SITE STEWARDSHIP PLAN

Killin Wetlands Natural Area



March 2017



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Killin Wetlands					
Approvals for Site St	ewardship Plan				
Date first routed:	3/23/2017				
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KILLIN WETLANDS SITE INFORMATION

LOCATION

Address: 46100 NW Cedar Canyon Rd, Banks, OR 97106

County: Washington

Number of acres: 589.58

Metro file no.: S 56.01

Table 1: Metro natural area bond purchased land for Killin Wetlands

PROPERTY NAME	FILE NO.	BOND YEAR	DATE ACQUIRED	MANAGEMENT	ACRES
Kistner Farms	07.001	1995	04/19/2002	Metro	373
Williams	56.001	2006	12/11/2008	Metro	3.58
Moore	56.002	2006	03/08/2012	Metro	214.95

DIRECTIONS TO SITE

From Wankers Corner Field Station (2661 SW Borland Road, Tualatin, OR 97062):

- Take I-205 S to I-5 N
- Take exit 292A and merge onto OR-217 N
- Use the left 2 lanes to merge onto US-26 toward Seaside
- Slight left onto NW Banks Rd
- Continue onto NW Cedar Canyon Rd

See Map 1 for details.

SECTION 1: INTRODUCTION

1.1 CONTEXT

Killin Wetlands is located north of Highway 6 and west of the town of Banks, along the west fork of Dairy Creek, a tributary of the Tualatin River (Map 2). The site lies in a narrow floodplain depression that receives runoff from an encompassing perimeter of partially-forested uplands. Abundant beaver activity at the site has helped create a large, perennially-flooded wetland that has developed a deep, high organic/peat soil layer over centuries of flooding. Cedar Canyon Creek, a primary tributary to Dairy Creek, passes through the heart of the wetlands, and the upland fields north and northeast of the wetlands are actively farmed through agricultural leases under Metro management.

The area surrounding Killin Wetlands contains a mixture of land uses including residential, timber management, commercial development and agriculture. Large expanses of privately and publicly owned properties nearby share habitat, hydrologic or soil features with the wetlands, and influence its potential ecological viability and larger landscape value. To date, Killin Wetlands has been managed largely via protection through acquisition and localized restoration in the western portion of the site. Hydrologic regimes have not been restored to historic conditions at the site due to likely flood impacts to adjacent neighbors.

Killin Wetlands was also identified as one of the Metro sites approved for funding for the development of public access through the 2013 local option levy. The site's Access Master Plan was developed in 2015 and construction of the first phase of access improvements is expected to begin in summer 2017.

1.2 SITE STEWARDSHIP PLAN GOALS AND USES

Site Stewardship Plans (SSPs) and Site Conservation Plans (SCPs) are sister documents. SCPs document conservation targets, desired future conditions, and key threats, providing a long-term vision for the site for internal and external audiences. Though rarely fully updated, SCPs are periodically revised to document strategic implementation and reflect on lessons learned through adaptive management. SCPs provide guidance for short- and long-term stewardship actions that the Natural Areas Land Management Team will take to reduce threats and increase conservation target health.

SSPs provide a five to ten year outlook for ongoing care of a site, shaping a vision of options and costs to facilitate thoughtful decisions using available resources. SSPs are primarily an internal working document and address vegetation management, such as invasive species control, and infrastructure maintenance for items such as fences, gates, and water control structures. SSPs are updated periodically as key restoration or access and development projects are implemented.

This SSP provides information necessary to:

- Protect natural resources supporting wildlife habitat and water quality.
- Define key actions that help achieve desired future conditions of conservation targets.
- Define key actions required to maintain infrastructure.
- Provide cost estimates for actions.
- Prioritize actions and document implementation.

The major stewardship issues of concern at Killin Wetlands include:

- Invasive species control.
- Maintaining ecological integrity of *Populus tremuloides* (quaking aspen) and *Quercus garryana* (Oregon white oak) stands.
- Maintaining hydroperiod of the wetland.
- Maintaining wildlife habitat for observed Oregon Conservation Strategy species.

SECTION 2: CONSERVATION TARGETS AND DESIRED FUTURE CONDITIONS

2.1 MAJOR HABITAT TYPES

Historically, Killin Wetlands was a mix of shrub and herbaceous dominated swamp in the lower wetlands and mixed coniferous and deciduous forest on higher ground. The site is described as having been heavily influenced by beaver and their dams.

The lower swamp has been dramatically altered following more than a century of emergence after being drained for pasture and farming in the 1870s. Exposure to air caused the peat soils, which underlay the swamp in a deep layer over a dozen feet thick in spots, to oxidize and collapse, leading to hundreds of acres of swamp subsidence. This subsidence created what is seen today as a broad lake whose bed is many feet lower than the pre-settlement profile. As a result, most of the swamp that was once covered with willows and other native shrubs is now open water, largely devoid of vegetation. It is estimated that the peat soils should slowly rebuild to restore the native profile over the next 100-200 years.

Currently Killin Wetlands can be characterized by several natural habitat types including emergent wetland, upland forest, shrub wetland, bottomland hardwood wetland, oak woodland, riparian forest, wet prairie and approximately 164 acres under agricultural lease (Table 2; Map 3). More detailed descriptions are available in the SCP.

HABITAT TYPE	ACRES OR LINEAR FEET
Wetland – emergent	187.5
Agriculture	164.4
Upland forest – mixed	77.3
Wetland – shrub	62.1
Wetland – bottomland hardwood	34.2
Woodland – oak	25.6
Riparian forest	23.9
Developed – pervious/non ag	10.6
Prairie – wet	4.0

Table 2: Major habitat types at Killin Wetlands

2.2 CONSERVATION TARGETS

Conservation targets are composed of a suite of species, communities and ecological systems that represent and encompass the full array of native biodiversity of the site, reflect local and regional conservation goals and are viable or at least feasibly restorable. Using onsite natural habitat types and regional conservation planning efforts as guides, conservation targets were selected that encompass the site's biodiversity values and regional conservation targets. The targets at this site are:

- Shrub wetland
- Upland forest
- Bottomland hardwood wetland
- Oak woodland
- Riparian forest
- Emergent wetland
- Prairie wet or dry

Appendix A summarizes the conservation targets, key ecological attributes, threats and strategic short- and long-term stewardship actions that can help address threats to these conservation targets. For more information, see the Site Conservation Plan.

It is important to prioritize restoration and stewardship activities for several reasons. Budgetary or time constraints are likely to limit how much work can be accomplished at a given site. Specific actions may rise to the top due to the scarce or unique nature of a habitat type or because abating a certain threat now will save time and money in the future. The SCP prioritizes conservation targets while Appendix B of this SSP assigns priority rankings to key actions; this does not mean that the other actions are not important, simply that they are not the most important actions within the next 3-5 years.

2.3 SPECIAL OR SENSITIVE HABITAT

Killin Wetlands persists as perhaps the last relatively unaltered remnant of a small collection of Willamette Valley peat-laden wetlands that supported several typically montane or coastal plant species that are otherwise not found in other parts of the Willamette Valley, such as *Salix geyeriana* (Geyer willow). The site also includes regionally rare quaking aspen and oak habitats, and *Fraxinus latifolia* (Oregon ash) bottomland forest.

In addition, Killin Wetlands is rich in native wildlife and its unique wetlands provide habitat for many native and rare bird species including the declining willow flycatcher, as well as breeding habitat to hundreds of state sensitive northern red-legged frogs and other pond breeding amphibians.

SECTION 3: STEWARDSHIP ACTIONS

Stewardship actions are broken up into five primary stewardship categories: site monitoring, vegetation management, access and infrastructure, water resources, and wildlife habitat as described below. Terramet includes the full list of stewardship categories, actions and tasks. Appendix B-1 describes strategic stewardship actions for each category needed over the next five to ten years, and Appendix B-2 provides a budget for these actions, as well as additional actions that may be warranted given sufficient time or funds.

3.1 SITE MONITORING

Site monitoring at Killin Wetlands is an integral part of an adaptive management approach to restoration and stewardship. Based on the monitoring plan developed by Metro, a feedback loop is created between monitoring and management decisions. Monitoring will be done to evaluate habitat, population responses to management action, as well as progress toward achieving habitat and population objectives.

Key monitoring actions at Killin Wetlands may include:

- Hydroperiod monitoring.
- Vegetation monitoring for invasive weeds.
- Early detection and rapid response (EDRR) surveys.
- Vegetation monitoring for sensitive or declining species of interest.
- Regular site walks to identify issues such as illegal access and inappropriate public use.

3.2 VEGETATION MANAGEMENT

Key vegetation management actions for the next five to ten years at Killin Wetlands relate primarily to:

- Invasive weed control of priority invasive species of concern.
- Promoting and maintaining the integrity of the site's Oregon white oak, Geyer willow, and quaking aspen populations.

Metro has initiated an early detection and rapid response (EDRR) program for certain invasive species. These EDRR species will be controlled by hand pulling or herbicide application as they are detected in the natural area. Other invasive plant species will be controlled as part of restoration projects or ongoing management of habitat areas. See Appendix C for a list of invasive species.

3.3 ACCESS AND INFRASTRUCTURE

Infrastructure generally includes human constructs such as maintenance roads, gates, fences, culverts, and signs. This category of stewardship actions may also include inventory property encroachments or surveying property lines. See Map 4 for spatial information on access and infrastructure at Killin Wetlands.

Key access and infrastructure actions at Killin Wetlands are:

- Maintaining property boundaries and property encroachment issues as they arise.
- As the site progresses into a visitor use area, it may include blinds, shelters, trails and other features that will need to be maintained.

3.4 WATER RESOURCES

Water resources stewardship actions are generally defined as maintenance of infrastructure associated with streams, rivers or wetlands at the site. Examples include maintenance of large wood structures, water control structures, or other water resource related actions and tasks.

Key water resources actions at Killin Wetlands are:

• Maintaining the wetland hydroperiod.

3.5 WILDLIFE HABITAT

Wildlife habitat structures are specific features installed to improve wildlife habitat. Examples include nest boxes, turtle logs or platforms, beaver exclusion fencing and other associated wildlife related actions and tasks.

Key wildlife habitat actions at Killin Wetlands may include:

• Maintaining wildlife habitat in accordance with the Oregon Conservation Strategy's suggested conservation actions for observed strategy species at this site (outlined in Appendix B-1).

SECTION 4: COORDINATION

This Site Stewardship Plan outlines strategic development and restoration actions to be carried out at Killin Wetlands over the next five to ten years. These actions include natural resource, access, and infrastructure improvements that require implementation plans and communications between land management and science staff about long term stewardship costs. Implementation of these actions will have impacts to future stewardship and management of the site. This section is intended to identify actions that need additional coordination.

Actions that require coordination

- The Killin Wetlands Access Master Plan was adopted by Metro Council in December 2015. As of December 2016, the access project was in the design detail and engineering stage with construction expected to begin in summer 2017 for phase one improvements. This project will require planning and coordination among the planning, land management, science, park operations and property management teams.
- Agricultural lease management on site will require periodic access and communication between the property management, land management, and science teams, and the lessee farmers.
- Volunteer events will require communication and coordination between the land management and volunteer coordinators.

SECTION 5: VOLUNTEERS AND COMMUNITY ENGAGEMENT

The primary goal of the volunteer program is to provide a variety of high-quality, meaningful volunteer opportunities that add value and capacity to Metro's work. Through these opportunities, community members are able to learn about and enjoy Killin Wetlands, work alongside fellow community members, learn new skills or polish existing ones, and gain the satisfaction of contributing to the long-term health and livability of their communities.

For Killin Wetlands, strategic volunteer opportunities may include:

- Group restoration projects e.g. invasive weed removal or native plantings
- Habitat enhancement projects
- Wildlife monitoring

SECTION 6: SITE MANAGEMENT

Metro's management of Killin Wetlands includes enforcement of the posted rules to provide protection for wildlife, water quality, and to protect the safety and enjoyment of any person visiting these facilities. The following sections describe key elements to management of the site.

6.1 FIRE INCIDENT ACTION PLAN

A fire incident action plan has been developed for this site (Appendix D, Map 5).

6.2 PUBLIC ACCESS

Through the 2013 local option levy, funding was approved for the development of public access to specific Metro owned sites, including Killin Wetlands. An access master plan for the site was developed in 2015 with phase one construction slated for summer 2017.

The primary purpose for the phase one development is to provide safe public access and necessary support facilities on a 9-acre portion of the site, with minimum impact on the natural resources and community. Key features of the project include a looped entry drive with parking lot and bus pullout, soft surface trails, viewing blinds, learning shelter, picnic facilities, info kiosk, landscaping, gate and fencing.

The planned facilities are located in the upland area on the western half of the site, around the existing dairy barn off of NW Cedar Canyon Road. The full master plan will eventually expand the looped trail network on the site, bringing the total developed area to about 17 acres.

6.3 SPECIAL USE PERMITS

Special use permits (SUPs) are required for certain regulated and non-traditional uses of Metro's parks and natural areas to ensure public health and safety and to protect natural resources, properties and facilities.¹

Current and historical SUPs for this site can be found in Terramet in the Site Documents section of the Killin Wetlands Docs & Agreements page or on the M drive (M:\PN\Teams\Visitor Services\SUP). One typical occurrence of an SUP for this site is that Washington County Vector Control applies annually to conduct mosquito surveillance and sampling on site.

6.4 DEED RESTRICTIONS, EASEMENTS AND OTHER SITE AGREEMENTS

The acquisition of a property under the Natural Area Program may sometimes include deed restrictions that place limitations on the use of the land. Deed restrictions can include restrictions on tree cutting, establish landscaping requirements, or establish road maintenance fees. Acquisitions may also include easements that entitle the holder to certain uses or rights on the property. Easements can include utility easements, easements of access, and conservation easements. Metro may enter into other voluntary agreements including intergovernmental agreements (IGAs) with other agencies and management agreements with non-governmental organizations.

Existing deed restrictions, easements and other site agreements include:

Kistner Farms (07.001)

- 2002 easement to James and Shannon Cole for water line (No. 2002-046521)
- 1954 limited access in deed to State of Oregon, by and through its Department of Transportation, Highway Department which provides that no right or easement or right of access to, from or across the Wilson River Highway other than expressly provided therein shall attach to the abutting property. Amended by Indenture of Access in 1979 (No. 7-014921).

¹ More information regarding policies, guidelines, and applications can be found at <u>www.oregonmetro.gov/specialuse</u>.

- Rights of the public, government bodies and public utilities in and to that portion of the property lying within the limits of NW Killian Road, NW Graham Road, NW Cedar Canyon Road, the Wilson River Highway and any other roads and highways.
- Rights of fishing, navigation, commerce, flood control, propagations of anadromous fish, recreation and other rights of the public, Indian tribes of government bodies in and to the waters of Dairy Creek.
- Right, title and interest of the State of Oregon in and to that portion of the property lying below the ordinary high water line of Dairy Creek as of 1859.

Williams (56.001)

• None.

Moore (56.002)

- 2012 North American Wetlands Conservation Act (NAWCA) Notice of Grant providing Metro funding for the acquisition of the Moore property through a partner agreement with Ducks Unlimited. In return a notice of grant was placed on the property identifying that the U.S. Fish and Wildlife Service has an interest in the property and agreeing that it will remain in its natural state among other things.
- 2012 easement to Sue Rondo for continued use of a portion of her gravel driveway and turnout that encroaches on Metro property for parking, ingress and egress to her property, and the sole responsibility of the maintenance and repair of the driveway encroachments.
- 2000 easement for maintaining slopes and drainage in favor of Washington County. This easement is in relatively the same location and for the same purposes as the easement referenced in the bullet below, but includes a larger area.
- 1998 easement for maintaining slopes and drainage in favor of Washington County. This easement affects a narrow strip of land along the northern boundary of the property at the southern edge of NW Cedar Canyon Road and includes dedication of the land as public right of way for this road.
- 1957 deed restriction conveying a parcel of property to the State of Oregon Highway Department limiting access to the south to the Wilson River Highway to specific access points, for specific purposes, and under specific circumstances. In addition to restricting access, the referenced deed imposes additional restrictions and conditions, including conditions under which access rights shall be forfeited, such as if the parcels that the highway severs are no longer owned by the same person. Deed specifically states that restrictions are permanent and run with the land.

For more detailed information on any of the above agreements, please refer to the Terramet acquisition pages or the legal acquisition hard copy files for the properties that make up this site (Kistner Farms – 07.001, Williams – 56.001, Moore – 56.002).

6.5 RESIDENTIAL OR AGRICULTURAL LEASE AGREEMENTS

Some Metro Natural Areas include a residence or multiple residences on the site. If and when it is decided to rent out a residence, a rental agreement is developed by Metro. This agreement

describes the lease terms, any rental restrictions, and acceptable uses of the lease area. In some cases the lease area is delineated on the ground by installation of markers such as carsonite posts, t-posts, or fencing. Some standard lease terms include a month to month term, pet restrictions, no hunting, and no commercial activities.

Metro may enter into agricultural lease agreements when the acquisition comes with an existing agricultural lease, farming fulfills management goals, or the preservation of available agricultural land and historic farming practices is desired. The agricultural lease delineates the boundaries of the farmed area and can include specific requirements including crop planted, herbicides used, and equipment used.

Existing lease agreements include:

Residential

• None.

Agricultural

- Kistner Farms Agricultural lease (contract #924031, Map 6) of 83 acres to John and Susan Bernards effective 4/29/2002 and renewing in perpetuity unless notice is given by September 1st.
- Moore Agricultural lease (contract #931199, Map 7) of approximately 70 acres to Dierickx Farms effective 1/01/2012 and renewing in perpetuity unless notice is given by September 1st. Original lease included more acres that have since been taken out of agricultural use.

For more detailed information on any of the above leases, please refer to the Agreements section of the Terramet site page for Killin Wetlands or the Leases tab of the Terramet Administration Agreements page.

MAPS

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- Appendix B Stewardship Actions
 - B-1 Summary of Stewardship Actions
 - B-2 Budget for Stewardship Actions
- Appendix C Invasive species
- Appendix D Incident Action Plan

Vicinity map



Site map



0.2 0 0.1 0.3 0.4 Miles 1 1 1 1

Current cover map



Killin Wetlands site

- Agriculture Developed - (pervious/non ag) Prairie - (wet) **Riparian forest** Upland forest - mixed
- 1.14

Wetland - bottomland hardwood

Wetland - emergent

Wetland - shrub

Woodland - oak

0.4 Miles 0 0.1 0.2 0.3 1

Site infrastructure map



Fire Incident Action Plan

primary entrance: 46100 NW Cedar Canyon Rd, Banks, OR 97106

Site Stewardship Plan

統 Metro



Metro Parks & Nature - map date: 3/8/2017

Agricultural lease area map 46280 NW Cedar Canyon Rd Banks, OR 97106

Site Stewardship Plan





Agricultural lease area map No situs, immed. N of Hwy 6, 1/2 mile W of Banks Banks, OR







APPENDIX A

KILLIN WETLANDS

Conservation Target Summary Table for Killin Wetlands - summary of conservation target key ecological attributes (KEAs), significant threats, and long term goals and strategic restoration actions. The priority assignment refers to the habitat(s) in most immediate need of attention.

CONSERVATION	KEY ECOLOGICAL ATTRIBUTES					
TARGET	(KEAs)	SIGNIFICANT THREATS	KEAs OUTSIDE NORMAL RANGE	LONG TERM GOALS	STRATEGIC RESTORATION AND STEWARDSHIP ACTIONS	PRIORITY
Shrub wetland Native shrub richness		Degraded organic soil layer, prior land use, non-native vegetation	<6 species of native shrubs species per acre	Well-established thickets of shrubs (>6 species per acre) that provide food and shelter for a variety of wildlife.	Planting and maintenance, ongoing weed control, seed collection and live cutting of rare plant species such as Geyer willow.	High
	Vegetative structure: shrub layer	Degraded organic soil layer, prior land use, non-native vegetation	<30% native shrub canopy cover	Establish and maintain 30-80% native shrub canopy cover.	Combination mow and spot spray to suppress targeted exotic plants, especially reed canarygrass and <i>Rubus armeniacus</i> .	High
Upland forest	Native tree and shrub richness	Non-native vegetation, fragmentation	<8 species of native tree and shrub species per acre	Mature mix of native trees and shrubs (>12 species per acre) providing food and shelter for a variety of wildlife.	Treat to suppress targeted exotic plants, especially reed canarygrass and <i>Rubus armeniacus</i> planting and maintenance of native trees and shrubs.	Medium
	Vegetative structure: tree and shrub layer	Non-native vegetation, fragmentation	<50% native tree and shrub canopy cover (combined)	Establish and maintain >75% native and healthy tree and shrub canopy cover (combined).	Treat to suppress targeted exotic plants, especially reed canarygrass and <i>Rubus armeniacus</i> .	High
Bottomland hardwood wetland	AlandFloodwater access to the floodplain: degree of connection between stream/ floodplain during high water eventsAgricultural ditches and non- native understory vegetationModerately disconnected by constructed levees, dikes, tide gates, elevated culverts, etc.Restore natural seasonal flooding of bottomland forests.Plan agric that bott		nected by Restore natural seasonal flooding of bottomland forests. Plan, permit, and implement strategic actions to disrupt agricultural ditch-mediated drainage and other artificial feat that entrain water and limit natural flooding at the site and i bottomland hardwood forest units.		High	
Oak woodland	Vegetation structure: canopy cover and architecture of woody vegetation	Understory currently invaded by abundance of non-native broadleaves and some encroachment of ash and other competing native hardwood trees	Oak and aspen canopy make up <20% of total combined canopy cover within the defined conservation target area	Open grown oak and aspen trees with native shrub and forb understory. Structures removed and expansion of oak woodland through plantings.	Suppress targeted non-native plants including ivy, blackberry, thistle, and tansy ragwart. Maintain suitable growing environment for oaks and aspens and remove competing trees as needed.	High
	Native grass and forb presence: native species richness (for the patch)	Invasive pasture weeds, English ivy and English holly	<20 native herbaceous plant species with high and moderate fidelity to oak woodland occur within the patch	Increase understory native herbaceous diversity, though to a level that is likely to be a less diverse community than upland woodland habitats.	Strategic site prep, seeding and planting of native forbs, grasses, sedges and other herbs.	Medium
Riparian forest	Vegetative structure: tree layer	Prior land use, fragmentation	<30% native tree canopy cover	>40% native vegetation cover.	Planting and maintenance, ongoing weed control.	High
	Riparian habitat continuity	Prior land use, fragmentation	>3 or more 25-50 m gaps	Enhance stream canopy cover/shading (0 or 1, 15-25 m gap in woody vegetation) and improve instream structure.	Vegetation enhancement and reforestation.	High
Emergent wetland	Native wetland plant cover in emergent area	Degraded organic soil layer, prior land use, non-native vegetation	<25% dominance of native herbaceous plants characteristic of the region's wetlands	Promote regeneration of the native vegetation and organic soil layer in the larger swamp with a maintained diversity of native plants.	Treat to suppress targeted exotic plants, especially reed canarygrass and <i>Rubus armeniacus</i> , followed by planting where invasive plant control occurs.	High
	Hydrology	Degraded organic soil layer, prior land use	Altered hydroperiod	Hydroperiod of the site is characterized by natural patterns of filling or inundation and draying or drawdown.	Identify and seek to implement "correct" hydrologic regime in the wetlands.	High
Prairie – wet or dry	Native forb and grass abundance - Percent cover native forbs & grasses	Agricultural use	<20% cover by native forbs and grasses	Restore native cover to 50%.	Plan and implement strategic seeding and planting of the prairie unit.	Low

APPENDIX B-1

KILLIN WETLANDS SUMMARY OF STEWARDSHIP ACTIONS

Stewardship actions planned for the next five to ten years at Killin Wetlands.

(Estimated costs and potential additional actions that could take place, depending on time and resources, are in Appendix B-2)

PROJECT TYPE	DESCRIPTION	TIMING/FREQUENCY	COMPLETED BY							
	SITE MONITORING									
Hydroperiod monitoring	Monitor water levels within the wetland to ensure the wetland stays inundated to protect sensitive peat soils.	As needed or determined by the site scientist	Natural Resource Scientist							
Infrastructure monitoring	Monitor site infrastructure and access issues such as gates and fences. Address issues as they arise and make necessary repairs.	Once a year	Natural Resource Technician							
Vegetation monitoring – invasive species	Monitor priority invasive species and walk site to identify any new infestations which need additional treatments.	Twice a year	Natural Resource Technician							
Vegetation monitoring – rare plants	Monitor sensitive and rare native plant species of decline in the Willamette Valley over time to ensure continued preservation including species such as Geyer willow, quaking aspen, Oregon white oak, Juncus nevadensis, and Carex amplifolia. Make remedies to protect or supplement the population over time.	Once a year	Natural Resource Scientist							
Monitor "strategy species" defined in the Oregon conservation strategy for the Willamette Valley ecoregion that have been previously observed at the site. These species include willow flycatcher, white breasted nuthatch, common nighthawk, olive-sided flycatcher, chipping sparrow, western bluebird, purple martin, cutthroat trout, Northern red-legged frog, Western pond turtle and the Western painted turtle		Ongoing	Natural Resource Scientist and/or Katy Weil							
	VEGETATION MANAGEMENT									
Invasive weed control – primary	Control high priority invasive weeds such as <i>Polygonum sp.</i> (knotweed) and <i>Mentha pulegium</i> (pennyroyal) where possible.	One to two times per year	Natural Resource Technician							
Invasive weed control – secondary	Control secondary weeds as budget and staff time allows. Secondary weeds of interest include <i>Phalaris arundinacea</i> (reed canarygrass), <i>Rubus bifrons</i> (Armenian blackberry), <i>Dipsacus fullorum</i> (common teasel), <i>Cirsium sp.</i> (non-native thistle species), <i>Hedera sp.</i> (English and Irish ivy) and weedy tree species such as <i>Ilex aquifolium</i> (English holly), <i>Prunus</i> <i>avium</i> (sweey cherry) and <i>Crataegus monogynya</i> (English hawthorn).	Ongoing as budget allows	Natural Resource Technician							
Native plant management	Promote the restoration and preservation of sensitive native plant populations at this site including <i>Carex</i> <i>amplifolia</i> (bigleaf sedge), <i>Juncus nevadensis</i> (Sierra rush), <i>Salix geyeriana</i> (Geyer willow), <i>Quercus garryana</i> (Oregon white oak) and <i>Populus tremuloides</i> (quaking aspen).	Ongoing	Natural Resource Scientist and Natural Resource Technician							

PROJECT TYPE	DESCRIPTION	TIMING/FREQUENCY	COMPLETED BY							
	ACCESS AND INFRASTRUCTURE									
Survey	Survey the northern boundaries and install Carsonite boundary markers to clearly define Metro property lines.	orthern boundaries and install Carsonite rkers to clearly define Metro property lines.								
Remove old infrastructure	Remove old culvert/pump house and address erosion issues in the drainage of the northeastern forest after a survey has been completed.	One time	Lead Natural Resource Specialist and Property Management							
	WATER RESOURCES									
Maintain wetland hydroperiod	In order to stabilize the wetland's hydroperiod, old drainage ditches will eventually need to be plugged to raise the water table. In the interim, water levels should be monitored and beaver habitat sustained (i.e. via planting regimes) in order to temporarily maintain adequate		Natural Resource Scientist							
	WILDLIFE HABITAT									
Conserve and promote Oregon Conservation Strategy bird species habitat	Maintain wildlife habitat in accordance with the Oregon Conservation Strategy's suggested conservation actions for observed bird strategy species at this site including acorn woodpecker, olive-sided flycatcher, willow flycatcher, common nighthawk, purple martin, western bluebird, chipping sparrow, white-breasted nuthatch.	Ongoing	Natural Resource Scientist and Natural Resource Technician							
Conserve and promote Oregon Conservation Strategy turtle species habitat	Maintain turtle habitat in accordance with the Oregon Conservation Strategy's suggested conservation actions for observed strategy species at this site including the western pond turtle and western painted turtle.	Ongoing	Natural Resource Scientist and Natural Resource Technician							
Conserve and promote northern red- legged frog habitat	Maintain wetland habitat with emergent plants and adjacent forest (Oregon Conservation Strategy, 2016).	Ongoing	Natural Resource Scientist and Natural Resource Technician							
Conserve and promote coastal cutthroat trout habitat	Maintain or restore aquatic and riparian habitat, providing suitable water quality and habitat complexity. Reduce localized impacts where populations could become increasingly fragmented (Oregon Conservation Strategy, 2016).	Ongoing	Natural Resource Scientist and Natural Resource Technician							

APPENDIX B-2

KILLIN WETLANDS BUDGET TABLE

10-year budget for stewardship actions

UNIT/AREA MAINTENANCE CATEGORY PROJECT TYPE DESC		DESCRIPTION OF TASKS HABITAT TYPE OR TIM CONSERVATION TARGET FRE	TIMING/ FREQUENCY	IMING/ REQUENCY	COST BY FISCAL YEAR											
							FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	FY24/25	FY25/26
			Target weeds that exist in upland areas such as blackberry,													
Upland	Vegetation Management	Invasive weed control	thistles and teasel; seed with native grasses in FY 19/20.	Upland forest	Annually	Med	\$5,000	\$5,000	\$5,000	\$8,000	\$0	\$5,000	\$0	\$5,000	\$0	\$5,000
Emergent and shrub wetlands	Vegetation Management	Invasive weed control	Target priority weeds such as <i>Polygonum sp.</i> and <i>Mentha pulegium</i> at the Moore property after it is out of stabilization	n. Emergent and shrub wetlands	Annually	High	\$0	\$0	\$0) \$C	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Wetland margin near access project	Vegetation Management	Invasive weed control	Mow and spray reed canarygrass within access project area.	Shrub wetland	Annually	Med	\$0	\$10,000	\$7,500	\$7,500	\$5,000	\$2,500	\$C	\$2,500	\$C	\$2,500
Northern boundary	Access and Infrastructure	Survey	Survey northern boundary and mark with Carsonite posts.	Upland forest	One time	Low	\$0	\$6,000	\$0) \$C	\$0	\$0	\$0) \$C	\$0	\$0
Northeastern forest	Access and Infrastructure	Culvert removal or repair	Remove or repair the old culvert/pump house in the drainag of the northeastern forest.	e Riparian forest	One time	Med	\$0	\$0	\$10,000) \$C	\$0	\$0	\$C) \$C	\$0	\$0
Totals							\$5,000	\$21,000	\$22,500	\$15,500	\$7,500	\$10,000	\$2,500	\$10,000	\$2,500	\$10,000

APPENDIX C

KILLIN WETLANDS INVASIVE SPECIES

The table below summarizes a preliminary list of invasive plants requiring control in all or parts of Killin Wetlands, including focus areas and timing for control. Invasive species, with the exception of Early Detection Rapid Response (EDRR) species, will be controlled as part of restoration projects or ongoing management of habitat areas. A list of noxious weeds for Oregon, including descriptions and photos, can be found at: www.oregon.gov/ODA/PLANT/WEEDS/statelist2.shtml.

Working list of priority non-native species for control at Killin Wetlands (EDRR species are bolded in red)

	0050150		FOCUS AREA FOR	
GENUS	SPECIES		DETECTION/CONTROL	
Arctium	minus	Common burdock	Upland	Spring
Calystegia	sepium	Hedge bindweed	Upland	Summer/Fall
Cirsium	arvense	Canada thistle	Upland	Spring
Cirsium	vulgare	Bull thistle	Upland	Spring
Conium	maculatum	Poison hemlock	All	Spring
Convolvulus	arvensis	Field bindweed	Upland	Spring
Cortaderia	selloana	Pampas grass	Upland	Summer
Crataegus	sp.	Hawthorn	All	Fall
Daphne	laureola	Spurge laurel	Forest	Spring/Fall
Dipsacus	fullonum	Teasel	All	Spring
Geranium	lucidum	Shining geranium	Forest*	Spring
Geranium	robertianum	Herb Robert geranium	Forest*	Spring
Hedera	sp.	lvy	Forest	Winter
Humulus	lupulus	Common hop	Riparian forest	Summer
llex	aquifolium	English holly	Forest	Fall
Juglans	nigra	Black walnut	All	Fall
Mentha	pulegium	Pennyroyal	Emergent/Shrub Wetland	Spring
Phalaris	arundinacea	Reed canarygrass	Ash Forested Wetland	Fall
Polygonum	sp.	Knotweed	Riparian forest	Summer
Prunus	avium	Sweet cherry	Forest	Fall
Prunus	cerasifera	Cherry plum	Forest	Fall
Rubus	bifrons	Armenian blackberry	Forest and Wetland Margins	Fall
Senecio	jacobaea	Tansy ragwort	All	Spring
Solanum	dulcamara	Bittersweet nightshade	All	Spring

**Geranium lucidum* and *Geranium robertianum* are widely distributed across this site and therefore, treatment areas should be assessed on a case by case basis.



Incident Action Plan

APPENDIX D

Killin Wetlands

Address/access points

Address:

• 46100 NW Cedar Canyon Rd, Banks, Oregon, 97106, Washington County

Primary Access (gate with parking area):

- 46100 NW Cedar Canyon Road, Banks, OR 97106
- Latitude: 45°36'57.8304"N; Longitude: 123°09'14.4828"W
- Cable gate with Metro A lock

Secondary Access 1 (farm gate to dirt road):

- No situs, off of Cedar Canyon Road, approximately 650 feet west of the intersection of NW Bays Drive and NW Cedar Canton Road.
- Latitude: 45°37′13.9″N; Longitude: 123°07′44.2″W
- Farm gate with Metro A lock and Metro natural area signage

Secondary Access 2 (farm gate)

- No situs, off of NW Wilson River Highway, approximately .7 miles past the intersection of NW Wilson River Highway (Hwy 6) and Nehalem Highway (Hwy 47).
- Latitude: 45°36'38.26"N : Longitude: 123° 7'42.67"W
- Farm gate with Metro A lock and Metro natural area signage. No formal parking areas.

Secondary Access 3 (gate, currently no parking, access by foot):

- No situs, off of Cedar Canyon Road, approximately .35 miles west of primary access
- Latitude: 45°37'00.4"N; Longitude: 123°09'37.4"W
- Cable gate with Metro A lock

Secondary Access 4 (gate to dirt road, no parking, access by foot):

- No situs, off of Cedar Canyon Road, approximately .55 miles west of primary access
- Latitude: 45°37'00.5"N; Longitude: 123°09'52.6"W
- Cable gate with Metro A lock

Secondary Access 5(gate to dirt road, no parking, access by foot):

- No situs, off of NW Killin Road, approximately 500 feet north of the intersection of NW Narup and Killin roads.
- Latitude: 45°37'18.9"N; Longitude: 123°09'52.3"W
- Cable gate with Metro A lock

Location

Primary access:

• T02N-R04W SECT35

- Secondary access #1 & 2
- T02N-R04W SECT36

Additional access points:

• T02N-R04W SECT34

Acreage

589.58

Structures

Dairy barn – located in the upland area on the western half of the site near the primary entrance off of NW Cedar Canyon Road.

In addition, through the 2013 local option levy, funding was approved for the development of public access to Killin Wetlands. An access master plan for the site was developed in 2015 with phase one construction slated for summer 2017 to provide support facilities on a 9-acre portion of the site near the primary entrance off of NW Cedar Canyon Road.

Water sources and staging areas

Cedar Canyon Creek, Park Farms Creek, and West Fork Dairy Creek flow through the property. There is also an unnamed creek that runs through the NE corner of the property and a man-made irrigation ditch that runs through the Eastern part of the property.

Two potential water sources are identified on the Incident Action Plan map. The main water source is a hose bib connected to the pump house located near the primary entrance along NW Cedar Canyon Road. In the event that an emergency takes place where water needs to be drawn (i.e. for fire suppression), the West Fork Dairy Creek may be utilized as a secondary source.

Sensitive habitat

All of the wetland areas at Killin Wetlands are considered sensitive habitat, but priority habitats for protection include peat wetlands and oak, aspen, and Geyer willow stands.

Contact information*

Metro Conservation Program

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Justin Takkunen, Natural Areas Land Manager	503-964-2386 (cell)
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Curt Zonick, Natural Resource Scientist	503-975-6058 (cell)
Yuxing Zheng, Communications Coordinator	971-344-2207 (cell)
Sheriff/police department	
Emergency	911
Washington County Sheriff, non-emergency	503-629-0111

Local fire department	
Banks Fire District 13	503-324-6262
Tenants	
Agricultural Lease 1 (Kistner Farms property)	
John and Susan Bernards	503-680-5436
Mailing Address:	
8680 NW Roy Road, Cornelius, OR 97113	
Agricultural Lease 2 (Moore property)	
Tim Dierickx	503-324-3311
<u>dierickxfarm@gmail.com</u>	503-201-9572
Mailing Address:	
43060 NW Dierickx Road, Forest Grove, OR 97110	6

*Please see Terramet for most up to date contact information.