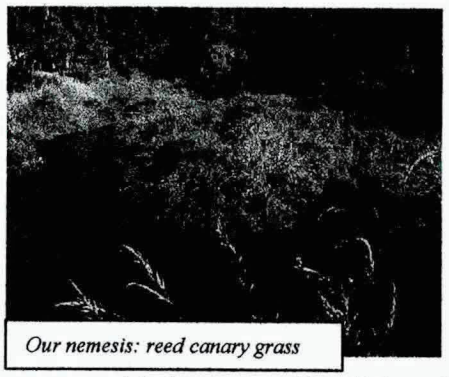
Canby Community Park Habitat Restoration Project

City Of Canby

Metro Regional Parks and Greenspaces
Restoration Contract # 922546

December 2000-June 1, 2003

Canby Community Park...



Our nemesis: reed canary grass

.....in the City of Canby, adjacent to the Molalla River; wetlands connected to the river via a stream fed by seeps and springs. The stream flows into a pond and passes under the road via a culvert...

The objective of our project was to begin the first phase of a multi-phased project to restore and enhance the entire riparian area and associated wetlands within the approximate 3.5 acre site in order to provide better quality fish and wildlife habitat and develop long term partnerships both at the local and regional levels.

The wetlands was (and still is) overgrown with reed canary grass. We've learned a thing or two about that plant, which I will address later in the narrative. The pond is shallow (max of 9') and in the summer the water gets very warm. The stream flows into the pond prior to passing through the culvert and on to the river. We are exploring measures to mitigate the negative impacts of the pond on stream temperature and water quality. We have started re-vegetating the pond bank, and are looking at re-engineering the culvert and/or separating the pond from the stream in future phases. Fish and Wildlife is providing guidance on this subject and we will continue to seek their advice on any future activities related to mitigation measures.

Meanwhile we will continue to monitor the impact of our restoration efforts on water quality, particularly stream temperature. Tony Crawford's Team Orion geography students at Ackerman Middle School are monitoring water quality at the site and will continue to do so throughout the restoration process. Ongoing results of their sampling are posted on their website. (www.ackerman.canby.k12.or.us.)

Beginning in February of 2001 we began a community wide exploration of possible partners for the project, and developed a restoration and monitoring plan with assistance from Environmental Consultant Loverna Wilson. Public and private presentations, cable access talk shows, pubic service announcements, newspaper articles and website exposure have helped create support for the project. Cultivating new partners and the care and feeding of existing partners is an on going process, and key to the long term success of our efforts.

During the preliminary planning process it became apparent that due to the location of the wetlands (not apparent from the main area of the park) a more visible wetland demonstration site would be advantageous. First of all, it would attract the attention of park visitors and hopefully pique their curiosity about the restoration project, and in doing so provide the public with learning opportunities via interpretive signage, volunteer opportunities, etc. We hoped increased awareness would increase support for the project, and we believe this to be true.

The other thing we have done is left flagging material on the plants. Because the grass is so aggressive, we have had a difficult time finding the new plantings even a few months after we have planted them. The flagging helps us located the plants. We continue to retrofit plants with flags and bags.

The second thing I have learned is that I could have spent an entire year just cultivating partnerships. I did not allocate enough of my hours to that task. Since I have several other projects I'm working on I had to get good at juggling my time. In retrospect I would have concentrated only on setting up the initial project partners, and also recruited an intern to help with project coordination etc.

The third thing I've learned, which is related to the above comment, is that restoration can be a full time job if you actually explore all the" possible" connections. The opportunities are rather overwhelming. Our project has the on the ground component for sure...the prepping planting etc, but there are opportunities for website development, plant propagation, marketing, publicity, GPS, mapping, interpretive signage and graphic arts, photography, videography, oral history, geography, watersheds, wildlife, landscape design, construction, recreation, etc etc. Really it seems like the only limitation is time. Of course I have no solution to this other than to hope that communities and policy makers can value the connections enough to allocate funds for such a person.

Lastly, as the project has grown to include such a diverse group of participants, it becomes ever more important to have a systematic way of documenting involvement in addition to the traditional sign in sheets etc. I now have a spreadsheet I share with my partners so they can easily provide the documentation I need. Volunteer hours are easy to underestimate and or forget altogether if you are not directly managing them.

In conclusion we are grateful we have received this grant seed money, and I believe we are going to be able to continue the restoration process with the partners we have developed during phase I, and with the new partners we will be able to bring on board for the next phases. Our Agriculture teacher at Canby High School has a new state of the art facility for propagating plants and his students are now propagating native plants for our future plantings. We expect the high school to provide 1000 plants for our fall planting this year. We will support the school venture by purchasing the plants at a reduced cost with donations from our local community. Those are the types of partnerships that add value to our community and insure the success of or project. Again thank you for your support.

Tony Crawford's Ackerman Middle School students

Canby Community Park Grant Funded Plants

Quantity	Plant Name
69	Ash
73	Vine Maple
72	Black Cottonwood
52	Western Red Cedar
30	Big Leaf Maple
93	Willow
29	Red Alder
18	Black Hawthorne
27	Pacific Crabapple
22	Chokecherry
5	Western Flowering Dogwood
89	Twinberry
29	Serviceberry
93	Nootka Rose
50	Thimbleberry
99	Indian Plum
31	Nine Bark
44	Red Osier Dogwood
37	Douglas Spirea
15	Elderberry
19	Snowberry
30	Oceanspray
27	Salmonberry
8	Gooseberry
13	Mock Orange
2	Stinking Currants
15	Sweet Gale
5	Cascara
186	Saw beak sedge
66	Operta sedge
160	Soft rush
154	Hard-stemmed bulrush
218	Slough sedge
132	Spreading rush
168	Dagger-leaf rush
50	Baltic rush
93	Small-fruited bulrush
130	Western Mannagrass
56	Spike rush
182	Tufted hair grass

MONITORING PLAN FOR PHASE I

Vegetation

1. Establish photo points:
   a) At the 100' X 100' initial planting site
   b) Along the stream bank adjacent to interpretive site
   c) At the interpretive site
   d) At the first foot bridge

2. Map the photo points using GIS

3. Take initial photos, and then, at a minimum, yearly photos in June of each year.
   a) Assess dominant plant species on an annual basis during the optimal growing portion of the season if possible
   b) Document species diversity and relative proportion of native and non-native species
   c) Document which species seeded and/or planted
   d) Evaluate plant health and, if necessary, replace, repair, and/or protect missing or damaged plants
   e) Monitor reed canary grass and add mulch in a bag as necessary.

Water Quality

1. Establish water quality testing points:
   a) Test at a minimum on an annual basis
   b) Graph/compare results
   c) Test for:
      - Conductivity Dissolved
      - Air Temperature
      - Total Dissolved Solids
      - Water Temperature
      - PH
      - Turbidity

   Phase I Water Quality Testing Points:

   1. First foot bridge
   2. Middle foot bridge
   3. Upper foot bridge

Wildlife Utilization

1. Compile baseline species diversity list
   a. Assess relative proportion of native and non-native species using the site
2. Survey annually and update species list/nesting locations etc.

Photo points for phase I: Canby Community Park Habitat Restoration Project

Canby Community Park Habitat Restoration
Planting Recommendations

By Loverna Wilson, Wetland Ecologist
P.O. Box 2284, Corvallis, OR 97339 (541-758-3403)

There are three characteristics that define a wetland: **hydrology** (how much water), **soil** (composition, color), and **vegetation** (plant communities). These three interrelated characteristics are important to consider when designing, planting, and maintaining your wetland plots.

Hydrology: the ground must be saturated or flooded long enough during the growing season to become anaerobic (no oxygen in it).

- The site needs to be flat, with a little ridge around the perimeter, so water will stay on the site.
- You'll need an irrigation system, with a way to control the amount of water delivered to various communities. Some will need more water, while others will need less.
- You'll only need to irrigate in the spring. Most Oregon wetlands are seasonal wetlands. They dry out in the summer because we don't have summer rainfall like the eastern part of the country does. You can mimic natural systems by having the sites saturated or ponded early in the spring (March-April), then start reducing water till the sites are dry by the end of June.
- During the first 2-3 years, you may need to water during the hot summers until there is good root establishment. This is especially true of the trees and shrubs.

Soil: High clay content in the soil may keep water from draining away, holding it on or near the surface long enough to become anaerobic. Soil chemistry changes when there is no oxygen. Over time, soils change color from brown to gray or black, sometimes with rusty red spots in it.

- If the soils on your site are well drained, you will need to irrigate more frequently to keep things wet enough in the spring.
- If there is a clay layer or high clay content, the site will hold water longer, and therefore, require less water to maintain saturated conditions.
- If your soils are not hydric, they will develop hydric characteristics if they are kept wet long enough each spring.

Vegetation: Plant communities are different on soils with no oxygen. Most plant roots get their oxygen from air pockets and oxygenated water in the soil. Only species adapted to getting oxygen from the air down to the root cells can survive in wet, anaerobic conditions.

Canby Community Park Habitat Restoration
Planting Recommendations

Suggested Wetland Plant Communities

Forested Wetland – wetness category 1

The ash woodland should be at one end of the demonstration site, so it has room to spread, while leaving space for other communities. Initially, several ash seedlings could be planted, but they should be thinned down to one or two as they grow larger. It should be kept quite wet until early summer so the skunk cabbage will survive. Best to have ponded water until end of April or May.

Oregon ash	*Fraxinus latifolia*	FACW
Slough sedge	*Carex obnupta*	OBL
Skunk-cabbage	*Lysichiton americanum*	OBL

Shrub Wetland – wetness category 1-2

This community should be on the edge of the forested site. The species will eventually grow in preferred habitats along the gradient from wooded to open areas. Water level similar to the ash/slough sedge/skunk cabbage community.

Pacific willow	*Salix lucida* spp. *lasiandra*	FACW+
Sitka willow	*Salix sitchensis*	FACW
Douglas spiraea (hardhack)	*Spiraea douglasii*	FACW
Slough sedge	*Carex obnupta*	OBL

Shrub Wetland – wetness category 2

This shrub community can be placed in one or two places along the line of communities. This community needs saturated soils, but does not necessarily require so much ponded water as the previous shrub community.

Pacific willow	*Salix lucida* spp. *lasiandra*	FACW+
Sitka willow	*Salix sitchensis*	FACW
Red-osier dogwood	*Cornus stolonifera*	FACW
Pacific ninebark	*Physocarpus capitatus*	FACU-
Slough sedge	*Carex obnupta*	OBL

Vernal Pools within the wet prairie (shallow depressions) – wetness category 2

Small depressions in the clayey wet prairies hold shallow water in the early spring, making it slightly wetter than the prairie community. The pools develop a characteristic community of grasses, sedges, and ephemeral flowers including the species listed below. Careful soil preparation, leaving one or two shallow depressions in the flat wet prairie community, should support a vernal pool community.

American sloughgrass	*Bechmannia syzigachne*	OBL
Water foxtail	*Alopecurus geniculatus*	OBL
Dagger-leaf rush	*Juncus ensifolius*	FACW
One-sided sedge	*Carex unilateralis*	FACW
Common downingia	*Downingia elegans*	OBL
Fragrant popcornflower	*Plagiobothrys figuratus*	FACW
Marsh speedwell	*Veronica scutellata*	OBL

Drier transitional and upland areas on the wetland and riparian edges

Any combination of these species can be planted along the upland edge of the wetland plots. Use the wetland status code to decide which species should be on the wetter end and which on the drier sites of this transitional zone.

Black cottonwood	*Populus trichocarpa*	FAC
Red alder	*Alnus rubra*	FAC
Black hawthorn	*Crataegus douglasii*	FAC
Nootka rose	*Rosa nutkana*	FAC
Common snowberry	*Symphoricarpos albus*	FACU
Common camas	*Camassia quamash*	FACW
Cow-parsnip	*Heracleum lanatum*	FAC+
Western buttercup	*Ranunculus occidentalis*	FAC
Large-leaved avens	*Geum macrophyllum*	FACW-

Suggested Pond Plant Communities

Shoreline Wetland – wetness category 1

Water sedge	*Carex aquatilis*	OBL
Small-fruited bulrush	*Scirpus microcarpus*	OBL
Soft rush	*Juncus effusus*	FACW

Pond edge, shallow water

Hard-stemmed bulrush	*Scirpus acutus*	OBL
Narrow-leaf burreed	*Sparganium emersum*	OBL
Broad-leaf cattail*	*Typha latifolia*	OBL

Canby Community Park Habitat Restoration
Planting Recommendations

Plant Species List

Type	Common Name	Scientific Name	Status
TREE	Alder, red*	*Alnus rubra*	FAC
	Cottonwood, black*	*Populus trichocarpa*	FAC
	Ash, Oregon*	*Fraxinus latifolia*	FACW
SHRUB	Dogwood, red-osier*	*Cornus stolonifera*	FACW
	Hawthorn, black*	*Crataegus douglasii*	FAC
	Ninebark, Pacific*	*Physocarpus capitatus*	FACU-
	Rose, Nootka*	*Rosa nutkana*	FAC
	Snowberry, common*	*Symphoricarpos albus*	FACU
	Douglas spiraea, hardhack*	*Spiraea douglasii*	FACW
	Willow, Pacific*	*Salix lucida* spp.*lasiandra*	FACW+
	Willow, Sitka*	*Salix sitchensis*	FACW
GRASS	Barley, meadow	*Hordeum brachyantherum*	FACW-
	Bentgrass, spike	*Agrostis exarata*	FACW
	Foxtail, meadow	*Alopecurus geniculatus*	OBL
	Hairgrass, tufted	*Deschampsia cespitosa*	FACW
	Mannagrass, northwestern	*Glyceria occidentalis*	OBL
	Sloughgrass, American	*Bechmannia syzigachne*	OBL
SEDGE	Bulrush, hard-stemmed	*Scirpus acutus*	OBL
	Bulrush, small-fruited	*Scirpus microcarpus*	OBL
	Spikerush, creeping	*Eleocharis palustris*	OBL
	Sedge, dense	*Carex densa*	OBL
	Sedge, hare's-foot	*Carex leporina*	FACW
	Sedge, saw-beak	*Carex stipata*	OBL
	Sedge, slough	*Carex obnupta*	OBL
	Sedge, water	*Carex aquatilis*	OBL
	Sedge, wooly	*Carex pellita (lanuginosa)*	OBL
RUSH	Rush, dagger-leaf	*Juncus ensifolius*	FACW
	Rush, slender	*Juncus tenuis*	FACW-
	Rush, soft	*Juncus effusus*	FACW
	Rush, spreading	*Juncus patens*	FACW
FORB[1]	Avens, large-leaved	*Geum macrophyllum*	FACW-
	Brooklime, American	*Veronica americana*	OBL
	Buttercup, celery-leaf	*Ranunculus sceleratus*	OBL

Sisyrinchium californicum	Golden-Eyed Grass
Athyrium filix-femina	Lady Fern
Vancouveria hexandra	Inside-Out-Flower
Symphoricarpos albus	Creeping Snowberry
Mahonia rep.	Creeping Oregon Grape
Lonicera involucrata	Twinflower

Water Quality Data
Molalla River Tributary at Community Park
Canby, Oregon

Data collected by Team Orion students of Ackerman Middle School.

Upper Bridge Location

Date	Air Temp	Water Temp	River Level	pH	Turbidity	T.D.S.	Conductivity	Dissolved 02
2/11/03	14.8	11.2	n/a	6.91	2.21	103.9	220	n/a
2/18/03	12.5	11.3	n/a	7.06	2.82	101.7	215	n/a
2/25/03	12.6	11.0	n/a	7.10	2.60	12.5	214	n/a
3/4/03	9.8	10.5	n/a	7.20	1.20	107.0	224	n/a
3/1103	15.3	12.3	n/a	6.84	2.85	105.7	221	n/a
4/8/03	21.4	14.2	n/a	6.69	1.25	110.5	231	n/a
4/10/03	14.2	12.7	n/a	6.88	1.26	107.1	224	n/a
4/15/03	16.5	13.5	n/a	6.99	2.18	111.2	132	n/a
4/22/03	14.6	13.5	n/a	7.00	1.23	112.1	234	n/a
4/29/03	17.8	13.4	n/a	6.85	1.61	110.8	232	n/a
5/1/03	23.6	15.2	n/a	6.94	2.42	111.4	233	n/a
5/6/03	16.5	13.7	n/a	6.92	1.97	112.6	234	n/a

Middle Bridge Location

Date	Air Temp	Water Temp	River Level	pH	Turbidity	T.D.S.	Conductivity	Dissolved 02
2/11/03	15.1	11.2	n/a	7.08	2.14	101	211	n/a
2/18/03	11.4	11.4	n/a	7.11	3.65	96.2	201	n/a
2/25/03	12.6	10.9	n/a	7.14	5.31	101.6	212	n/a
3/4/03	10.1	10.7	n/a	7.28	1.57	104.6	219	n/a
3/11/03	13.7	13.4	n/a	6.91	1.78	105.7	221	n/a
4/8/03	21.6	14.2	n/a	6.69	1.20	109.0	227	n/a
4/10/03	14.5	12.9	n/a	6.90	1.45	107.9	225	n/a
4/15/03	15.0	13.4	n/a	7.05	1.22	109.4	228	n/a
4/22/03	14.5	13.4	n/a	7.08	1.17	111.2	232	n/a
4/29/03	15.8	14.6	n/a	6.86	1.47	110.5	231	n/a
5/1/03	23.1	15.0	n/a	7.02	2.72	111.3	232	n/a
5/6/03	16.4	13.5	n/a	7.01	1.83	111.6	233	n/a

Lower Bridge Location

Date	Air Temp	Water Temp	River Level	pH	Turbidity	T.D.S.	Conductivity	Dissolved 02
2/11/03	13.7	11.3	n/a	7.01	1.90	97.6	204	n/a
2/18/03	10.4	10.4	n/a	7.11	4.16	96.7	202	n/a
2/25/03	11.2	10.6	n/a	7.15	2.63	96.2	201	n/a
3/4/02	10.0	10.7	n/a	7.15	2.20	97.2	204	n/a
3/11/03	12.2	13.1	n/a	6.93	1.68	97.8	204	n/a
4/8/03	19.7	15.4	n/a	6.72	0.877	99.2	207	n/a
4/10/03	13.4	13.1	n/a	6.81	1.72	97.3	203	n/a
4/15/03	15.3	14.9	n/a	7.06	0.92	99.2	207	n/a
4/22/03	14.8	14.7	n/a	7.08	1.25	100.8	211	n/a
4/29/03	17.3	15.2	n/a	7.02	.9	99.2	207	n/a
5/1/03	22.9	17.0	n/a	7.05	1.25	100.7	210	n/a
5/6/03	16.9	15.3	n/a	7.06	1.12	99.6	208	n/a

Note: Air and water temperature are measured in Celcius degrees. Turbidity is measured in NTU's. T.D.S. stands for Total Dissolved Solids and is measured in milligrams per liter. Conductivity is measured in ms/cm (microsiemen per centimeter). River level is recorded in feet.

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