The Coburg Wetland Self-Guided Interpretive Trail: A Case Study in Environmental Interpretation Planning.

by

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Abstract: The key to developing successful environmental interpretation is sound planning. This paper is a discussion of the principles of environmental interpretation and how they apply to the planning process. The Coburg Wetland is a 21 acre reserve located on the west side of Interstate-5 in Coburg, Oregon. The city of Coburg, with help from several federal agencies, is planning to develop the site for educational and recreational uses. After consideration of project goals, audience, and parameters, it was determined that the construction of a self-guided interpretive trail would enhance the site and assist in educating the general public on the values of wetlands. Details of trail design, disabled access, thematic stops, and interpretive text are discussed.

Keywords: environmental interpretation, planning, Coburg, wetlands.

1. Interpretation Planning

What is Interpretation?

The word "interpretation" often causes confusion. Interpretation can be defined as the process of translating languages so people from different cultures and backgrounds can communicate. Environmental interpretation also aids communication between people of different backgrounds. Environmental interpretation is the process of translating the technical language of natural sciences into ideas that the general public can easily understand (Ham 1992, p.3).

Interpretation includes, "...naturalist talks, exhibits, audiovisual programs, labeled nature trails, brochures, publications, and other facilities and services which are provided to help people enjoy and understand the natural and cultural resources of the areas they visit" (Field and Wagar 1984, p.12). Interpretation is different from other types of instruction in that it attempts to educate in an entertaining and interesting manner and encompasses real world objects and locations. Freeman Tilden is considered the "father of environmental interpretation" because he was the first to clearly define the term. Primarily interested in communication rather than science, Tilden (1957) defined interpretation as, "An educational activity which aims
to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information."

Environmental interpretation can be presented in a conducted or a non-conducted manner. Interpreters, sometimes called "naturalists", are typically employed by natural resource agencies to present guided walks, tours, and other organized presentations. Brochures, signs, videos and visitor center exhibits all attempt to communicate important and interesting themes to the individual in a non-conducted fashion. The success of different formats is generally site-specific and is determined by factors such as audience, topic interest, attractiveness of site, and most importantly -- the nature and quality of interpretive materials.

The goals of interpretive facilities, programs and literature differ depending on the organization and the individuals responsible for their conception. The primary goal is, generally, to communicate a message to the observer. Lewis (1980) lists nine more specific goals of interpretation:

(1) To help park visitors understand that the place they're visiting is related to the place they call home.
(2) To help visitors understand the interrelationships among as many aspects of what is being observed as possible.
(3) To help visitors have an inspirational, relaxing, good time.
(4) To arouse curiosity and sometimes satisfy it.
(5) To conserve park resources through an understanding and consequent appreciation of them.
(6) To provide visitors with an escape from the pressures which assault them.
(7) To show the relationship of what is being observed (experienced) to the lives of the observers.
(8) To give the kind of interpretation which will encourage visitors to figure some things out for themselves.
(9) To give accurate, interesting information which forms the foundation for an interpretation of data.

This list of goals illustrates that interpretation is not concerned exclusively with education, but also with promoting effective communication and enhancing the recreation experience.
Tilden (1957) was a strong proponent of *thematic* interpretation. An organized theme prevents interpretation from becoming an endless stream of unrelated facts. Ham (1990) explains,

Presentations which don't have themes beg the question, 'so what?,' and unfortunately, most of us have read or listened to information that has left us asking this question. But presentations which do have themes seem to be 'going somewhere,' and it's easy for us to organize all the facts and supportive details in our minds because we can 'stick' them to the theme.

Since visitors to interpretive sites are generally not captive audiences, presentations which seem disorganized in this manner will not be effective: brochures will not be read, signs ignored, guided walks abandoned. In order for interpretation to be successful, it must be planned with a consistent theme.

**The Connection between Interpretation and Geography**

Individuals unfamiliar with the fields of environmental interpretation or geography may have difficulty understanding how the subjects are related. Geography is, most basically, a study of space and time. Leighly's (1955) discussion of the historical development of geography between 1888 and 1955 offers several definitions. Leighly begins by citing Russel Hinman's 1888 definition, "Physical geography seeks to trace the operation of the laws of nature upon the earth; upon the air, the water, and the land; upon plants, animals and even upon man" (Leighly 1955, p.309). This definition, still used by many geographers today, explains one of the links between environmental interpretation and geography. The goal of interpretation is to better communicate scientific concepts, or Hinman's "laws of nature", to the general public.

Leighly also cites Barrow's (1922) definition of geography as, "...dealing solely with the mutual relations between man and his natural environment" (Leighly 1955, p.314). This definition is very similar to three of the goals of environmental interpretation discussed earlier:
(1) To help park visitors understand that the place they’re visiting is related to the place they call home.
(5) To conserve park resources through an understanding and consequent appreciation of them.
(7) To show the relationship of what is being observed (experienced) to the lives of the observers (Lewis 1980, p. 31).

Though geography is no longer deals "solely" with the relationship of humans and their environment, this is still a major emphasis within the field.

Leighly, himself, is a proponent of loosening restrictive definitions and encourages geographers to return to a study of the earth for its own sake, and to "approach to earth with unhampered curiosity" (Leighly 1955, p. 317-318).

Geographers do not have a monopoly on curiosity about the earth and one of the main goals of interpretation is to "arouse curiosity and sometimes satisfy it" (Lewis 1980, p. 31).

The difference between environmental interpretation and geography lies in the primary goals of the individuals working in the two fields. Whereas individuals conducting research in geography are attempting to expand the base of knowledge in their specialized area of study, interpreters generally take this knowledge and attempt to make it understandable for the general public. Geography can be viewed as a research tool, while interpretation is an educational tool. Since geographers may not always be well trained in the art of communication and education and interpreters may not be well trained in geography, this is an area where partnerships need to be established. The cooperation between these fields should assist in increasing geographic knowledge among the American public.

**The Planning Process**

In order to determine which interpretive format and theme will be most appropriate and efficient for a specific topic or site, it is important to go through a careful planning process. Once the decision is made to develop a site for interpretive
use, it is tempting to rush in and begin construction immediately. This often results in brochures that are never read, trails which are too muddy to traverse and visitor centers whose themes are not appropriate for their locations. Such mistakes can be avoided by first considering a project's objectives. After the objectives have been defined, various alternatives should be considered. Only after this groundwork has been completed, should the managing body proceed to select alternatives which most effectively meet the project objectives. Though it is tempting to proceed with the momentum of early enthusiasm, the planning stages should not be overlooked; "we must not simply rely on a limited set of time-honored techniques without examining their current relevance to diverse visitor publics" (Field and Wagar 1984, p.12).

In the example of the Coburg Wetland, a two-step planning model was employed. The first step, the interpretive master plan, defines the goals and objectives of the project. There are several models used for the planning process; Bucy's (1990) planning model for natural resource interpretation is generally considered to be a sound conceptual approach. This model groups a series of questions under six main categories: goals, audience, parameters, interpretive opportunities, themes, and strategies. After these criteria have been evaluated, plans can be made about how to accomplish the project's objectives. The second step, building from the recommendations of the master plan, was to design a detailed conceptual plan for the self-guided trail based on a model provided by Ham (1992). The conceptual plan provides details of trail stops, examples of text for signs, a thematic map of the trail, and recommendations for trail construction. The two step planning process is used to assist in coordinating the individuals and organizations involved in the project and encouraging them to focus on specific goals to be accomplished.
2. Coburg Wetland Case Study:

Site Description

For much of American history, wetlands have been viewed as worthless property. Wetland environments, once common in the Willamette Valley, have been continually diked, drained and farmed. Unfortunately, very few of the valley's wetlands remain. Due to concerns about wildlife conservation, water pollution and groundwater depletion, public attitudes towards wetlands have been changing in the past twenty years. As a result, more wetlands are being protected in reserve systems. The general public is becoming interested in learning about wetland ecology and management, but educational materials and interpretive facilities that deal with wetland topics are still scarce.

The Coburg wetland (approximately 21 acres) is located at the north end of Coburg's Industrial Way and contains a variety of habitat types, including ponds, wet meadows, drier uplands and drainage ditches. The site is also home to a wide diversity of native flora and fauna. The wetland is bordered on one side by Interstate-5 and there are plans to construct a fence and plant a row of trees to buffer the site both visually and audibly from the freeway. The primary source of water for the wetland comes from a series of ditches draining nearby fields, parking lots, and the freeway. There are two main pond areas in the wetland, one of which (being at the same level as the water table) contains water year-round.

The property was donated to the city of Coburg by Pape Incorporated in 1993. The city of Coburg, working in conjunction with the Linn and East Lane Soil and Water Conservation Districts and the Cascade Pacific RC&D Area, plan to develop the site into an educational and recreational facility. Coburg is also planning to use a few acres of the property for the construction of a sewage treatment facility. Once those plans are complete, it will be necessary to evaluate what impact, if any, construction will have on the wetland.
Four students from Oregon State University produced a draft management plan in 1993 which presented various management alternatives. In order to enhance recreation and education at the Coburg Wetland, the draft plan recommended providing the following: "(1) restrooms, (2) boardwalks, (3) interpretive signs, (4) picnic tables, (5) parking lot, (6) viewing platforms, and (7) brochures" (Bezayiff, et al. 1993, p.1-2). These recommendations and other options are considered in the following pages.
Planning Step One:  
Interpretive Master Plan for the Coburg Wetland.

In order to provide a strong framework on which to base planning decisions, it is important to consider factors which are specifically related to the Coburg site. The planning model used for the Interpretive Master Plan is described by Bucy (1990) in "Planning for Success: The Key to Effective Interpretation." The questions listed at the beginning of each section are quoted from this source.

Goals

Question #1: Why is the message being sent? What must it accomplish?

The overall goal of the Coburg project is to increase public awareness and appreciation of wetland systems. This goal is to be accomplished by focusing interpretation on both utilitarian (e.g. recharging aquifers) and amenity values (e.g. wildlife habitat) of wetlands. Without a feedback instrument, it is difficult to tell whether a visitor has left with a better understanding of wetland systems. It may be desirable to provide a method of collecting comments from visitors who have visited the site. This may be useful in making later improvements to the interpretation.

A secondary goal of the development of this site for interpretation is to increase the tourism potential of Coburg. A recent study of traffic patterns in the city of Coburg (population 625) revealed that approximately 4,100 cars pass by the city hall daily (personal communication with Jack Harris, Coburg Public Works Director, 1994). The city views the interpretive potential of the wetland not only as an educational opportunity, but also as a way of encouraging some of these motorists to spend time in the vicinity. In order to test if the development has resulted in a change in traffic patterns, vehicle data from studies conducted after completion of the trail will be compared to the studies done in the past few years.


**Audience**

*Question #2: Who is to receive the message(s)? What are their needs, expectations and backgrounds?*

The expected audience for the Coburg Wetland Interpretive Trail is made up of the local community, schoolchildren from Coburg and Eugene, and motorists traveling the I-5 corridor or Coburg Road. The wide diversity of the audience makes interpretive planning difficult for this site. Some visitors may already have extensive knowledge about wetlands, while others may be newcomers to the subject. Visitors from the local community live in a primarily rural or small town environment, whereas those from Eugene are accustomed to the city environment. A wide variety of grade levels from local schools may also visit the wetland and be interested in corresponding levels of educational material.

In order to narrow the planning process for interpretation purposes, it is important to consider a "target audience". Rather than attempting to meet the interests of any potential visitor to the wetland, aiming for a target audience will enable the interpretation to be more focused and thus, more successful. Often in the attempt to meet the expectations of a wide audience, interpretation becomes so broad that it is no longer useful to any of the visitors. Focusing on a target audience should reduce that possibility. The target audience for this site would include adults and children who have had little education on wetland topics. This means that information presented will need to be very basic, but conducted in a fashion which will pique interest rather than becoming boring. When focusing interpretation at a low-knowledge level, it is important to remember not to aim so low as to insult the audience and thus lose their interest.

Another audience consideration for interpretative planning is providing access for disabled visitors. This has become an important issue in recent years due to
changing attitudes towards people with disabilities and new legislation requiring facilities to provide access. Section 504 of the 1973 Rehabilitation Act and the 1990 Americans with Disabilities Act requires that public facilities make necessary adjustments to provide access to visitors with disabilities. What level of accessibility is appropriate for this site? It is important to consider this question during the planning stages in order to prevent the need for costly improvements later. Since the Coburg wetland is so close to the I-5 corridor, the site may attract disabled visitors who might avoid more remote sites. Making a trail "barrier-free" does not necessarily mean paving trails with concrete, though that is an option to be considered. Additional options and proposals will be included in the conceptual plan for the self-guided trail.

**Parameters**

*Question #3: What are the constraints affecting the development, maintenance, and functioning of the interpretive components? How much will it cost?*

The budget for the project has yet to be determined, but the plan is more likely to be implemented if costs are kept low. Much of the work in the construction of the self-guided trail could be done by volunteers from the community and schools. Set costs would include construction of the signs, printing of brochures and equipment for the trail and footbridge construction (see appendix two). Maintenance on the site will be the responsibility of volunteers and staff from the Coburg public works department.

One factor affecting both development and maintenance of the site is the decision to use signs or brochures to present the interpretive text. There is always debate over which medium is "best" for presenting interpretive information, but "No known study (and there have been many) has demonstrated conclusively that [either] of them is inherently better or worse...Each has [its] strengths and weaknesses"
(Ham 1992, p.314) Table one delineates the positive and negative aspects of using the two different mediums at the Coburg site.

Table One: Pros and Cons of using signs or brochures at the Coburg Wetland.

<table>
<thead>
<tr>
<th></th>
<th>Signs</th>
<th>Brochures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pros</td>
<td>• More likely to attract readers</td>
<td>• Interpretation is easily updated</td>
</tr>
<tr>
<td></td>
<td>• Requires less maintenance</td>
<td>• Materials can be provided for different age groups.</td>
</tr>
<tr>
<td></td>
<td>• Can be visually attractive</td>
<td>• Less expensive</td>
</tr>
<tr>
<td></td>
<td>• One time expenditure (unless vandalized)</td>
<td>• Less obtrusive on the landscape</td>
</tr>
<tr>
<td></td>
<td>• More professional image</td>
<td>• &quot;Souvenir&quot; value, can be taken home</td>
</tr>
<tr>
<td>Cons</td>
<td>• High initial expenditure</td>
<td>• Less likely to be read</td>
</tr>
<tr>
<td></td>
<td>• Expensive to replace if vandalized</td>
<td>• Requires periodic reprinting and replenishment</td>
</tr>
<tr>
<td></td>
<td>• Obtrusive on the landscape</td>
<td>• Can create a litter problem</td>
</tr>
</tbody>
</table>

Because the sign option is more likely to attract attention and will require less maintenance, that is the proposed option for the Coburg site. It will be important to consider the visual placement of the signs so they blend well with the environment and do not detract from the natural beauty of the wetland. Using signs rather than brochures presents a large initial investment that will require funding from outside sources, but it should eliminate the need for continual maintenance and printing costs under the brochure option. If funding becomes a problem for the project, it would be possible to change to the brochure option with little difficulty. This approach would be more acceptable than completely abandoning the project due to lack of funds.

Another important parameter to be considered is the potential impact to the site. Trails in wetland areas are notorious for being muddy. Though boardwalks are
often proposed for wetland trails, they will probably not be necessary for the Coburg site. It appears to be possible to construct the trail so it crosses drier upland areas and still provides good views of the wet meadows and ponds. Footbridges or culverts may be necessary in a few places to cross small channels. If the level of foot traffic becomes high enough to create a problem with mud, a paved trail or boardwalks may need to be considered. Another potential impact that develops with wetland trails is that visitors desire to walk along the water's edge. This area is generally the most fragile because of seasonally changing water levels. In order to satisfy the visitors' desire to get close views of the ponds, it is proposed that viewing platforms be constructed. This will enable visitors to get closer to the water without having to cross fragile areas. Telescopes could be placed on the platforms to improve wildlife viewing opportunities.

Interpretive Opportunities

Question #4: What topics are available and appropriate for sending the message? What resources do you have available for telling your stories? What features are the visitors already focusing on?

Most wetland visitors come with the expectation of seeing wildlife. Kids will wade in the water looking for frogs and bugs. Adults scan the ponds for herons and ducks. The best resource for telling the wetland story is the wildlife, because that is most often what people want to see. Unfortunately, wildlife can be difficult subjects because of their mobility. A sign that describes the different species of ducks on the pond is useless if no ducks appear. This is an important consideration in interpretive planning. It is useful to give visitors other things to look for or do, if no wildlife is visible. An example would be pointing visitors at certain areas which are good duck habitat and explaining why ducks prefer that type of area.

Stop seven: Waterfowl are welcome wetland visitors. This pond is an excellent place to watch for different types of waterfowl such as ducks, geese, and herons. Many of
these birds migrate through this area each year and make stops at the wetlands of the Willamette Valley.

Watch deep in the grasses for signs of waterfowl. They may have heard you coming and are hiding in the long grasses at the water's edge. The grasses make a good hideout from both people and predators. The tall cover makes it difficult for hawks and owls to spot their prey. Look up and see if there are any hawks circling. Ducklings who stray too far from their grassy hideout can become prey to one of these large birds.

This example illustrates one element of wildlife interpretation: making the visitor feel as if they have experienced a wildlife outing even if no animals are seen.

Another resource for interpretation on the Coburg wetland is to incorporate how a wetland can be important to people. Much of the degradation of wetlands that has occurred in the past has been the result of the idea that these areas were worthless. Interesting visitors in how wetlands help people (by recharging groundwater and filtering pollutants) will aid in accomplishing the goal of creating a better appreciation for these systems. The following section is an example of text for an interpretive stop concerning how wetlands filter pollutants (data adapted from Moore 1992).

Nature's Filtering System

The water coming into the wetland can be pretty dirty, but it is pretty clean by the time it reaches our wells. How does this happen?

[the following questions will be printed on the front of panels which can be lifted to reveal the answers].

Q: The water slows down as it moves into the wetland. How does this help to clean the water?
A: Some of the dirt, silt, and chemicals settle to the bottom of the wetland.

Q: How do plants and other living things help to clean the water?
A: Much of what we consider pollution, plants can actually use for food. Chemicals like nitrates and phosphorus, often found in fertilizers, are filtered out of the water by roots. Tiny organisms called microbes also clean the water by using these nutrients.

Q: What happens deep in the mud to help clean the water?
A: Down in the mud, where there is little oxygen, chemical reactions take place which break down some of the chemicals into less harmful substances.
This is just one example of how text could be worded for a stop regarding the filtering process. Although there is much more information that could be included on the subject, the text needs to be kept brief. Signs with too much text tend to be ignored by visitors because the perceived "effort" in reading the sign will be higher than the perceived "reward" (Ham 1993, p.19). Therefore, although it is tempting to include a large amount of information on interpretive signs, this practice tends to decrease the number of visitors who make the effort to read the text. The design of this sign encourages the visitor to become involved with the text by lifting the panel to read the answers. Interactive exhibits aid in the learning process and make a display more interesting and entertaining. Though not every sign should be interactive (maintaining variety is still important), this type of format provides a method of involving the visitor with the interpretive material.

**Theme**

_**Question #5: What is the intended message?**_

By attempting to cover both utilitarian and non-utilitarian functions of wetlands, the theme has been designed to incorporate both ideas. The tentative theme for the self-guided trail is, "Wetlands meet the needs of both people and wildlife." The first quarter to half of the trail will focus on utilitarian functions as explained above. The second half of the trail will discuss wildlife and ecology. These two concepts have been tied together in the theme and ideally will leave the visitor with the impression that wetlands are very "worthwhile" places. It is important to remember that not every wetland topic can be covered in the interpretation, as Bucy states, "...it is better to give a person one clear idea that sticks, than many blurry facts that can slip through the seams of the mind and vanish" (Bucy 1990, p.4).
Strategies

Question #6: Where, when and under what conditions can the message be best communicated? What means of communication and what facilities are best suited to presenting each part of the message?

In order to meet the goals identified by this plan, the best strategy for communicating the "story" of the Coburg wetland is through the construction of a self-guided interpretive trail. The self-guided trail will make a loop passing by both of the ponds and by the input channels. It will be important to consider the placement of the trail in order to minimize muddiness and the need for footbridges. Other information concerning the trail location and characteristics can be found in the following section, "Coburg Wetland Self-Guided Trail: Conceptual Plan."

The secondary goal of the interpretive trail is to increase the tourism potential of Coburg. One way of accomplishing this goal would be to design and construct an informational kiosk at the entrance to the site. The kiosk could serve as both the introductory sign for the trail and could publicize current events in Coburg. A glass (or plastic) covered bulletin board could display postings of other events that visitors could attend. It is also proposed that a general brochure for the wetland be designed and printed. This could be distributed to area rest stops and other tourist gathering points. A brochure could aid in bringing visitors to Coburg and creating interest in wetland preservation.

Another method of publicizing the self-guided trail and other tourist sites in Coburg would be the installation of a low-power radio transmitter near the freeway. This method of communication is becoming increasingly popular for communities which desire increased tourism. Signs on the freeway encourage motorists to tune their radios to a specific frequency to hear information on tourism opportunities in that area. Depending on the cost of such transmitters and potential funding sources, this may be a viable option for Coburg.
Conclusions

In conclusion, the Coburg Wetland is an opportunity to provide interpretive services to a public that is becoming increasingly interested in, and concerned about, wetlands. A sound planning model, like that provided by Bucy (1990) is critical in designing a successful interpretive project. The goal for the Coburg Wetland is to increase public awareness and appreciation of wetland systems. With the theme of "wetlands meet the needs of both people and wildlife", the self-guided trail will help visitors understand why wetlands are important. The next step in the planning process is to discern how these goals would best be accomplished. In the following section, details concerning trail construction, interpretive stops, and text will be discussed.
Planning Step Two: 
Conceptual Plan for the Coburg Wetland Self-Guided Trail.

Introduction

Upon completion of an interpretive master plan, the next step in the planning process is to develop a detailed conceptual plan. The conceptual plan organizes the project by offering options which meet the criteria and goals identified in the master plan. The interpretive master plan identified that the major goal of the project is, "to increase public awareness and appreciation of wetland systems" (p.8). A secondary goal is to increase the tourism potential of the city of Coburg. According to the interpretive master plan, the best way to achieve these goals at the Coburg wetland is through the construction of a self-guided interpretive trail that makes use of educational signs to inform visitors about human and wildlife uses of wetland systems. Included in this plan is a sketched map which depicts the trail location and interpretive stops in respect to major landmarks (See appendix one). Since the map was drawn in the field and is not referenced to any topographic basemap, it is meant for illustration purposes only.

Description of Proposed Trail

The proposed interpretive trail will take visitors on a short loop around the pond and return them back to the parking lot / proposed picnic area. Since there is little change in elevation at the site, the view from the trail will be fairly even with the water level. An exception to this is on the eastern boundary of the property where the trail will rise onto a drier upland area overlooking one of the ponds. This is ideal, because it gives the visitor a slightly elevated vantage point from which to view the wildlife and also preserves the visual integrity of the site, because the I-5 freeway will be behind them. Since most of the trail will be located on drier uplands, trampling impact and waterlogged trails should not be a significant problem except in wet
Disabled access is an important planning consideration for the Coburg Wetland Interpretive Trail. Barrier-free trails make access to interpretive sites easier, safer and more enjoyable for all visitors. Laws relating to disabled access to recreational sites include the Architectural Barriers Act, Section 504 of the 1973 Rehabilitation Act and the 1990 Americans with Disabilities Act (Ham 1992, p.318). These laws require that all buildings, facilities, programs and services be made accessible. Even when one disregards the legal aspect of the situation, making recreational facilities accessible is still desirable: "...It is...cost effective and just makes good sense to design for the greater number of people" (Geiger, et al. 1989, p.49). Geiger (1989) explains further,

Approximately 50% of all Americans have some degree of disability. This includes individuals with some form of significant physical, sensory or mental impairment; individuals with less apparent disabling conditions (both temporary and/or chronic) and many senior citizens who experience various degrees of disability (Geiger et al. 1989, p.49).

To make a trail "barrier-free", it is important to consider trail surface and grade. Since the site is fairly level, there is no anticipated problem with the trail being too steep for visitors with mobility impairments. It appears possible to construct the trail so that it avoids muddy areas which would cause difficulties for wheelchairs or canes. Paving the trail is an option that would increase accessibility for visitors with mobility impairments as well as families with strollers. In terms of keeping the site "natural", this option is less desirable. A woodchip or gravel trail, if kept dry, can provide adequate access for most disabled users, but would likely prevent motorized wheelchair use. It will be important to consider the design of viewing platforms, bridges and culverts in order to make them accessible for all visitors. The proposed design for the interpretive signs is suggested by Bartlett (1992, p.303) to provide easier viewing for visitors in wheelchairs (see appendix three). Text size and color contrast should be considered for the interpretive materials to aid visitors with
sensory impairments.

**Sign Material and Design**

Interpretive signs can be produced from a variety of materials, but one of the most functional is fiberglass. The text and graphics are silk-screened and then embedded in a fiberglass casing. Along with being visually attractive, the signs can withstand adverse weather conditions. Though the signs are vulnerable to vandalism, they are easy and inexpensive to replace. When the silkscreened print of the sign is produced, it is a simple matter to print additional copies. If the sign is vandalized, one of the additional prints can be used to replace the original.

Wooden signs are also a viable option for the wetland trail. These signs are inexpensive, durable, and can be fabricated by volunteers. The drawback of wooden signs is the restrictive nature of the medium. Wooden signs are generally limited to text and simple, outlined pictures. Fiberglass signs are the preferred option for the Coburg Wetland, but wood could be used if funding becomes a problem.

**Trail Theme**

The theme for the Coburg wetland interpretive trail will be, "Wetlands meet the needs of both people and wildlife." Wetlands help filter pollutants and recharge ground water supplies. Since most of the local community makes use of well water, this trail can be an opportunity to educate local citizens on how this and other wetlands in the Willamette valley are important to their community. The water that supplies the wetland drains from local farm fields, industrial parking lots, and the freeway. All of these areas have the potential of adding pollutants such as heavy metals and nitrates to the ground water supply. Wetland plants (and bacteria/fungi) help to filter this water before it returns to the aquifers. Focusing on how the wetland affects the community should help local people realize their connection with their
environment and with the Coburg wetland, specifically.

The second main objective of the interpretive trail would be to focus on the native wildlife found around wetlands and how the wetland provides suitable habitat for many different species. During a one-hour excursion through the Coburg wetland, one could see crawdads, fish, frogs, ducks, geese, herons, red-winged blackbirds, fox, and the tracks of a nutria. The diversity on this small site has substantial interpretive potential.

Thematic Plan

Introductory sign:

Welcome to the Coburg Wetland!

Have you always thought that wetlands were only good for ducks? Come on an easy thirty minute walk and learn how wetlands meet the needs of both people and wildlife.

The trail is a .5 mile loop and returns here.

Stop one: The humble beginnings of a wetland. The trail begins by examining two of the drainage ditches that serve as inputs for the wetland. The text for the stop will discuss briefly the fact that the wetland is a remnant from the construction of Interstate-5 and that the water sources are from nearby fields and drainage ditches. The text will emphasize that from these humble beginnings, nature has reclaimed the site.

Stop two: Groundwater: From wetlands to wells. While viewing the larger, seasonal marsh, the visitor can read about how wetlands help to recharge aquifers. In the current age of water conservation and well-water issues, this topic should be of interest to many local citizens.
Stop three: Nature's filtering system. The text for this stop will concentrate on how wetland plants and organisms help filter pollutants. Since the previous two stops considered how the runoff water was returned to the aquifers, this stop will discuss how wetlands are a natural cleaning system for that water (see example on p.12).

Stop four: The serenity of a marsh. This will be the last stop near the seasonal marsh and it will deal with the intrinsic, scenic value of wetlands. It is important to consider values that are non-utilitarian in nature, because they can provide an emotional connection with the site. Quotes from various preservationists on the subject of serenity and reflection in nature will serve as the text for this stop. This sign serves as a transition point between how wetlands help people to how they help wildlife.

Stop five: Life in the water. At this point, the visitor will be guided back toward the drainage ditch which separates the two ponds. Stop five will discuss the different types of frogs and fish that might be seen if someone explores the waterways. Visitors have the potential of seeing crawdads, fish, frogs, tadpoles, mollusks and a host of other small creatures. Even if the visitor does not get to see any of these animals, the sign will get them watching more closely as they walk the rest of the trail. The text will also encourage people to listen for the sounds of the frogs which are generally audible from the direction of the pond.

Stop six: Bugs: All abuzz about wetlands. Stop six will list some of the insects that people can look for around the water and what niche they fill in the wetland ecosystem. This would also be a good opportunity to discuss the wetland food chain.
Stop seven: Waterfowl are welcome wetland visitors. This will be the first stop at the pond that is filled year-round. On the east side of the pond, there is a large black cottonwood tree. This would be the ideal location for a bench because of the shade and because, being slightly uphill from the pond, it provides a good view. The text will describe various types of waterbirds that might be seen at different times of the year. If viewing platforms and telescopes prove to be an economically viable measure for the Coburg wetland, stops seven and eight would be ideal sites because of their upland locations.

Stop eight: Marsh music: birds of the wetlands, will discuss some of the other birds that call the Coburg wetland home. The area is generally ringing with the sounds of red-winged blackbirds and other songbirds. Raptors are also common sights and some varieties will be discussed in the interpretive text.

Stop nine: Wetlands are watering holes for wildlife. Stop nine will be the last stop on the shore of the pond. This sign will discuss how mammals fit into the general wetland picture. There is evidence of nutria (an aquatic mammal) at the site and very high probability of other mammals including raccoons, skunk, deer and red fox, as well as various types of rodents.

Stop ten: The Coburg wetland is important to us all. This stop will serve as the conclusion of the walk. As the visitor looks back at the wetland they just experienced, they will be reminded why wetlands are important to both people and animals. The conclusion will also encourage them to learn more about wetlands and suggest ways of getting involved in wetland protection.
Conclusions

Wetlands trails are a unique way to interpret wildlife and human interactions and the Coburg Wetland is a good opportunity to provide this service to the public. This design will aid in planning the self-guided trail scheduled for construction in the near future.

Further Recommendations:

Before construction begins on the Coburg Wetland Interpretive Trail, other factors need to be considered. First, the wetland needs to be surveyed and mapped. At the current time, the high and low water levels for the ponds are only approximations. Before the trail can be constructed, it is important to determine where culverts and bridges will be needed. Since much of the planning process took place in late spring of 1994, high water levels were estimated by vegetation differences. Field mapping during the high water period would be advisable to corroborate these findings.

Another important step to take before construction would be to control access to the site. Hunting and fishing are no longer allowed on the site, but currently there are no regulatory signs. Since there is evidence that the property has been used for these activities in the past (empty shell casings and fishing line), it is important that the new restrictions are clearly identified. A sign at the main entrance to the wetland could state, "All wildlife of the Coburg Wetland are protected! Please, no hunting, fishing or collecting." Other signs along the border should identify the site as a protected area. At the present time, the waterfowl in the wetland are still skittish around visitors. This could be the result of hunting pressure in the wetland and throughout the Willamette Valley. It is expected that the wildlife will habituate to visitors now that hunting has ceased.

It is important that detailed inventories of plants, birds and other animals are
completed in the near future. Ideally, this should have been completed before the interpretation planning began. The need for inventories was expressed as early as March of 1993 in the Coburg Wetland RC&D Measure Plan (East Lane et al. 1993, p.2-3) and was re-iterated by the Draft Management Plan in May of the same year (Bezayiff et al. 1993, p.2). These inventories should be completed before any further planning is done. Exotic species, such as the nutria and mosquitofish, are present at the site and decisions concerning their management should be made before trail construction begins.

There are a wide variety of other projects which would enhance visitor enjoyment of the Coburg Wetland. The construction of a small picnic area has been discussed and will serve as the starting and ending point for the interpretive trail. Restroom facilities and drinking fountains are also needed. Providing parking for visitors is also a primary concern before trail construction is completed. This could be accomplished by designing a small parking area or making arrangements with neighboring businesses to provide parking.

Funding for the trail construction can be obtained from a variety of sources. Private organizations, such as Ducks Unlimited and the Audubon Society, often provide funds for such projects. Limited funds are available through federal and state programs. The local business community may also be interested in a partnership program which encourages them to "adopt" the wetland. Since local business may profit from increased tourism, they may be willing to support the project. A recreational vehicle repair company, based next to the wetland, could also benefit when clients use the picnic area and trail during their wait.

After the construction of the interpretive trail, an additional project would entail designing interpretive packets that could be used by school classrooms in conjunction with field trips and outdoor activities. These could be designed to further elaborate on the interpretation used in the self-guided trail, or to lead the students in
separate projects. Students could be involved in testing water quality or in conducting plant and wildlife inventories. Local teachers should be involved in the development of these resources. This could aid the local community in developing a sense of ownership and responsibility for the wetland.

3. Conclusions

The success of interpretive developments depends on careful planning. Identifying goals, audience, theme, parameters and strategies in the early stages of the planning process can aid the interpreter in choosing interpretive formats and themes which are most conducive to achieving the project's goals. In the case of the Coburg Wetland, the primary goal is to increase the public's awareness and appreciation of wetland systems. After considering the site, parameters and themes, it was determined that this goal can best be accomplished by the construction of a self-guided trail.

There is growing concern over preserving wetland areas in the Willamette Valley to protect water quality, wildlife and waterfowl. The Coburg Wetland Interpretive Trail will provide an opportunity for residents of the Willamette Valley to achieve a better understanding of why wetlands are important. The completion of this project will be a great public service to the residents of the area who share these concerns and will provide recreational and educational opportunities for years to come.
References


Appendix A: Sketch Map of Coburg Wetland Self-Guided Interpretive Trail.

Thematic Stops
Stop #1: The Humble Beginnings...
Stop #2: Groundwater: From Wetlands to Wells.
Stop #3: Nature's Filtration System.
Stop #4: The Serenity of a Wetland.
Stop #5: Life in the Water.
Stop #6: Bugs: All Abuzz About Wetlands.
Stop #7: Waterfowl are Welcome Wetland Visitors.
Stop #8: Marsh Music: Birds of the Wetlands.
Stop #9: Wetlands are Watering Holes for Wildlife.
Stop #10: The Coburg Wetland is important to us all.
Appendix B: Proposed features which will require outside funding.

- Mapping / surveying
- Trail surface
- Signs (interpretive and regulatory)
  - Design
  - Fabrication
  - Installation
- Informational kiosk
- Viewing platforms (2)
- Telescopes (2)
- Bridges / culverts
- Low-power radio
- General brochure
  - Design
  - Printing
- Fence repair / construction
- Construction equipment
- Restroom facilities
- Picnic tables
- Parking area

Appendix C: Proposed design for interpretive signs (as suggested by Bartlett (1992) and Ham (1992).
Appendix D: Airphoto of the Coburg Wetland.