anyone you know, is interested in participating.

Memorandum of Understanding (MOU) with University of Idaho

The Project has signed a MOU with the University of Idaho to cooperate on the Poulson Constructed Wetland System. Brad King, Irrigation Engineer, will be doing the Water Quality work on the CWS. This agreements allows both agencies to cooperate more effectively.

Presentations (posters, papers, talks)

We presented a number of talks, papers, and poster sessions this past quarter. Below is a list of our presentations.

Hoag, J. C., M. Sellers, and M. Zierke. January 24-26, 1994, Constructed wetland systems for water quality improvement of irrigation wastewater in the arid and semi-arid west. Poster session, Water Quality 2000, Boise, ID.

Hoag, J. C., M. Sellers, M. Zierke, and R. Schmidt. 1994. Constructed wetlands systems for water quality improvement. Paper to be presented at the Annual Wildlife Society Meeting, Albuquerque, N.M.

Hoag, J. C. February 23, 1994. Riparian restoration methods and plant material development for riparian areas. BLM State Office, Boise, ID.

Hoag, J. C. 1994. Constructed wetlands systems for water quality improvement. Utah Water Users Association Annual Meeting, St. George, UT.

Hoag, J. C. 1994. Selection and acquisition of Woody Plant species and Use of "The Stinger" for shoreline erosion control. USA Corps of Engineer Shoreline Erosion Control Workshop, Denton, Texas.

Hoag, J. C., and M. Sellers. June 2, 1994. Use of greenhouse propagated wetland plants versus live transplants to vegetate constructed or created wetlands. Paper to be presented at the Society of Wetland Scientists Annual Meeting, Portland, OR.

Germination Studies

A comprehensive germination study of CANE2 has been started. A multiway ANOVA will be used to test what the interactions of such factors as accession, stratification method, perigynium removal, and scarification has on rates of germination. Hopefully, this information will prove helpful in increasing the rate of germination. If anyone has any information/ideas on Carex germination they would like to share, it would be a big help.

Technical Training Received

Mike Sellers and Mike Zierke received their Idaho pest consultants license this past February. The entire staff received training on the use of Prelude, the government spreadsheet and database program. We also had a training session on MS Word (Unix) to increase our work efficiency.

Total Quality Management (TQM) Training

We attended a Total Quality Management workshop this March and found it very helpful. We are committed to serving our customer and are striving for 100 % conformance to customer expectations. We would appreciate all feed back, good and bad, so that we may better meet our customer/cooperators expectations.

Meetings attended

We have attended several Plant materials committee meetings this year. Idaho had its Plant Materials Committee meeting in Boise to discuss SCS needs. It also had its Interagency Plant Materials Committee meeting where different agencies reported on what they are doing in relation to plant materials. We also attend the same committee meeting in Provo, UT. Presentations were made on Constructed Wetland Systems and Riparian planting techniques.

Technical Assistance Provided

Technical assistance was requested and provided to the following people and organizations:

* USA Corps of Engineers, Waterways Experiment Station, Riparian section, Vicksburg, MS
* USA Corps of Engineers, John Carr Reservoir, Boydton, VA - Stinger planting
* Nature Conservancy, Cindy Lunte, Upland and Wetland plant recommendations, 1000 Springs CWS
* USDI Bureau of Reclamation, American Falls Reservoir
* USDI Bureau of Reclamation, Chris Ketchum, Minidoka Project - Seagull Bay, Poulson CWS, Smith Drain, and Sterling Wetlands

* Three Rivers RC&D, Paula Jones - Grants , research proposals, alternative funding, proposals
* Idaho Fish and Game - Sterling Wildlife Management Area, Seagull Bay on AFR
* Idaho Dept. of Transportation - Planning for a Riparian Restoration training session for their Environmental Planners
* Utah Water Users Association - workshop on wetland plants, uses, and revegetation
* USFS Lucky Peak Nursery, Kay Beall - potential CWS on the nursery ground to filter field runoff
* Idaho Fish and Game - Saint Charles Creek, riparian rehabilitation consultation
* Corvallis Plant Materials Center - SCS Western Region Coordination study
* Maryland - National Capital Parks and Planning Commission, Jeannie Allen, literature mailing
* Inter-fluv, Bryce Romig, Bozeman, MT, wetland plant propagation consultation
* Chemical Nuclear Geotech., Lisa Lesperance, Grand Junction, CO, Created wetland species selection consultation
* Express Farms, ELPA3 seed
* Mike Henderson, Lamb-Weston Inc. - Interest in the project and information on CWS.
* R. White, Southern Tier Consulting, N.Y. - Info on Project
* C. Zimmerman, Colorado Soil Conservation Board - Info on Stinger and riparian plantings
* L. Wheaton, Boise - Info on cottonwood propagation
* Water Quality 2000 Conference - presented a poster paper on CWS
* V. McMasters, SCS, Lewiston, ID - Wetland plant propagation
* South Bonneville SCD Board meeting - Revegetation of the Blackfoot river with woody plants
* Gooding SCS FO - Information on wetland evapotranspiration rates.
* Valley SCD - Cascade Reservoir problems.
* Kelly Ellis, Provo, UT - Info on Stinger and riparian plantings.
* Bill Henry, Stillwater NWR - Stinger and riparian plantings.
* M. Hilliard, BLM State Office - Possible tour of ponds
* David Webb, Mt. Shasta, CA - Riparian plantings
* Idaho Fish & Game, J. Connelly - Field Border plantings along fence lines.
* Jim Johansen, BLM Seed Warehouse - Seed source addresses
* Nancy Shaw, USFS - Willow locations and willow collections
* E. Crowe, USFS - Baker City willow locations and habitat
* R. Clauzwitz, USFS - Habitat types with willows and wetland plants.

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