

# Metro | Agenda

Meeting: Smith and Bybee Wetlands Advisory Committee (SBAC)  
Date: Tuesday, September 27, 2016  
Time: 5:30 p.m. – 7:30 p.m.  
Place: Metro Regional Center – Room 270  
600 NE Grand Ave, Portland Oregon 97232

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<b>5:30 p.m.</b>	<b>Welcome and introductions</b>	<b>All</b>
<b>5:35 p.m.</b>	<b>Approve Mar. 2016 meeting minutes</b>	<b>Troy Clark</b>
<b>5:40 p.m.</b>	<b>Multnomah County update on Wapato</b>	<b>Christian Gaston</b>
<b>6:00 p.m.</b>	<b>Planning projects update</b>	<b>Lisa Goorjian Dave Elkin</b>
<b>7:00p.m.</b>	<b>State of the Wetlands report</b>	<b>Jonathan Soll</b>
<b>7:10p.m.</b>	<b>Dog policy</b>	<b>Jonathan Soll</b>
<b>7:25 p.m.</b>	<b>Goals and next meeting agenda</b>	<b>All</b>
<b>7:30 p.m.</b>	<b>Adjourn</b>	

#### **Upcoming SBAC meetings:**

Tuesday, November 29, 2016 at Metro Regional Center  
For agenda/schedule information, contact Christy Carovillano at 503.797.1629 or [christy.carovillano@oregonmetro.gov](mailto:christy.carovillano@oregonmetro.gov)

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## Smith and Bybee Wetlands Advisory Committee

September 27, 2016

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### Committee members in attendance

Troy Clark\* .....Audubon Society of Portland (Chair)  
Carrie Butler\* .....Port of Portland (Vice Chair)  
Adele Rife\* .....Columbia Slough Watershed Council  
Bill Briggs\* .....ORRCO  
Emily Roth\* .....Friends of Smith & Bybee Lakes  
Eric Tonsager\* .....Oregon Bass and Panfish Club  
Jennifer Devlin\* .....City of Portland, Bureau of Environmental Services  
Jonathan Soll\* .....Metro, Parks and Nature  
Pam Arden\* .....40 Mile Loop Trust  
Patt Opdyke\* .....North Portland Neighbors  
Sara Henderson\* .....St. Johns Neighborhood Association

### Others in attendance

Christy Carovillano .....Metro, Parks and Nature  
Dave Elkin .....Metro, Parks and Nature  
Christian Gaston .....Multnomah County

### Committee members not in attendance

Don VandeBergh\* .....Oregon Department of Fish and Wildlife

\*Denotes voting Smith and Bybee Wetlands Advisory Committee member.

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## WELCOME

The March 29, 2016 meeting minutes were approved as written.

## MULTNOMAH COUNTY UPDATE ON WAPATO

Christian Gaston, Policy and Research Director for Multnomah County Chair Deborah Kafoury, provided a status update on the Wapato correctional facility, an 18 acre site located in the heart of the Rivergate Industrial District, and which the Smith and Bybee Wetlands Advisory Committee (SBAC) has a good neighbor agreement in place with the county.

### Background

In 1996 Multnomah County voters approved a bond measure to build a new correctional facility, but the operating levy that would have funded the operations of the new jail fell through. Multnomah County still moved forward with constructing the minimum security jail, leaving the facility without operational funding to run it.

It has been over 11 years since construction of the jail was completed, and along with a lack of operating dollars, the demand for jail beds also declined, leaving the facility largely sitting vacant other than its minor use as a film set and for police training. This is in part due to the restricted use the bond placed on it and the fact that it is zoned heavy industrial – both impediments to any other adaptive use of the facility outside of a correctional facility.

With the bonds about to be paid off in October, the county has been preparing over the past year for either a potential sale or a second pitch to the public for ideas on alternative use of the property. One such proposed and controversial use is using the facility as a homeless shelter. This idea however, faces many obstacles including the deed restriction on the property from when it was purchased from Port of Portland barring any

residential use. According to Christian, this, coupled with the facilities analysis that revealed high costs and additional questions of legality, has led the Board to move off of pursuing the use of the facility as a homeless shelter.

Christian noted that there have been a handful of other ideas and each has been evaluated, but all have fallen apart in the end. With no long term corrections need foreseen, the county is faced with finding a buyer that could put it to good use industrially.

### **Discussion**

Troy Clark asked if Commissioner Smith is satisfied with the Board's decision as she has been a main proponent of its potential use as a homeless shelter. Christian replied that he cannot speak for Commissioner Smith, but referenced comments made in the newspaper in which it implied that she was still hoping to have further briefings from staff on the topic due to the many things standing in its way like the deed restriction, industrial zoning, and good neighbor agreement, and until she has more clarity on where those items stand, she considers the conversation to be in a holding pattern.

Emily Roth asked if more information was available on the other potential uses and their evaluation, but Christian said legally he cannot provide any details. He did say the county had an appraisal done on the property and the value will range depending on the industrial adaptive use, but it came in around \$8.5 million.

Emily followed up saying the committee's main concern is the continued protection of the trees and habitat the current good neighbor agreement provides and asked if this would be upheld under a sale. Christian responded that the county's legal team is still looking into this and he will be sure to follow-up with the committee once he has more information.

Emily then posed the question as to whether Metro might be interested in purchasing the property. Jonathan Soll said theoretically, yes, but many things would have to be looked into. Troy added that it may be more of a question directed toward the Port of Portland. Carrie Butler agreed and said it would depend on whether they can incorporate the management of that area into their mitigation area. Emily asked who was currently doing the maintenance on the property now, to which Christian answered that the county has a landscape crew that does minimal work, such as weed removal.

Troy next asked if there was anticipation of another two year renewal of the conditional use exemption the county has previously re-applied for as it expires. Christian said no, as they are trying to avoid this expensive renewal cost, so the property will only be able to be used in a heavy industrial capacity.

Patt Opdyke brought up the topic of the good neighbor agreement again and asked if the property reverts back to exclusively heavy industrial, if there would be any legal ties that would keep the good neighbor agreement in place. Christian reiterated their legal team is looking into this more, but it seems to pertain exclusively to the property's use as a correctional facility. Emily suggested that perhaps if the property does get sold, they can develop a new good neighbor agreement with the buyer. Christian added that the feedback he has gotten from various firms looking at the property is that the berm is a feature they appreciate.

Patt then brought up the topic of lighting and the restrictions around it that were included in the good neighbor agreement to prevent interference with wildlife, and how this could provide the greatest hindrance to purchasers. Christian asked if Rivergate has any lighting restrictions to which Carrie replied she knows the Port has looked at individual cases, but she is not entirely sure and can look more into it.

Closing out the topic, Pam Arden asked if the exemption to allow for the use of the site as a correctional facility expires, and later the county does determine they need to use it in this capacity, will they have to re-apply to do so. Christian responded that although he doesn't think this scenario is impossible, he does think it is highly unlikely they will need the conditional use permit again.

### **Next Steps**

Christian Gaston will follow up with Troy Clark once he has more information on how the good neighbor agreement may be affected by the expiring of the bond and the potential sale of the property.

Carrie Butler will look more into any potential lighting restrictions Port of Portland places on Rivergate tenants.

**PLANNING PROJECTS UPDATE**

Dave Elkin, a principal regional planner with Metro Parks and Nature, presented an update on work he has done to further investigate and scope out the prioritized projects for Smith and Bybee Wetlands from the Comprehensive Natural Resource Plan (CNRP) (see [Attachment 1](#) for additional details). Being a new planner on this project, his hope was to get guidance and recommendations from the committee on how they would like to move forward.

**Discussion***North Slough/Bybee Lake portage*

Since this project was identified as a low priority at the last meeting, it was not discussed at this meeting and will remain on the back burner for the time being.

*St. Johns landfill regional trail and bridge*

This project is moving forward and will have a staggered start on the planning, design, and construction with the Columbia Boulevard bridge project in order to gain efficiencies by combining work needed for both such as surveying. However, there is still no timeframe on the start of this yet. A very rough estimate is possible construction in 2019, but Dave will keep the committee posted as details are determined.

Troy Clark noted that as this project moves forward he would like someone from the landfill staff to come and speak to the committee so they can hear their potential concerns with the project. He doesn't think it is too early to get their views.

*Viewing platform renovation*

Dave noted that the Bybee blind may not be a good candidate for a second story. He suggested instead upgrading the viewing blinds to provide a more cohesive aesthetic and the possibility of this cost falling under maintenance and repair.

Emily Roth asked for clarification as to why a second story viewing platform ever became a potential project to which Troy responded that it was added because of the public outreach and their interest. Patt Opdyke also added that in terms of the Smith blind, staff was having to continuously cut back vegetation so they thought if they went above it, this maintenance would not be required as frequently.

Emily voiced her concerns over the accessibility of a second story, while Sara Henderson reminded the committee that based on the discussion from the last meeting it seemed like they were going to just hold off on this project for now. Troy said they will eventually have to investigate this project further and whether it is feasible or not because it will come up again. Patt agreed and said they need to develop a rationale as to how they decide on it and she would like to see cost projections to help make this decision.

It was determined that Bybee blind can be excluded due to the previous discussions surrounding it and there being no difference in a second story view. Carrie Butler said she feels if they are going to spend money on the viewing blinds, she thinks it makes more sense to upgrade them aesthetically as Dave suggested, rather than adding a second story, and maybe they can just explore the possibility of raising them up a little.

The plan to do improvements and upgrade the railings will move forward while Dave does more work to scope out this project and bring back additional information to the committee on accessibility and the potential raising of the blinds.

*Interlakes Trail extension*

Dave noted that there have been a variety of options for the Interlakes Trail extension discussed previously, from extending the trail to the channel that connects the lakes (as outlined in the 2013 CNRP), to a shorter extension, or even no extension; so he is not fully confident on understanding the plan for this project and definitely wants to hear the committee's recommended path forward.

Troy asked that since the CNRP actually shows where the proposed trail would go, how this will affect their ability to change length or direction if they wanted to. Dave responded that they may need to do an amendment in order to have the trail change from what is drawn.

Emily added that they had a long discussion about this project last meeting and the committee wanted a Metro scientist to come out and give their opinion on how the trail could affect things. She said the committee is looking for Metro's recommendation based on maintenance, safety, and ecological concerns.

Dave brought up how the plan identifies a boardwalk and noted that this would be a very expensive option. Pam Arden said the idea of the boardwalk was to corral people and limit the impact of the trail extension. Carrie asked if there are less expensive ways to lineate the trail to make it obvious.

Dave said he has been discussing a couple of options with regards to the trail extension with Elaine Stewart, Metro's Smith and Bybee Wetlands lead scientist, and they have the difficult dilemma of looking at the placement of structures in a dynamic landscape. He said this is an opportunity to provide a closer to nature experience for people and he will work with Elaine to firm up that framework a little more to discuss with the committee, but the general concept is possible temporary structures that can go in on a year by year basis and move with the needs of the land and its management.

Emily reiterated that she wants to hear from Metro staff on the topic and Pam said she wants to see what Dave and Elaine suggest for the trail ignoring what currently is shown in the CRNP.

#### *Additional seating*

Dave noted that regarding seating, the land use document gets very specific and does not read that additional seating options can be added, so in order to do so, it would probably need to be amended. He will investigate other possible ways more seating could be incorporated.

Emily suggested creatively thinking about seating to come up with alternative options rather than just benches. Pam added that they need to keep in mind not allowing any new seating that could entice camping, while Patt wanted to make sure Turtle Turnout was specifically called out for new seating in order to make it more conducive to educational programs. Jennifer Devlin asked if input was gathered from the Naturalists and Dave responded that yes, he had spoken with them and seating at Turtle Turnout would be beneficial.

Emily also noted that the land use document does not have everything listed as a Type III land use decision, so perhaps moving forward with the additional seating may be simpler. Troy then mentioned that the land use document has a ten year window and they are currently three years into it, so they could potentially call out more seating in the future if they need to, but first they need to take the step to see what is currently allowed, and then they can re-visit what's next. Dave said he will take all of this into consideration as well as accessibility when looking into things further, including scoping out an overall design look and maintenance upgrades for Turtle Turnout.

#### *Improving access to the Interlakes Trail*

Dave completed detailed measurements of the current bus pull out location and compared the area to construction drawings. He did see an opportunity for a single ADA parking stall with access to the cross walk at this current location that may only require restriping of the area. Dave also said this option would still allow the bus to pull in and drop people off safely, but if more ADA parking spots are wanted, it would require a longer and more expensive construction and permitting process. Since PBOT owns the entry drive, the next step is to discuss this project with them. Emily suggested that perhaps Metro can ask for a PBOT vacation from the drive so Metro can take over ownership decisions for it.

Troy thinks if they cannot fit two ADA stalls then they should move forward with the one and Emily added that it would be great if this could get done just by restriping. Dave added that ODOT may have other ideas too and will move forward with this project.

*Signage upgrades*

Trailhead sign – Dave said they have a standard Metro entry kiosk used at other Natural Areas that can be put in under a maintenance and operations upgrade. He noted they would keep the flood elevation marker and update the sign graphics.

Entry sign – Dave said the replacement of the current entry sign with the Metro standard would require an amendment to the CNRP and Type III land use review. He said if they chose to go this route, they could wrap it up with a few other projects that may need Type III land use review and go for them all at once. Emily suggested possibly looking for a different location to place the entry sign that could eliminate the need for this.

Trail markers for the future Interlakes trail extension were also included in the signage upgrade needs discussed.

Pam noted that any covered structures put in should be moved closer to a harder surface rather than off of the paved paths. Troy added that he does not want any signage that labels the site as a park, that it should be identified as an area. Dave will move forward with costing this out and investigating the moving of the entry sign.

**Next Steps**

Dave will keep the committee updated on his continued work on all the projects and their timelines, costs, and feasibility results.

**STATE OF THE WETLANDS REPORT**

Jonathan Soll provided an update on the restoration projects that have been taking place at Smith and Bybee Wetlands so far this year (see [Attachment 2](#) for additional details) along with showing a map identifying the different restoration phases ([Attachment 3](#)).

*Basic stewardship*

Jonathan said they were as aggressive as they possibly could be with control of the explosion of large infestations of *Ludwigia* over the summer. Emily Roth asked if there is an aggressive infestation in the slough. Carrie Butler said she thinks there are populations east of Smith and Bybee Wetlands and Jonathan suggested maybe Metro can have someone go out and do some scoping. Carrie added that there were surveys done for it in the slough that they can also look at.

Carrie asked if Metro staff has also seen an increase in white water lily at Smith and Bybee as the Port has had an explosion of it at Ramsey Lake and it is labor intensive work. Jonathan will look into both this question and the *Ludwigia* issue and get back to the committee with additional details.

*Channel management*

Metro is working on regaining their ability to effectively manage the water level, primarily in Smith Lake. They are honing in on the preferred design with the anticipation to construct next year. The project has some challenges with the dredging, such as what to do with the removed material because of the regulations on filling and hauling being expensive. They are also exploring using the dredged material to purposely raise parts of the lake for ash forest. Jonathan will keep the committee posted on the progression of this project.

Jonathan informed the committee that Metro submitted a proposal to the Corps of Engineers to access the Rivergate Consent Decree funds to use for the channel management project, while also offering other projects as backups.

*St. Johns Prairie*

Elaine is seeding the 30 acres of Phase 2 this fall. We will launch phases 3 and 4 during levy 2 if it is successful.

*Forested wetland*

This project is attempting to weave together the patches of floodplain ash. Phase 2 of the project showcased a partnership with contractors Verde and Mosaic to give Verde the opportunity to learn landscape restoration.

*Water control structure upgrade*

This project currently needs permitting for the design and then will be going to bid this winter with construction planned for next summer. This means the site will have one more dry year. The general observations section of Attachment 2 provides more information on what Metro staff have observed while keeping the water control structure open the last two years.

Emily noted that she thought there was previous research that showed lower water levels and drier conditions allows for more red-legged frogs. Jonathan followed up saying that amphibian surveys are done at Smith and Bybee and he will get the details to pass on.

**Next Steps**

Jonathan will follow-up with the committee on the white water lily question, the source of *Ludwigia*, the progression of the channel management project, and the amphibian monitoring details, specifically on red-legged frogs, for Smith and Bybee.

It was requested that Elaine Stewart attend the next meeting.

**DOG POLICY**

In advance of the meeting, Jonathan Soll provided the committee with a copy of the literature review of the impacts of dogs on wildlife and water quality that Metro staff completed earlier this year ([Attachment 4](#)). He also gave a brief overview of Metro's dog policy – domestic animals are not allowed in Metro's natural areas and in limited situations in our parks, except on regional trails.

Troy Clark said that if there is going to be an open house the middle of next year regarding a trail going into St. Johns landfill from the Chimney Park dog park with a dog exemption from Metro on the 40-mile loop trail, he feels it is an urgent matter that the SBAC draft a letter to Metro Council concerning the exemption while he continues to urge the Councilors himself.

Jonathan weighed in and said that if the committee feels strongly, they should proceed with this plan. He added that Metro had multi-departmental meetings over the summer to discuss the dog issues – what they are actually doing on the ground and how that relates to their policy and what they should do moving forward. He said their Senior Leadership team confirmed that Metro natural areas are no dog areas and are holding firm on that policy until Council tells them to do otherwise.

Carrie Butler added that this is going to be a very challenging situation to control. With the 40-mile loop north of the slough being in place for so many years, she feels it will be very difficult to stop people from bringing their dogs. Emily Roth asked if there are any design components they can incorporate to keep dogs on the trail. Cooper Mountain was offered as a good example of how signage and rangers can help reduce dog use.

**Next Steps**

The SBAC will explore the dog policy approach more in depth at the next meeting.

Once complete, Jonathan will provide the committee with a copy of the literature review on the affects of hiking, biking, and horseback riding on wildlife and water quality that Metro staff are currently working on.

**GOALS FOR NEXT MEETING AND WRAP-UP**

- Christian Gaston will follow up with Troy Clark to provide an update from Multnomah County's legal team on how the Wapato good neighbor agreement may be affected by the expiring of the bond and the potential sale of the property.
- Dave Elkin will keep the committee up to date with how his project planning is progressing and provide any new details he uncovers.
- Jonathan Soll will follow-up with the committee on the various questions that came from his restoration projects update.
- Elaine Stewart will be asked to attend the next meeting to provide her feedback on the planning and restoration projects.

- The SBAC will have a more in depth discussion on the dog policy.
- Jonathan Soll will provide the committee with the Metro staff literature review on the affects of hiking, biking, and horseback riding on wildlife and water quality once it is complete.

Meeting adjourned at 7:36 p.m.





# Smith and Bybee Wetlands Natural Area ACCESS IMPROVEMENTS

September 27, 2016

# Access Improvements

1. Regional trail and bridge
2. Viewing platform renovation
3. Interlakes Trail extension
4. Seating at Turtle Turnout
5. *Portage – Low priority project*

## *Not Identified in CNRP*

- A. Signage upgrade
- B. Improve access to Interlakes Trail

# 1. St. Johns Landfill regional trail and bridge



- Project planning, design and construction to be a “staggered start” with Columbia Blvd. Bridge project
- First phase will connect landfill bridge to viewpoint
- Path from viewpoint to bridge to be completed when funding becomes available



# St Johns Prairie Trail & Chimney Park Bridge over Columbia Boulevard



## PROJECT 1

Chimney Park Trail & Bridge over Columbia Boulevard


-  Proposed trail
-  Proposed bridge over Columbia Blvd.

## PROJECT 2

St Johns Prairie Trail & Overlook


-  Proposed trail - Phase One
-  Proposed trail - Phase Two

 Existing regional trail

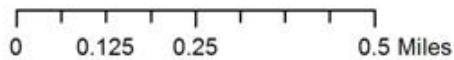
 Railroad

 Metro

 Port of Portland

 BES

 Portland Parks



## 2. Viewing platform renovation

- CNRP identified possible 2<sup>nd</sup> story
- Recommend safety replacement of railings (operations)



## 2. Viewing platform renovation

- Siding has been removed
- Wood installed as temporary fix
- Needs permanent railing

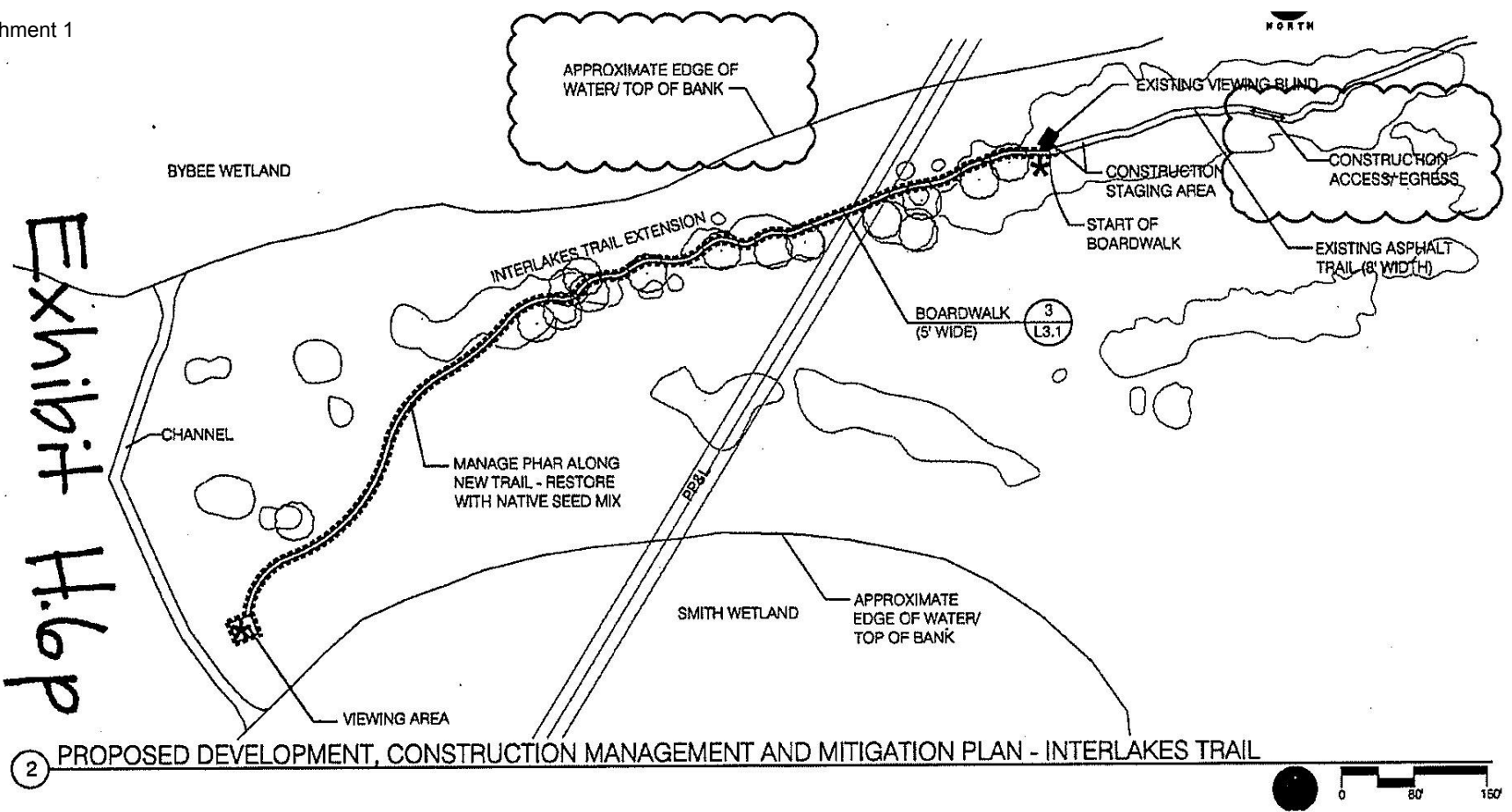


## 2. Viewing platform renovation

- Artistic railing to match material of viewing blind
- Low maintenance
- Cost @ \$3,000 - \$5,000 (Two Blinds)
- 6 – 9 months



Exhibit H.6p



2 PROPOSED DEVELOPMENT, CONSTRUCTION MANAGEMENT AND MITIGATION PLAN - INTERLAKES TRAIL

# 3. Interlakes Trail Extension



## 3. Interlakes Trail extension

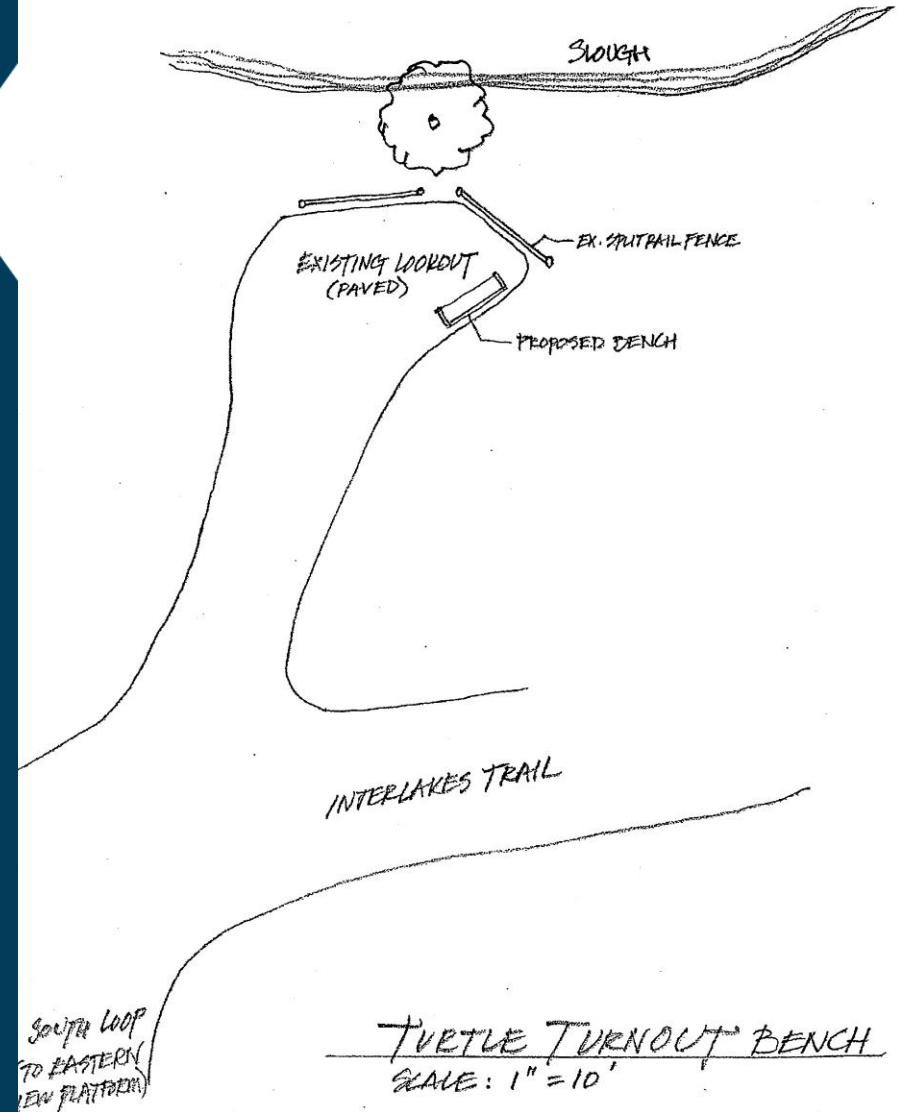
- Extend the trail from the end of the paved path to the channel that connects Smith and Bybee lakes – *2013 CNRP*
- Variety of options discussed for this improvement – shorter extension, no extension, etc.
- Need recommended “path forward”

## 4. Additional Seating

- Site plan included in land use document
- Identifies one bench at turtle turnout

### Exhibit C18

Project 1E  
Turtle turnout bench  
Sketch



## 4. Additional Seating

- Seating at Turtle turnout was identified in CNRP
- Additional seating may require amendment to CNRP
- Benches approximately \$1,500 to \$2,000 each

# A. Improve access to Interlakes Trail

- Facilitate access to the Interlakes Trail by adding bus parking and parking for people with disabilities at the trailhead.
- Improve the walk from the parking lot to the trailhead by separating the trail from the road.

# A. Improve access to Interlakes Trail

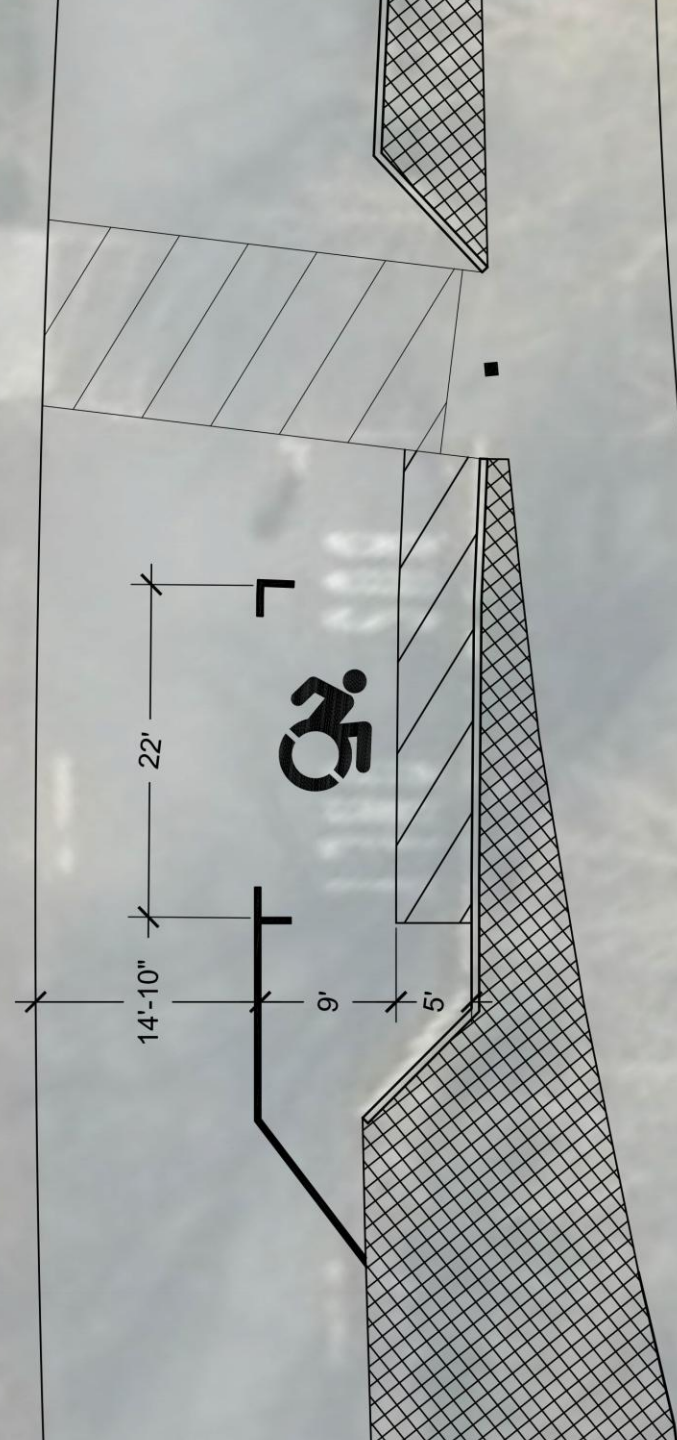
Existing bus pull out and pedestrian crossing

Completed detailed measurements and compared to construction drawings



# Opportunity for a single ADA parking stall

- Removal of old paint
- Restriping for new ADA stall and access route
- Cost of approx. \$1,500 to \$2,000
- Next step – discuss with PBOT



## B. Signage Upgrades

- Entry Sign
- Trailhead Sign
- Trail markers

## B. Signage Upgrades

- Trailhead interpretive sign needs replacement
- Keep flood elevation marker
- Update sign graphics





## B. Signage Upgrades

- New Metro standard signage
- Roof protects sign and provides rain shelter
- Cost approx. \$3,000 to \$3,500



## B. Signage Upgrades

- Entry sign needs replacement
- Replacement would require amendment to CNRP – Type III Review
- Unless existing posts are used



# B. Signage Upgrades

- CNRP identifies signage along future Interlakes Trail Extension
- Is there additional signage needed?



# Access Improvements

1. Regional trail and bridge
2. Viewing platform renovations
3. Interlakes Trail extension
4. Seating at Turtle Turnout
5. *Portage – Low priority project*

## *Not Identified in Land Use Document*

- A. Signage upgrade
- B. Improve access to Interlakes Trail



Arts and conference centers

Garbage and recycling

Land and transportation

Oregon Zoo

Parks and nature

**[oregonmetro.gov](http://oregonmetro.gov)**

## Smith and Bybee Restoration Updates Sept. 2016

Jonathan Soll to the Smith and Bybee Advisory Committee, Sept 27, 2016

### Basic stewardship

- Treated entire site for yellow flag Iris
- Ludwigia control – treated surprisingly large infestations in Bybee and Smith Lakes, had to budget extra funds. The final figure is likely to be \$50-65,000 for the year.

### Channel management project

- In early design with OTAK to implement recommendation from PHS report. Preferred alternative should be in place in next 2 months and ready for permitting. Expect to construct next year.

### St John's Prairie

- Phase 1: in maintenance phase – invasive control
- Phase 2: seeding 40 acres this fall
- Phase 3: on hold pending funding decisions. Hope to start site preparation in 2017.

### Forested wetland

- Phase 1 in maintenance mode
- Phase 2 site preparation cutting/sprays targeting mainly RCG but also some blackberry. Will plant @60,000 shrubs and trees to extend the forested wetland along the west edge of Smith Lake

### Sedge meadow

- Phase 1, final site prep cutting and sprays; planting 200,000 Carex aperta bare root plants this fall to expand the meadow to 5 acres
- Phase 2, site prep cutting and sprays; will plant @25,000 trees and shrubs in the 'matrix' between the sedge meadows; will plant sedge next year after more site prep

### WCS upgrade

- DU is obtaining permits
- Plan is to go out for bid in February and construction next summer

### General observations

Leaving the water control structure open for two years has led to amazing recovery of the willow stands that were formerly drowned. They're forming a "bathtub" ring around Smith Lake and also starting to fill in other areas as well. After 2 growing seasons many are over 10 feet tall. Many native recruits (willow, ash and sedge mainly – in addition to what we've planted) are coming in where we've sprayed reed canarygrass. There is one section in the forested wetland where the sedge has taken off to a point where we are considering clipping out the shrubs that were planted in that area.



# Smith and Bybee Wetlands

# Restoration projects



## The impacts of dogs on wildlife and water quality: A literature review

Compiled by Lori Hennings, Metro Parks and Nature, April 2016

### SUMMARY

Metro periodically reviews the science literature behind its natural resource policies to ensure policies are based on the most current science. Recently staff reviewed the scientific literature regarding the impacts of dogs on wildlife to inform Metro Regulatory Code Title 10.01, which excludes pets from most Metro properties. The only exceptions are service dogs, leashed dogs on some regional trails, Broughton Beach, boat ramps and properties managed by others through intergovernmental agreements that are integrated into larger parks where leashed dogs are allowed (e.g., Forest Park).

Any human related activity can disturb wildlife. In order to meet Metro's dual goals of protecting natural resources and providing access to nature, Metro has tried to strategically locate trails in less sensitive habitat and to ensure that human activity is as non-disruptive as possible. Part of that strategy has been to allow public access, while limiting certain activities such as bringing dogs into natural areas.

The evidence that dogs negatively impact wildlife is overwhelming. It is clear that people with dogs – on leash or off – are much more detrimental to wildlife than people without dogs. Dogs (*Canis lupus familiaris*) are considered to be a subspecies of wolves (*Canis lupus*), and wildlife perceive dogs as predators.<sup>(30)</sup> Impacts include:

1. **Physical and temporal displacement** – The presence of dogs causes wildlife to move away, temporarily or permanently reducing the amount of available habitat in which to feed, breed and rest. Animals become less active during the day to avoid dog interactions. Furthermore, the scent of dogs repels wildlife and the effects remain after the dogs are gone.
2. **Disturbance and stress response** – Animals are alarmed and cease their routine activities. This increases the amount of energy they use, while simultaneously reducing their opportunities to feed. Repeated stress causes long-term impacts on wildlife including reduced reproduction and growth, suppressed immune system and increased vulnerability to disease and parasites.
3. **Indirect and direct mortality** – Dogs transmit diseases (such as canine distemper and rabies) to and from wildlife. Loose dogs kill wildlife.
4. **Human disease and water quality impacts** - Dog waste pollutes water and transmits harmful parasites and diseases to people.

### INTRODUCTION

Metro owns 17,000 acres of parks and natural areas and does not allow dogs or other pets on the vast majority of these lands. Exceptions include service animals, leashed dogs on some regional trails, Broughton Beach, boat ramps and certain properties managed by others through intergovernmental



agreements that are integrated into larger parks where leashed dogs are allowed (e.g., Forest Park). The policy that prohibits visitors from bringing pets to most of Metro's managed parks and natural areas was initiated by Multnomah County in the 1980s and continued in practice after Metro assumed management of those parks in the early 1990s. After a review of the scientific literature and meaningful public discourse, Metro formally adopted the pets policy into its code in 1997 (Metro Council Regulatory code Title 10.01 adopted in Ordinance 96-659A).

To ensure this decision reflects the most up-to-date information, Metro staff examined 54 peer-reviewed scientific journal articles and several research reports relating to the impacts of dogs in natural areas, including numerous literature reviews on the impacts of various types of recreation on wildlife and habitat.<sup>(10, 28, 42,54,61,63, 65,68,71,73,77)</sup> The results of our literature review are summarized below.

### **PHYSICAL AND TEMPORAL DISPLACEMENT**

Displacement may be the most significant impact due to the amount of habitat affected. The presence of dogs causes most wildlife to move away from an area, which temporarily or permanently reduces the amount of functionally available habitat to wildlife. The research is clear that people with dogs disturb wildlife more than humans alone.<sup>(5,10,33,38,39,41,44,61,68,69)</sup> These effects reduce a natural area's carrying capacity for wildlife, and also reduces wildlife viewing experiences for visitors.

Studies on a variety of wildlife in many countries and settings demonstrate that dogs along trails and in natural areas significantly alter wildlife behavior.<sup>(9,33,39,41,49,53,58)</sup> A 2011 literature review found negative dog effects in all 11 papers that examined such effects.<sup>(65)</sup> Studies demonstrate dog-specific impacts on reptiles,<sup>(29,31,48)</sup> shorebirds and waterfowl,<sup>(24,32,51,69)</sup> songbirds,<sup>(5,9,10)</sup> small mammals,<sup>(33,39,56)</sup> deer, elk and bighorn sheep,<sup>(4,36,38,44,49,59,63)</sup> and carnivores.<sup>(22,33,52,58)</sup>

A study in France found that two hikers disturbed an area of 3.7 hectares walking near wild sheep, whereas two hikers with dogs disturbed 7.5 hectares around the sheep.<sup>(41)</sup> In Chicago, migratory songbirds were less abundant in yards with dogs.<sup>(9)</sup> Dog walking in Australian woodlands led to a 35% reduction in bird diversity and a 41% reduction in the overall number of birds.<sup>(5)</sup> The same study showed some disturbance of birds by humans, but typically less than half that induced by dogs.

Studies in California and Colorado showed that bobcats avoided areas where dogs were present, including spatial displacement<sup>(22,33,52)</sup> and temporal displacement in which bobcats switched to night time for most activities.<sup>(22)</sup> The Colorado study also demonstrated significantly lower deer activity near trails specifically in areas that allowed dogs, and this effect extended at least 100 meters off-trail.<sup>(33)</sup> This negative effect was also true for small mammals including squirrels, rabbits, chipmunks and mice, with the impact extending at least 50 meters off-trail.

Evidence suggests that some wildlife species can habituate to certain predictable, non-threatening disturbances such as people walking on a trail in a natural area; this effectively lowers the stress response. Part of this adaptation may be due to wildlife learning what is and isn't a threat, and also

avoidance of hunters.<sup>(19,55,63,70)</sup> Habituated animals still react, but amount of habitat affected is not as large.<sup>(55,56,63,70)</sup> However, dogs – especially off-leash dogs – may prevent wildlife habituation because wildlife consistently see them as predators. Dog-specific disturbance has been studied for birds, with no evidence of habituation even with leashed dogs, even where dog-walking was frequent; this effect was much weaker for people without dogs.<sup>(5)</sup>

Even the scent of dog urine or feces can trigger wildlife to avoid an area. Therefore, the impacts of dog presence can linger long after the dog is gone, even days later. One literature review found that predator odors caused escape, avoidance, freezing, and altered behavior in a large suite of wildlife species including scores of amphibian, reptile, bird, and mammal species from other studies.<sup>(30)</sup> The scent of domestic dogs has been shown to repel American beaver (*Castor Canadensis*), mountain beaver (*Aplodontia rufa*), deer (*Odocoileus* species), elk (*Cervus elaphus*), and a wide variety of wildlife native to other countries.<sup>(20,30)</sup> Mountain beaver cause economic damage to young tree stands in the Pacific Northwest, and foresters are considering using dog urine as a repellent.<sup>(20)</sup> An experimental study demonstrated that dog feces are an effective repellent for sheep, with no habituation observed over seven successive days.<sup>(1)</sup>

One Colorado study showed mixed effects of dogs on wildlife.<sup>(44)</sup> The study compared effects of pedestrians alone, pedestrians with leashed dogs and unleashed dogs alone on grassland birds. Vesper Sparrows (*Pooecetes gramineus*) and Western Meadowlarks (*Sturnella neglecta*) waited until dogs were closest to flush – that is, they fly or run away. This could be an attempt to remain undetected against the greatest threat, but could also mean that these bird species perceive humans as a greater threat than dogs. However, the same study found strong dog-specific impacts on mule deer in woodlands. A literature review found that ungulates (deer, elk and sheep) had stronger flight responses in open habitats compared to forested habitats.<sup>(63)</sup> Unlike small ground-nesting songbirds, larger animals would have no cover and could easily be seen in open habitats.

The disturbance effects of off-leash dogs are stronger than on-leash and substantially expand the amount of wildlife habitat affected,<sup>(32,59,63,69)</sup> and the unpredictability of off-leash dogs may prevent wildlife habituation in large areas of habitat.<sup>(5,10,32,61,69)</sup> The negative effects are increased even further when dogs and people venture off-trail, probably because their behavior is less predictable.<sup>(44,67)</sup> Off-leash dogs are likely to reduce the number and types of wildlife in large areas of habitat.

A Colorado study found off-leash dogs ventured up to 85 meters from the trail, although this result was from 1 square meter plots covering a very small percentage of the area.<sup>(33)</sup> Remote cameras in another study documented the same dog 1.5 miles apart in the same day.<sup>(61)</sup> In Utah, mule deer showed a 96% probability of flushing within 100 meters of recreationists located off trails; their probability of flushing did not drop to 70% until the deer were 390 meters from the recreationists.<sup>(67)</sup> A California shorebird study found that off-leash dogs were a disproportionate source of disturbance, and that plovers did not habituate to disturbance; birds were disturbed once every 27 minutes on weekends.<sup>(32)</sup>

To illustrate the potential of dogs to displace wildlife we explored two well-known local park examples that allow dogs on leash. Forest Park is one of the largest urban parks in the U.S. and was always intended to connect urban dwellers with nature; people have been walking their dogs there since before the park's 1948 dedication. Forest Park covers 5,172 acres of forest, including approximately 80 miles of trails and service. Using a very conservative 25-meter buffer around mapped trails to represent the "human + dog on leash" area of disturbance and assuming 100% compliance with leash rules, the area affected would be 1,406 acres – that's 28% of the entire park. In 651-acre Tryon Creek Natural Area, 207 acres of land (32%) is within 25 meters of a trail.

## **DISTURBANCE AND STRESS RESPONSE**

Stress response is the functional response of an animal to an external stressor, such as seasonal changes in temperature and food availability or sudden disturbance.<sup>(3)</sup> Specific stress hormones are released to enable the animal to physically respond to the stressor. Acute stress response, when an animal reacts to an immediate situation, can benefit an animal by triggering it to respond appropriately to a threat. However, chronic stress such as repeated disturbances over time may reduce wildlife health, reproduction, growth, impair the immune system and increase vulnerability to parasites and diseases.<sup>(16,27,75)</sup>

Dogs cause wildlife to be more alert, which reduces feeding, sleeping, grooming and breeding activities and wastes vital energy stores that may mean life or death when resources are low, such as during winter or reproduction.<sup>(8,32,40,41,69)</sup> Animals release stress hormones and their heart rates elevate in response.<sup>(3,27,37,38)</sup> When stress becomes too high, animals may flush, freeze, or hide.<sup>(26,30)</sup>

Several studies document that disturbance reduces reproductive success for some wildlife species.<sup>(11,35,40,50,63)</sup> Numerous studies found that female deer and elk, and deer and elk groups with young offspring, show greater flight responses to human disturbances than other groups.<sup>(63)</sup> Stress hormones may cause male songbirds to reduce their territorial defense, females to reduce feeding of their young, nestlings to have reduced weight and poor immune systems, and adult birds to abandon nests.<sup>(11,34,35,76)</sup> A Colorado study showed that elk repeatedly approached by humans had fewer young.<sup>(50)</sup> Although research is lacking on whether dogs specifically reduce the reproductive success of wildlife, the fact that humans with dogs create much stronger disturbance effects than without dogs<sup>(5,33,38,41,44,61,68,69)</sup> implies that these stress effects would be magnified if people had dogs with them.

## **INDIRECT AND DIRECT MORTALITY**

Dogs chase and kill many wildlife species including reptiles, small mammals, deer and foxes.<sup>(12,13,29,31,48,58,62)</sup> A Canadian study found that domestic dogs were one of the top three predators that killed white-tailed deer fawns.<sup>(4)</sup> In northern Idaho winter deer grounds, an Idaho Fish and Game conservation officer witnessed or received reports of 39 incidents of dogs chasing deer, directly resulting in the deaths of at least 12 animals.<sup>(36)</sup> A study in southern Chile revealed that domestic dogs preyed on

most of the mammal species present in the study area.<sup>(60)</sup> A 2014 literature review of dogs in parks identified 19 studies that investigated the effects of dogs preying on wildlife.<sup>(73)</sup> Of these, 13 reported observing or finding strong evidence of dog predation on wildlife. The Audubon Society of Portland's Wildlife Care Center took in 1,681 known "dog-caught" injured animals from 1987 through March 2016.<sup>(2)</sup>

Dogs transmit diseases to wildlife and vice versa including rabies, Giardia, distemper and parvovirus.<sup>(18,23,66,74)</sup> A Mexico City study concluded that feral dogs continually transmitted parvovirus, toxoplasmosis and rabies to wildlife including opossums, ringtails, skunks, weasels and squirrels.<sup>(66)</sup> Large carnivores such as cougars are especially vulnerable to domestic dog diseases including canine distemper.<sup>(74)</sup>

### **HUMAN DISEASE AND WATER QUALITY IMPACTS**

Under the Oregon Department of Environmental Quality (DEQ), Metro is a Designated Management Agency to protect water quality in compliance with the federal Clean Water Act. Limiting dog access at most natural areas is one of Metro's commitments to DEQ, because dog feces pollute water. Feces are often delivered to waterways through stormwater.<sup>(57)</sup> The average dog produces ½ to ¾ pound of fecal matter each day – a hundred dogs can produce more than 500 pounds of waste per week.<sup>(45)</sup> The DEQ identifies pet waste as a significant contributor to one of the region's most ubiquitous and serious pollutants, *E. coli* bacteria. Contact with *E. coli*-polluted water can make people sick. Because dog waste can be a relatively simple source to reduce or eliminate exposure to *E. coli*, DEQ considers reducing or eliminating dog waste an important action item in jurisdictions' clean water implementation plans for the Willamette Basin watershed.<sup>(47)</sup>

Humans can catch parasites and diseases such as hookworms (causes rash), roundworms (may cause vision loss in small children, rash, fever, or cough) and salmonella (causes gastrointestinal illness) from dog waste.<sup>(7,57)</sup> Aside from potential illnesses, dog waste can negatively affect visitors' experience in a natural area. Dog waste left on the ground is a leading complaint in Portland parks, and violators may be fined up to \$150 per incident.<sup>(14)</sup>

Several examples illustrate local dog impacts. A Clean Water Services DNA study found that dog waste alone accounts for an average of 13% of fecal bacteria in stream study sites in the Tualatin River Basin.<sup>(17)</sup> Off-leash dog walking is documented to cause erosion in Portland's Marshall Park, creating sediment problems in stream water.<sup>(15)</sup> In 2014 Portland school administrators expressed concern because playgrounds had become "a minefield for animal waste" from people using school grounds as after hours, off-leash dog parks, threatening the health of school children.<sup>(21)</sup> The City of Gresham found extremely high levels of *E. coli* bacteria in water quality samples of a very specific stretch of a stream, where dog feces were found along stream banks behind several yards with dogs.<sup>1</sup> The city sent letters to

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<sup>1</sup> Personal communication with Katie Holzer, Watershed Scientist at the City of Gresham, Oregon, 4/11/2016.

residents in the neighborhood about the incident and how to properly dispose of dog feces; the levels have not been elevated in follow-up sampling.

### **BELIEF, BEHAVIOR AND REALITY**

People do not always take responsibility for their impacts on wildlife. Several studies demonstrate that natural area visitors, including dog owners, often don't believe they are having much of an effect on wildlife, or assign blame to different user groups rather than accepting responsibility themselves.<sup>(6,64,67,68)</sup> Some natural area visitors assume that when they see wildlife, it means that they are not disturbing the animals – or worse, that because they didn't see any wildlife, they didn't disturb any.<sup>(64)</sup>

For example, in Utah, about half of recreational visitors surveyed did not believe that recreation was having a negative impact on wildlife; of those that did, each user group blamed other groups for the strongest impacts.<sup>(67)</sup> In Austria, 56% of people surveyed at a national park agreed that wildlife is in general disturbed by human activity.<sup>(64)</sup> However, only 12% believed that they had disturbed wildlife in their visit that day, and dog-walkers ranked their activities as less disturbing than other user groups' activities. When asking different user groups to rate the impacts of overall human disturbance on wildlife, dog-walkers rated the impacts the lowest, at 2.6 out of 5 possible impact points.

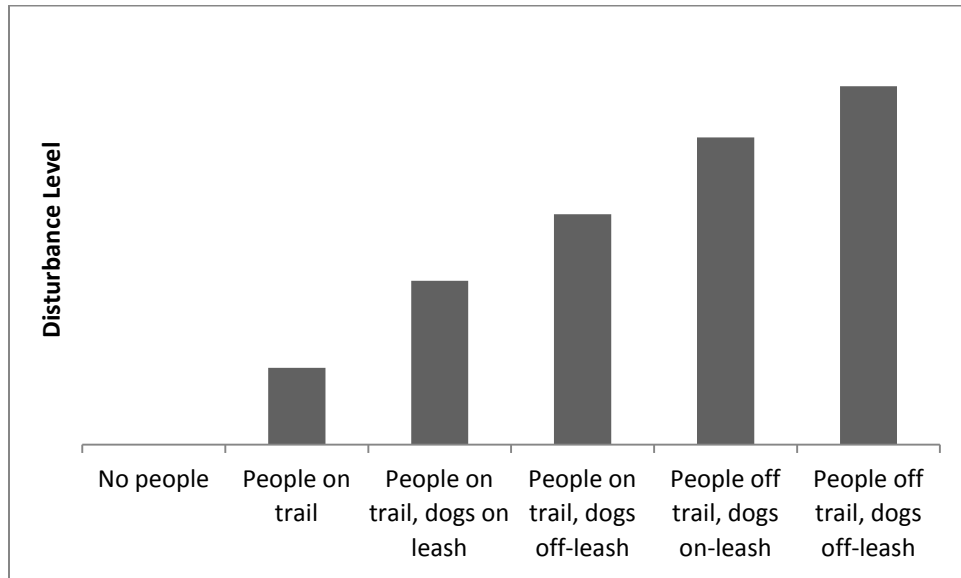
Surveys indicate that many dog owners desire fewer restrictions, while non-dog owners often feel the opposite.<sup>(72,73)</sup> However dog owners don't always follow the rules, and some dog owners allow their dogs to run free in leash-only natural areas.<sup>(32,52,73)</sup> In a Santa Barbara study, only 21% of dogs were leashed despite posted leash requirements.<sup>(32)</sup> And despite regulations and claims to the contrary, dog owners often don't pick up their dog's waste.<sup>(6,32)</sup> An English study revealed that although 95% of visitors claimed to pick up their dog's waste only 19-46% actually did so, depending on location within the park.<sup>(6)</sup>

### **DISCUSSION**

In summary, people and their dogs disturb wildlife, and people are not always aware of or willing to acknowledge the significance of their own impacts. Wildlife perceive dogs as predators. Dogs subject wildlife to physical and temporal displacement from habitat, and dog scent repels wildlife with lingering impacts. Dogs disturb wildlife which can induce long-term stress, impact animals' immune system and reduce reproduction. Dogs spread disease to and outright kill wildlife. People with dogs are much more detrimental to wildlife than people alone; off-leash dogs are worse; and off-trail impacts are the highest (Figure 1).

Urban wildlife is subjected to many human-induced stressors including habitat loss, degraded and fragmented habitat, impacts from a variety of user groups, roads, trails, infrastructure, noise and light pollution.<sup>(26)</sup> These stressors will increase with population; from July 2014 to 2015 the Portland-Vancouver metropolitan region added 40,621 new residents.<sup>(43)</sup> Current population in the region stands at 2.4 million, with another 400,000 residents expected over the next 20 years.

**Figure 1.** Conceptual illustration of the relative impacts on wildlife due to people without and with dogs.



Among medium to high density cities, Portland currently ranks second in the total area covered by parks at nearly 18%, and also second in the number of park acres per resident.<sup>(25)</sup> Of 34 park providers in the Portland region, all but four allow dogs in most or all of their natural areas, typically on-leash; more than two-thirds also offer dog parks or off-leash dog areas (Table 1 at end of document).

Wildlife conservation is not the only valid reason to preserve natural areas. Park providers must weigh the trade-offs between wildlife, habitat, water quality and recreational values. But when considering different types of public access in a natural area, it is important to understand that the research is clear: people with dogs substantially increase the amount of wildlife habitat affected and are more detrimental to wildlife than people without dogs.

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**Table 1.** Park providers' dog policies in the greater Portland, Oregon metropolitan area.

Parks provider	No dogs allowed	Some parks allow dogs	Dogs allowed	On-leash	Free to roam	Off-leash areas or dog park
Audubon Society of Portland	X					
City of Beaverton		X <sup>2</sup>		X		X
City of Cornelius			X	X <sup>3</sup>		
City of Durham			X	X		X
City of Fairview		X <sup>4</sup>		X		
City of Forest Grove			X	X		X
City of Gladstone			X	X		X
City of Gresham			X	X		X
City of Happy Valley			X	X <sup>5</sup>		X
City of Hillsboro			X	X		X
City of Lake Oswego			X	X		X
City of Milwaukie <sup>6</sup>			X	X		X
City of Oregon City			X	X		X <sup>7</sup>
City of Portland		X		X <sup>8</sup>		X <sup>9</sup>
City of Sherwood			X	X		X
City of Tigard			X	X		X
City of Troutdale		X <sup>10</sup>		X		X <sup>11</sup>
City of Tualatin			X	X		X
City of West Linn			X	X		X <sup>12</sup>
City of Wilsonville			X	X		X
City of Wood Village			X	X		
Clackamas County			X	X		X
Clean Water Services (Fernhill Wetlands)	X					

<sup>2</sup> All parks except fountain provided by Tualatin Hills Parks & Recreation District.

<sup>3</sup> Considering off-leash dog area at Water Park.

<sup>4</sup> Dogs on leash allowed at all parks except Salish Ponds (no dogs).

<sup>5</sup> Dogs on leash except prohibited in playgrounds.

<sup>6</sup> All city parks are operated by North Clackamas Parks and Recreation Department.

<sup>7</sup> The City of Oregon City is currently testing off-leash areas in three parks.

<sup>8</sup> Dogs on-leash except prohibited at Foster Floodplain Natural Area, Tanner Springs Park, Whitaker Ponds Nature Park, Riverview Natural Area, and the amphitheater at Mt Tabor Park.

<sup>9</sup> 33 off-leash dog areas.<sup>46</sup>

<sup>10</sup> Most parks: dogs not allowed. Exception: Sunrise Park and large Beaver Creek Greenway, leash only. Considering two more on-leash dogs allowed parks.

<sup>11</sup> Plans for an off-leash area at Sunrise Park.

<sup>12</sup> One off-leash dog area: field near parking lot at Mary S. Young Park. Off-leash dogs were identified as an issue by parks board.

Parks provider	No dogs allowed	Some parks allow dogs	Dogs allowed	On-leash	Free to roam	Off-leash areas or dog park
Federal / State (Sandy River Natural Area)			X <sup>13</sup>	X	X	X
Metro		X <sup>14</sup>				
N. Clackamas Parks & Recreation			X			X
OR Department of Fish and Wildlife			X	X <sup>15</sup>	X	X
OR Parks & Recreation Department			X	X		X
Port of Portland		X <sup>16</sup>		X		
The Nature Conservancy	X					
The Wetlands Conservancy			X <sup>17</sup>	X	X	
Tualatin Hills Park and Rec. District		X <sup>18</sup>		X		X
U.S. Fish & Wildlife Service	X					
U.S. Forest Service <sup>19</sup>			X	X	X	X

<sup>13</sup> Leashes required only on/near Confluence Trail and in parking area. Leash-off everywhere else. Region's largest off-leash area, and heavily used.

<sup>14</sup> Metro does not allow dogs except for service dogs, leashed dogs on regional trails, Broughton Beach, boat ramps and properties managed by others through intergovernmental agreements that are integrated into larger parks where leashed dogs are allowed (e.g., Forest Park).

<sup>15</sup> All dogs must be on leash, except while hunting during seasons authorized on Sauvie Island Wildlife Area, or pursuant to a valid "Competitive Hunting Dog Trial Permit" or "Sauvie Island Wildlife Area Individual Dog Training Permit."

<sup>16</sup> Includes Vanport Wetlands and mitigation sites. No dogs allowed except Government Island State Recreation Area (leased to Oregon Parks Department).

<sup>17</sup> No formal policy.

<sup>18</sup> Dogs allowed on-leash except Tualatin Hills Nature Park and Cooper Mountain Nature Park.

<sup>19</sup> Refers specifically to the Sandy River Delta, owned and administered by the National Forest Service, Columbia River Gorge National Scenic Area.