

# Garry Oak Work Session—WNPS

Summary of Morning Speakers' Presentations

Cornet Bay, Whidbey Island, WA

March 4, 2005

Fred Weinmann, President of the Washington Native Plant Society, opened the Work Session by explaining the purpose of the session. Oak woodlands and prairies have been identified as one of three focus areas for the Society. The Work Session was organized so that WNPS members can become more knowledgeable about Garry oaks (*Quercus garryana*), interact more with the professional botany community, and provide informed input on Garry oak issues.

## **Ecological Overview and Status of Garry Oak and Associated Prairie Ecosystems**

**Christopher Chappell, Vegetation Ecologist,  
Washington Natural Heritage Program**

Chris Chappell presented a thumbnail sketch of Garry oak ecology, a description of associated ecosystems, and a summary of the status of Garry oak ecosystems today in Washington.<sup>1</sup> He noted that Garry oaks are a species with wide ecological tolerance, as drought-tolerant as any of our trees, growing to the edge of the shrub-steppe. They are also capable of tolerating some winter flooding.

### **Ecology**

**Reproductive Strategy:** Trees are wind pollinated. Acorns are produced and disseminated by gravity and by animals. When the tree is severely damaged, i.e. by fire or logging, the root crown will sprout.

Acorns germinate when wet. (Several people reported that acorns were viable even when they had holes in them.) Acorns are much attacked, including by insects while on the tree. There is much predation by birds and mammals.

Sprouting from the root crown occurs after fires and is related to the age of the tree. The root crown will sprout more profusely if the tree is less than 100 years old.

**Growth and mortality:** Seedlings from acorns grow slowly, whereas root crown sprouts grow rapidly. Garry oaks grow to about 500 years old, and are subject to root and butt rot as they age.

Fire has been an important ecological process for Garry oaks. Relatively frequent, low intensity fires benefit tree growth. As trees age, the bark thickens and becomes fire resistant. Leaves are also fire resistant. Fires have mainly been absent since European settlement. Oak woodlands have been encroached on by conifers, especially Douglas fir (*Pseudotsuga menziesii*), and by exotic plant species.

### **Associated Ecosystems**

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<sup>1</sup> Chris referred to "Distribution and decline of native grasslands and oak woodlands in the Puget Lowland and Willamette Valley ecoregions, Washington," by Chappell *et al.*, in *Conservation of Washington's Rare Plants and Ecosystems*, published in 2002 by the Washington Native Plant Society and available from WNPS.

West Side Oak Woodlands: These communities are relatively fire dependent. Soils are usually well-drained and topography varies. Garry oaks usually occur in a mosaic with upland prairies or balds. Douglas fir is seral on most of these sites.

Upland Prairie and Oak Savannah: These systems are totally fire dependent and are characterized by dry, relatively deep soils. Fires have disappeared since European settlement. There are still some significant areas of upland prairie in the South Puget Sound area, but almost no true oak savanna remains.

Herbaceous Balds and Bluffs: These are areas with shallow soils or bare rock outcrops on steep slopes, typically south- and west-facing. Areas have smaller openings than prairies, though they may have once been larger. They are not as fire dependent as other Garry oak ecosystems. There are a lot of balds in the Olympic rainshadow and especially on the San Juan Islands.

Willamette Valley Wet Prairies: Willamette Valley wet prairies totally depend on fires. They formerly existed in southwest Washington, where a few small areas remain though most have been converted to agriculture. They have deep, seasonally flooded soils, and occur in a mosaic with upland prairies and oak savannahs. They tend to be invaded by ash (*Fraxinus latifolia*) when fires are excluded.

East Side Oak Pine Woodlands. These areas occur in Klickitat and Yakima counties, where Ponderosa pine (*Pinus ponderosa*) is a major component. Oak-pine woodlands form a mosaic with grasslands, shrub-steppe, or steppe plant communities. The areas tend to be large and Douglas fir is not present. Understory species differ from the west side woodlands.

### **Status of Garry Oak Ecosystems in Washington**

On the east side of the Cascades, in Klickitat and Yakima counties, Garry oak-pine woodlands comprise approximately 70,000 acres.

In the Puget Trough Garry oak canopies (urban and other) comprise 20,000 acres, and grassland (regardless of condition) consists of 20,000 acres. A further breakdown is as follows:

Oak-dominated Woodlands	5,000 acres
Garry oak co-dominant with Douglas fir	>9,000 acres
Scattered oak	1,300 acres
Native grassland	< 3,000 acres
Semi-native grassland (native and non-native species)	> 9,000 acres
Exotic grassland	4,500 acres
Grassland (not checked)	2,000 acres

The historic extent of grasslands in the Puget Trough is estimated to have been 250,000 acres of prairies and 25,000 acres of balds. About 5 percent of pre-European settlement grasslands remains. Threats to Garry oak consist of non-native plants, Douglas fir invasion, lack of oak recruitment (long-term), urbanization, logging practices (especially on the east side), and agriculture (grazing and land conversion).

In response to a question about the distribution of Garry oaks in the San Juans, i.e., why they occur in some areas but not other very similar areas in terms of habitat, Chris said he has not observed any ecological reason for these apparent anomalies in distribution. Some people speculate that Native Americans actually spread the oak.

**Current and Ongoing Research**  
**Scott Pearson, Westside Ecologist**  
**Natural Areas Program, Washington Department of Natural Resources**

Scott prefaced his presentation by stating that he would be reporting mainly on prairies.

**The effects of a prescribed burn on golden paintbrush (*Castilleja levisecta*), by Scott Pearson and Peter Dunwiddie**

The golden paintbrush originally occurred on 12 sites in Washington and southern British Columbia, where it grows on lowland prairies historically maintained by Native American burning. The golden paintbrush is federally listed as threatened, and it is subject to a federal recovery plan and reintroduction plan. Major threats are agriculture, development, invasive species, and grazing animals. Florence Caplow has developed a reintroduction plan, and Florence Caplow and Chris Chappell have developed a site characterization report, which has just been published.

Two previous studies suggested that populations of golden paintbrush increase following burning. This study explored the question whether fire is an effective tool in enhancing the viability of populations. Research was carried out at Rocky Prairie, the largest extant population of golden paintbrush (30 acres, 15,000 plants). Four replicate plots were established, and all plants were counted in 10 permanent transects. The study tracked 50 tagged plants in each plot. Half of each plot was burned in September 1997. Burned plots were paired with controls and monitored through 2004.

Results were as follows. The population size of golden paintbrush increased on the burn area and declined on the control area. Fire had no effect on plant stem height or fruiting, compared to the control. Fire slightly increased flowering (short term), compared to control. Fire resulted in more flowering (more plants flowered and more seeds were produced) as opposed to vegetative reproduction. There was no difference in mortality between the burn area and the control. The number of plants increased on the burn site.

The study concluded that burning has little impact on the vigor of individual plants. Population increased on the burn area because more plants flower, more seed is produced, and there is more bare ground allowing safe seed sites. There may possibly be lower long-term mortality on the burn site. Resulting management recommendations were to burn every 6 to 12 years and to count the number of flowering plants every 3 to 4 years.

**Experimental introduction of *Castilleja levisecta* outplanting with controls, by Scott Pearson and Peter Dunwiddie**

Three treatments were applied to outplanted golden paintbrush, which was planted with and without a host plant. The treatments were burn, soil scarification, and control. The study found that burns produced a few more seedlings than scarification or the control. Fire helps reproduction but does not change survivorship.

### **Streaked horned lark habitat selection and restoration, by Scott F. Pearson**

The streaked horned lark (*Eremophila alpestris strigata*) is a recognized subspecies of horned lark. Its breeding range is from the Puget Trough to the Willamette Valley. It has been extirpated from British Columbia, northern Puget Sound and the Rogue River. It is a federal and state candidate species that is associated with prairies and airports, which are often former prairies.

This study looked at the lark's habitat selection, reproductive consequences of habitat selection, and habitat manipulation (application of herbicide). Territories were mapped with respect to vegetation, and reproductive success was monitored. Eggs are usually laid on the ground on the north side of a plant, usually bunch grass or lupine.

Habitat selection: Larks showed a preference for rock, annual grass, annual forbs, and non-vegetated areas for territory (positive correlation). By contrast, streaked horned larks did not exhibit preference for non-native perennial forbs and shrubs as territory. With respect to nesting, the study found that the lark showed a preference for bunch grass sites for nests.

Reproductive consequences of habitat selection: Habitat selection resulted in a 28 percent rate of survivorship. The primary source of failure was predation, and successful, versus depredated, nests were positively correlated with annual grasses.

Habitat manipulation: The herbicide Poast was administered to eight 50 x 50 meter plots. There was no difference in bird abundance between treated and untreated plots, nor was there a change in habitat variables.

### **Oregon white oak production, by David Peter and Constance Harrington**

Peter and Harrington studied Garry oak, or Oregon white oak, acorn production. Acorn crops correlated with summer precipitation, and trees in warm, moist growing conditions were found to produce the most acorns.

The study also found that the consistency of acorn production is related to stand conditions and fire history. It found that open grown trees produce more acorns. Hot fires reduce or eliminate acorn crops for one or more years, whereas underburned stands produce acorns more consistently and in larger numbers than non-underburned stands, and fire temperature is important.

Burns that occur more than 4 times in 17 years lower acorn production, but underburning 1 to 4 times in the same period increases production. The most productive sites were found along rivers in Klickitat County.

### **Oregon white oak release study at Ft. Lewis, by Warren Devine and Constance Harrington**

Garry oak is being encroached on by Douglas fir. In this study, Douglas fir has been removed to release the crowns of Garry oak. The diameter of the opening was increased in two increments, half release and full release. After removal of surrounding Douglas fir, researchers performed 60-second acorn counts. Data show that half release has no effect, but full release of the Garry oak crown results in a big increase in acorn production. Release also results in epicormic branching (growth of new branches).

## **Conservation and Research Needs in Garry Oak and Associated Systems**

**Dr. Peter Dunwiddie, Scientist, Director of Research Programs**

**The Nature Conservancy of Washington**

Peter focused on three general areas where conservation and research are needed for Garry oak systems. The first need is to save what is left—to protect remaining oak habitats from development, since so little remains. Research is needed on restoration of degraded habitats, which Peter regards as the real work of the future. Finally, there is a need to restore connectivity among remaining fragments of oak habitat.

### **Current Extent of Protected Areas and Opportunities for Protection**

The current extent of protected Garry oak ecosystems includes Mima Mounds, Glacial Heritage, Scatter Creek, Rocky Prairie, and Ft. Lewis-McCord Air Force Base. In north Puget Sound, Garry oak habitats are protected in the San Juan Islands at American Camp, British Camp, Iceberg Point, Cady Mountain, Pt. Disney (Waldron Island) and Mt. Constitution. There are few opportunities for protecting large acreages. They include Speiden Island (private and highly degraded) and Turtleback Mountain on Orcas Island.

In eastern Washington, opportunities for protection occur at Swauk Creek. TNC is working with private landowners using conservation easements. TNC is also working at Rock Creek, where they hope to protect approx. 1,700 acres. Much oak habitat is on Tribal Lands in the south of the state.

At Tieton River, TNC is involved in purchasing 10,000 acres in checkerboard ownership, and transferring them to WDFW, which owns the alternate sections, thus setting up a system where ownership does not interfere with management.

### **Connections Among Fragments**

Research is needed to understand the importance of connections between oak preserves. What is a meaningful connection? What tools should be used determine a meaningful connection—for pollinators, avifauna, butterflies? Organisms that need these ecosystems must be identified.

### **Restoration of Degraded Habitats**

Peter listed some of the research questions for restoration of these systems.

Conservation Area Design: How to design preserves so that viability of sites is maintained. Is there a critical area for the preserve? How do buffers enhance viability? What sort of connectivity is needed?

Restoring Vegetation Composition and Structure: How do you restore an entire community? What should be the genetic considerations? How to deal with invasive species and introduce natives? To reduce invasive species, soils and prior land-use activities must be taken into account.

Restoring Fauna: It has become clear that that “if you build it, they will not necessary come,” especially invertebrates. How to reintroduce species to prairies?

Restoring Ecological Processes: The obvious process is fire. It is not simple, and our current work has occurred during a very short time frame. We need to consider alternative methods when fire is not an option, such as mowing and use of herbicides.

Measuring Conservation Success. It is hard to determine success. What level of understanding do we need? What components are useful to monitor, i.e., umbrella species?

Conservation in a Changing World. How successful will we be in the long term with global warming? How to provide resilient systems? What is the value in the matrix between the preserves? Is it just an icon?

### **Garry Oak Ecosystem Restoration Projects of the USDA Natural Resource Conservation Service through their Wildlife Habitat Incentives Program**

**Rachel Maggi, Wildlife Biologist**

**Wildlife Habitat Incentive Program, Natural Resource Conservation Service**

The Wildlife Habitat Incentives Program (WHIP) is a program of the Natural Resource Conservation Service (NRCS, formerly known as the Soil Conservation Service). WHIP is a voluntary program that provides landowners with the technology and finances to develop habitat. All non-federal lands are eligible (private, state, county, tribal, land trusts), and there are no minimum size requirements, so a parcel as small as half an acre is eligible.

Participants in the program sign contracts for 5-10 years. Participants must provide proof of ownership or control of the land for the contract period. WHIP provides up to 75 percent of the cost, and has about \$400,000 to spend in the state. NRCS personnel help provide a plan, and applicants are then ranked according to the following criteria:

- Is it restoration of a priority habitat and species?
- Proximity to other protected areas
- Cost per acre
- Education benefits—will owner share the project?

Priority habitat areas for WHIP are prairies, oak habitat, band-tailed pigeon forage, Olympic Peninsula elk forage, and small wetlands. They have 26 oak projects, including 6 projects on the islands.

Oak restoration activities include direct sowing, oak seedling establishment, conifer removal and understory enhancement. Rachel provided detailed guidance on sowing and seedling establishment.

In addition to WHIP, several other NRCS programs help to restore Garry oaks. For example, upland areas around wetlands are planted with Garry oaks, and the Environmental Quality Incentives Program (EQIP) excludes cattle in agricultural settings. Additional information is available on the WHIP website: [www.nrcs.usda.gov/programs/whip](http://www.nrcs.usda.gov/programs/whip)

**Update on recent Garry Oak Ecosystem Recovery Team GOERT Research Colloquium,  
February 2, 2005, Victoria, BC**

**Linda Storm, WNPS Board Member**

(Linda will prepare a more detailed report on the Colloquium for the summer issue of Douglasia.)

The sole focus of GOERT ([www.goert.ca](http://www.goert.ca)) is on recovery of Garry oak and associated ecosystems. They consider Garry Oak a keystone species. Other Canadian groups concerned about Garry oaks are Garry Oak Meadow Preservation Society (GOMPS) ([www.garryoak.bc.ca](http://www.garryoak.bc.ca)), and Garry Oak Restoration Project (GORP) ([www.gorpsaanich.com](http://www.gorpsaanich.com)). Topics addressed at the colloquium are listed below.

- Mating system of Garry oak (genetics), by Mike Meagher ([mmeagher@pfc.forestry.ca](mailto:mmeagher@pfc.forestry.ca)), who found two genotypes (A and B).
- Historical distribution of Garry oak ecosystems
- Garry oak insects of British Columbia
- Bird surveys in Garry oak woodlands
- Herbivory and competitive effects on composition of Garry oak ecosystems
- Adaptation and dynamics of butterfly species at the edge of the range
- Research and monitoring of crows nests
- Conifer removal to restore Taylor's checkerspot butterfly
- Phylogeography of rare slim-leaf onion (*Allium amplexans*) in British Columbia, by Erica Wheeler

Distribution of the slim-leaf onion correlates with Garry oak distribution. Wheeler used molecular markers to analyze different populations throughout the range. She found that the rarest cytotypes are diploid populations. Most populations are tetraploids. West of Victoria BC, the populations are the least genetically diverse, whereas the California populations have the greatest diversity.

- Impacts of climate change and fire on ecological integrity of Garry oak ecosystems, by Marlow Pellatt and others

The objectives of this study were manifold: to determine the role of climate change on Garry oak and associated ecosystems; to determine fire history; to understand baseline ecosystems and how ecosystem functions have been altered; to determine potential impacts of climate change, fire suppression, exotic species, and habitat fragmentation; and to develop park management options under different land management scenarios.

The study tracked conditions over time and found evidence of the following sequence.

11,500-8,500 BP frequent fires

8,500-7,000 more open savannah was present

7,000-5,700 moister period, when alder came in and canopy was more closed

5,500 to present. Rise in the oak populations. This was speculated to be the result of anthropogenic fire.

- Ethnoecological research on camas landscapes, by Brenda Beckwith

Beckwith calls them oak-camas parklands, combining the ecological keystone species (the oak) with the cultural keystone (camas) to arrive at historical and cultural significance. She found that productivity was increased in traditionally managed

meadows, prairies and beds. Management involved clearing, weeding, and burning after harvest. Camas reproduces vegetatively with harvest. The research indicates the need to more fully understand how cultural practices affect ecological gradients across space and time.

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Summary of Afternoon Session  
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**Field Restoration Efforts**  
**Patrick Dunn, Plant Ecologist**  
**The Nature Conservancy**

Patrick discussed restoration efforts on prairies and associated Garry Oak ecosystems in the South Sound. Invasives such as Scotch broom and Douglas fir no longer represent as much of a challenge because they know how to control them -- with enough time, persistence and money. Invasive pasture grasses represent more of a challenge and selective herbicides seem to provide the best option. Infestations of new noxious weeds also present a challenge and it is critical to identify these early before they have an opportunity to become established.

The role of fire has also been examined. Of particular interest to Patrick has been the role of pocket gophers in opening up fresh soil for invertebrates and seed establishment. Interest in the role of these animals to these ecosystems is ongoing.

Success of restoration efforts and degree of challenge is related to the length of disturbance and how well established non-native pasture grasses have become.

Restoration enhancements include:

Roemer's fescue plug-ins where survivorship is typically very high. Plugging in native forbs is also important. Patrick described a restoration effort on Fort Lewis that had been heavily impacted by military activity and its success. Overtime, TNC has built up sufficient seed of native species to experiment with direct seeding using a seed drill. Growth rates are much slower than for plugs, but this approach still has potential.

Conifer removal is contracted out and they have chosen to pay someone to drop the trees and someone else to remove the trees. Besides diminishing encroachment, conifer removal releases Garry Oaks to increase branching but this, too, is slow.

Patrick emphasized the importance of conservation efforts on an ecoregional scale and the need to link up with others in Oregon and British Columbia to compare efforts and techniques.

**Sheilah Crider**  
**Oak Harbor City Council**

Sheilah described community efforts to save a large Garry Oak in Oak Harbor. She explained the decision had been made over a year ago to cut down this tree without anyone knowing about this until they heard about it in the news. She consulted with individuals from around the country, assembling documentation, and then called an emergency council meeting. Through this effort

they were able to save this magnificent oak. One expert said the only real danger to this oak was the chain saw. They believe the tree is about 300-350 years old. Dr. Southworth, said it might even be older than this.

Melissa Duffy added to Sheilah's presentation providing additional background on efforts to save the post office tree. She held a memorial to honor the tree before it was cut down, inviting musicians and poets and townspeople. She said she was amazed to find out how much this tree meant to people in the town and noted that there must not have been any dialog in the town, because the city simply did not realize the value of this tree to the town. Once the execution of the tree was staid, Melissa had time to talk to the arborist and many others and she found that the arborist was most familiar with conifers and was applying what he knew to the Garry Oak. For example, he told the council that an oak tree dying will produce more acorns, which this one was doing, but this is true for conifers (producing more seed) but not for Garry Oak. Seeking out the expertise of David Peter, who researches Garry Oak reproduction, she found that this is not true for Garry Oak and when they are dying they cease to produce. This tree was still producing acorns. Both David Peter and Darlene Southworth came to Oak Harbor and inspected the tree. Between the two of them they believed the oak had another 100 years. They made recommendations for how to enhance the survival of the tree. Eliminating soil compaction from vehicles/equipment, removing black landscaping plastic and feeding the tree with leaves and acorns were actions that could be taken -- and which have now been taken.

Melissa wanted to acknowledge the work of Hank Nydham who has helped to make Oak Harbor a tree city -- by planting hundreds of trees, restoring habitat to enhance the health of trees and working with school groups on many of these efforts.

**Andrew Fritz**  
**Clover Park Technical College**

Andrew described the Flett Property Restoration Efforts of Clover Park Technical College but said this talk was also a cry for help. This property was a dairy farm for many years when the state acquired it. Some of it was sold off but about 110 acres was given to Clover Park Technical College. About 30-35 acres of the Flett Property is an oak savannah with over 700 Garry oaks. 106 species have been identified including invasive species like Scot's broom, blackberry and an understory of all European grasses. The remainder of the property is a conifer woodland and a wetland. An adjacent parcel is for sale and will likely be developed. Andrew's Environmental Technology class has been working mostly on wetland restoration, but they do want to do some things to protect and restore the oak savannah.

Andrew has been working to prevent vehicle access to the oak savannah, which has been a problem, but now it looks like some barriers will be installed and will effectively prohibit access for weekend parties and other activities, but still allow public walk-on access. Other impacts include camping and trash. Clover Park Technical students are removing the trash.

The class is also participating in a USFS study with David Peter on Garry oak reproduction.

Andrew hopes to involve his classes in small scale restoration of the oak savannah by planting native grasses and forbs and plans to do this a little bit at a time as funding provides.

**Thom Pence, Private Property Owner  
San Juan Island Restoration Effort**

Thom explained the history of his project. In 1975 the county planning department asked The Nature Conservancy to come to the San Juan Islands to identify natural areas. They found Cady Mountain to be one of the best examples of a Garry Oak Savannah in all of the northern Puget Sound and recommended that the county establish some restrictions to protect this habitat. Twenty-five years later, Thom bought a piece of property on Cady Mountain and discovered the oaks on it and realized they were suffering from conifer competition. So Thom began removing conifers to free-up and release the Garry oaks. Thom encouraged neighbors to get involved in removing conifers on their properties also to enhance habitat for their Garry oaks. He then learned about grants which are available through the Wildlife Habitat Improvement Program with NRCS and applied.

Thom said he was a forester by profession before retirement, but really did not know much about Garry oak. He is learning from his experience and today's presentations, that just removing the conifers may not be enough to truly implement restoration -- a more active role may be needed which would include reintroduction of native species -- both plant and animal.

This site also includes challenges because of its steep terrain, a lot of equipment which might be useful cannot be brought onto the site, or when they do bring in equipment they also might be introducing exotics like Scot's broom and blackberry. They are finding that much of their work is very labor intensive.

A native plant society member has completed an inventory identifying 31 different grasses just on Thom's property. Only 11 of these are native. Thom says there is much learning about what needs to be done. In the WHIP Grant there was no budget for multiple years of invasive control. Thom says volunteer groups have come to help, so it hasn't all been just property owners. It's definitely a group effort. A lot of questions remain. Of highest priority will be what happens when the grant money runs out. What will happen to the habitat when its left alone. Will it stay the way its left? Not likely.

**Jim Duemmel  
Whatcom & Skagit County Garry Oaks**

Jim has found 8 locations of Garry Oak in Whatcom and Skagit counties. They are all associated with salt water except for one. Another exception to the more natural locations of Garry Oak is one street tree in Anacortes, not too far from the Guemes Island Ferry Terminal. All other Garry oaks in these two counties are associated with Madronas and with Douglas fir, besides salt water. These trees are growing on steep rocky ground -- not at all a savannah setting. The two most interesting sites are on Chuckanut Bald and on Sammish Island. Plant lists for these sites are available on the WNPS website under plant lists. The one on Sammish Island is private property but the Skagit Land Trust holds an easement on it. The site on Chuckanut Bald is on private property and is just north of the state park. Jim described landownership on other properties as he understood it. All seem to have Douglas fir encroachment. Jim, also said he had not seen any acorn production at any of these sites.

## **University of Washington and other Updates**

### **Linda Storm**

Dave Peter will be defending his dissertation on “Garry Oak Ecosystems Response to Fire” this spring. Linda promised to notify attendees at today’s work session beforehand, since the thesis defense is a public forum and anyone wishing to attend may do so.

Update from Jim Agee. Recent publication in NW Science: 2004. Oak Community and Seedling Response to Fire at Ft. Lewis. Chris Reagan and Jim Agee.

Update from Kern Ewing. Kern and his students have been conducting a number of research projects on restoration ecology at CUH’s research natural area adjacent to the center. This is a large urban open area for experimental design and restoration ecology. One student planted 105 Garry oak trees in 1997 and they are all doing very well. Kern’s students are also experimenting with prairie restoration. Experimentation with different mulches, different soil treatments, fire, herbicide treatments on mounded and flat sites are being carried-out. Several papers have been published on responses.

Mary Linders, Department of Fish and Wildlife. Mary considers active involvement by the scientific community with urban communities to be essential for protecting and maintaining urban pockets of Garry Oak. Efforts to get local jurisdictions to incorporate protections for Garry Oak in planning or critical area ordinances would help to provide protection.

## **Cultural Significance of Garry Oak Prairies**

### **Linda Storm**

NW Science meetings coming up at the end of March will have two sections on Garry Oak. One on its ecology and one on traditional knowledge of Garry Oak.

Also coming up is the SERNW meeting the first week of April. This, too, will have a section on Garry oak and traditional knowledge chaired by Linda and Steve Erickson.

Linda Storm’s Work. Linda is studying the historical ecology and ethno ecology of the upper Chehalis basin prairies. Linda explained she began by looking at the mounded prairies and how they may have contributed to the wild plant food production of different root foods like camas and their response to fire. She is trying to get a sense of how camas is distributed across mounded prairies. This is nested within a much broader research effort to develop a historical picture of the ecology of the area and the people/plant interactions. Of particular interest to Linda is some recent research by Chris Chappell, Janice Miller and Florence Caplow on the wet prairies farther south which were not formed on the glacial outwash but on ancient geologic formation where the soils are more loamy. These areas were noted by early explorers. Very little is known about these wetter, more mesic prairies.

Linda would like to see a better inventory of the different types of Garry oak ecosystems and a better understanding about the ecological differences. She says there have been a lot of myths about where one will find Garry oak and she believes its ecologic range is much larger than what most believe.

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Afternoon Interactive Dialogue – Comments/suggestions from the audience  
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**Forest Shomer –**

With respect to connectivity, we need to take a second look at places like gravel pits and airports (e.g., Quileute Prairie, Jefferson Prairie in Pt Townsend) which offer connectivity.

We should encourage partnerships – Flett Creek is an example. Partnership could be formed with owners of adjacent land, and prairie-oak habitat development could be incorporated in the development. In answer to a question about the cost of the land adjacent to the Flett Creek Garry Oak area, Andrew Fritz said the price tag is high (5 million for 15 acres)

The question is, how to get private landowners involved in Oak habitat conservation?

**Dean Longrie** (WNPS Board, retired forester, works with conservation districts) –

There is a great opportunity to access private land and create partnerships. A good example is NRCS; Conservation Districts, Ecology, DNR-NHP – volunteers have a good long-term connection (not regulatory). Dean suggested that there should be an effort to get money on the ground.

Use Conservation Districts to channel info, money, with volunteers. In answer to the question whether they can work in urban areas, Dean said “sure.”

In Clark County development is a very strong influence. (Dean is also a contractor who works with developers. As a rule if you can provide developers info that can help them save money, they will do it a different way, one that is land-friendly.)

The PUD in Clark County and the Conservation District worked on rights-of-way too – “Available money” has been put toward conservation (thru CD) – done some pretty impressive restoration in creeks (Salmon Creek).

**Mary Sue Gee--**

Other options for Flett Creek area are Conservation Futures, 2-3 million every couple of years – Pierce County Council is funding more (15-20 million). The group picks projects and prioritizes them. They could purchase the Flett Creek parcel with public \$.

Cascade Conservation Trust does this kind of work to connect landowners with priority conservation projects and sets up stewardship.  
(Every county has 0.0625 percent in Conservation Futures.)

Work with land trusts.

**Steve Erickson--**

Another funding mechanism in San Juan County, the San Juan Land Bank, is successful because it has money (gets 1% of real estate sales).

Run county-wide campaigns, get this stuff on ballot, and generate millions of \$ per year to buy conservation lands (*I didn't get his complete recommendation here*)

**Dixie Llewellyn--**

City of Port Townsend is looking for parcels/areas. They need inventories & priorities. Sequim – Native Plant Society could draft something to recommend that Garry oaks & associated ecosystems should be priority habitats for conservation. Language could be incorporated explicitly in Critical Area Ordinances, etc.

**Melissa Duffy--**

Would like to see WNPS create a "think-tank" web site to allow people to share information on restoration of Garry oak & associated ecosystems, address what works/what doesn't. Could WNPS website have a clearinghouse where information can be housed & provide links to other websites?

Canada is doing so much. Would be great if we could link up with Vancouver, Victoria groups, invite them to come & present, and go visit them.

Need a way to dialog & exchange ideas (existing list serves of Oregon White Oak Working Group, South Sound Prairies Working Group, & Canada's Garry Oak Ecosystem Recovery Team were mentioned - need to pull those together)

Maybe set up a "Dr. David.com" and have Dave Peter answer.

List serves: Get GOERT (web site is [www.goert.com](http://www.goert.com)) & Oregon Garry Oak working group list serves other ([www.oregonoaks.org](http://www.oregonoaks.org)),

**Pat Dunn -**

Suggested we work to link all these groups together rather than have 3 separate ones (*I believe he said he would work on this - we can follow-up with him*)

**Steve Erickson-**

Steve will be co-moderating a session with Linda Storm at the upcoming SERNW conference (Seattle Convention Center, April 4-6) on Garry Oak/Prairies & Traditional Ecological Knowledge. He will suggest creation of a general Garry oak list serve (pull it all together) - SER had a Garry Oak working group too, but it has been somewhat defunct.

**Judi Lantor, USFWS**

USFWS Partners for F&W program funding priorities: prairies & oak woodlands and coastal grassland bluffs (particularly Oak systems). The cost share for these is 50% for prairie & oak woodlands, and 25% for the coastal grassland bluffs. There is also a Private Stewardship Program.<sup>2</sup>

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<sup>2</sup> In a later e-mail, Judy provided the following information. "The Private Stewardship Program provides grants and other assistance to individuals and groups in local, private, and voluntary conservation efforts that benefit federally listed, proposed or candidate species or other at-risk species. The program requires a 10% match that can be provided in cash or through in-kind contributions. Projects are evaluated on a number of factors, so projects that benefit federally listed species would receive more points for that ranking factor, but other at-risk species and habitats are eligible. This would include Garry oak habitat restoration projects that might not benefit a listed or candidate species.

"The Partners for Fish and Wildlife Program requires a 50% match, which can also be in the form of in-kind contributions. In Western Washington we have given priority to prairie and oak woodland or savanna restoration projects.

"The Puget Sound Program (PSP), a component of our National Coastal program, can fund coastal grassland bluff restoration projects. If a Garry Oak restoration project were located along or close to a shoreline we could potentially use these program funds. The PSP requires at least a 25% match.

**Fred Weinmann, WNPS President--**

Botany Washington this year is on San Juan Island and will be visiting Cady Mountain Garry Oak restoration project.

**Kathy Winters**

We can encourage PUDs to place Garry oaks on city tree lists by communicating the benefits of oaks over other trees planted. We all live in developments of one kind or another. Garry oaks don't pull up the sidewalks like some of the horticultural trees do.

Talk about true value/real value of what we have on the land, present ease of handling, cost effectiveness, then get into aesthetics, *genius loci* – not found anywhere else (people like to feel their place is special)

Dynamic shifts – liked Forest's gravel pit idea. In Germany they lift all overburden off mines & put back down new to restore.

Kathy commented on some gravel mine areas in need of restoration that were once prairie/oak habitats. Shelton Johns Prairie, Fred Hills –The tondas?

Kathy liked Linda's focus, where we are learning from Native traditional use/management. Current application of these ideas is important. Need to look at these prairies as sustainable forms of perennial polycultures (see Wes Jackson's work in tall grass prairies). This is key--don't need to plow everything up every year, can have diverse mix of species ('crops'), maintain soils, habitat for wildlife & produce diverse food resources. (For example, camas is a great candidate for gardening/perennial polyculture, in the context with other associated root foods, like lomatiums, etc.)

Linda mentioned the importance of working with Tribes. Find out who your local tribes are. Though it's not always easy to get involvement, reach out – learn about the cultural significance of your place. For example, on Whidbey Island at least three tribes have ties: Northern Part – Skagits (many affiliated now with Upper Skagit tribe, Swinomish Tribe), Middle part – Kikialis (not a recognized tribe- but may be part of Skagit Systems Cooperative, Swinomish, Skagits), Lower part – Snohomish (many of whom are now with Tulalip Tribe). Work to understand the ethnobotany & cultural significance of the places you are trying to conserve & restore. Involve the tribe as you can.

**Stewart Weschler--**

His vision is to have every school system between oak & prairies – Kids are naturally/instinctively excited about nature. Create and support more nature programs for kids, to chase butterflies, get a germinating acorn, learn about importance of camas lily – cook & eat them, see the first blooming viola adunca – Once kids know this stuff, parents get on board, then politicians get on board – then all turn yards into prairie habitat! (Stewart showed viola adunca & a monarch butterfly to illustrate his vision.)

**Al Smith--**

Clark's Prairie on Lake Washington, at Seward Park, was settled the same time as the Denny Party. One component of Garry oak remains, with *Rhus diloba* and a few Garry oak trees.

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“For the Partners and PSP, we send out a request for proposals in September. Those projects are evaluated and ranked by staff in our western Washington office. For the PSG program, our regional office sends out a notice of grant availability (it just closed for this year). Those projects are evaluated through our regional office by a panel consisting of a variety of individuals.”

Need a good vegetation management plan for the park, but no one is pushing at the Parks Dept. Need a good/informed management plan. WNPS involvement would help.

He's a tool collector & showed an old metal adze that he'd found – suggested recreating tending with old tools.

### **Someone**

Need to foster a sense of place. Convince Dept. of Transportation to use Garry oaks in mountain highway. Need 20 Garry oaks, specified as 2-inch caliper oaks, and felt it was too hard to transplant and keep them alive.

On the website, provide information on the availability of oak & right size to plant, best ways to plant, and education on appropriate ways to restore/transplant.

### **Bill Brookereson**

If one of our goals is to get people involved in restoration, use Native Plant Appreciation Week (1<sup>st</sup> week of May). WDOT, Ecology & other states are helping to sponsor Native Plant Appreciation Week. Initiate Garry oak restoration planting project as part of this week.

### **Mike Marsh, WNPS Conservation Chair**

Cross-Base Highway between Ft Lewis & McChord AFB will significantly impact/fragment the largest remaining continuous oak habitat in Western Washington. The proposed road would impact oak, prairie, wetlands, and the only population Western Gray Squirrel, also a listed wetland species, *Howellia aquatilis*, and prairie species, *Aster curtis*, etc. WNPS is trying to encourage not to build the highway. USEPA described Environmental Impact Statement as inadequate. But Federal Highways Record of Decision (ROD) said they are going to build it anyway – BUT they still need \$ to build the highway. Write to the Governor! State Trans. Committee Chair, April 11<sup>th</sup> bill out of Committee (it may include \$ for that highway). Write Pierce, King, Thurston and convince other county commissioners this road a bad idea. Write Mary Margaret Haugen, State Senator, Chair State Transportation Committee, and give her opportunity to speak her mind about this. Give her information to advocate not to fund this project!

The Woodbrook Hunt Club is against it too (they are a horse riding group and historic properties would be impacted). The Puyallup tribe is concerned too.

### **Stewart Weschler –**

More concerns about Cross-Base Highway-- opening areas to development/sprawl/secondary impacts, western gray squirrel habitat fragmentation/impacts on population. Base-closure issue (look into this) & connection to other people's interests? Closure & land conversion.

The Western Gray Squirrel was proposed as threatened & denied by USFWS – litigation.

### **Fred Weinmann**

For Native Plant Appreciation Week, between now and May 1 we should write a letter on the Cross-Base proposal and get something planned.

### **Steve Erickson –**

Stopping Cross-Base Highway should be WNPS's highest priority. It's a boondoggle. Wage this campaign. It will raise prairies & oaks to the status of old growth conifer forest (old decadent

trees to OGF). Audubon – Tahoma, Woodbrook Hunt Club, NW Ecosystem Alliance, Mary Fries/Conservation Chair, Whidbey Environmental Action Network (WEAN).

If Federal Department of Defense establishments get surrounded on four sides by development, often they are closed. The State government's priority is to keep it open. It is in Norm Dick's district. Contact Policy & Environment Committee - Elliott Marks - Jay Manning –

**Pat Dunn--**

Would like to get a "traveling" field trip together to foster interaction between Georgia Basin, Washington & Oregon people working on conservation of Garry oak habitats. Start in BC, then Whidbey, South Sound prairies, Willamette Valley – Garry Oak Road Show! Do this in June 2005 (visit the Cross-Base Highway area too.)

Prairie Appreciation Day is MAY 7<sup>th</sup>! Glacial Heritage Prairie Preserve.

TNC is working on a "Statement of Unity" for prairies. It started through South Sound working group. It's a non-binding statement of commitment to preserving prairies (held in DOD right now – hoping to move this forward in very near future).

Dave (Peters?) could come talk to WNPS board to share Statement of Unity. (Pat was asked if he would make it available to review.) Ideally, it links and binds together the ecoregion in broader perspective.

Someone else suggested (re Cross-Base Highway) to contact Norm Dicks & Patty Murray – mention impact on military base. Let's get some folks to visit Norm Dicks and share info on Garry oak; visit Patty Murray too.

Gain platform for funding one of those levels

**John Browne--**

Landscape is still connected to the people. Ivy is in the venerable halls of our institutions, BUT prairie remnant has been created on the roof of Evergreen's library! Might be part of a hopeful movement for future.

King County Public Benefit Rating system has been effective at keeping places open for wildlife. Encourage other counties to develop these incentive programs & identify Garry oak within rating system.

Need to promote the concept of no impact development (or low impact development).

Garry Oak Work Session  
Summary of Morning Discussion by WNPS Board  
March 5, 2005

**Fred Weinmann—**

It would have been nice to discuss and shoot questions from the afternoon's interactive discussion to the panel participants.

Because there are no federal or state agencies or regulations to explicitly protect these ecosystems, we are it. We can fill the niche by working with local jurisdictions, through education, appreciation, local community activities--working at that level, etc.

**Carol Shenk**

Bush Administration is cutting conservation tax breaks. We could send a letter.

**Ellen Kuhlmann**

Regarding conservation funding and giving more grants, the WHIP programs initial funds are contracts. After the money is gone, there is some maintenance but no money for that. Could we coordinate with WHIP (NRCS, USFWS \$)? We could enhance that by funding a post-contract phase, providing maintenance and monitoring funding. We could work to obtain money for this and to provide follow-up/longer term stewardship of those projects.

A follow-up meeting was suggested with Rachel Maggi, NRCS, & Judy Lantor, USFWS, to look at how to patch together funding sources.

The Conservation Committee has developed a process for grants. We can use existing budget for needs tied to WHIP projects. Will develop a RFP process for future. Ten-year easement (CREP, EQUIP & WHIP) work with landowners to understand the value of keeping land sustained in conservation.

**Dean Longrie--**

Role of WNPS & non-profits is to help landowners become stewards. We could develop partnerships between Conservation Districts and WNPS (in concert with opportunities with TNC - Land Trusts). ROLE: technical assistance support & money.

**Tom Johnson--**

With respect to getting people on the ground doing things, promote a South Sound Stewardship program. Its a lot of work and needs SS chapter support. In Thurston County, two years ago Scott & Sasha Shaw went down and gave the chapter a presentation on the Stewardship Program. They've been interested. How much does it cost Snohomish County? (Snohomish County 15-18K year; King County 23-24K year. Need a coordinator year round.)

Could do pay model too (collaborate with Evergreen).

Note: A grant has been submitted to EPA (Education?) to help support the Snohomish Stewardship program & to coordinate stewardship programs in other parts of the state. Mission of that stewardship program is Garry oak/prairie focus.

For a South Sound Stewardship Program targeted at Garry Oak communities, would need to get Chapter's support, i.e. Anna Thurston & Rod Gilbert (Mary Fries), and could work with Andrew Fritz at the technical college. Others have contacted Catherine about wanting to create stewardship program (from Tacoma). Tom Johnson, Scott & Catherine ask for meeting with them at next board meeting.

Identify a champion in the County.