

Tualatin Hills Park & Recreation District

Natural Resources Functional Plan



Tualatin Hills Park & Recreation District Natural Resources Functional Plan

December 8, 2014

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Executive Summary

The Tualatin Hills Park & Recreation District manages nearly 1,400 acres of natural areas spread across more than 100 sites which represent more than half of the park district's total land holdings. These areas provide multiple benefits for wildlife and patrons.

The purpose of the Natural Resources Functional Plan (NRFP) is to provide a vision and set of tools to help staff prioritize and measure the success of their work in stewardship and community engagement in these natural areas. It also serves as a tool to help stakeholders, including THPRD staff, understand how and why natural resource decisions are made.

The plan will influence multiple departments at THPRD; however, it will have the greatest influence on the Natural Resources Department, whose mission is to connect people to nature through trails, environmental education, and stewardship. The NRFP covers processes and goals related to the park district's geographic boundaries, although successful natural resource management requires partnerships and coordination extending beyond the lines on a map.

For community engagement activities (Chapter 2), the plan sets the direction programs should follow, as well as rationales, strategies, and milestones for getting park district residents connected to nature. Key priorities for staff activity include:

1. Create a sense of place.
2. Reach new audiences.
3. Provide a continuum of experiences.
4. Maintain quality of programs.

For natural areas (Chapters 3 to 5), the plan provides a process that considers multiple perspectives when making decisions. Staff will use scoring rubrics in a decision-making process that ranks sites based on widely used conservation criteria. The plan also provides a process to guide values-based decisions. Key priorities for staff activity include:

1. Protect the best.
2. Improve habitat connectivity.
3. Focus on watershed scale improvements.
4. Show success in the field through reporting.

For additional information, see the pages that follow or visit the Natural Resources Department webpage at <http://www.thprd.org/nature/home.cfm>

1. Background & Purpose

1.1 Introduction

The Tualatin Hills Park & Recreation District (THPRD) owns or manages nearly 1,400 acres of natural areas spread across more than 100 sites. These areas represent more than half of the park district's total land holdings. Natural areas are dominated by native plants, show limited man-made modifications to the land, provide food and shelter for wildlife, and often contain ponds, creeks, or wetlands. They also provide opportunities for learning, wonder, and hands-on involvement for community members.

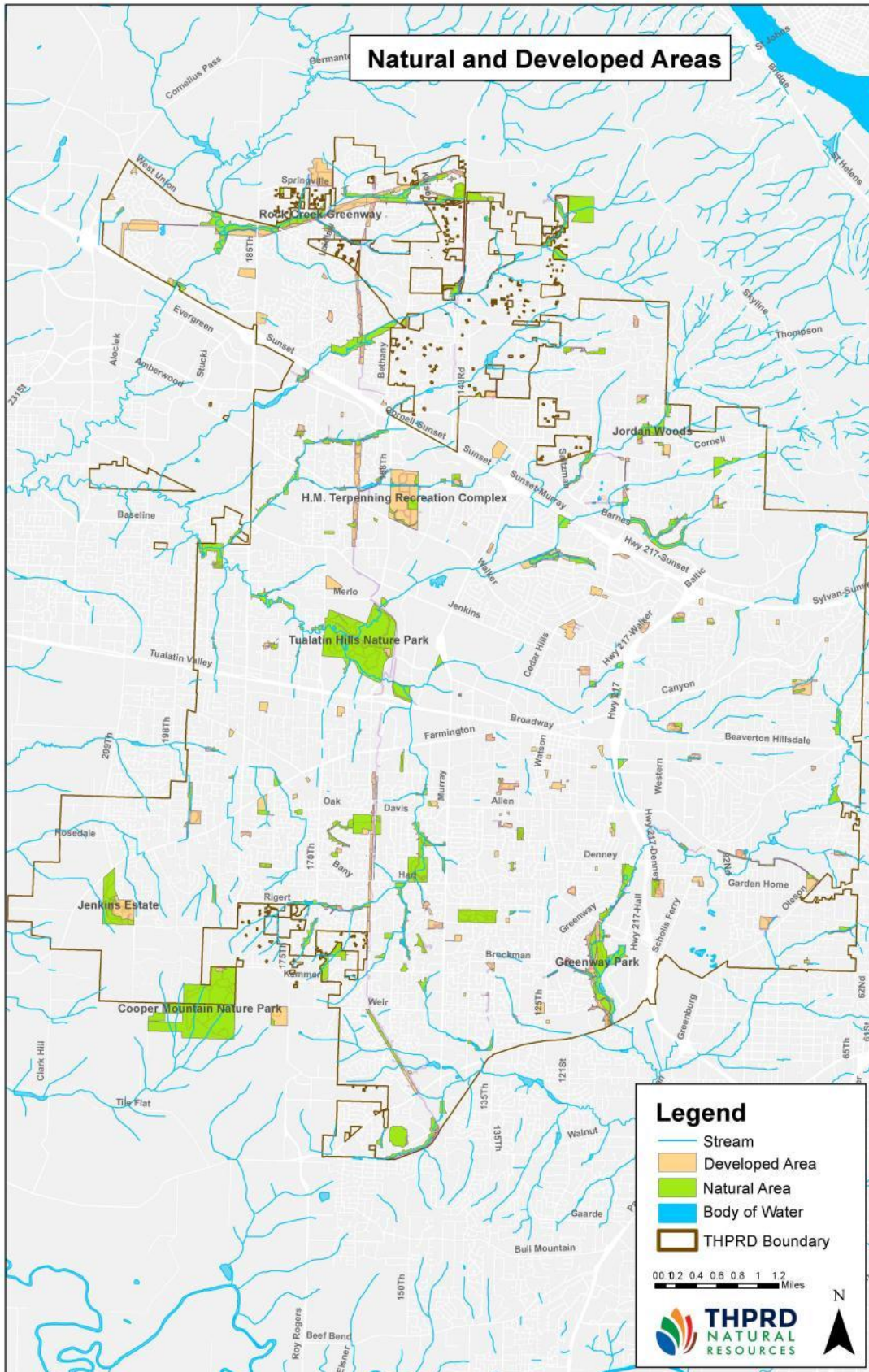
Because residents of the park district value natural resources, THPRD created a natural resources department to involve people in and conserve these areas. *The department's mission is to connect people to nature through trails, environmental education, and stewardship.*

The department has matured over time and is still evolving. Tasks that once may have seemed simple, such as acquiring and protecting a system of natural areas, have grown much more complex, as local natural resource managers learn more about how ecosystems function and what is required to keep them healthy or restore them to health.

In addition, community engagement activities offered by the department, such as volunteer stewardship and environmental education programs, have also matured. What started as an occasional nature program at a traditional recreation center has blossomed into an extensive set of classes, camps, and volunteer opportunities that each year serve thousands of students, families, and adults across the entire district. With two environmental learning facilities and a high level of staff and patron interest, the program is expected to see continued growth.

To ensure the success of the Natural Resource Department in education or habitat management, it is important to keep in mind that THPRD is part of a network of natural area managers, educators, and park providers in the Portland region, all of whom play roles in conserving and stewarding natural resources.

The purpose of the Natural Resources Functional Plan (NRFP) is to provide a vision and set of tools to help staff prioritize and measure the success of their work in stewardship and community engagement in these natural areas. The plan also serves as a tool to help stakeholders, including THPRD staff, understand how and why natural resource decisions are made.



1.2 Benefits of Natural Areas

Natural resources improve the ecological health of the community as well as contributing to the quality of life and character of the region. Central to the NRFP are several concepts:

- All parks provide some degree of natural resource function and should be managed as such.
- Natural areas are an important link to the history of this area.
- Human health is enhanced through the clean air and water provided by natural areas, as well as the opportunities for physical activity and relaxation opportunities they provide.
- Community engagement activities provide an important means for the community to understand and appreciate natural resources and become stewards of these areas.
- Natural resources should be protected, nurtured, and managed to maintain or enhance their integrity over time.
- Natural areas provide irreplaceable ecological functions.
- Management of natural resources is an important responsibility of the district.

At the heart of the THPRD NRFP is the long-term vision of a network of connected habitats that provide for the ecological and cultural needs of the community. This network of biodiversity corridors safeguards wildlife habitat, provides means for seed dispersal, and migration routes. The network provides passive recreation choices, offers educational opportunities, and preserves scenic character. A good example is the Rock Creek Greenway, which provides long stretches of uninterrupted habitat and connections to larger areas, such as Forest Park, while also serving the human needs of biking, jogging, or watching wildlife. Natural areas also contribute to the well-being of the community by improving water and air quality, increasing groundwater recharge, lessening flooding, and providing moments of beauty.

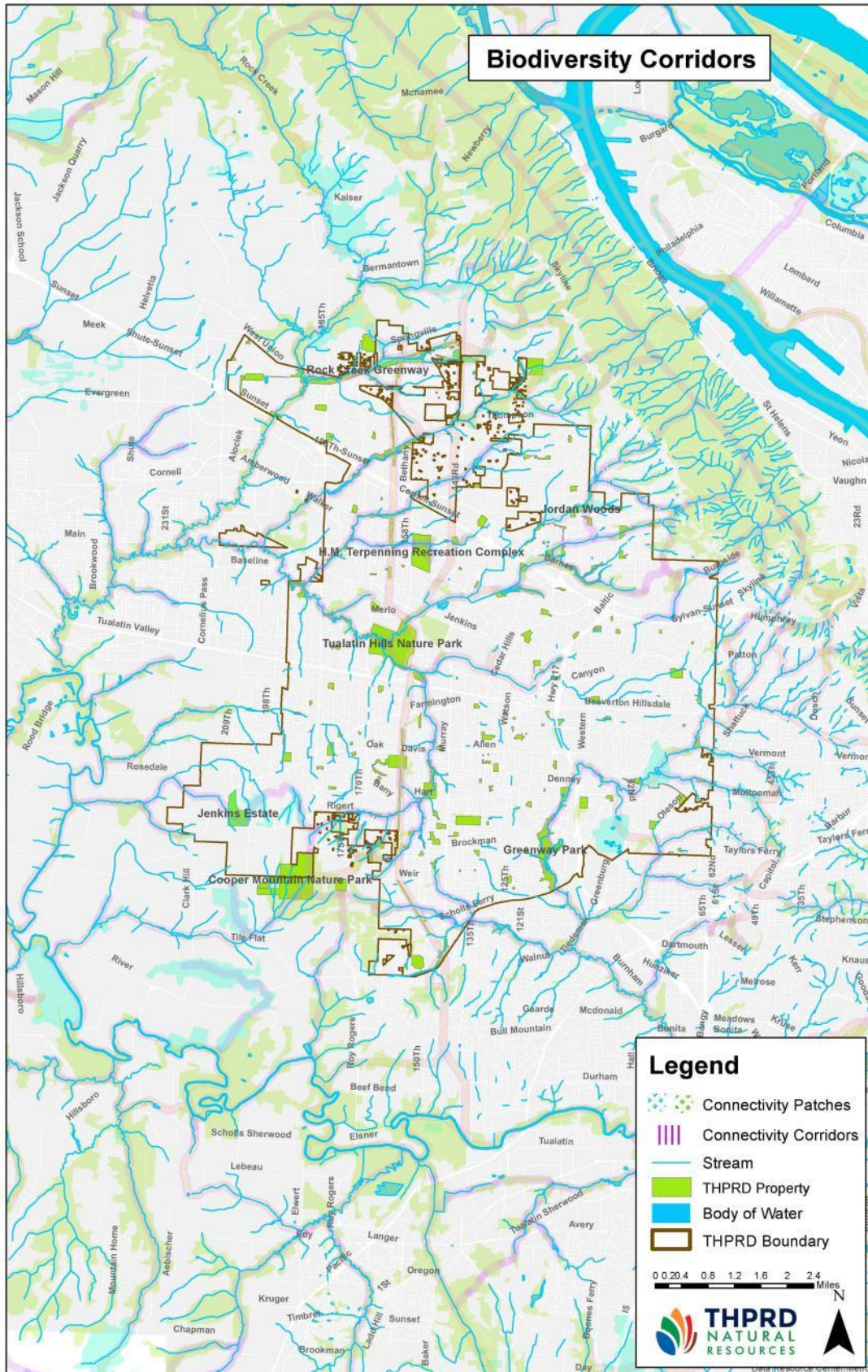
1.3 Natural Resources Philosophy

The following principles guide staff habitat management:

- *Protect the best.* When resources are not sufficient to do everything that needs to be done, staff will start by securing the highest quality natural areas. The premise (and evidence from other agencies) is that it is both less expensive and more effective to keep a site going through periodic maintenance than it is to restore it through heroic effort. The exception to this rule is the threat or risk a low functioning site might pose if it is neglected. For example, a patch of non-native Scotch broom next to an intact prairie is a threat to that prairie. Treating the Scotch broom and restoring it to something else may not be a high priority when looked at in isolation; but if treating it reduces the threat to a high functioning natural area, then it may be worth the effort.
- *Provide habitats that show a range of historic conditions.* Habitats such as prairie or oak woodland are increasingly rare, but are an important part of the natural and cultural

history of the region. Staff efforts to preserve these areas are valuable to wildlife and for educational purposes.

- *Allow natural processes to continue.* Staff will normally allow changes in water conditions, or permit native plant and animal species to change over time without intervention, except when a direct, preventable impact by humans is present. Non-native species will be reduced or eliminated where practical.
- *Lessen human impacts to natural areas.* After creating plans and conducting public outreach, staff will conduct activities that mimic natural processes or correct negative human actions. This could include prescribed burns and native tree removal in places where natural processes would have eliminated or reduced certain species. It may also entail removal of illegal trails or non-native plants. Some conditions, such as high water levels due to development elsewhere in the watershed, are beyond the scope and abilities of staff to manage.
- *Change is a constant.* Natural areas grow; trees die, but remain standing; and creeks carve new channels. While this is sometimes challenging for patrons, staff acknowledge and accept that the composition of natural areas will change over time.
- *Be proactive in habitat planning.* Staff will anticipate and communicate possible changes in natural areas when doing habitat management planning. When conducting habitat restoration, staff will use native plant species, but may plant them in configurations that support a resilient, if not typical, habitat configuration. With the predictions of warmer, drier summers and wetter winters, staff will need to adjust planting and maintenance strategies to provide habitat resiliency for climate change. Staff will keep abreast of changes in common, accepted habitat management practices, as well as new non-native species that may need to be managed.
- *Regional species are a priority.* Regional ecosystems are defined as those in the Lower Willamette Valley and Puget Trough. Habitat will be managed to promote native wildlife. Where feasible, new plants installed in THPRD properties should be historic to this region and should be of genetic stock from this area.
- *Trails can protect habitat.* Some areas are not suitable trails. However, well designed and maintained trails allow public access and lessen human impacts to wildlife.



1.4 Plan Context

The NRFP replaces the district's original Natural Resources Management Plan, adopted in January 2002. The NRFP covers processes and goals related to the park district's geographic boundaries, although successful natural resource management requires coordination beyond those boundaries. For the staff to succeed in their work, coordination with broader plans and outside partners will be critical.

At the broadest level, the NRFP supports the goals of habitat and wildlife conservation in the Oregon Department of Fish & Wildlife's state-wide [Oregon Conservation Strategy](#). On a more local level, the plan carries out portions of the vision of the Intertwine Alliance, of which THPRD is an active member. This includes the work of the Conservation Education Working Group and the Conservation Working Group's [Regional Conservation Strategy](#) (RCS), which provides guidance on habitat and wildlife management priorities within the Portland-Vancouver metropolitan region. THPRD will follow the recommendation from the RCS, which aims to:

- Ensure that the diversity of habitat types, plants, and animals is protected, conserved, and restored across the region's urban and rural landscapes.
- Acquire, protect, conserve, and manage functional habitat connectivity for wildlife (e.g., corridors) and create connections between habitat areas.
- Control invasive plant, animal, and aquatic species and reestablish native species.
- Create a healthy urban forest canopy that contributes to improvements in stormwater management and air quality.
- Maintain the long-term ecological integrity of streams, wetlands, rivers, and floodplains, including their biological, physical, and social values.

Staff should consult with other plans or regulations that relate to natural resources when carrying out work relating to this plan.

1.5 How THPRD Properties Connect to the Region

All THPRD parks provide some natural resource functions and values. However, the quality and quantity of natural resources varies greatly among properties. Because district resources are limited, it is important to identify properties with the highest natural resource functions and values and, accordingly, the greatest potential to contribute to the ecological integrity of the entire system.

THPRD presently manages about 1,400 acres of natural and semi-natural areas located in the Tualatin Valley bordered by Hillsboro on the west, Portland on the east, and district jurisdictional lines north and south. Park district lands are part of several biodiversity corridors that reach the Tualatin River, the Tualatin Mountains, and the Coast Range. Within this burgeoning 50 square mile urban/suburban area of 230,000 people, THPRD is the primary park

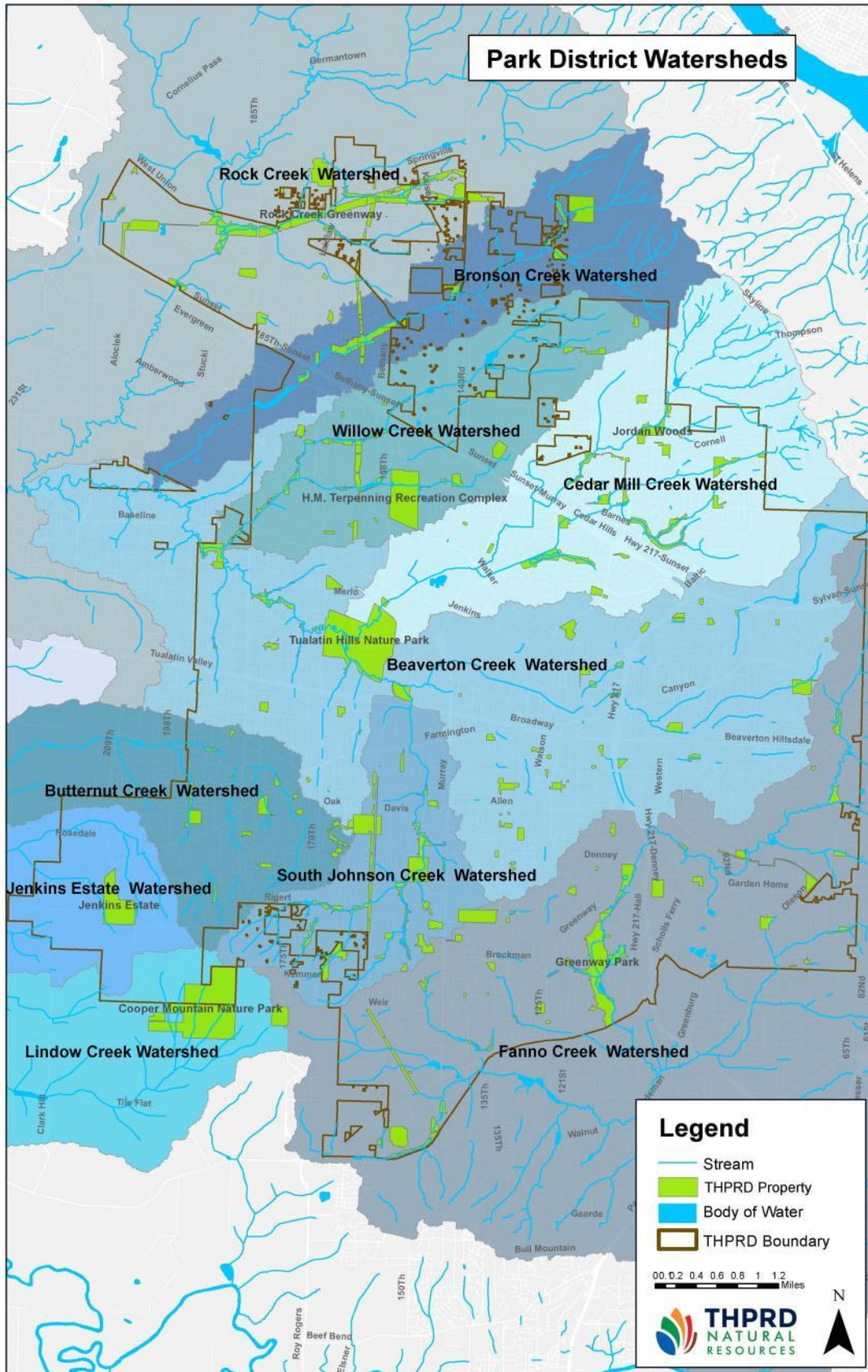
and natural resource manager, yet it only manages a mere four percent of the land within district boundaries. The general rule on biodiversity conservation is that it takes 30% of a region's ecosystems retained in a natural condition to maintain enough habitat for all native species.

In order to achieve long-term success, staff will need to partner with other organizations, land owners, and citizens to balance the influence of outside forces on THPRD property and increase watershed-wide benefits. A restoration plan for a site may need the voluntary involvement of neighboring private property owner or partnerships with larger-scale organizations, such as Clean Water Services, to achieve long-term success. The following considerations should be made when planning a project:

- Connections to watershed-scale processes and biodiversity corridors should be included when conducting individual site management.
- Ecological function needs to be evaluated at site, local, and regional scales.
- Non-natural areas surrounding a natural area (including street trees, athletic fields, and neighboring residential or commercial landscaping) can influence and provide habitat for different types of native wildlife.
- A functioning riparian system combines major benefits for native fish, wildlife, and people.
- Connectivity to larger blocks of habitat within the landscape is essential to maintain benefits to wildlife on a population level.

Significant biodiversity corridors on THPRD land include:

- Beaverton Creek, especially in the vicinity of the Tualatin Hills Nature Park
- Bronson and Bannister Creeks
- Cooper Mountain Nature Park and the South Johnson Creek watershed
- Fanno Creek
- Rock Creek and its unnamed tributary along the Rock Creek Greenway
- Westside and Waterhouse Linear Trail corridors



Relationship to THPRD's Comprehensive Plan

The park district's 2013 Comprehensive Plan provides broad goals for all aspects of park operations. Goal Four directs staff *to acquire, conserve and enhance natural areas and open spaces within the district*. Guidance on ways to carry out and measure the success of the following goals are described in the chapters of the NRFP:

4A. Conserve and enhance park district natural areas by working cooperatively with other groups.

- Use policies and procedures outlined in the park district Natural Resources Functional Plan to guide development and maintenance of structures or amenities in natural areas.
- Remove and control non-native plants, including noxious weeds, in natural areas where feasible and appropriate.
- Regularly review and coordinate maintenance protocols and activities among natural resource and maintenance personnel.

4B. Develop an interconnected system of greenways and wildlife habitat.

- Work with public agencies, nonprofit groups, and others to identify and acquire or secure easements for natural areas.

4C. Use park district facilities and programs, as well as partnerships with schools and other agencies, to increase the public's understanding of natural processes, wildlife, and habitats.

4D. Manage natural areas to lessen human impacts and allow natural processes to continue, while providing safe access.

- Coordinate trails development and maintenance activities with natural resource management objectives and activities.
- Continue to work with utility/other agencies to manage rights-of-way for utilities within natural areas, including vegetation management, replanting and other activities to create healthy habitat.

4E. Maintain man-made amenities or features in natural areas to meet educational and recreational needs while managing or limiting access and providing stewardship of the natural resource.

- Use policies and procedures outlined in the park district Natural Resources Functional Plan to guide development and maintenance of structures or amenities in natural areas.

4F. Allow for most natural processes to occur in natural areas or natural area elements of other park district facilities, consistent with direction provided in the park district's Natural Resources Functional Plan.

4G. Address general improvement and acquisition recommendations.

- Continue to look for opportunities to acquire natural resources and open spaces.
- Prepare Natural Resources Functional Plan

1.7 About this Document

The NRFP gives broad guidance on the management of natural areas and community engagement and includes specific decision-making guides.

For natural areas, the guides provide a process that is designed to help people consider multiple perspectives when making decisions. Each guide aids in the decision-making process by employing a rational method of scoring that ranks sites based on generally agreed upon or widely used conservation criteria. The criteria were developed with the assistance of an ecological consultant and professional land managers from nearby agencies and chosen based on science and best practices in the industry.

For community engagement activities, the plan sets the direction programs should follow, as well as providing rationales, strategies, and milestones for getting park district residents involved in natural areas.

The Natural Resources Department will be the most active user and keeper of the document; however, since the park district's Maintenance Operations and Planning departments each interact with natural resources in the course of their work, they will consult it when working in or near natural areas.

Other functional plans, including the Trails and Programs Functional Plans, relate to this document and will be consulted as appropriate.

Technical terms used in this document are defined in the glossary on page 50.

2. Community Engagement

The Community Engagement section of this plan provides guidance, direction and standards for all Natural Resources staff members, including volunteers, who participate in any type of community engagement program. This section provides rationales and goals for the types of engagement programs that are offered, and it outlines the standards for quality and content.

This document defines programs as all structured environmental education activities and volunteer opportunities, as well as informal interpretive interactions and activities.

2.1 Purpose of Community Engagement

Community engagement is a central guiding principle and core value of THPRD. The purpose of community engagement is to build positive relationships between people and the natural world. Staff accomplish this through awareness, exploration, education, and stewardship experiences. Community engagement builds on the district's strengths and opportunities, allowing THPRD residents and stakeholders to meaningfully engage with nature.

All Natural Resources staff are involved in community engagement at one level or another. This chapter sets goals and direction for guided and self-guided engagement experiences; ongoing volunteer opportunities; informal/roving interpretation; and facilities/amenities, including nature play areas, trails, and nature centers. Guidance for the development of physical amenities is covered in Chapter 5.

2.2 Community Engagement Approach

The Natural Resources Department will create a safe and positive learning environment where all patrons, regardless of background or level of experience, will feel welcome to explore and engage with nature. Staff will engage patrons through an interpretive approach; forging emotional connections first, followed by opportunities for learning and gaining knowledge. Current categories and examples of engagement include:

- *Guided engagement: The process whereby the individual is led by a trained professional who is skilled in teaching others about a particular resource and often accompanies them from place to place in the area of the resource.*
 - Examples of guided engagement include: nature preschool; guided walks; instructor-led registration programs; camps; school programs; group programs; nature birthday parties; community events; and outreach opportunities.
- *Self-directed engagement: The process whereby the individual takes the initiative and responsibility for learning. Individuals select, manage, and assess their own learning activities, which can be pursued at any time in any place, through any means, at any age.*

- Examples of self-directed engagement include: trail maps, interpretive signs, park/visitor information on the website, and indoor and outdoor exhibits.
- *Volunteer Opportunities: episodic and long-term opportunities for volunteers to provide stewardship and environmental education support across the District.*
 - Examples of volunteer opportunities include: habitat and trail stewardship, internships, adoption program, park watch, preschool program, advisory committee, youth stewardship programs, and wildlife and habitat monitoring.
- *Informal/Roving interpretation: spontaneous, personal interpretive contacts with audiences within a variety of settings.*
 - Examples of informal interpretation include: intentional or incidental interactions between patrons and staff or volunteers along trails, on the phone, at a nature center, or at a public meeting where information about natural resources is shared.
- *Amenities/Facilities: places that bring environments and people together under the guidance of trained professionals or provide self-directed learning environments where visitors experience and develop relationships with nature.*
 - Examples of amenities/facilities include: nature play areas, trails, and facilities such as the Tualatin Hills Nature Center and the Cooper Mountain Nature House.

2.3 Community Engagement Philosophy

The strongest community engagement activities are those which directly connect patrons to the local environment in which they live. The Natural Resources Department will strive to provide experiential opportunities where people can interact and relate to nature on their own terms, with THPRD, or in their own neighborhoods. Partnerships across the THPRD service area will allow staff to be successful in fulfilling this mission. In addition, staff accomplish the mission via the following values and principles:

Values:

- 1) Sense of Place: Staff encourage visitors to learn about and see themselves as a part of the natural community. Staff will promote stewardship and a sense of fellowship with others as a result of common attitudes, interests, and goals.
- 2) Personal Connection: Staff provide unique, meaningful, and relevant experiences for all people to connect with nature and promote physical, emotional, intellectual and spiritual health.
- 3) Life-long Learning: Staff provide a variety of (individual, group, guided, self-guided, single and repeat) experiences so that patrons can develop deeper, life-long connections to nature.

Principles:

- 1) Provide a safe, positive, and welcoming environment for all patrons.
- 2) Focus on local environments, processes, flora and fauna.
- 3) Focus on experiential interpretive learning; build emotional and physical connections, then impart knowledge.
- 4) Provide a range of experiences for all people and a variety of opportunities for them to connect to nature, based on their interests.

2.4 Target Audience

As of 2014, THPRD offers an extensive set of volunteer and environmental education programs. Volunteer opportunities are available for people ages 10 and up, but primarily focus on middle-school age through adults. Environmental education programs are geared towards families with children under the age of 15. While staff continue to serve these primary audiences, the goal over the next five years is to reach and serve diverse audiences representing groups and demographics that are currently underserved by programs.

Ongoing programming will serve all ethnicities and age groups, though staff will focus on the following target audiences over the next five years: younger age groups (ages 1-17) and their families, retirees (age 55+), and underserved high school age communities.

2.5 Community Engagement Priorities Moving Forward

While the Natural Resources Department will maintain and continue to provide the current level of programs, it is envisioned that community engagement will be enhanced through the following four priorities:

1. Create a Sense of Place: Become a central resource for nature activities where patrons gather to be inspired, increase their level of understanding and knowledge, and participate in programs.
2. Reach New Audiences: Connect with and involve community members who are currently underrepresented in programs and services.
3. Provide a Continuum of Experiences: Expand the opportunities for community members to participate in programs that foster a deeper understanding of THPRD natural areas, while also nurturing a continuum of experiences.
4. Maintain Quality of Programs: Maintain and increase the quality of programs while continuing to develop and deliver programs and services that engage and equip community members to become stewards of THPRD natural areas.

2.6 Relationship to other THPRD Plans

The NRFP outlines the rationale, goals, and strategies for natural resource community engagement activities and addresses goal 4C in the THPRD Comprehensive Plan: *Use park district facilities and programs, as well as partnerships with schools and other agencies, to increase the public's understanding of natural processes, wildlife, and habitats.*

Pricing, cost recovery goals, and the service assessment process for programs are outlined in the THPRD Service and Financial Sustainability Plan and the THPRD Program Functional Plan. In addition, guiding principles for programs, program success monitoring, and addressing facility standards is also included in the Program Functional Plan.

2.7 Community Engagement Priorities

Priority 1: Create a Sense of Place

Rationale

A sense of place develops when people have a deep understanding, appreciation and engagement with a particular place. It is created over time through knowledge gained and direct experiences. When a strong sense of place is established, its identity and character is recognized immediately by visitors and valued deeply by park district residents. With nature centers and nature play areas, among other natural resource amenities, staff have an opportunity and desire to inspire a stronger sense of place across the community and encourage connections between people and the natural environment. The Natural Resources Department strives to become a central resource for the public to learn about nature; people are welcome to explore, interact, and share experiences; and staff foster fellowship and create a sense of community. People feel a sense of place when engaged in natural resources programs – they understand that these are places to gather and share nature activities, information, and inspiration.

Goal

Become a central resource for the community to be inspired, to increase knowledge and understanding of nature, and participate in programs.

Core Strategies

- Increase awareness of community engagement opportunities through a variety of communication and marketing techniques.
- Create natural areas, educational facilities, and amenities that are safe, welcoming and well maintained. Provide a positive, knowledgeable, and friendly presence at THPRD facilities, trails, parks, and natural areas, to engage all people with nature.

- Offer experiences through which patrons develop a deeper level of understanding and increased knowledge about natural processes and the local environment.
- Provide a continuum of experiences and opportunities that allow people to forge emotional and intellectual bonds with the natural environment, ultimately enabling residents to see themselves as a part of this place and make a positive impact on the environment.

What Success Looks Like

When new people move to the area, people tell them to look to THPRD for nature opportunities in greater Beaverton – THPRD is the place to visit if residents want to be inspired about nature; increase knowledge and understanding about trails, natural resources, and natural processes in their community; and participate or engage in volunteer opportunities and nature education programs. Success will be measured by increased trail and facility counts, as well as qualitative surveys that indicate people’s level of satisfaction and awareness of program offerings.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none"> • Proactively engage the community in a dialogue about NR facilities, programs and services and use the data to inform internal priorities and resource allocation. • Develop visitor use surveys to measure quality of facilities, trails, and programs. 	<ul style="list-style-type: none"> • Use various promotional tools (including website and social media) to provide access to timely, relevant and accurate information. • Propose changes to indoor and outdoor programming areas, including exhibits, and classrooms, to better serve patrons. 	<ul style="list-style-type: none"> • Provide information and education to new audiences using appropriate marketing tools. • Implement changes to indoor and outdoor programming areas, including exhibits and classrooms, to better serve patrons.

Priority 2: Reach New Audiences

Rationale

The Natural Resources Department provides opportunities for people to connect with nature throughout the Park District. The current audience attending community engagement programs through Natural Resources has been growing, but has been a fairly consistent demographic group. While staff will continue to serve this primary audience, the goal over the next five years is to reach and serve new audiences representing groups and demographics that exist across the District, but are currently underserved by natural resources programs.

Goal

Engage new audiences within the District that are currently underserved by NR programs.

Core Strategies

- Within the priority audiences defined above, engage community groups and organizations in a dialogue that helps THPRD understand the community needs of the priority audiences.
- Pursue active and reciprocal partnerships with community groups and organizations serving priority audiences to help strengthen the collective work of both partners.
- Refine existing, and develop new, programming; utilize advanced outreach, marketing, technological and communication strategies to better serve priority audiences.

What Success Looks Like

In five years, staff will be actively working with priority community groups and organizations to promote and engage more diverse audiences across all THPRD natural areas. Through thriving partnerships and new programming, the demographics of those engaged are growing, both numerically and in the depth of engagement. In short, more people, representing a wider cross-section of the community, are connecting to nature more deeply than ever before.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none">• Identify and contact community groups and organizations to establish potential partnerships to reach target audiences.	<ul style="list-style-type: none">• Develop a working relationship with at least two groups within the priority audiences to assess their needs and maintain dialogue.• Tailor program offerings to priority audiences.	<ul style="list-style-type: none">• Increase participation by priority audiences.

Priority 3: Continuum of Experiences

Rationale

The Natural Resources Department provides a wide range of engagement opportunities to residents of the community. While individually these represent many points of engagement, the goal over the next five years is to assess the kinds of opportunities for engagement, creating a continuum that provides community members with pathways for long-term learning and connection to nature.

Goal

Staff will expand the continuum of engagement, incorporating the breadth and depth of current offerings, in order to promote positive relationships between people and nature and nurture lifelong learning.

Core Strategies

- Internally assess the use of space and programs to identify ways of improving and expanding engagement opportunities.
- Plan for, develop, and propose short- and long-term opportunities that fill the gaps along the continuum of engagement, from knowledge to engagement.
- Support staff development in planning for, developing, proposing, and marketing short- and long-term programs.

What Success Looks Like

In five years, an increased number of community members will be engaged with THPRD as active participants and volunteers. Success will be demonstrated by an increase in the types of programs that are offered and the number of participants in each of those offerings.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none"> • Research and assess needs and interests in the region, specifically for the target audiences. • Perform a gap analysis of program offerings along the continuum of engagement. 	<ul style="list-style-type: none"> • Create staff professional development guidelines to support development of programs and marketing to priority audiences. • Create a plan to assess, evaluate and propose physical changes to indoor and/or outdoor programming spaces. • Develop engagement pathways incorporating existing and new programs. 	<ul style="list-style-type: none"> • Pilot engagement pathways and programs that provide for long-term engagement. • Formalize partnerships with other nature organizations to expand and coordinate programming. • Implement changes to indoor and/or outdoor programming spaces based on needs.

Priority 4: Maintain Quality of Programs

Rationale

The quality of programs influences the level of participation and engagement. Quality of programs includes everything from first impressions and the environment in which patrons learn, to the content of programs and interactions with staff. Recognizing this, staff strive to maintain and improve the quality of programs, facilities, and interactions with the public.

Goal

Over the next five years, staff will continue to implement program quality review and improvement practices to ensure the highest quality of programs and services across the Natural Resources Department.

Core Strategies

- Hire, train, and support skilled staff members and volunteers who are committed to developing high quality programs and services.
- Establish, follow, and seek to meet internal and professional quality standards.
- Conduct qualitative and quantitative evaluations to measure the success of programs and services.

What Success Looks Like

In five years, natural resources programs and services will reflect a common set of quality standards. Using tools and methods to ensure continuous learning and improvement will be routine practices across all teams in the department. Using qualitative and quantitative measures, programs will consistently be perceived as offering high quality and value to the community. Other parks and recreation systems will routinely seek to replicate natural resources programs and services.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none">• Define and clarify quality standards for programs.• Assess the quality of programs against the developed standards and develop processes to ensure programs meet the standards.• Update training resources for volunteer positions.	<ul style="list-style-type: none">• Regularly evaluate programs and services.• Refine programs to meet quality standards.• Match staff resources and training to ensure the ability to provide high quality programs.	<ul style="list-style-type: none">• Document quality improvements and use the findings to improve existing programs and inform the development of new programs.

3. Habitat Management Priorities

3.1 Scope of Natural Resources Department Work

Natural Resources staff are the lead planners, educators, and habitat managers in natural areas, but given the broad scope of what they must accomplish, non-profit or government partners, volunteers, contractors, and staff from other THPRD departments are critical to achieving success. Partners do a wide variety of things to support THPRD efforts, including: conducting large scale planning, providing plants or materials, coordinating volunteers or paid labor, conducting environmental education activities, and controlling weeds. Table 3A shows the THPRD lead and partner departments for work conducted in natural areas.

Table 3A. THPRD Natural Area Staff Responsibility Matrix (⊙ = lead on task ○ = assist with task)

TASK ↓	Natural Resources	Maintenance Operations	Planning	Security	Risk Management
Community engagement	⊙				
Conflict resolution	⊙			○	○
Educational programs	⊙				
Emergency response	○	○		⊙	○
Hazard Tree Management	○	⊙			○
Interpretive signs/art	⊙ Design	⊙ Maintenance	○		
Mapping/inventory	⊙		○		
Natural Area Management	⊙	○			
Natural Resources Functional Plan	⊙	○	○		
Nature Play Areas	⊙ Off-trail sites	○	⊙ Developed sites	○	○
Paved Trails	○	⊙			
Rule enforcement/ Security	○			⊙	
Soft-surface trails	⊙	○	○		

TASK ↓	Natural Resources	Maintenance Operations	Planning	Security	Risk Management
Trails Functional Plan	○	○	⊙		
Volunteer coordination	⊙				
Wildlife management	⊙			○	○

⊙ = lead on task ○ = assist with task

3.2 Natural Area Maintenance

Maintaining healthy natural areas provides a place where patrons can explore, enjoy, and learn about nature close to home. Historically, natural areas have been viewed as places that take care of themselves. It is now understood that this is not the case, especially in urban/suburban areas. Without active management of outside influences, natural areas will lose their native biological diversity over time as a result of human activities and invasion by non-native species. Although maintenance activities must be done in these areas, the approach is considerably different than maintaining a traditional, turf-oriented park.

The purpose of natural area maintenance is to lessen human impacts and allow natural processes to continue, while providing safe access for people, where appropriate. Natural area maintenance activities include removing non-native weeds, planting native plants, decommissioning/obscuring unwanted illegal trails, and pruning vegetation away from trails. Leaves are left on the ground to enrich the soil; standing dead trees and logs are both acceptable and beneficial when located a safe distance from patron activities or structures.

Unlike a developed park, where clean edges and neatly trimmed bushes are desirable, natural area maintenance activities may not be obvious to visitors. For example, where shrubs need to be trimmed back from a trail through a natural area, care should be taken to maintain the illusion that the trail clearings are not artificially created. On the other hand, removal of invasive weeds will temporarily leave a noticeable empty space until the area is revegetated. The goal of habitat management and maintenance is to work toward healthy, resilient natural systems. This can be accomplished through specific actions that benefit the habitat and ensure that human impacts are reduced or minimized.

3.3 Maintenance and Restoration Priorities

When staff can identify which natural areas provide the highest function and value, they can better prioritize their time and efforts by making the case to stakeholders or funders about why a site is deserving of resources. All THPRD natural areas will be scored and prioritized every five years, or individually after significant enhancement projects, using the rubric in Table 3B.

Scores are based on an unweighted system that has 12 criteria. Criteria are listed in alphabetical order in each of the tables in the document. This is done to provide consistency and to reduce the appearance that one criterion is more important than another. The criteria include important ecological features, such as the presence of water, the condition of the site, unusual plants and animals, and the degree to which the site is connected to other natural areas. Social factors, like the potential for community engagement programs, public support, and degree of public use, are also considered. The staff judgment factor can be used to give added weight to any of the previous factors. Definitions of these criteria can be found in the glossary on page 50. Parks are scored on a comparative basis to each other. Scores above 40 are considered high functioning, between 25 and 39 are moderate functioning, and below 25 are low functioning sites.

While all natural areas will be given a baseline level of monitoring and care, high functioning sites will receive more resources. One measurable outcome of a high functioning site and successful habitat management is the percent of native plants, known as native cover, that can be found in a natural area. Staff will use native cover as one way to gauge when a site may need a higher level of management. Targets for native plant cover in different levels of natural areas can be found in Table 3C. When a site in a particular category is not meeting the target, staff should consider planning an improvement project or increased level of maintenance.

Table 3B. Natural Area Management Prioritization Rubric

Criteria	Point Scale				
	5 Points	4 Points	3 Points	2 Points	1 Point
Condition of habitat	Excellent condition >90% native cover	70-90% native cover	Moderate condition between 50-70% native cover	Between 30-50% native cover	Poor condition <30% native cover
Connectivity and size	Adjacent to or existing as a large habitat (>30 acres), anchor habitat or major connecting corridor (i.e. Fanno, Beaverton, Rock Creeks)	Adjacent to or existing as a medium/large sized habitat (20-30 acres), anchor habitat or connecting corridor	Adjacent to or existing as a medium sized habitat (10-20 acres) or in close proximity (within 1/3 mile) to a connecting corridor	Adjacent to a small habitat or proximity to a cluster of 2 or more habitats not separated by impassible barriers	Site is isolated from other natural areas
Current public support/ partners/ volunteer activity	Active public support group or partnership <u>and</u> regular volunteer activity	Active public support group or partnership <u>or</u> regular volunteer activity	A potential support group or partner <u>or</u> occasional volunteer activity	Moderate-low volunteer activity	No current or little potential for activity
Environmental education/ interpretation	Regular, year-round environmental education or interpretation	Regular, seasonal environmental education or interpretation	Periodic program or potential for programming/ interpretation	Moderate-low program usage	Sites with no existing programs or low potential for programming/ interpretation

Habitat type	Locally rare habitat types (i.e., prairie, oak woodland, mature forest)	Emergent or forested wetlands, young upland forest	Protected riparian corridors	Degraded habitats with remnant natural feature such as stand of native trees or shrubs	Man-made mitigation site or highly impacted habitat such as clearcut
Presence of listed or locally rare species	Confirmed presence of wildlife species listed as endangered, threatened, or sensitive by a state or federal agency	Confirmed presence of locally rare species or species of interest	Suspected presence of species (based on unconfirmed but credible community reports)	Suitable habitat for species (size, structure, cover)	Species is unlikely to be on site
Property size	Large property (>30 acres)	20-30 acres	Medium property (10-20 acres)	3-10 acres	Small property (<3 acres)
Public use and/or visibility	High use sites	Moderate-high use sites	Moderate use sites	Moderate-low use sites	Low use sites
Relationship to water	Presence of fish bearing, perennial or otherwise major creek (i.e. Rock Creek)	Presence of seasonal pond or minor perennial creek (i.e. Golf Creek)	Seasonal creek or in-stream pond (i.e. Bethany Lake)	Presence of isolated, year-round pond (i.e. Progress Lake)	No water resources are on the site, but absence of impervious area helps groundwater recharge

Return on previous or potential Investment	High level of return	Moderate-high level of return	Moderate level of return	Moderate-low level of return	Low level of return
Staff judgment	0-5 points for otherwise unaccounted for benefits or advantages of acquiring a site. May be applied if staff expertise determines that criteria should be more heavily weighted.				
Threat of inaction	Areas where neglect would result in an immediate threat (<1 year) to ecosystems (erosion, habitat loss) or public safety (i.e., fire)	Areas where neglect would result in a near-term threat (1-3 years) to ecosystems or public safety	Areas where neglect would result in a mid-term threat to ecosystems or public safety (3-5 years)	Areas where neglect would result in a potential future threat to ecosystems or public safety (>5 years)	Areas where neglect would result in a potential future threat to ecosystems or public safety beyond foreseeable future (>10 years)
Watershed benefit	Site or proposed activity has significant benefit beyond property boundaries	Site or proposed activity has large benefit beyond property boundaries	Site or proposed activity has moderate benefit beyond property boundaries	Site or proposed activity has modest benefit beyond property boundaries	Site or proposed activity has very localized benefit

Table: 3C. Plant Community Maintenance Targets

	Site Type		
	High Functioning	Moderate Functioning	Low Functioning
Minimum Percent native cover	80%	60%	40%

3.5 Land Acquisition Priorities

Land acquisition strategy requires a big picture view of the THPRD system. To advise the board of directors (who ultimately make land acquisition decisions) staff will score and write a narrative evaluation of lands for potential inclusion into the THPRD natural resource portfolio. Acquisition criteria are applicable where THPRD is considering purchase of new property, as well as acceptance of donated land.

Acquisition criteria seen in Table 3D are based on an unweighted system that has 13 criteria. Criteria are listed in alphabetical order in each of the tables in the document. This is done to provide consistency and to reduce the appearance that one criteria is more important than another. The criteria include important ecological features, such as the presence of water, the condition of the site, unusual plants and animals, and the degree to which the site is connected to other natural areas. Social factors, like the potential for environmental education programs, public access, and the potential for partnerships or funding, is considered. The costs of operation and likelihood that the site could be ecologically damaged if not under THPRD ownership also affects the scoring. The staff judgment factor can be used to give added weight to any of the previous factors. Definitions of each criteria can be found in the glossary on page 50. Properties are scored on a relative basis to each other. Scores above 35 are considered high, between 25 and 34 are moderate, and below 25 are low priority for acquisition.

Table 3D. Acquisition Criteria

Criteria	Point Scale				
	5 Points	4 Points	3 Points	2 Points	1 Point
Condition of habitat	Excellent condition >90% native cover	70-90% native cover	Moderate condition. 50-70% native cover	Between 30-50% native cover	Poor condition <30% native cover
Connectivity and size	Adjacent to or existing as a large habitat (>30 acres), anchor habitat or major connecting corridor (i.e. Fanno, Beaverton, Rock Creeks)	Adjacent to or existing as a medium/large sized habitat (20-30 acres), anchor habitat or connecting corridor	Adjacent to or existing as a medium sized habitat (10-20 acres) or in close proximity (within 1/3 mile) to a connecting corridor	Adjacent to a small habitat or proximity to a cluster of 2 or more habitats not separated by impassible barriers	Site is isolated from other natural areas

Criteria	Point Scale				
	5 Points	4 Points	3 Points	2 Points	1 Point
Environmental education/ interpretation potential	Regular, year-round environmental education or interpretation	Regular, seasonal environmental education or interpretation	Periodic program or programming/ interpretation	Moderate-low program usage	Sites with no existing programs or low potential for programming/ interpretation
Partnerships and Funding	High likelihood of donation, grant or partner funding to acquire or support site	Medium-high likelihood of donation, grant or partner funding to acquire or support site	Moderate likelihood of grant or partner funding to acquire or support site	Low likelihood of grant or partner funding to acquire or support site	Primarily a local interest, unlikely to gain funding from grant or partners or support site
Habitat type	Locally rare habitat types (i.e., prairie, oak woodland, mature forest)	Emergent or forested wetlands, young upland forest	Protected riparian corridors	Degraded habitats with remnant natural feature such as stand of native trees or shrubs	Man-made mitigation site or highly impacted habitat such as clearcut
Management cost and/or risk	<i>Subtract 0-5 points for sites with high cost to manage, and/or risks such as fire hazard, slope instability or other.</i>				
Presence of listed or locally rare species	Confirmed presence of wildlife species listed as endangered, threatened, or sensitive by a state or federal agency	Confirmed presence of locally rare species or species of interest	Suspected presence of species (based on unconfirmed but credible community reports)	Suitable habitat for species (size, structure, cover)	Species is unlikely to be on site

Recreation potential	Sites that have easy access, allow connections to or extensions of existing trails	Existing trails or good potential for trail development	Sites with moderate trail potential	Sites with limited trail potential or limited access	Sites with no trail potential or limited access
Relationship to water	Presence of perennial fish bearing, perennial or otherwise major creek (i.e. Rock Creek)	Presence of seasonal pond or minor perennial creek (i.e. Golf Creek)	Seasonal creek or in-stream pond (i.e. Bethany Lake)	Presence of isolated, year-round pond (i.e. Progress Lake)	No water resources are on the site, but absence of impervious area helps groundwater recharge
Social factors	High public support, high physical visibility that contributes to the aesthetics of a community, or provides unique environmental educational opportunity	Moderate-high level of support	Moderate support, visibility, or education opportunity (i.e., near a school)	Moderate-low level of support	Low levels of support, low visibility, and minimal educational value
Staff judgment	0-5 <i>points</i> for otherwise unaccounted for benefits or advantages of acquiring a site. May be applied if staff expertise determines that criteria should be more heavily weighted.				

Threat of loss	Areas that are certain to be lost to development	Areas that are likely to be lost to development	Areas where development-related loss is of moderate possibility	Areas where development-related loss is of low possibility	Areas already protected due to site constraints, zoning, or restrictions on land use
Watershed benefit	Site has significant benefit beyond property boundaries	Site has large benefit beyond property boundaries	Site has moderate benefit beyond property boundaries	Site has modest benefit beyond property boundaries	Site has very localized benefit

4. Natural Area Management Planning

4.1 Planning for Success

The purpose of creating plans, collecting data, and completing maintenance or enhancement work is to improve the quality of natural areas. Plans set the target for success. Staff action helps move a project or management strategy towards success. Site monitoring and inventory are the tools used to show the level of success. The data collected during these processes allows staff to evaluate past actions and plan for future efforts.

4.2 Site Management Documents

Earlier sections of the NRFP set broad priorities and goals. This section details the documents that guide on-the-ground natural area management. Concept level information is presented in this chapter to illustrate the intent and most important components of various documents, but specific templates, best practices, manuals, etc. are not included, in order to allow for flexibility as needs change over time. Current practices and management materials are available on district computer systems. Staff are expected to follow recent science and practical advances in the natural resources field to meet goals. Sources for updated professional practices will be sought via conferences, printed material, professional contacts, and the Internet.

The goals of this section are:

- To help staff plan for, carry out, and measure success.
- To provide a framework for accomplishing the goals and objectives of the department.
- To create an easily accessible repository of information that preserves the institutional knowledge of staff.
- To assign staff responsibility areas.

Site management documents and procedures range from being broad-based to site-specific. (In this case, a site refers to a specific geographic region or management unit.) Table 4A provides an overview of the types of documents and the scope of content they address.

Table 4A. Site Management Document Topic Areas and Scope.

	Scope of document
Functional Plan	
Master Plan	
Maintenance Management Plan	
Research	
Restoration Plan	
Site History	
Site Inventory	

4.3 Schedule for Production of Site Management Documents

The production and updating of documents is vital to the decision-making processes. Table 4B shows the preferred timeline for either the production or updating of guidance documents.

Table 4B. Frequency of Production of Habitat Management Documents

	Frequency of production (in years)			
	1	2	5	For new projects/sites
Functional plan			●	
Master Plan				●
Maintenance Management Plan			●	●
Research		●		
Restoration plan				●
Site History	●			
Site Inventory			●	●

4.4 Master Plan

A master plan develops a vision and guidance on park uses, features and their approximate location within a property or set of properties. The plan is often for future development and programming and may address trails, structures, natural resource management, and general design concerns. The plan is concept-based and not intended to address detailed issues related to engineered site design or operations. Master plans are led by a design team and may be composed of staff from multiple departments, as well as outside consultants or citizens.

4.5 Maintenance Management Plan

A maintenance management plan (MMP) is a holistic document that summarizes site data, describes needs and tasks, and delineates areas of responsibility between departments. Equally important, it establishes a long-term vision for each habitat at a site. An MMP also describes the vision for larger scale restoration projects that may change the appearance of a site, but not the specific details needed to carry out said project (that is the role of a restoration plan, described in section 4.7). It estimates the costs of both ongoing maintenance and large scale restoration activities on a site.

MMPs are often produced following a park redevelopment project. Depending on the site and prioritization ranking, the MMP can take different forms, ranging from a site map showing areas of department responsibility, to a larger document outlining everything from site history and habitat information to task methodology and frequency. Ultimately, the type of document that is most useful and appropriate will depend on the priority of and complexities of the site.

Departmental responsibility for maintaining park sites will fall to the Maintenance Operations Department and the Natural Resources Department. The Maintenance Operations Department is generally responsible for built features, while the Natural Resources Department is in charge of natural features. A list of typical responsibility areas can be found in Table 4C, though these can shift if an efficiency or special skill at a site is needed.

Table 4C. Typical Departmental Responsibility in MMPs

Natural Resources	Maintenance Operations
Bodies of water	Buildings
Forests and wetlands	Hard-surface trails
Off-trail nature play areas	Kiosks
Soft-surface trails	Signs
	Structured nature play areas
	Traditional play equipment

4.6 Research and Outside Groups

Natural areas are dynamic places, and despite high levels of training, staff continue to have questions about wildlife, plants, or natural processes that can aid in the management of these places. Many questions can only be answered through field research. The Natural Resources Department will work cooperatively with educational institutions, students, and other outside groups to design and implement appropriate research, including citizen science projects. Appropriate research includes studies that will add to the scientific knowledge of subjects such as natural processes, wildlife and habitat management, and water resources in the region. This increased knowledge will allow staff to share information and make more informed decisions in the management of natural area sites. While the subjects of many projects are fully conceived prior to a request for a research permit, staff should compile and revise yearly a list for research priorities based on new local or regional issues. In this way, staff can reach out to recruit institutions and individuals performing research in the region. Staff will maintain a written research request form and review process to determine legitimate research, including the collection of specimens.

4.7 Restoration plans

A restoration project improves the condition of a specific portion of a site. A restoration plan is a detailed document that outlines a project to be completed that goes beyond routine maintenance. It describes current condition, a desired future condition, and contains a specific description of work to be performed, as well as a refined cost estimate. The size and scope may range from a larger-scale, contractor-led effort, to a smaller staff or volunteer-led restoration project. This often entails a design modification that changes the look or function of a site. Restoration plans frequently focus on habitat restoration, but also apply to trail projects. All plans should contain broad goals and specific measurable objectives.

4.8 Site Management Files

Site management files include everything from documenting a mitigation project at a site, to a conversation with a neighbor supportive of invasive plant removal, to an unusual wildlife sighting. Storing this information in a location that preserves the institutional knowledge of staff is of great importance for the understanding and management of each individual site in the long-term. Site management files should include:

- Actual history- if known, past use or adjacent land use can explain the reason for specific conditions on site
- Encroachments- contact information for neighbors, nature of encroachment, timeframe for removal, photos
- Neighbor contacts- neighbors supportive of natural resource issues, neighbors with concerns regarding vegetation or district practices

- Park user issues- conflicts between park users or user types, vegetation issues, safety concerns, slippery surfaces
- Restoration work- volunteer or staff- led restoration work, target species, photos, budget (including approximate dollar value and time investment)
- Volunteer activity- habitat or trail restoration activity, clean ups, partners
- Wildlife sightings- unusual sightings, nesting or breeding activity, potential conflict species, federally or locally listed species, species of concern, etc.

4.9 Site inventory

Site inventory includes field-collected quantitative and qualitative data, which gives staff baseline information and data over time. This data will allow staff to track changes and see trends within natural areas and trails which inform management decisions. Inventory data, listed in priority order, should be collected on habitat, trails, and wildlife.

- Vegetative habitat types and layers, dominant and invasive species, and various impacts. Each natural area is divided into habitats based on vegetation type and function. For each habitat, information is gathered so as to obtain a complete picture of the individual habitat. Each habitat is divided into vegetative layers where data is gathered on percent cover, percent native, dominant species, and canopy height. In addition to habitat data, staff collects data on location and extent of target invasive and rare species of plants.
- Trail data is gathered on condition, surfacing, and width for all soft-surface and hard-surface trails. Information is also gathered for bridges, boardwalks, stairs, and trail amenities. Since habitat and trail inventory data is stored in and/or gathered with GIS, all information has a spatial reference that allows staff to produce and share maps.
- Wildlife inventory is currently focused on amphibians and turtles; however focal species should be based on the needs of the site. Data is collected on sites with a known or suspected breeding population or presence of a target species.

Future inventory work will delve into wildlife usage, impact of human activities, stream inventory, and water quality.

4.10 Monitoring and Data

Natural resource managers rely heavily on maps and data. Maps provide information and orientation, while data tracks and facilitates the analysis of success. Site monitoring and staff visits are important because they foster a current picture of what needs to be done in the short term. Keeping up-to-date data and maps of THPRD properties will be critical to help staff manage properties and see bigger picture change over time, allowing an evaluation of success compared to planned goals. Data collection will be done with an eye towards efficiency. Staff will use existing sources as much as possible, so long as the scale of the data is appropriate. Sources such as the Regional Land Information System (RLIS) data produced by Metro, as well as ecological layers created through the Intertwine Alliance's Conservation Working Group, are useful for baseline information and trends. These maps should be the starting point for new data layers created in house, specific to THPRD resources.

5. Decision Making Processes

5.1 Overview

In managing natural resources on behalf of a community, managers must often make decisions on what they believe are strictly technical issues; but these issues may impact individuals, neighborhoods or larger groups. There may be a “right” way to handle a particular problem from a scientific or technical standpoint, but doing so can conflict with the values, beliefs, or opinions of community members. There are also occasions when community members do not agree amongst themselves about a course of action, and decision-making processes can get bogged down, leading to inaction and a possible compounding of problems.

This chapter is designed to provide processes for engaging staff and the community in the decision-making process. When possible, staff will make efforts to understand the broader interests of the community, not just individual concerns. The sections that follow outline suggestions aimed at considering multiple angles on perceived problems. After engaging in these processes, a clear answer still may not emerge. In these cases, higher level THPRD management or the board of directors may intervene and make a decision in the absence of a unified recommendation.

5.2 Natural Area Management

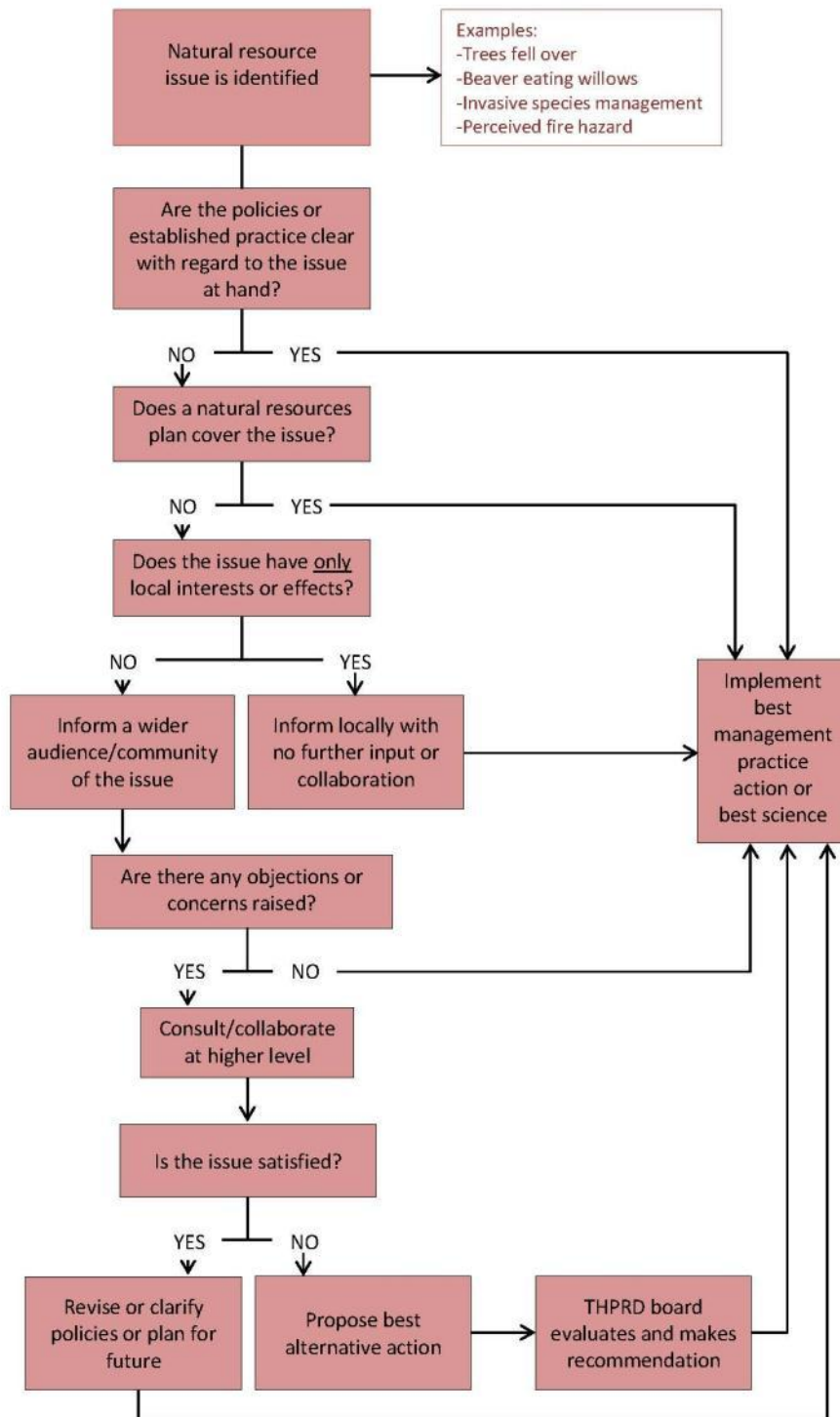
THPRD natural areas are relatively small and embedded within an urban/suburban matrix of development. In addition to conservation of habitat, these properties are important for public use and enjoyment. The presence of people and nature in close proximity can be a cause of conflict because there is not always enough room to accommodate the needs of wildlife with the desires of people. An investment in public outreach efforts early in the process, efforts that involve listening to stakeholder concerns, often provides important insights to guide decisions or discussions. Staff will attempt to foresee potential conflict areas and be proactive in the planning process, but this is not always possible.

While staff will always follow the Community Outreach Procedure, conflicts may arise that require staff to consider the appropriate level of public involvement beyond THPRD policy requirements. Levels of involvement are:

1. Inform (lowest level)
2. Consult
3. Involve
4. Collaborate

When a solution to a conflict is not clear cut, staff should consult flow chart 5A.

Chart 5A. Natural Resource Concern Resolution Flow Chart.



5.3 Public Access Guidance

To preserve wildlife habitat and to shelter sensitive species or habitats, not all sites, or all parts of all sites, will have access to the public. Generally, however, people expect to have some access to natural areas, and if no access is provided they may provide their own by building or creating illegal and unsafe trails that cause more problems than a well-planned, official trail. In addition, urban natural areas are sometimes claimed for illegal use, such as camping, dumping, or vandalism, if they are not used by average, more responsible citizens.

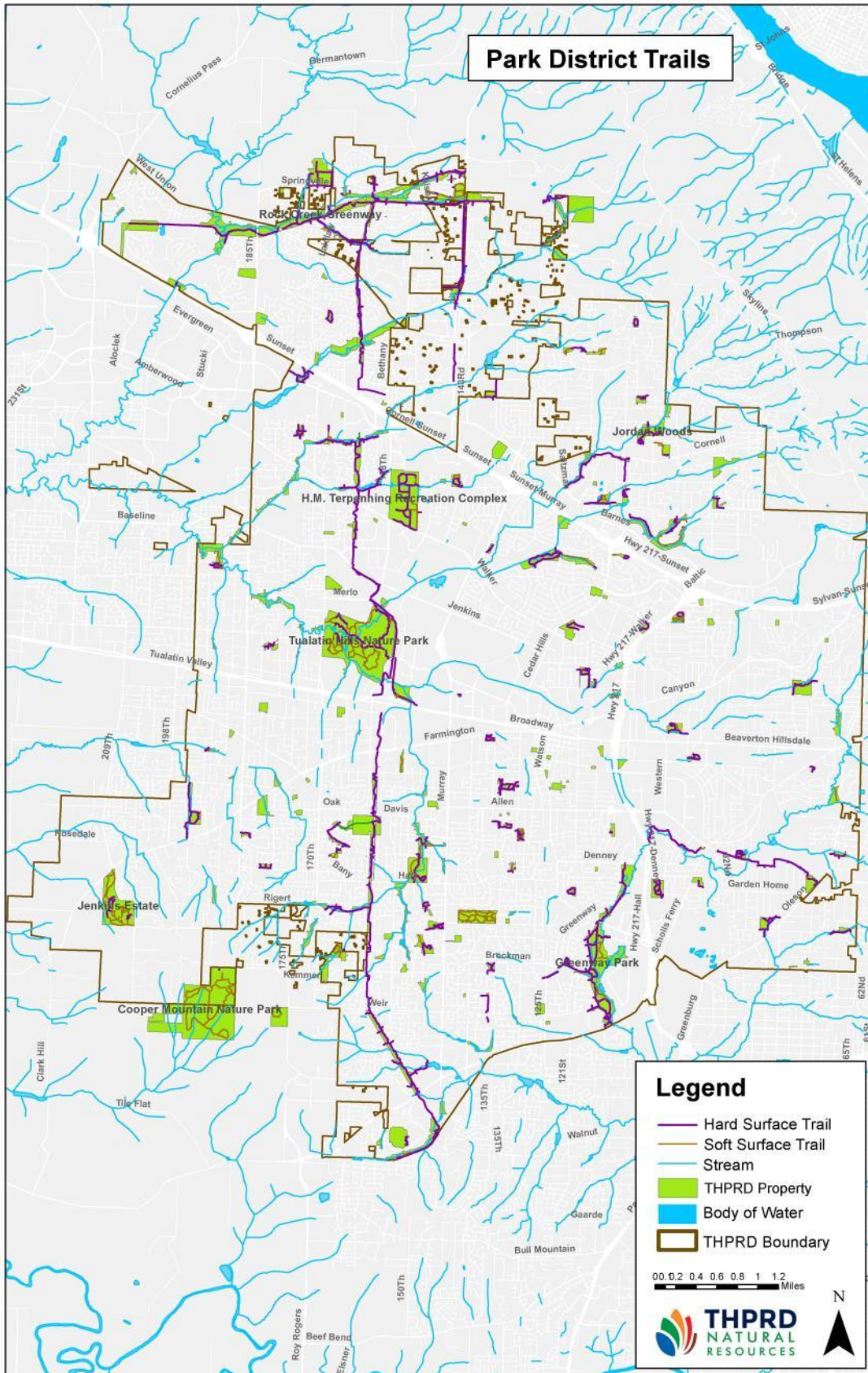
The district aims to provide a variety of experiences and levels of access. Access does not mean full development. General levels of access and facilities that can be provided to natural areas:

- An overlook, or viewing place
- An unpaved trail, either natural surface or graveled
- A boardwalk
- A paved trail, narrow or wide
- A trailhead, including parking, orientation signs and possibly portable restroom facilities
- Permanent structures including nature center, classroom, flush restrooms, or a covered shelter

Additional amenities that could be added to most sites include: interpretive signs, trail-side exhibits, directional signs, nature play areas, and benches.

Large sites, such as the Tualatin Hills Nature Park, lend themselves to a full range of facilities with space left over for natural habitats. Construction of permanent buildings should be considered only after using the site development criteria below and completing a needs and financial analysis. Smaller sites have more limited opportunities, at times having so many constraints that very little should be provided.

Site development suitability criteria seen in Table 5A is based on an unweighted system that has 11 criteria. Criteria are listed in alphabetical order in table below. This is done to provide consistency and to reduce the appearance that one criteria is more important than another. The criteria include ecological features similar to those seen in earlier guidance tables, including the presence of water, unusual plants and animals, and the degree to which the site is connected to other natural areas. Social factors, like the potential for environmental education programs, as well as community interest, is gauged. The ease of development and degree of trail connectivity to the site also affects the scoring. Definitions of each criteria can be found in the glossary on page 50. Properties are scored on a relative basis to each other. Scores above 40 are considered high, between 20 to 39 moderate, and below 20 are low priority for public access.



Suitability for nature play areas can be evaluated using the same criteria, minus the trail connectivity criteria.

The scoring system presented in Table 5A is recommended as a guide to help determine whether a site is more or less suitable for development of visitor facilities, consistent with conservation objectives. Table 5B shows a range of development options for consideration based on the scores generated through Table 5A. Site conditions may dictate that a different level of development occurs than is noted in the table.

Table 5A. Site Development Suitability Criteria

Criteria	Point Scale				
	5 Points	4 Points	3 Points	2 Points	1 Point
Capacity of development	High (more than 1800 people a week)	1001-1799 people a week	Medium (700-1000 people a week)	401-699 people a week	Low (less than 400 people a week)
Environmental education/interpretation potential	Regular, year-round environmental education or interpretation	Regular, seasonal environmental education or interpretation	Periodic program or programming/interpretation	Sporadic program usage	Sites with no existing programs or low potential for programming/interpretation.
Habitat type	Locally rare habitat types (i.e., prairie, oak woodland, mature forest)	Emergent or forested wetlands, young upland forest	Protected riparian corridors.	Degraded habitats with remnant natural feature such as stand of native trees or shrubs	Man-made mitigation site or highly impacted habitat such as clearcut

Impact on biodiversity corridor	Trail or development has minimal impact on wildlife access	Trail or development has some impact on wildlife access to a habitat under 10 acres	Trail or development impacts wildlife access to a small size habitat (10-20 acres) or connecting corridor	Trail or development impacts wildlife access to a medium size habitat (20-30 acres) or connecting corridor	Trail or development impacts wildlife access to a large habitat (>30 acres), anchor habitat or connecting corridor (i.e. Fanno, Beaverton, Rock Creeks).
Physical site constraints	Relatively unconstrained sites where neighboring property issues are from property line, land is flat, soil is suitable for development	Somewhat constrained sites	Moderately constrained sites	Moderately-highly constrained sites	Highly constrained sites due to neighboring property, steep slopes, unstable soils
Presence of listed or locally rare species	Species is unlikely to be on site	Suitable habitat for species (size, structure, cover)	Suspected presence of species (based on unconfirmed but credible community reports)	Confirmed presence of locally rare species or species of interest	Confirmed presence of wildlife species listed as endangered, threatened, or sensitive by a state or federal agency.
Public concern about habitat impacts	Sites where conservation concern is weak	Sites where conservation concern is weak-moderate	Sites where conservation concern is moderate	Sites where conservation concern is moderate-strong	Sites where conservation concern is strong

Public support for site access	Public support for facilities and/or partnerships are strong	Public support for facilities and/or partnerships are strong-moderate	Public support for facilities and/or partnerships are moderate	Public support for facilities and/or partnerships are low	Public is opposed or uninterested in access
Site size	Large property (>30 acres)	20-30 acres	Medium property (10-20 acres)	3-10 acres	Small property (<3 acres)
Trail connectivity	Sites on a regional trail corridor	Sites that connect to or are within close proximity to a regional trail corridor	Sites on a community trail corridor	Sites that connect to or are within close proximity to a community trail corridor	Sites that provide neighborhood trails
Water resources	No water resources are present or water resources are on site, but development could occur with little to no impact to resource or buffer	Water resources are on site, but development could occur with minimal impact to resource or buffer	Ponds, streams, or wet habitats would be moderately impacted by development activities	Ponds, streams, or wet habitats would be moderately/highly impacted by development activities	Ponds, streams, or wet habitats would be highly impacted by development activities

Table 5B. Evaluation Outcomes and Levels of Development for Consideration

	Overlook	Soft trail	Boardwalk	Nature Play Area	Paved trail	Trailhead or parking	Permanent structures
Up to 15 pts.	•						
20-39 pts.	•	•	•	•			
40+ pts.	•	•	•	•	•	•	•

5.4 Placement and Design of Facilities

Once a decision is made that access and facilities will be provided, design and amenity placement should be done in a sensitive way that minimizes habitat disruption. For example, locating developed facilities at the margins, or on already disturbed habitat, preserves larger spaces for wildlife activity. If there is an aesthetic feature, like a pond, creek, or rock outcrop, the trail should at least provide a good view of it to avoid encouraging off trail bush-whacking to get to the feature. Resources such as Metro’s Green Trails Manual should be used throughout the design process to minimize disturbance to land and habitat, while creating positive and safe experiences for patrons.

5.5 Wildlife management

THPRD strives to provide a healthy environment for people and wildlife. Many urban wildlife species roam across park or private property boundaries and into neighborhoods. While the district does provide habitat for wildlife, direct responsibility for these animals lies with the Oregon Department of Fish and Wildlife (ODFW). Like ODFW, the park district advocates for a “living with wildlife” approach, in which humans and wildlife coexist. There are so many animals around, and only a limited amount of space, that they are here to stay. For wildlife health reasons, relocation of wildlife is not recommended. More information can be found on the ODFW’s [living with wildlife website](#).

Because of the wide extent of non-native wildlife, THPRD will partner with other agencies on comprehensive region-wide strategies as needed. Specific species may be managed on a project-specific basis.

When wildlife concerns arise on THPRD property, staff always start with an educational approach, then move on to higher levels of involvement, depending on the need. Table 5C shows a range of responses to wildlife concerns.

Table 5C. Range of response to wildlife concerns.

Level of concern	Example	Potential action
Light	Ducks nesting in developed park area	Educational signs
Low	Bobcat activity is seen in natural area and neighborhoods	Visits to park, local groups, or specific neighbors
Medium	Beavers chewing trees likely to fall on private property	Habitat modification such as screening trees
High	Coyote is regularly sitting in picnic shelter	Work with ODFW or other partner agency
Emergency	Cougar is seen in natural area with public access	Work with ODFW or other partner agency and communication with area stakeholders

5.6 Water Management

THPRD owns only a small percentage of the watersheds in the district's service area and has a limited ability to impact the volume, height or quality of water. THPRD will assist Clean Water Services and other agencies that have broader roles in managing storm water; however, water management is not a central focus for the district.

6. Measures of Success

Staff will work within existing means to carry out the work plan. However, this may entail changing the current staff structure, focus, or work assignments. Goals may also be carried out using bond, grants, donations, partnerships, volunteers, or funding through business plans.

6.1 Community Engagement

It is envisioned that community engagement will be enhanced through the following four priorities. More details about these priorities can be found in Chapter 2.

1. Create a sense of place: Become a central resource for nature activities where patrons gather to be inspired, increase their level of understanding and knowledge, and participate in programs.
2. Reach new audiences: Connect with and involve community members that are currently underrepresented in programs and services.
3. Provide a continuum of experiences: Expand the opportunities for community members to participate in programs that foster a deeper understanding of THPRD natural areas while also nurturing a continuum of experiences.
4. Maintain quality of programs: Maintain and increase the quality of programs while continuing to develop and deliver programs and services that engage and equip community members to become stewards of THPRD natural areas.

6.2 Habitat Management

It is envisioned that habitat management will be improved through the following four priorities. Details about each follow.

1. Protect the best. Put resources towards the highest functioning properties.
2. Improve habitat connectivity. Provide opportunities for plants, seeds, and wildlife to move from one natural area to another.
3. Focus on watershed scale improvements. Maximize the ecological benefits of staff time and resources with projects whose benefits extend beyond the project area.
4. Show success in the field through reporting. Develop ways to show the success of habitat management efforts.

Strategic Priority 1: Protect the Best.

Rationale

When resources are not sufficient to do everything that needs to be done, staff will start by securing the highest quality natural areas. These natural areas provide the best habitats for wildlife, the greatest amount of natural processes, and, often, the areas most visited by patrons. It is also less expensive and more effective to keep a site healthy through periodic maintenance than it is to restore it through heroic effort. This also supports Comprehensive Plan goals 4D and 4E.

Goal

Increase the percent of labor and physical resources going to high functioning properties.

Core Strategies

- Keep planning documents and habitat prioritization lists up to date.
- Create work plans that focus on high functioning sites.
- Maintain man-made amenities or features in natural areas to meet educational and recreational needs and protect habitat.
- Manage or limit access to sensitive natural areas.
- Pursue partnerships that will allow the greatest amount of resources to be spent on high functioning areas.

What Success Looks Like

High functioning properties continue to stay in good condition and meet the native plant cover targets. Stable soils, low weed cover, and healthy plant and animal communities can be easily observed on THPRD natural areas.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none">• Complete habitat management prioritization rubric for every property.	<ul style="list-style-type: none">• Complete site inventories for all properties.• Complete management plans for higher functioning sites.	<ul style="list-style-type: none">• Show that the condition of higher functioning properties is meeting targets.• Change resource allocation to favor the best properties.

Strategic Priority 2: Improve habitat connectivity.

Rationale

To ensure the long-term health of natural areas, plants and animals need means to move from one location to another. Improving biodiversity corridors ensures that organisms have means to respond to climate change over time. Improving habitat connectivity supports Comprehensive plan goal 4B.

Goal

Improve habitat connectivity for plants and animals.

Core Strategies

- Improve stepping stone habitats, even if they are not high functioning sites.
- Protect corridors through partnerships, easements, and land acquisition.
- Manage natural areas to lessen human impacts and allow natural processes to continue
- Work with utilities and other agencies to manage rights-of-way to the benefit of native organisms while still meeting human needs.
- Coordinate trails development and maintenance activities to reduce impacts on wildlife movement.

What Success Looks Like

Small (i.e.: frogs) and large animals (i.e.: deer) can move from one natural area to another, while maintaining local source populations. Plants are able to creep from place to place over time or have their seeds dispersed. Connectivity can take many forms, from backyard habitat programs to naturalized corridors in power line right-of-ways.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none">• Map key biodiversity corridors.• Classify potential areas of opportunity for improvement by the amount of resources needed to complete.	<ul style="list-style-type: none">• Plan habitat corridor improvements on THPRD lands.• Develop a working relationship with at least two partners.	<ul style="list-style-type: none">• Protect corridors through easements, agreements, or purchases.• Implement habitat improvements.

Strategic Priority 3: Focus on watershed scale improvements.

Rationale

THPRD owns only a small portion of the watershed and is highly influenced by outside forces. In order to maximize the impact of staff activities on THPRD property and minimize outside impacts to THPRD properties, projects that go beyond property lines are needed. Projects that allow natural processes to occur (as noted in Comprehensive Plan goal 4F) tend to benefit the entire watershed.

Goal

Shift focus of staff from site-based planning to watershed scale improvements.

Core Strategies

- Allow for most natural processes to occur in natural areas or natural features of other park district facilities.
- Seek non-traditional partners who may provide resources or land that allows for larger projects.
- Use maps and data to visualize larger scales than can be seen from the ground.

What Success Looks Like

When staff start to identify a problem and propose a solution, they look beyond the immediate fix and consider forces beyond the site in question. In three to five years, staff are engaged with new partners to plan and implement projects extending beyond THPRD boundaries. THPRD properties will show increased health through more stable stream banks, increased amounts of native plants, or more abundant wildlife populations.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none">• Identify priority corridors of THPRD property with the highest potential for improvements.• Determine baseline site conditions and data sources to measure change.• Staff can name THPRD natural areas by watershed.	<ul style="list-style-type: none">• Create plans for large scale projects.• Develop a working relationship with at least two partners.	<ul style="list-style-type: none">• Implement partner-based projects beyond THPRD property.• Show the benefits of implemented projects.

Strategic Priority 4: Show success in the field through reporting.

Rationale

To provide habitat and ecosystem health and to meet Comprehensive Plan goal 4A, staff need to conserve and enhance natural areas. There are many ways to go about doing this, including routine maintenance, returning streams to their natural courses, adding basking logs for wildlife, and installing native vegetation. Staff's ability to show that work they have done maintains or improves the condition of natural areas allows them to justify continued investment.

Goal

Develop quantitative and qualitative means to show the success of habitat management efforts.

Core Strategies

- Develop visual means to show how and where resources are being spent.
- Gather information to show what types of species and habitats benefit from staff efforts.
- Use technology to streamline data collection, projection, storing, and sharing.

What Success Looks Like

Staff can easily produce reports that include data tables, maps, and charts showing measures of success and areas for improvement. When applying for a grant, staff can produce a sound rationale for funding approval.

Milestones

Short Term	Mid Term	Long Term
<ul style="list-style-type: none">• Identify existing products or services that can be used as a basis for data management.• Rank methods of data management and make recommendation for specific data collection/storage system.	<ul style="list-style-type: none">• Develop partnerships with other agencies to ensure data sharing is effective.• Identify necessary types of equipment, levels of staffing, and costs to implement system.	<ul style="list-style-type: none">• Implement data collection system (may require finding funding).• Create and produce standardized suite of reports that show success over time.

Glossary

Active recreation. Recreation that requires more intensive development and often involves cooperative or team activity, including playgrounds and ball fields.

- Organized sports (soccer, football)
- Frisbee
- BMX pump track (Eichler Park)

Biodiversity corridor. These areas allow plants (via seeds or creeping over time) and animals to move in and out of natural areas. They often follow stream corridors, power line areas, or existing connected areas of habitat. Without corridors the diversity of plants and animals will decline over time.

Developed Area. A place intended for traditional park activities such as sports, picnics, leisure, play and may have the following features (examples: PCC Rock Creek, Sunset Park, Eichler Park)

- Mowed grass
- Ornamental plants/trees
- Playgrounds
- Circulatory paths
- Ball fields
- Sports courts
- Picnic tables
- Natural features

Encroachment. What occurs when there is an unauthorized use of park district property for personal purposes such as extending a garden into or storing a vehicle in a park, usually by a neighboring property owner.

Environmental Education. A learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action.

Habitat. The place where an organism is typically found.

Interpretation. A mission-based communication process that forges emotional and intellectual connections between the interests of the audience and meanings inherent in the resource.

Intertwine Alliance. The Intertwine Alliance is a coalition of private firms, public agencies and nonprofit organizations working together to tap new sources of funding, better leverage existing investments, and more fully engage residents with the outdoors and nature.

Native plants. Plants that are associated with the Intertwine region (encompasses both urban and rural lands in parts of Clackamas, Marion, Multnomah, Washington, and Yamhill counties in Oregon and Clark, Columbia, Cowlitz, and Skamania counties in Washington.) before European settlement.

Natural Area. A place for wildlife habitat preservation and quiet activities. (Examples are Tualatin Hills Nature Park, Hyland Woods, and Bronson Creek Greenway.) The land shows historic non-man made landscapes and may contain:

- Native vegetation is a dominant feature.
- A water resource.
- Square footage is larger than a half-acre (22,000 sq. ft.).
- Passive recreation is intended use such as wildlife watching, walking, contemplation.

Natural Feature. A remnant natural item in an otherwise developed park. Examples include:

- Stands of native trees with developed area underneath (Cedar Hills Park).
- Stormwater swales and retention ponds.
- Native vegetation is present, but horticultural plants may be dominant.
- A water resource like a stream in an otherwise developed park (Raleigh Park).
- Square footage is usually less than a half-acre (22,000 sq. ft.)

Nature Center. A facility that brings environments and people together under the guidance of trained professionals to experience and develop relationships with nature. A nature center serves its community and fosters sustainable connections between people and their environment.

Nature Play. A designated area with an existing park in which people have the opportunity to engage in creative, unstructured play with natural elements in a natural setting.

Passive Recreation. Recreation is that emphasizes the natural or open-space aspect of a park and involves a low level of development, including trails.

- Walking
- Hiking
- Wildlife watching
- Paved-trail biking
- Photography

Undeveloped Area. A property the park district owns that has most of these criteria:

- Mix of vegetation. May include common weeds, grass, and some to no native vegetation.
- May have just paved trail.
- Possibly no formal visitor facilities exist or are planned.
- Future intended use is unknown.

Water resources are areas that contain unfiltered water such as:

- ponds/lakes
- creeks/streams
- wetlands

Definition of Criteria in Decision Making Tables

Item	<i>Definition</i>
Capacity of development	Visitor usage based on the number of people a site can accommodate over a set period of time.
Condition of habitat	Based on evaluation of total aerial plant cover. Averages native and invasive plant species at all three layers: canopy, understory, and groundcover.
Connectivity	The extent to which an area is adjacent to or near other natural areas, thus increasing its effectiveness as habitat. Adjacency means it touches onto another natural area. Proximity means it is close by. What is close enough for one species may not be close enough for another. For example, wildlife with low dispersal capability (amphibians, reptiles, small mammals) may not be able to connect two habitats separated by a few hundred feet, but birds may cover this distance easily. A habitat cluster is defined as two or more habitats within 1/3 mile of each other.
Current public support/partners	The amount of active support or stewardship group that assists THPRD in site management.
Environmental education/interpretation	Describes the amount of THPRD or partner led programs, school groups, interpretive features, or other educational uses at a site.
Flora/fauna impacts	Ability of development to work around sensitive or rare species as defined in the Intertwine <i>Regional Conservation Strategy</i> or <i>Biodiversity Guide</i> . Some animals are more sensitive to occasional or ongoing disturbance by people. Some impacts may be avoided by working outside of nesting or migration seasons. Other impacts due to trail or amenity construction are permanent.
Funding	Likelihood of non-THPRD funds or services becoming available to defray the

	costs of acquisition or enhancement.
Impact on biodiversity corridor	These areas allow plants (via seeds or creeping over time) and animals to move in and out of natural areas. They often follow stream corridors, power line areas, or existing connected areas of habitat. Without corridors the diversity of plants and animals will decline over time.
Habitat type	<p>“Locally rare” habitat types include those that are considered uncommon or of high conservation value as identified by the Intertwine, including prairie, oak woodland, mature forest over 50 years of age.</p> <p>Locally common types include young upland Douglas fir or mixed forests, riparian corridors, and emergent wetlands.</p> <p>Semi-natural habitats have been highly disturbed by human activities and include recovering clear-cut areas, pasture grass fields, and created wetlands.</p>
Management cost and/or risk	Allows staff to reduce the points assigned due to factors that may cause high management costs or risks. These can include slide prone sites, flood prone sites, fire hazards, undesirable current use, and other issues that could increase the cost or challenge of managing an area.
Property size	Large habitat is a relative term. The Intertwine’s Regional Conservation Strategy uses 30 acres to define “large” or “anchor” habitats.
Partnerships	This score is based on the strength or likelihood that outside groups (public or private) could contribute to the ongoing maintenance or health of the site over time through volunteerism, fundraising, or resource acquisition.
Physical site constraints	Includes land conditions that are difficult to work around, such as steep slopes, narrow property configuration, unstable soils, etc.
Presence of listed or locally rare species	Use the Intertwine <i>Biodiversity Guide</i> ’s comprehensive list of state, federal, and locally rare plant and wildlife species. These may be confirmed through a biological inventory or assessment, or they may have been reported but not confirmed (possibly by site users or student researchers). If the habitat is suitable, and sensitive species have been seen nearby (i.e. bluebirds at Cooper Mountain).
Public concern about habitat impacts	Interest shown by the public includes an organized group, commenting via telephone, writing letters, asking questions of staff in the field, and attending public meetings.
Public support for site access	Interest shown by the public includes an organized group, commenting via telephone, writing letters, asking questions of staff in the field, and attending public meetings.
Public use	Staff observations or numbers from surveys or electronic trail user counter relative to other, similar sites.

Recreation potential	This is based on a staff level assessment of a site's capacity for trails and related amenities (see Site Development Suitability table).
Relationship to water	A major creek is perennial, fish bearing, or has important habitat for aquatic species. A minor creek has a seasonal flow only, and lacks complex habitat. Sites that do not have surface water may get 1 point if they have upland plant cover that contributes to watershed function, such as flow regulation and water quality filtering.
Return on previous investment	The degree of success per dollar or time investment to which THPRD and/or partners have already invested time and/or money to restore a property.
Site size	Larger sites often have enough space that impacts can be avoided, and that allow for more extensive and useable trail systems.
Social factors	Any factor that relates a site to social benefit: aesthetics, environmental education, proximity to a school or low income or other housing area that lacks natural areas, high visibility site.
Staff judgment	Allows for staff to weight one or more of the above by adding 1-5 total points. This score recognizes managerial experience of staff.
Threat of inaction	Threat here means what may happen if a site is neglected. This could include an invasive species threat, illegal camping, fire hazard, and other undesirable issues or activities.
Threat of loss	Areas that are most suitable to commercial development such as housing, industrial, or retail uses will receive the highest scores. Sites with regulatory or physical challenges would receive lower scores.
Trail connectivity	Location with respect to regional or community trail connections. Trails that make connections to other planned trails earn a higher score.
Water resources	Water resources are naturally occurring streams, ponds, or wetlands. These wet areas are known to provide habitat for a higher proportion of organisms than surrounding drier areas. Regulations such as Clean Water Services' vegetated corridors provide legal protection extending on average 50 feet out from the edges of these areas.
Watershed benefit	Because THPRD only owns a portion of the land in the area, but is influenced and influences adjacent property, activities such as restoration projects whose benefits may extend beyond the project site are of increased importance. A major stream restoration covering 10 acres will cool water and spread native plant seeds to downstream areas will score the highest amount of points. Removal of a common non-native plant in a 1,000 square foot area is a local benefit, but is unlikely to influence property outside of this area will score the smallest number of points.

