

FIGURE 5
ORWAP Assessment Area (AA)

Project: Clark Residence



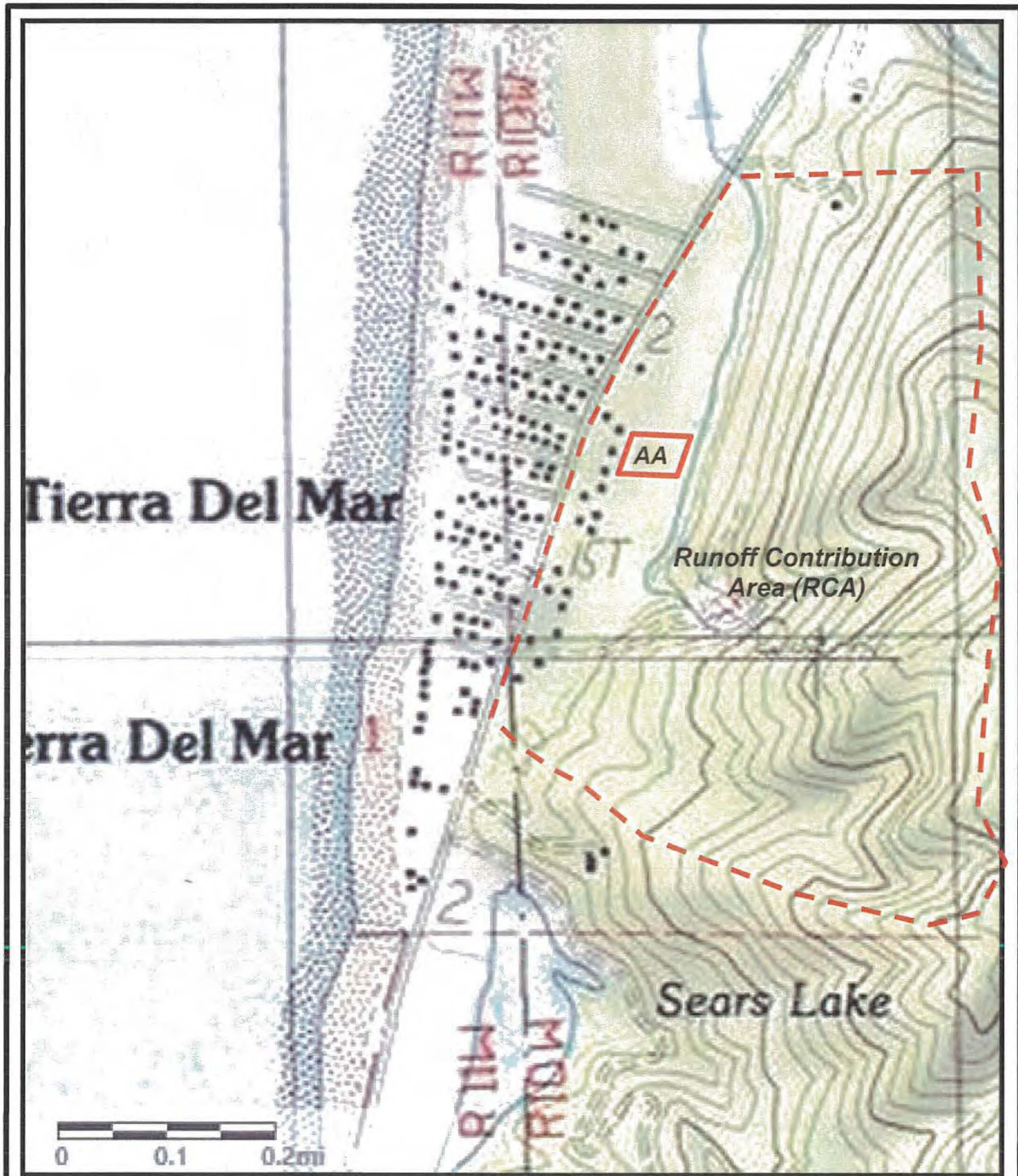
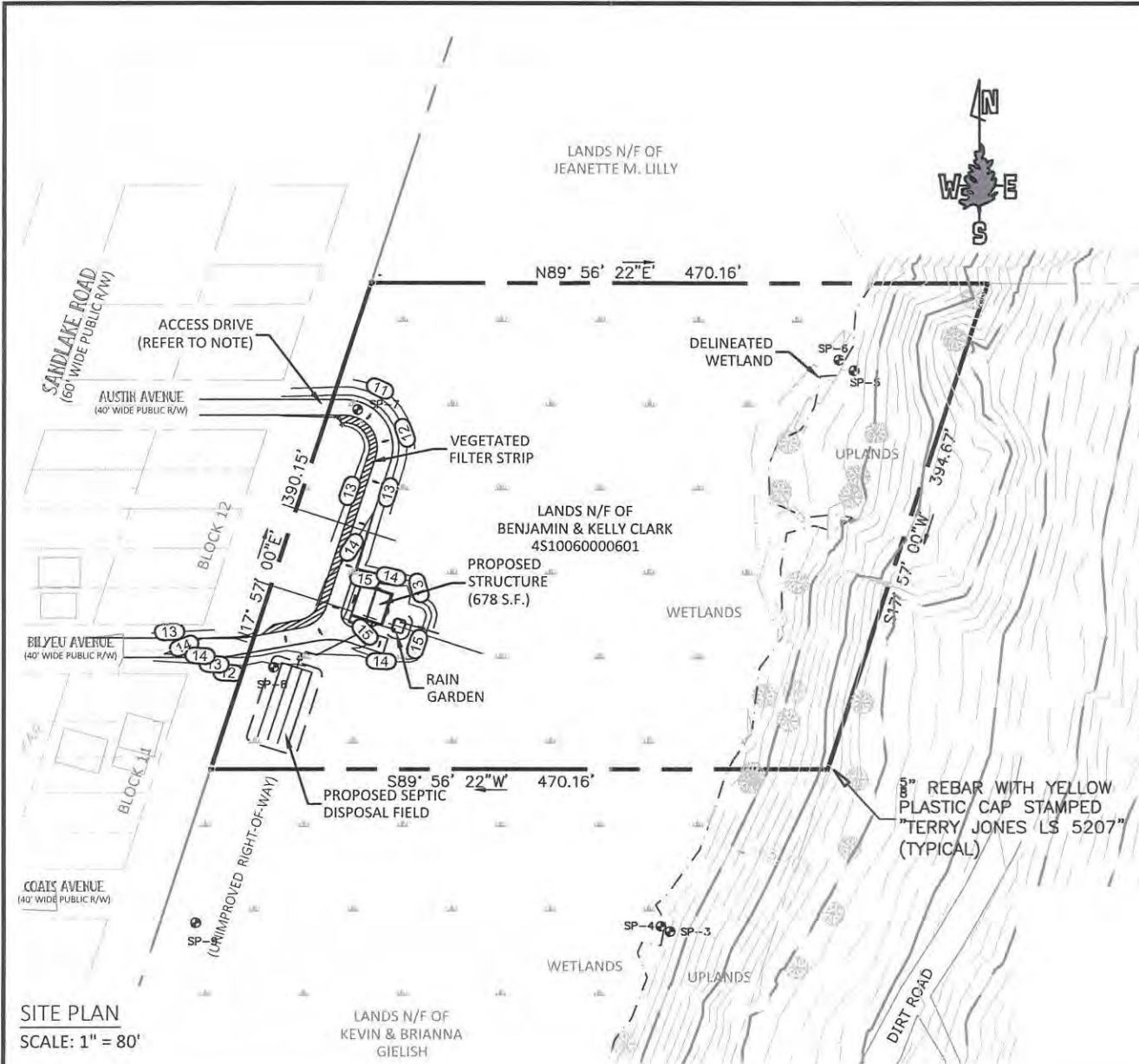


FIGURE 6
ORWAP Runoff Contribution Area (RCA)

Project: Clark Residence





SITE PLAN
SCALE: 1" = 80'

OWNER:
BENJAMIN & KELLY CLARK
56564 METEOR DRIVE
BEND, OR 97707
PHONE: 541.410.3996
EMAIL: ben.built@yahoo.com

WETLAND CONSULTANT:
ZION NATURAL RESOURCES
CONSULTING
C/O ERIC HENNING
PO BOX 545
MONMOUTH, OR 97361
PHONE: 503.881.4171
EMAIL: eric@zionconsulting.org

UTILITY DATA:
EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED RESIDENCE HAVE NOT BEEN IDENTIFIED NOR LOCATED

SANITARY SEWER:
CAPPING FILL SANITARY SEWER DISPOSAL FIELD

GENERAL NOTES:
INFORMATION SHOWN HEREON IS NOT THE RESULT OF AN FORMAL SURVEY BY GREEN CASCADES, LLC. WETLANDS ARE FROM A SURVEY PREPARED BY BAYSIDE SURVEYING, LLC.

EXISTING GROUND TOPOGRAPHY IS THE RESULT OF A FORMAL SURVEY BY BAYSIDE SURVEYING, LLC.

PROPOSED ACCESS DRIVE LOCATION IS FOR CONCEPTUAL PURPOSES ONLY. EXACT LOCATION TO BE FIELD VERIFIED. ALIGNMENT OF DRIVE SHALL BE DETERMINED IN A MANNER TO MINIMIZE THE NUMBER OF TREES REMOVED TO THE GREATEST EXTENT POSSIBLE.

THESE PLANS ARE NOT A COMPLETE SET OF CONSTRUCTION DOCUMENTS. THEY ARE TO BE USED AS REFERENCE FOR THE INSTALLATION OF WATER QUALITY DEVICES ONLY AND ARE NOT TO BE RELIED ON FOR ANY OTHER ASPECTS OF CONSTRUCTION. THE OWNERS ARE ENCOURAGED TO CONSULT WITH THE ENGINEER TO DETERMINE PROPOSED GRADING NECESSARY TO PROVIDE POSITIVE DRAINAGE TO THE THROUGH THE PROPOSED FACILITIES.

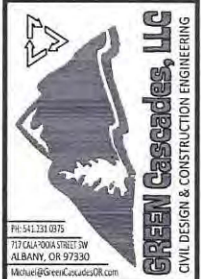
WETLAND IMPACT AREA:
TOTAL IMPACT AREA = 17,650 S.F.
CUT = 650 CY
FILL = 1450 CY

SHEET INDEX

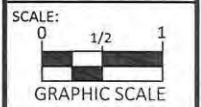
PROPOSED SITE PLAN	C1.0
CROSS SECTION	C2.0

DATE	REVISION	CHKD
08-05-21	GRADED WITH REAL EG TOPO	MJR

PROPOSED SITE PLAN
PROJECT:
CLARK RESIDENCE
PREPARED FOR:
BENJAMIN & KELLY CLARK
SITUATE IN:
TIERRA DEL MAR, OREGON



ENGINEER: M.J. RICCITELLI
DRAFTED: M.J. RICCITELLI
DATE: 06-29-2021



SHEET No.
C1.0

PROJECT#: 0801-21



Credit Request Form Oregon In-Lieu Fee Program

**Oregon Department
of State Lands**

AGENCIES WILL ASSIGN NUMBERS		
DSL Permit No. 63193 GP	Army Corps of Engineers Permit No. NWP-2021-135	180-day reservation ends:
In-Lieu Fee Project Name # of Credits Purchased Payment Amount	Project Number:	PCA code(s) \$ - PCA 13012-0218 (70%) \$ - PCA 13013-0218 (30%)

SEND ONE SIGNED COPY OF YOUR MATERIALS TO

Oregon Department of State Lands, ATTN: In-Lieu Fee Mitigation Specialist, 775 Summer Street NE, Suite 100, Salem, OR, 97301, -OR- fax to (503) 378-4844 -OR- email to dana.field@state.or.us.

*Include an ORWAP functional assessment (if this was the method required) with your request if proposing purchase of wetland credits from the Half Mile Lane project.

(1) APPLICANT INFORMATION

<u>Applicant</u>		Business Phone #	541-410-3996
Name and Address	Ben Clark 56564 Meteor Dr. Bend, OR 97707	Home Phone #	
		Fax #	
		Email	ben.built@yahoo.com
<u>Authorized Agent</u>		Business Phone #	503-881-4171
Name and Address	Eric Henning Zion Natural Resources Consulting PO Box 545 Monmouth, OR 97361	Home Phone #	
		Fax #	
<u>Check one</u>		Email	eric@zionconsulting.org
Consultant <input checked="" type="checkbox"/>			
Contractor <input type="checkbox"/>			

(2) PROJECT LOCATION

Street, Road or Other Descriptive Location		Legal Description (attach <i>tax lot map</i> *)			
		Township	Range	Section	Quarter/Quarter
East of Austin and Bilyeu Avenues		4S	10W	6	
In or near (City or Town)	County	Tax Map #		Tax Lot #	
Tierra Del Mar	Tillamook	4.10.6		601	
<u>Latitude (in DD.DDDD format)</u> 45.2522			<u>Longitude (in DD.DDDD format)</u> -123.9629		

(3) PROPOSED PROJECT INFORMATION

How many credits are needed? 0.41 Credits	When will the credits be purchased by? 12/1/2021
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Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Clark Residence
Investigator Name:	Eric Henning
Date of Field Assessment:	8/1/2021
County:	Tillamook
Nearest Town:	Tierra Del Mar
Latitude (decimal degrees):	45.2522
Longitude (decimal degrees):	-123.9629
TRS, quarter/quarter section and tax lot(s):	T4S, R10W, Sec 6, tax lot 601
Approximate size of the Assessment Area (AA, in acres):	4.05
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	5%
If delineated, DSL file number (WD #) if known:	2021-0143
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): <u>Systems:</u> Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E <u>Classes:</u> Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PFO
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	F
Soil Unit Mapped in Most of the AA:	Heceta fine sand
If tidal, the tidal phase during most of visit:	
What percent (approximate) of the wetland were you able to visit?	0
What percent (approximate) of the AA were you able to visit?	1
Have you attended an ORWAP training session? If so, indicate approximate month & year.	
How many wetlands have you assessed previously using ORWAP (approximate)?	
Comments about the site or this ORWAP assessment (attach extra page if desired):	

Date: 8/1/2021		Name: Eric Henning		Site: Clark Residence			
Form OF Office Data ORWAP V. 3.2		Conduct an assessment <u>only after reading the accompanying Manual and explanations in column E below</u> . Answering many of the following questions requires viewing aerial imagery and maps, covering an area up to within 2 miles of the AA. For each affirmative answer, change the 0 in the "Data" column to a "1". Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered for the ENTIRE wetland and bordering waters.		For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Aquatic Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibians & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PD= Native Plant Diversity, PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.		For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix C of the Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.	
#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Cell Name	Comments	
OF1	Distance to Extensive Perennial Cover (DistPerCov)	The distance from the AA edge to the edge of the closest patch or corridor of perennial cover (see definition in column E) larger than 100 acres is:		Corridor - is simply an elongated patch of perennial cover that is not narrower than 150 ft at any point.			
		<100 ft.	1	Perennial cover - is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less than annually, such as hayfields, lightly grazed pastures, timber harvest areas, and rangeland. <u>It does not</u> include water, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. [AM, WBN, PD, PDv, POL, SBM, Sens, STR]			
		100 to <300 ft.	0				
		300 to <1000 ft.	0				
		1000 ft. to <0.5 mile.	0				
		0.5 mile to 2 miles.	0				
> 2 miles.	0						
OF2	Distance to Tidal Waters (DistTidal)	The distance from the AA edge to the closest body of tidal water is:		Tidal water - If unclear whether a water body is tidal, check the ORWAP Map Viewer's Headtide layer (expand Hydrology), or check with local sources. Assume Columbia River is tidal east to Bonneville Dam and the Willamette River south to the Oregon City Falls. [WBF]			
		<1 mile.	1				
		1-5 miles.	0				
		>5 miles.	0				
OF3	Distance to Ponded Water (DistPond)	The distance from the AA edge to the closest (but separate) body of nontidal fresh water (wetland, pond, or lake) that is ponded all or most of the year is:		Use field observations, aerial imagery, and/or the ORWAP Map Viewer's Persistent Nontidal layer (expand Wetlands/National Wetlands Inventory). [AM, WBF, WBN, SBM, PD, Sens]			
		<100 ft.	0				
		100 to <300 ft.	0				
		300 to <1000 ft.	0				
		1000 ft. to < 0.5 mile.	1				
		0.5 mile to 2 miles.	0				
		>2 miles.	0				
OF4	Distance to Lake (DistLake)	The distance from the AA edge to the closest (but separate) body of nontidal fresh water (wetland, pond, or lake) that is ponded during most of the year and is larger than 20 acres (about 1000 ft on a side) is:		Use field observations, aerial imagery, and/or the ORWAP Map Viewer's Persistent Nontidal layer (expand Wetlands/National Wetlands Inventory). [WBF, WBN]			
		<1 mile.	0				
		1-5 miles.	0				
		>5 miles.	1				
OF5	Distance to Herbaceous Open Land (DistOpenL)	The distance from the AA edge to the closest patch of herbaceous openland larger than 10 acres and in flat terrain is:		Herbaceous openland - includes both perennial and non-perennial cover. For example, it can include pasture, herbaceous wetland, meadow, prairie, ryegrass fields, row crops, herbaceous rangeland, golf courses, grassed airports, and hayfields. Do not include open water of lakes, ponds, or rivers; or unvegetated surfaces; or areas with woody vegetation. In dry parts of the state, croplands in flat areas are often irrigated and are distinctly greener in aerial images. Flat terrain - means slope of less than 5%. [WBF, WBN, POL]			
		<100 ft.	0				
		100 to <300 ft.	0				
		300 to <1000 ft.	0				
		1000 ft. to < 0.5 mile.	1				
		0.5 mile to 2 miles.	0				
		>2 miles.	0				

OF6	Distance to Nearest Busy Road (DistRd)	The distance from the <u>AA center</u> to the nearest road with an average daytime traffic rate of at least 1 vehicle/minute is:		Estimate this traffic rate threshold using your judgment and considering the road width, local population, distance to densely settled areas, alternate routes, and other factors.	
		<=100 ft.	0		
		100 to <300 ft.	0	[AM,SBM,PD,PUv,STR]	
		300 to < 0.5 mile.	0		
		0.5 to <1 miles.	0		
		1 to 2 miles.	0		
		>2 miles.	0		
OF7	Size of Largest Nearby Patch of Perennial Cover (SizePerenn)	Including the AA's vegetated area, the largest patch or corridor that is perennial cover and is contiguous with vegetation in the AA (i.e., not separated by roads or channels that create gaps wider than 150 ft), occupies:		Contiguous -Abutting, with no major physical separation that prohibits free exchange or flow of surface water (i.e., not separated by roads or channels that create gaps wider than 150 ft)	
		<=0.01 acre.	0		
		.01 to < 1 acre.	0		
		1 to <10 acres.	0		
		10 to <100 acres.	0		
		100 to <1000 acres.	0		
		1000 to 10,000 acres.	0		
		>10,000 acres.	0	[AM,SBM,PD,POL,Sens,STR]	
OF8	Wetland Type Local Uniqueness (UniqPatch)	Select EACH of the vegetation types below that comprise more than 10% of the AA AND less than 10% of a 0.5 mile radius around the AA. (See Column E).		This is a 2-part question: (1) if no vegetation class comprises more than 10% of the AA, answer "none of the above." (2) If a vegetation class does comprise more than 10% of a 0.5 mile circle (~50 acres), determine if that vegetation class also comprises less than 10% of the AA.	
		Herbaceous vegetation (perennial grasses, sedges, forbs; not under a woody canopy; not crops).	0		
		Unshaded shrubland (woody plants shorter than 20 ft).	0		
		Trees (woody plants taller than 20 ft).	0	[INVv,AMv,WBFv,WBNv,SBMv,PDv,POLv,Sens]	
		None of above.	0		
OF9	Perennial Cover Percentage (PerCovPct)	Within a 2-mile radius of the AA center, the percentage of <u>land</u> that has perennial cover is:		Perennial cover - is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less than annually, such as hayfields, lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads.	
		<5% of the land.	0		
		5 to <20% of the land.	0		
		20 to <60% of the land.	0		
		60 to 90% of the land.	0	[FA,AM,SBM,POL,Sens,STR]	
		>90% of the land.	0		PerennAll
OF10	Forest Percentage (ForestPct)	Within a 2-mile radius of the AA center, the cumulative amount of <u>forest</u> (regardless of forest patch sizes, and including any in the AA) is:		Forested patch - is a land cover patch that currently has >70% cover of woody plants taller than 20 ft. May be in a plantation.	
		<5% of the circle.	0		
		5 to <20%.	0	[FA,SBM,STR]	
		20 to <50%.	0		
		50 to 80%.	0		
		>80%.	0		
OF11	Herbaceous Open Land Percentage (OpenLpct)	Within a 2-mile radius of the AA center, the amount of herbaceous openland in flat terrain is:		Herbaceous openland - can include both perennial and non-perennial cover. For example, it can include pasture, herbaceous wetland, meadow, prairie, ryegrass fields, row crops, herbaceous rangeland, golf courses, grassed airports, and hayfields.	
		<5% of the land.	0		
		5 to <20%.	0		
		20 to <50%.	0		
		50 to 80%.	0		
		>80%.	0	[WBF,WBN,POL]	

OF12	Landscape Wetland Connectivity (ConnScapeW)	Within a 2-mile radius of the AA center:		Corridor - is simply an elongated patch of perennial cover that is not narrower than 150 ft at any point.	
		There are NO other wetlands.	0		
		There are other wetlands (or a wetland), but NONE are connected to the AA by a corridor of perennial vegetation. The corridor must be at least 150 ft wide along its entire length and not interrupted by roads with regular traffic.	0	Regular traffic - is at least 1 vehicle per hour during the daytime throughout most of the growing season. Assess this based on local knowledge, type of road, and proximity to developed areas.	
		There are other wetlands (or a wetland), and ALL are connected to the AA by the type of corridor described.	0	Perennial - see OF9 for definition.	
		There are other wetlands (or a wetland), and ONE or MORE (but not all) are connected to the AA by the type of corridor described.	1	[WBN, SBM, Sens, STR]	
OF13	Local Wetland Connectivity (ConnLocalW)	Within a 0.5 mile radius of the AA center:		Regular traffic - is at least 1 vehicle per hour during the daytime throughout most of the growing season. Assess this based on local knowledge, type of road, and proximity to developed areas.	
		There are NO other wetlands.	0		
		There are other wetlands (or a wetland), but NONE are connected to the AA by a corridor of perennial vegetation. The corridor must be at least 150 ft wide along its entire length and not interrupted by roads with regular traffic.	0	Perennial - see OF9 for definition.	
		There are other wetlands (or a wetland), and ALL are connected to the AA by the type of corridor described.	0	IF possible, field verify	
		There are other wetlands (or a wetland), and ONE or MORE (but not all) are connected to the AA by the type of corridor described.	1	[AM, WBN, SBM, PD, Sens, STR]	
OF14	Wetland Number & Diversity Uniqueness (HUCbest)	According to the ORWAP Report, this AA is located in one of the HUCs that are listed as having a large diversity, area, or number of wetlands relative to the area of the HUC. Select ALL of the following that are true:		In the ORWAP Report, under the Watershed Information section and the HUC Best table, look at the columns "Is HUC Best?" and "Greatest Criteria Met."	
		Yes, for the HUC8 watershed	0	[AM, WBF, WBN, SBM, Sens]	
		Yes, for the HUC10 watershed	0		
		Yes, for the HUC12 watershed	1		
		None of above.	0		
		Data are inadequate (NWI mapping not completed in HUC).	0		
OF15	Landscape Functional Deficit (GIScore)	In the ORWAP Report, find the HUC 12 Functional Deficit table. Select ALL functions below that have a notation for that HUC.		In the ORWAP Report, under the Watershed Information section, look at the Functional Deficit table. Enter 1 for each of the listed functions that are noted.	
		Water storage (WS)	0		
		Sediment retention (SR)	0	These are HUCs in which a relatively small number, or proportional area, of the wetlands are likely to be performing the named function, thus adding value to those that are.	
		Nutrient transformation (NT)	0		
		Thermoregulation (WC)	0	See ORWAP's Technical Supplement for explanation of how the FuncDeficit was calculated.	
		Aquatic invertebrate habitat (INV)	0		
		Amphibian habitat (AM)	0	[WSv, WCv, SRv, PRv, INVv, Fav, AMv, WBNv]	
		Fish habitat (FH)	0		
		Waterbird habitat (WB)	0		
		None of above.	1		
		No data.	0		
OF16	Conservation Designations of the AA or Local Area (ConDesig)	On the ORWAP Map Viewer, use the layers indicated below to answer. Select ALL of the following that are true:		In the ORWAP Map Viewer, use the applicable layers.	
		(a) The AA is within or connected to a stream or other water body and this stream or water body has been designated as ESH within 0.5 miles of the AA, according to the Essential Salmonid Habitat (ESH) layer.	0	Include areas not shown as ESH, if ODFW has confirmed they qualify as ESH.	
		(b) The AA is within or contiguous to a designated Oregon's Greatest Wetlands, according to the map layer of that name.	0	Oregon's Greatest Wetlands identifies the most biologically and ecologically significant wetlands in the State of Oregon. [PU]	
		(c) The AA is within an Important Bird Area (IBA), as officially designated, according to the map layer of that name.	0	[WBFv, WBNv]	
		None of above.	1		

OF17	Non-anadromous Fish Species of Conservation Concern (RareFR)	According to the ORWAP Report, the score for occurrences of rare non-anadromous fish species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.	
		High (≥ 0.75 for maximum score, or ≥ 0.90 for this group's sum score), or there is a recent (within 5 years) onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Species include Miller Lake lamprey, Goose Lake lamprey, Pit sculpin, Lahontan cutthroat trout, Inland Columbia Basin redband trout, Steelhead (Snake River Basin ESU), Alvord chub, Goose Lake tui chub, Borax Lake chub, Lahontan redband, Oregon chub, Goose Lake sucker, Tahoe sucker, Warner sucker, Shortnose sucker, Lost River sucker. Note that for some of these species, only specific geographic populations are designated. [FRV]	
		Intermediate (i.e., not as described above or below).	0		
		Low (≤ 0.33 for both the maximum score this group's sum score, but not 0 for both).	0		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	-1	<u>This question may need to be revised after the field visit.</u>	
OF18	Amphibian or Reptile of Conservation Concern (AmphRare)	According to the ORWAP Report, the score for occurrences of rare amphibian or reptile species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.	
		High (≥ 0.60 for maximum score, or ≥ 0.90 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Species include: Black salamander, California slender salamander, Cope's giant salamander, Rocky Mountain tailed frog, Woodhouse's toad, Foothill yellow-legged frog, Northern leopard frog, Oregon spotted frog, Columbia spotted frog.	
		Intermediate (i.e., not as described above or below).	0		
		Low (≤ 0.21 for maximum score AND < 0.15 for sum score, but not 0 for both).	0		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	-1	[AMV] <u>This question may need to be revised after the field visit.</u>	
OF19	Feeding (Non-breeding) Waterbird Species of Conservation Concern (RareWBF)	According to the ORWAP Report, the score for occurrences of rare <u>non-breeding</u> (feeding) waterbird species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.	
		High (≥ 0.33 for maximum score, or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	<u>Non-breeding</u> - mainly refers to waterbird feeding during migration and winter. California brown pelican, Aleutian cackling goose, Dusky Canada goose	
		Low (< 0.33 for maximum score and for sum score, but not 0 for both).	-1	[WBFV]	
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0	<u>This question may need to be revised after the field visit.</u>	
OF20	Nesting Waterbird Species of Conservation Concern (RareWBN)	According to the ORWAP Report, the score for occurrences of rare <u>nesting</u> waterbird species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.	
		High (≥ 0.60 for maximum score, or ≥ 1.00 for this group's sum score), or there is a recent breeding-season observation of any of these species onsite by a qualified observer under conditions similar to what now occur.	0	Species include: Horned grebe, Red-necked grebe, Western grebe, Clark's grebe, American white pelican, Least bittern, Snowy egret, Trumpeter swan, White-faced ibis, Harlequin duck, Bufflehead, Yellow rail, Western snowy plover, Upland sandpiper, Franklin's gull, Marbled murrelet.	
		Intermediate (i.e., not as described above or below).	-1	[WBNV]	
		Low (≤ 0.09 for maximum score and for sum score, but not 0 for both).	0	<u>This question may need to be revised after the field visit.</u>	
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species during breeding season by a qualified observer under conditions similar to what now occur.	0		
OF21	Songbird, Raptor, Mammal Species of Conservation Concern (RareSBM)	According to the ORWAP Report, the score for occurrences of rare <u>songbird, raptor, or mammal</u> species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.	
		High (≥ 0.60 for maximum score, or > 1.13 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	Species include: Bald eagle, American peregrine falcon, Arctic peregrine falcon, Greater sage-grouse, Columbian sharp-tailed grouse, Yellow-billed cuckoo, Northern spotted owl, Short-eared owl, Black swift, Lewis's woodpecker, Purple martin, Northern waterthrush, Bobolink, Tricolored blackbird, Fringed myotis, Spotted bat, Townsend's big-eared bat, Pallid bat, Northern sea lion, Fisher, Sea otter, Canada lynx, Columbian white-tailed deer. [SBMV]	
		Intermediate (i.e., not as described above or below).	-1		
		Low (≤ 0.09 for maximum score AND < 0.13 for sum score, but not 0 for both).	0		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0	<u>This question may need to be revised after the field visit.</u>	
OF22	Invertebrate Species of Conservation Concern (RareInvert)	According to the ORWAP Report, the score for occurrences of rare <u>invertebrate</u> species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores. See <u>Supp. Info</u> file for a list of species.	
		High (≥ 0.75 for maximum score, or for this group's sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	See the <u>Supp. Info</u> file's RareAnimals worksheet for list of species addressed by this question.	
		Low (< 0.75 for maximum score AND for this group's sum score, but not 0 for both).	0	[INNV]	
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	-1	<u>This question may need to be revised after the field visit.</u>	

OF23	Plant Species of Conservation Concern (RarePssp)	According to the ORWAP Report, the score for occurrences of rare <u>wetland-indicator plant</u> species in the vicinity of this AA is:		Use <u>ORWAP Report's</u> Rare Species Scores max and sum scores.		
		High (≥ 0.75 for maximum score, or > 4.00 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0	See the <u>Supp_Info's</u> RareWetPlants worksheet for list of species addressed by this question.		
		Intermediate (i.e., not as described above or below).	1	[PDv,POLv]		
		Low (≤ 0.12 for maximum score AND < 0.20 for sum score, but not 0 for both).	0	This question may need to be revised after the field visit.		
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	0			
OF24	River Proximity (RiverProx)	There is a nontidal river within 1 mile and it is adjacent to, OR downslope from, the AA (connected or not). Enter 1, if true. If not, SKIP TO OF27.	0	River - as used here is a channel wider than 50 ft between its banks. In the ORWAP Map Viewer, use the National Hydrography Dataset - Flowline layer (expand Hydrology).[WSv]	NearRiver	
OF25	Floodable Property (FloodProp)	Select ONE of the below:		Row crops - do not include pasture or other perennial cover.		
		Floodplain boundaries within 1 mile downslope or downriver from the AA have not been mapped. Enter 1 and SKIP TO OF27.	0	In the ORWAP Map Viewer, use the Floodplain layers. Also, the Seasonal Nontidal Wetland layer (expand Wetlands/National Wetlands Inventory) may indicate some floodplain areas.		
		Floodplain boundaries within 1 mile downslope from the AA have been mapped BUT there is neither infrastructure nor row crops vulnerable to river flooding located within the floodplain and within that distance. Enter 1 and SKIP TO OF27.	0	[WSv] Supplement with field observations at multiple seasons, if possible.		
		Floodplain boundaries have been mapped AND infrastructure or row crops are present within 1 mile downslope or downriver and those are not protected from 100-year floods, but actual damage has not been documented.	0			
		Damage to infrastructure or row crops from river flooding has been documented within that distance.	0			
OF26	Type of Flood Damage (DamageType)	The greatest financial damage in the floodplain is (or would be) to:		Row crops - do not include pasture or other perennial cover. On the ORWAP Map Viewer, use the Floodplain layers [WSv]		
		Buildings, roads, bridges.	0			
		Row crops (during some years).	0			
OF27	Hydrologic Landscape (Arid)	According to the ORWAP Report, the wetland is in a hydrologic landscape unit classified as:		In the ORWAP Report, under the Location Information table, find the Hydrologic Landscape Class.		
		Arid.	0	[AM, AMv, WBNv, SBMv, OE, Sens]		
		Semi-arid.	0			
		Dry.	0			
		Moist.	0			
		Wet.	0			
Very Wet.	1					
OF28	Input Water - Recognized Quality Issues (WQIn)	According to ORWAP Map Viewer's Water Quality Streams layer and Water Quality Lakes layers, <u>ALL</u> of the following are true: (a) within 1 mile upstream from the AA edge, a water body or stream reach is labeled as being 303d, Water Quality Limited (categories 3B-5); Potential Concern; or TMDL Approved AND (b) the problem concerns one or more of the parameters listed below. <u>Select All that apply.</u>		Use the ORWAP Map Viewer's Water Quality Streams layer and the Water Quality Lakes layer (expand Water Quality and Quantity) and the Distance tool. Use the Identify tool to determine the reason for the listings.		
		Total suspended solids (TSS), sedimentation, or turbidity.	0			
		Phosphorus, chlorophyll-a, or algae.	0	If the AA receives both inflow and outflow from river flooding, consider the polluted water to be both "upstream" and "downstream".		
		Nitrates, ammonia, chlorophyll-a, or algae.	0			
		Petrochemicals, heavy metals (iron, manganese, lead, zinc, etc.), other toxins.	0	[SRv,PRv,INV,FA,FR,AM,WBF,WBN,STR]		
		Temperature or dissolved oxygen.	0	This may need to be verified in the field.		
		None of above, or no data. If true, enter 1 and SKIP TO OF30.	1		NoDataWQup	
OF29	Duration of Connection Between Problem Area & the AA (ConnectUp)	The upstream problem area mentioned above (OF28) has a surface water connection to the AA:		In the ORWAP Map Viewer, use the National Hydrography Dataset (expand Hydrology) and the Persistent, Seasonal, or Saturated nontidal layers (expand Wetlands/National Wetlands Inventory) to determine duration of surface water connection.		
		For 9 or more continuous months annually.	0	[SRv,PRv,INV,FA,FR,AM,WBF,WBN,STR]		
		Intermittently (at least once annually, but for less than 9 months continually).	0			
		Never (or less than annually).	0	This may need to be determined or verified in the field.		

OF30	Downslope Water Quality Issues (ContamDown)	According to ORWAP Map Viewer's Water Quality Streams layer and Water Quality Lakes layer, <u>ALL of the following are true:</u> (a) within 1 mile downhill or downstream from the AA's edge, a water body is labeled as being 303d, Water Quality Limited (categories 3B-5); Potential Concern; or TMDL Approved AND (b) the problem concerns one or more of the parameters listed below. Select All that apply.		Use the ORWAP Map Viewer's Water Quality Streams layer and the Water Quality Lakes layer (expand Water Quality and Quantity) and the Distance tool. Use the Identify tool to determine the reason for the listings.	
		Total suspended solids (TSS), sedimentation, or turbidity.	0	[WCv,SRv,PRv,FA]	
		Phosphorus, chlorophyll-a, or algae.	0		
		Nitrates, ammonia, chlorophyll-a, or algae.	0		
		Petrochemicals, heavy metals (iron, manganese, lead, zinc, etc.), other toxins.	0		
		Temperature or dissolved oxygen.	0		
None of above, or no data. Enter 1 and SKIP to OF32.				NoData/WQdo	
OF31	Duration of Connection Between AA & Water Quality Problem Area (ConnDown)	The connection between the downstream problem area mentioned above (OF30) and the AA:		In the ORWAP Map Viewer, use the National Hydrography Dataset (expand Hydrology) and the Persistent, Seasonal, or Saturated nontidal layers (expand Wetlands/National Wetlands Inventory) to determine duration of surface water connection.	
		Is a stream or water body that connects these areas for 9 or more continuous months annually.	0		
		Is a stream or water body that connects these areas intermittently (at least once annually, but for less than 9 months continually).	0	[WCv,SRv,PRv,FA]	
		Is a probable groundwater connection, or connection via direct runoff only (no channel connection).	0	This may need to be determined or verified in the field.	
		Never exists (a topographic ridge probably prevents all the AA's runoff and groundwater from reaching the problem area).	0		
OF32	Drinking Water Source (DEQ) (DWsource)	According to ORWAP Map Viewer's Surface Water Drinking Water Source Areas layer and the Ground Water Drinking Water Source Areas layer, the AA is within:		In the ORWAP Map Viewer, use the water source layers (expand Water Quality and Quantity).	
		The source area for a surface-water drinking water (DW) source.	0	[NRv]	
		The source area for a groundwater drinking water source.	0		
		Neither of above.	1		
OF33	Groundwater Risk Designations (GWrisk)	According to ORWAP Map Viewer's Groundwater Management Areas layer and the Sole Source Aquifer layer, the AA is: Select All that apply		In the ORWAP Map Viewer, use the DEQ Groundwater Management Areas layer and the Sole source Aquifer layer (expand Water Quality and Quantity).	
		Within a designated Groundwater Management Area (ODEQ).	0		
		Within a designated Sole Source Aquifer area (EPA): the North Florence Dunal Aquifer.	0	[NRv]	
		Neither of above.	1		
OF34	Relative Elevation in Watershed (Elev)	In the ORWAP Map Viewer, based on the Hydrologic Boundaries 4th Level (HUC 8) layer (expand Hydrology), determine if the AA is: (See Column E)		1) Consider which end of the HUC is the bottom. Where streams join, the "V" that they form on the map points towards the bottom of the HUC.	
		In the upper one-third of its watershed.	0	2) If the AA is closer to the HUC's outlet than to its upper end, and is closer to the river or large stream that exits at the bottom of the HUC than it is to the boundary (margin) of the HUC, then check "lower 1/3". If not near that river, check "middle 1/3".	
		In the middle one-third of its watershed.	0	3) If the AA is not in a 100-yr floodplain, is closer to the HUC upper end than to its outlet, and is closer to the boundary (margin) of the HUC than to the river or large stream that exits at the bottom of the HUC, then check "upper 1/3"	LowerShed
		In the lower one-third of its watershed.	1	4) For all other conditions, check "middle 1/3". [WSv, PRv, FA, FR, WCv, OE, Sens, SRv]	
OF35	Runoff Contributing Area (RCA) - Wetland as % of (WetPctRCA)	Delimit the wetland's Runoff Contributing Area (RCA) using a topographic base map. The area of the AA's wetland is:	W	See the ORWAP Manual for specific protocol for delimiting the RCA (Section 4.1 Step 5). The RCA includes only the areas that potentially drain directly to the AA's wetland rather than to channels that flow or flood into that wetland. Exact precision in drawing the boundary is not required.	
		<1% of its RCA.	0		
		1 to <10% of its RCA.	1		
		10 to 100% of its RCA.	0		
		Larger than the area of its RCA. Enter 1 and SKIP TO OF39.	0	[WS, Wsv, SR, SRv, PR, PRv, WCv]	NoRCA

OF36	Unvegetated % in the RCA (ImpervRCA)	The proportion of the RCA comprised of buildings, roads, parking lots, exposed bedrock, and other surface that is usually unvegetated at the time of peak annual runoff is about:	W	In the ORWAP Map Viewer, use an Aerial layer to determine the proportion of the RCA comprised of buildings, roads, parking lots, exposed bedrock, and other surfaces that are usually unvegetated at the time of peak annual runoff. [WSv,WCv,SRv,PRv,INV,FA,Sens,STR]	
		<10%.	1		
		10 to 25%.	0		
		>25%.	0		
OF37	Transport From Upslope (TransRCA)	A relatively large proportion of the precipitation that falls farther upslope in the RCA reaches this wetland quickly as indicated by the following: (a) RCA slopes are steep, <u>and/or</u> (b) upslope wetlands historically present have been filled or drained extensively, <u>and/or</u> (c) land cover is mostly non-forest, <u>and/or</u> (d) most RCA soils are shallow. This statement is:	WV	Refer to aerial imagery and/or consult local sources. See the <u>ORWAP Manual</u> for instructions. [WSv,SRv,PRv,STR]	
		Mostly true.	0		
		Somewhat true.	0		
		Mostly untrue.	1		
OF38	Upslope Soil Erodibility Risk (ErodeUp)	Use the ORWAP Report or the Map Viewer to determine if the erosion hazard rating of the soil within 200 ft away and upslope of the AA is:		If the soil unit is the <u>same as the AA</u> , the Erosion Hazard can be obtained from the ORWAP Report's Soil Information section. If the soil unit is <u>different than the AA</u> , use ORWAP Map Viewer's Oregon Soil layer and see the ORWAP Manual for instructions on how to determine the erosion hazard rating. [SRv,PRv,STR]	
		Slight.	1		
		Moderate.	0		
		Severe.	0		
		Very severe. Could not determine.	0 0		
OF39	Streamflow Contributing Area (SCA) - Wetland as % of (WetPetSCA)	Delimit (or visualize, for large river basins) the wetland's Streamflow Contributing Area (SCA) using a topographic base map. The area of the AA's wetland is:	W	See the <u>ORWAP Manual</u> for specific protocol for delimiting the SCA (section 4.1, Step 6). The SCA is all upland areas that drain into streams, rivers, and lakes that feed the AA's wetland either directly or during semi-annual floods. In addition, for wetlands intercepted by a mapped stream, the SCA can be delineated automatically and its area reported at this <u>USGS web site</u> : https://streamstats.usgs.gov/ss/ . Enter the coordinates, select Oregon, select Delineate, zoom to level 15 or finer, and click on a stream. [WS, SR, SRv, PR, PRv, WCv]	
		<1% of its SCA, or wetland is in the floodplain of a major river.	0		
		1 to <10% of its SCA.	0		
		10 to 100% of its SCA.	0		
		Larger than the area of its SCA. Enter 1 and SKIP TO OF41. Wetland lacks tributaries and receives no overbank water. Enter 1 and SKIP TO OF41.	0 1		NoSCA1 NoSCA
OF40	Unvegetated % in the SCA (ImpervSCA)	The proportion of the SCA comprised of buildings, roads, parking lots, exposed bedrock, and other surface that is usually unvegetated at the time of peak annual runoff is about:	W	See the <u>ORWAP Manual</u> for instructions. [WCv,SRv,PRv,FA,STR]	
		<10%.	0		
		10 to 25%.	0		
		>25%.	0		
OF41	Upland Edge Shape Complexity (EdgeShape)	Most of the edge between the AA's wetland and upland is (select one):	WV	See <u>ORWAP Manual</u> for instructions and illustrations. [NR, SBM, Sens]	
		Linear : a significant proportion of the wetland's upland edge is straight, as in wetlands bounded partly or wholly by dikes or roads, or the AA is entirely surrounded by water or other wetlands.	0		
		Intermediate : Wetland's shape is (a) ovoid, (b) mildly ragged edge, and/or (c) contains a lesser amount of artificially straight edge.	1		
		Convolute : Wetland perimeter is many times longer than maximum width of the wetland, with many alcoves and indentations ("fingers").	0		
OF42	Zoning (Zoning)	According to ORWAP Map Viewer's Zoning layer, the dominant zoned land use designation for currently undeveloped parcels upslope from the AA and within 300 ft. of its upland edge is:		See the <u>ORWAP Manual</u> for instructions on how to determine the zoning designation. If information is not provided, check local zoning maps. [WSv,WCv,SRv,PRv,INV,FAv,FRv,AMv,WBFv,WBNv,SBMv,PDv,POLv,PUv]	
		Development (Commercial, Industrial, Urban Residential, etc.), or no undeveloped parcels exist upslope from the AA.	0		
		Agriculture or Rural Residential.	0		
		Forest or Open Space, or entirely public lands.	1		
		Not zoned, or no information.	0		

OF43	Growing Degree Days (GDD)	According to ORWAP Map Viewer's Growing Degree Days layer, the long term normal Growing Degree Days category at the approximate location of the AA is:		See the ORWAP Manual for instructions on how to determine the growing degree days category.		
		<256.	0	[NR, FR, AM, WBN, SBM, WCv, OE, CS, Sens]		
		256 - 1020.	0			
		1021-1785.	1			
		1786 - 2550.	0			
		2551 - 3315.	0			
		3316 - 4079.	0			
		> 4079.	0			

Date: 8/1/2021		Name: Eric Henning		Site: Clark Residence		
Form F Field Data (nontidal Wetlands) ORWAP V 3.2		Conduct an assessment only after reading the accompanying Manual and explanations in column E below. For each affirmative answer, change the 0 in the "Data" column to a "1". Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered for the ENTIRE wetland and bordering waters.		For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Export, INV= Invertebrates, FA= Anadromous Fish, FR= Resident Fish, AM= Amphibians, WBF= Feeding Waterbirds, WBN= Nesting Waterbirds, SBM= Songbirds, Mammals, & Raptors, POL= Pollinators, PH= Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.		
For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix C of the accompanying Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.						
#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Cell Name	Comments
F1	Tidal Wetland (Tidal)	This is a tidal wetland (either freshwater or saltwater). If yes, GO TO worksheet " T ". Do not enter any data here. If nontidal, continue with F2.		Tidal wetland - a wetland that receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation. Tidal flooding occurs on a 6-hour cycle DURING THE TIME it is flooded by tide, which may be as infrequent as once per year. If NWI map shows the wetland with a code beginning with E (for estuarine), assume the wetland to be tidal. However, some wetlands lacking that code are also tidal.		
F2	Ponded Condition (Lentic)	At least once every 2 years, some part of the AA contains a cumulative total of >900 sq.ft. of surface water that is ponded. The water persists for >6 days and may be hidden beneath emergent vegetation or scattered in small pools. Enter 1, if true.	0	Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). [AM,WBF,WBN]	Lentic	
		Reminder: For all questions, the AA should include all persistent waters in ponds smaller than 20 acres that are adjacent to the AA. The AA should also include part of the water area of adjacent lakes or rivers larger than 20 acres -- specifically, the open water part adjacent to wetland vegetation and equal in width to the average width of that vegetated zone.		Adjacent - is used synonymously with abutting, adjoining, bordering, contiguous -- and means no upland (manmade or natural) completely separates the described features along their directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent -- a large portion of their edges must match. The features do not have to be hydrologically connected in order to be considered adjacent.		
F3	Water Regime (Hydroperiod)	The water regime (hydroperiod) of the most permanent (usually deepest) part of the AA is: Select only ONE. [To meet any of the definitions other than <u>Ephemeral</u> , there must be >100 sq ft of surface water for the duration described, otherwise mark the type listed above it.] <u>Ephemeral</u> . Surface water in the wettest part of the AA is present for fewer than 7 consecutive days during an average growing season. Includes some of the areas mapped as <u>Saturated</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F25. <u>Temporary</u> . Surface water present for 1-4 weeks consecutively during an average growing season, OR if persists for longer, it is almost entirely in scattered pools, each smaller than 1 sq.m. Dries up completely during part of most average years. Includes some of the areas mapped as <u>Saturated</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F25. <u>Seasonal</u> . Surface water present for 5-17 weeks (1-4 months) consecutively during an average growing season, but dries up completely during part of most average years. Includes some of the areas mapped as <u>Seasonal</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F5. <u>Semi-Persistent</u> . Surface water present for more than 17 weeks (4 months) consecutively during an average growing season, but dries up completely during part of most average years. Includes some of the areas mapped as <u>Seasonal</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F5. <u>Permanent</u> . Does not dry up completely during most average years. Includes some of the areas mapped as <u>Persistent</u> Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and continue.		In the NRCS county soil survey, the Water Features table provides information about periods of flooding, ponding, and highwater table depths. Descriptions of the soil units may include information on saturation persistence. Also consider the hydroperiod label on NWI wetland polygons. [WS, FA, FR, WBN, WBF, WC]	NeverWater TempWet ShallowType DeepType PermType	

F4	Flooded Persistently - % of AA (PermW)	Identify the parts of the AA that still contain surface water even during the driest times of a normal year . At that time, the percentage of the AA that still contains surface water is:		driest times of a normal year - i.e., when the AA's surface water is at its lowest annual level.	
		1 to <25% of the AA.	0	Sites fed by unregulated streams that descend on north-facing slopes, tend to remain wet longer into the summer. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [WS,PR,NR,CS,INV,FR,AM,WBF,WBN]	
		25 to <50% of the AA.	0		
		50 to 95% of the AA.	0		
		>95% of the AA.	0		
				AllPermWater	
F5	Depth Class (Predominant) (DepthDom)	When water is present in the AA, the depth most of the time in most of inundated area is: [Note: NOT necessarily the maximum spatial or annual depth]		This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the AA is brief, the answer will be based on the depth of the most persistently inundated part of the AA. Include surface water in channels and ditches as well as ponded areas.	
		>0 to <0.5 ft.	0	In the <u>ORWAP Manual</u> , see the diagram in Appendix B. [WC,SR,PR,CS,OE,INV,FA,FR,WBF,WBN,PD,Sens]	
		0.5 to < 1 ft deep.	0		
		1 to <3 ft deep.	0		
		3 to 6 ft deep.	0		
>6 ft deep.	0				
F6	Depth Class Distribution (DepthEven)	Within the area described above, and during most of the time when surface water is present, the water area has: Select only one.		Estimate these proportions by considering the gradient and microtopography of the site.	
		One depth class covering >90% of the AA's inundated area (use the classes in the question above).	0	In the <u>ORWAP Manual</u> , see the diagram in Appendix B. [INV,FR,WBF,WBN,PD]	
		One depth class covering 51-90% of the AA's inundated area (use the classes in the question above).	0		
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0		
F7	Emergent Plants – Area (EmArea)	Consider just the area that has surface water for >1 week during the growing season. Herbaceous plants (not moss, not woody) whose foliage extends above a water surface in this area (i.e., emergents) cumulatively occupy an annual maximum of:	W	If multiple small patches are separated by less than 150 ft, they may be combined when evaluating this question.	
		<0.01 acre (< 400 sq.ft). Enter 1 and SKIP TO F10, unless only part of a wetland is being assessed.	0	[SR,PR,OE,INV,FR,WBF,WBN,SBM,PD]	NoEm
		0.01 to < 0.10 acres (3,920 sq. ft).	0		
		0.10 to <0.50 acres (21,340 sq. ft).	0		
		0.50 to <5 acres.	0		
		5 to 50 acres.	0		
>50 acres.	0				
F8	% Emergent Plants (EmPct)	Emergent plants occupy an annual maximum of:		[WC,SR,PR,NR,CS,OE,INV,PD,FA,FR,AM,WBF,WBN,SBM]	
		<5% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		5 to <30% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		30 to <60% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
		60 to 95% of the parts of the AA that are inundated for >7 days at some time of the year.	0		
F9	Cattail or Tall Bulrush Cover (Cttail)	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.) or tall bulrush is:		[WBN, SBM]	
		<1% of the emergent vegetation, or cattail and bulrush are absent.	0		
		1 to <25% of the emergent vegetation.	0		
		25 to 75% of the emergent vegetation.	0		
		>75% of the emergent vegetation.	0		

F10	Water Shading by AA's Woody Vegetation - Driest (WoodyDryShade)	During an average growing season, when water levels are lowest (but surface water still occupies >400 sq ft or >1% of the AA), the percentage of the remaining surface water within the AA that is shaded by trees and/or shrubs located within the AA is:		[WC,FA,WBN,SBM]	
		<5% of the water, and fewer than 10 woody plants taller than 3 ft shade it, or all surface water is flowing.	0		
		<5% of the water, but more than 10 woody plants taller than 3 ft shade it.	0		
		5 to <25% of the water.	0		
		25 to <50% of the water.	0		
		50 to 95% of the water.	0		
		>95% of the water.	0		
F11	Open Water - Extent	During most of the growing season, the largest patch of open water that is in or adjacent to the AA is >1 acre and mostly deeper than 1 ft. Enter 1, if true.	0	Open Water - is surface water of any depth that contains no emergent herbaceous or woody vegetation (may contain floating-leaved or completely submersed plants). It may be partially	OpenW
F12	All Pondered Water as Percentage - Wettest (PondWpctWet)	When water levels are highest, during a normal year, the surface water that is ponded continually for >6 days occupies:		Pondered - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).	NoPond
		<1% or none of the AA. Surface water is completely or nearly absent then, or is entirely flowing. Enter 1 and SKIP TO F22.	0		
		1 to <5% of the AA.	0	[WS,WC,CS,OE,INV,AM,WBF,WBN]	
		5 to <30% of the AA.	0		
		30 to <70% of the AA.	0		
		70 to 95% of the AA.	0		
		>95% of the AA.	0		
F13	Pondered Open Water Area - Wettest (OWAreaWet)	When water levels are highest, during a normal year, the AA's pondered open water occupies a cumulative area of:	W	Pondered - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).	NoPondOW
		<0.10 acre (< 4356 sq. ft) of the AA and adjacent pondered waters. Enter 1 and SKIP TO F16.	0		
		0.10 to <0.50 acres (21,340 sq. ft) of the AA and adjacent pondered waters.	0		
		0.50 to <1 acres of the AA and adjacent pondered waters.	0		
		1 to <5 acres of the AA and adjacent pondered waters.	0		
		5 to <50 acres of the AA and adjacent pondered waters.	0		
		50 to <640 acres (1 sq. mi) of the AA and adjacent pondered waters.	0	[WS,WBF]	
		640 to <1000 acres of the AA and adjacent pondered waters.	0		
		1000 to <2500 acres of the AA and adjacent pondered waters.	0		
		>2500 acres (>4 sq.mi) of the AA and adjacent pondered waters.	0		
F14	Pondered Open Water Distribution - Wettest (WaterMixWet)	When water levels are highest, during a normal year, the distribution (in aerial view) of pondered open water patches larger than 0.01 acre (400 sq. ft) within the AA is (must meet both a and b criteria):		[NR,AM,WBF,WBN,PD,SBM]	
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are many small patches of open water scattered widely within vegetation or many small vegetation clump "islands" scattered widely within open water. Typical (for example) of some extensive bulrush and cattail marshes.	0		
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are only a few (or no) small patches of open water scattered widely within vegetation or a few small vegetation clump "islands" scattered widely within open water.	0		
		(a) Vegetation or open water comprise >70% of the AA (and its bordering waters) AND (b) There are several small patches of open water scattered within vegetation or several small vegetation clump "islands" scattered within open water.	0		

		(a) Vegetation or open water comprise >70% of the AA (and its bordering waters) AND (b) Open water is mostly in a single area (e.g., center of the wetland) and vegetation is in the rest (e.g., periphery), with almost no intermixing. (Typical of many ponds excavated for livestock watering, stormwater treatment, mineral extraction as well as many wetlands that are inundated only temporarily each year).	0		
F15	Width of Vegetated Zone - Wettest (WidthWet)	When water levels are highest, during a normal year, the width of the vegetated wetland that separates the largest patch of open water within or bordering the AA from the closest adjacent uplands, is predominantly: [Note: This is not asking for the maximum width.]		Vegetated wetland - in this case does not include underwater or floating-leaved plants, i.e., aquatic bed. In farmed wetlands that have different crops from year to year, consider vegetation condition as it probably existed during most of the past 5 years.	
		<5 ft, or no vegetation between upland and open water.	0	If open water exists as many patches, use the distance between the majority of those patches and uplands.	
		5 to <30 ft.	0		
		30 to <50 ft.	0		
		50 to <100 ft.	0		
		100 to 300 ft.	0	[WC,SR,PR,NR,CS,OE,AM,WBF,WBN,SBM,PD,Sens,EC]	
		> 300 ft.	0		
F16	All Poned Water as a Percentage (Driest) (PondWpctDry)	When water levels are lowest, during a normal year, but surface water still occupies ≥1,076 sq feet (100 sq meter) OR ≥1% of the AA (whichever is more), the water that is ponded (either visible or concealed by vegetation) in the AA occupies:		Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).	NoPond2
		<1% or none. Surface water is completely or nearly absent then, or is entirely flowing. Enter 1 and SKIP TO F22.	0		
		1 to <5% of the AA.	0	[WC,FA,FR,AM,WBN,Sens]	
		5 to <30% of the AA.	0		
		30 to <70% of the AA.	0		
		70 to 95% of the AA.	0		
		>95% of the AA.	0		
F17	Ponded Open Water Area (Driest) (OWAreaDry)	When water levels are lowest, during a normal year, the AA's ponded open water occupies a cumulative area, including adjacent ponded waters, of:	W	Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle).	NoPondOW2
		<0.10 acre (< 4356 sq. ft). Enter 1 and SKIP TO F24.	0		
		0.10 to <0.50 acres (21,340 sq. ft).	0		
		0.50 to <1 acres.	0	Open water - is surface water of any depth that contains no emergent herbaceous or wood vegetation (may contain floating-leaved or completely submersed species). It may be partially shaded by a tree canopy.	
		1- 4 acres.	0		
		5 to <50 acres.	0		
		50 to <640 acres (1 sq. mi).	0	[WBN,PUv]	
		640 to <1000 acres.	0		
		1000 to 2500 acres.	0		
		>2500 acres (>4 sq.mi).	0		
F18	Ponded Open Water Distribution - (Driest) (WaterMixDry)	When water levels are lowest, during a normal year, the distribution of ponded open water patches larger than 0.01 acre (400 sq. ft) within the AA is:		[NR,INV,AM,WBN]	
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are many small patches of open water scattered widely within vegetation or many small vegetation clump "islands" scattered widely within open water. Typical (for example) of some extensive bulrush and cattail marshes.	0		
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are only a few (or no) small patches of open water scattered widely within vegetation or a few small vegetation clump "islands" scattered widely within open water.	0		
		(a) Vegetation or open water comprise >70% of the AA (and its bordering waters) AND (b) There are several small patches of open water scattered within vegetation or several small vegetation clump "islands" scattered within open water.	0		

		(a) Vegetation <u>or</u> open water <u>comprise</u> >70% of the AA (and its bordering waters) AND (b) Open water is <u>mostly</u> in a single area (e.g., center of the wetland) and vegetation is in the rest (e.g., periphery), with almost no intermixing. Typical of many ponds excavated for livestock watering, stormwater treatment, mineral extraction as well as many wetlands that are inundated only temporarily each year.	0		
F19	Floating Algae & Duckweed (Algae)	At some time of the year, <u>most</u> of the AA's otherwise-unshaded water surface is covered by floating mats of algae, or small (<1 inch) floating plants such as duckweed, <i>Azolla</i> , <i>Wolffia</i> , or <i>Riccia</i> . Enter 1, if true.	0	This includes most nontidal wetlands labeled as Aquatic Bed (AB) on NWI maps. If wetland can be visited only during winter, it may not be possible to answer this question with much certainty unless local sources are contacted or indicators (e.g., dried remains of algae) are found.	
F20	Floating-leaved & Submerged Aquatic Vegetation (SAV)	SAV (submerged & floating-leaved aquatic vegetation, excluding the species listed above) occupies an annual maximum of:		SAV - are herbaceous plants that characteristically grow at or below the water surface, i.e., whose leaves are primarily and characteristically under or on the water surface during most of the part of the growing season when surface water is present. Some species are rooted in the sediment whereas others are not. If pond lily (<i>Nuphar</i>) is the predominant species, consider its maximum extent only during the period when surface water is present beneath the leaves. [PR,OE,INV,FR,AM,WBF,WBN]	NoSAV
		none, or <5% of the water area.	0		
		5 to <25% of the water area.	0		
		25 to <50% of the water area.	0		
		50 to 95% of the water area.	0		
		>95% of the water area.	0		
many SAV plants present, but impossible to select from the above categories.	0				
F21	Width of Vegetated Zone (Driest) (WidthDry)	When water levels are lowest, during a normal year, but surface water still occupies >400 sq feet or >1% of the AA (which ever is more), the width of the <u>vegetated wetland</u> that separates the largest patch of open water within or bordering the AA from the closest adjacent uplands, is predominantly:		Measure the width perpendicular to the open water part. Vegetated wetland - in this case does not include underwater or floating-leaved plants, i.e., aquatic bed. In farmed wetlands that have different crops from year to year, consider vegetation condition as it probably existed during most of the past 5 years. <i>Note: For most sites larger than 1 acre and with persistent water, measure the width using aerial imagery rather than estimating in the field.</i> [WBN]	
		<5 ft, or no vegetation between upland and open water.	0		
		5 to <30 ft.	0		
		30 to <50 ft.	0		
		50 to <100 ft.	0		
		100 to 300 ft.	0		
> 300 ft.	0				
F22	Beaver (Beaver)	Use of the AA by beaver during the past 5 years is: Select most applicable ONE.		Valley width - is delimited by an abrupt increase in slope on both sides of the channel. [AM,WBN,SBM,PD,Sens]	
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, or lodges.	0		
		<u>Very likely</u> based on known occurrence in this part of the region and <u>proximity to ALL</u> of the following (a) a persistent freshwater wetland, pond, or lake, or a perennial low-gradient (<5%) channel, and (b) average valley width is > 150 ft and (c) >20% cumulative cover of aspen, cottonwood, alder, and willow in vegetated areas within 150 ft of the AA's edge. Or there is evidence of beaver just outside the AA.	0		
		<u>Somewhat likely</u> based on known occurrence in this part of the region and <u>proximity to ALL</u> of the following (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) average valley width is >50 ft, and (c) >20% cumulative cover of hardwood trees and shrubs in vegetated areas within 150 ft of the AA's edge.	0		
		<u>Unlikely</u> because site characteristics above are deficient, and/or this is an area where beaver are routinely removed. But beaver occur within 2 miles.	0		
<u>None.</u> Beaver are absent from this part of the region.	0				
F23	Isolated Island (Island)	During June, the wetland contains (or is part of) an island that is isolated from the shore by water depths >3 ft. The island may be solid, or it may be a floating vegetation mat suitable for nesting waterbirds. The island must be larger than 400 sq.ft and without inhabited buildings. Enter 1, if true.	0	[WBF,WBN]	
F24	Ice-free (IceDura)	During most years, most of the AA's surface water (if any) does not freeze, or freezes for fewer than 4 continuous weeks. Enter 1, if true.	0	[PR,FR,WBF]	

F25	Water Fluctuation Range - Maximum (Fluctu)	The maximum vertical fluctuation in surface water within the AA, during a normal year is:		maximum vertical fluctuation - is the difference between the highest annual and lowest annual water level during an average year.	
		<0.5 ft or stable.	1	Use field indicators to assess this indicator. [WS,SR,PR,NR,CS,OE,INV,AM,WBN,PD]	
		0.5 to < 1 ft.	0		
		1 to <3 ft.	0		
		3 to 6 ft.	0		
>6 ft.	0				
F26	% Only Saturated or Seasonally Flooded (SeasPct)	Identify the parts (if any) of the AA that never contain surface water (only saturated soil) or where the water (either ponded or flowing) usually remains on the land surface for less than the entire growing season. The percentage of the AA containing such areas is:		If you can identify plants, use their wetland indicator status to infer the possible extent of seasonal-only inundation within a wetland. Vegetation may be patterned in concentric or parallel zones, as one moves outward & away from the deepest part of the wetland or channel. Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) may be evident when not fully inundated. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualizing where that would intercept the land along the river. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. Although useful only as a general guide, the NRCS county soil survey descriptions of the soil units and water feature table usually includes information on flooding frequency and saturation persistence. [SR,NR,CS,OE,INV,FA,WBF,WBN,POL,SBM,PD,Sens,EC]	
		<5% of the AA, or none (i.e., all water persists for >4 months).	0		NoSeasonal
		5 to <25% of the AA.	0		
		25 to <50% of the AA.	0		
		50 to 75% of the AA.	0		
>75% of the AA.	1				
F27	Salinity, Alkalinity, Conductance (Salin)	The AA's surface water is mostly:		Saline or brackish conditions are commonly indicated by a prevalence of particular plant species. Consult the ORWAP_SupplInfo file's P_Salt worksheet for a list of these. Brackish or saline - conductance of >5000 µS/cm, or >3200 ppm TDS Slightly brackish - conductance of 500- 5000 µS/cm, or 320 - 3200 ppm TDS Fresh - conductance of < 500 µS/cm, or <320 ppm TDS [PR,CS,AM]	
		Brackish or saline. Plants that indicate saline conditions dominate the vegetation. Salt crust may be obvious around the perimeter and on flats.	0		
		Slightly brackish. Plants that indicate saline conditions are common. Salt crust may or may not be present along perimeter.	0		
		Fresh. [Note: Assume this to be the condition unless wetland is known to be a playa or there is other contradicting evidence]. Unknown.	1 0		FreshW
F28	Fish & Waterborne Pests (FishAcc)	Select All that apply:		[INV,FA,FR,AM,WBF]	
		A regularly-used boat dock is present within or contiguous to the AA.	0		
		A regularly-used boat dock is not within the AA, but there is one within 300 ft. of the AA and there is a persistent surface connection between the dock and the AA.	0		
		Fish (native or stocked) are known to be present in the AA, or can access it during at least one day annually.	0		
		None of the above, and could not estimate fish presence/absence.	1		
F29	Non-native Aquatic Animals (PestAnim)	The following are known or likely to have reproducing populations in this AA, its wetland, or in water bodies within 300 ft that connect to the AA at least seasonally. Select All that apply:		Assume non-native fish to be present if wetland is associated with a nearby reservoir, fish pond, or perennial stream flowing through an agricultural or residential area. Assume bullfrog, nutria, and/or carp to be present if (a) the AA contains persistent water or is flooded seasonally by an adjoining body of permanent water, and (b) not a forested wetland, and (c) in western Oregon, elevation is lower than about 3000 ft. In the ORWAP_SupplInfo file, see Inverts_Exo worksheet for more complete list of non-native invertebrates of Oregon, and WetVerts worksheet for more complete list of fish that are not native to Oregon. You may also consult: http://nas.er.usgs.gov/queries/default.aspx http://www.dfw.state.or.us/conservationstrategy/invasive_species.asp [FA,FR,AM,EC]	
		Non-native amphibians (e.g., bullfrog) or reptiles (e.g., red-ear slider).	0		
		Carp.	0		
		Non-native fish that prey on tadpoles or turtles (e.g., bass, walleye, crappie, brook trout).	0		
		Non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish).	0		
		Nutria.	0		
		None of above.	1		

F30	Shorebird Feeding Habitats (Shorebd)	The extent of <u>mudflats</u> , <u>very shallow waters</u> , or <u>shortgrass meadows</u> , within the AA, that meet the definition of shorebird habitat for at least 3 months during the period of late summer through the following May is:		Shorebird habitat - areas must have (a) grasses shorter than 6", or a mudflat, during any part of this period, AND (b) soils that either are saturated or covered with <2 inches of water during any part of this period, AND (c) no detectable surrounding slope (e.g., not the bottom of an incised dry channel), AND (d) not shaded by shrubs or trees. See photograph in Appendix A of manual. This addresses needs of most migratory sandpipers, plovers, curlews, and godwits. [WBF]	
		None, or <100 sq. ft.	1		
		100 to <1000 sq. ft. within AA.	0		
		1000 to 10,000 sq. ft. within AA.	0		
		>10,000 sq. ft. within AA.	0		
F31	Outflow Duration (OutDura)	The <u>most persistent</u> surface water connection (outlet channel, pipe, ditch, or overbank water exchange) between the AA and the closest stream or lake located downslope is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of its wetland, OR the surface connection between the AA's wetland and a mapped stream or lake located within 300 ft downslope from this wetland].	W	The emphasis is on the connection to a mapped stream network. A larger difference in elevation between the wetland-upland boundary and the bottom of the wetland outlet (if any) indicates shorter outflow duration.	
		Persistent (>9 months/year).	0	Do not rely only on topographic maps or NWI maps to show this; inspect while in field if possible, and ask landowner. The durations given are only approximate and are for a "normal" year.	
		Seasonal (14 days to 9 months/year, not necessarily consecutive).	0	The connection need not occur during the growing season. Assume that depressions with effective nearby ditches or tile drains will connect for shorter periods.	
		Temporary (<14 days, not necessarily consecutive).	1	[WS,WCV,SR,PR,NR,CS,OE,FA,FR,Sens]	NoOutlet
		None -- no surface water flows out of the wetland except possibly during extreme events (<once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. Enter 1 and SKIP TO F33.	0		
F32	Outflow Confinement (Constric)	During <u>major runoff events</u> , in the places described above where surface water exits the AA, it:	W	Major runoff events - would include biennial high water caused by storms and/or rapid snowmelt.	
		Is <u>impeded</u> as it mostly passes through a pipe, culvert, tidegate, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography).	0	Impeded - means causing a delay or reduction in water velocity or volume.	
		Leaves mainly through natural surface exits, not largely through artificial or temporary features which <u>impede</u> or <u>accelerate</u> outflow.	1	[WS,SR,PR,NR,CS,OE,Sens,STR]	
		Is exported more quickly than usual as it mostly passes through ditches or pipes intended to accelerate drainage. They may be within the AA or connected to its outlet or within 30 ft of the AA's edge.	0		
F33	Tributary or Overbank Inflow (Inflow)	At least once annually, surface water from upstream or another water body moves into the AA. It may enter directly, or as unconfined overflow from a contiguous river or lake. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. Enter 1, if true. If false, SKIP TO F36.	0	[SRV,PRV, PD]	Inflow
F34	Input Channel Gradient (SlopeInChan)	The gradient of the tributary with the largest inflow, averaged over the 150 ft. before it enters the AA (but excluding any portion of the distance where water travels through a pipe) is:		[SRV, PRV]	
		<1%.	0		
		1 to <3%.	0		
		3 to 6%.	0		
		>6%.	0		
F35	Throughflow Complexity (ThruFlo)	[Skip this question if the AA lacks both an inlet and outlet.] During peak annual flow, water entering the AA in channels encounters which of the following conditions as it travels through the AA: Select the ONE encountered most.		This mainly refers to surface water that moves between the inlet and outlet. Some judgment is required in assessing straight vs. indirect flow path.	
		Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel within unvegetated (often incised) channels and has minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	See <u>ORWAP Manual</u> Appendix B diagram.	
		Bumps into <u>herbaceous vegetation</u> but mostly remains in fairly <u>straight channels</u> .	0	[WS,SR,PR,NR,OE,INV,FA,FR,WBF,WBN,PD]	
		Bumps into <u>herbaceous vegetation</u> and mostly <u>spreads throughout</u> , or follows a fairly <u>indirect path</u> (in widely meandering, multi-branched, or braided channels).	0		
		Bumps into <u>tree trunks and/or shrub stems</u> but mostly remains in fairly <u>straight channels</u> .	0		
		Bumps into <u>tree trunks and/or shrub stems</u> and follows a fairly <u>indirect path</u> (meandering, multi-branched, or braided) from entrance to exit.	0		

F36	Internal Gradient (Gradient)	The gradient from the lowest to highest point of land <u>within the AA</u> (or from outlet to inlet) is:		Wetlands with no outlet, and wetlands where most surface water is impounded on site, should be considered flat (<2%).	
		<2% (internal flow is absent or barely detectable; basically flat).	0	For other wetlands, estimate gradient as the elevation difference between the inlet and outlet (if any) divided by the distance between them, or the difference between the highest and lowest points in the wetland divided by the distance between them.	
		2 to <6%.	1	[WS,SR,PR,NR,CS,OE,AM,WBF,WBN]	TooSteep1
		6 to 10%.	0		TooSteep2
		>10%.	0		
F37	Groundwater Strength of Evidence (Groundw)	Select first one that applies:		[WS,WC,NR,CS,OE,INV,FA,FR,PD]	
		In the AA or its wetland: (a) Springs are observed, OR (b) Water is markedly cooler in summer and warmer in winter (e.g., later ice formation) than in other local wetlands, OR (c) Measurements from shallow wells indicate groundwater is discharging to the wetland, OR (d) Water visibly seeps into pits dug within the AA during the driest time of the year and located >30 ft from the closest surface water.	0		
		The AA's wetland: (a) Is very close to the base of a natural slope steeper than 15% and longer than 300 ft or is located at a geologic fault, OR (b) Has no persistently flowing tributary AND one or more is true: (b1) Is on a natural slope of >5%, OR (b2) Has rust deposits ("iron floc"), colored precipitates, or dispersible natural oil sheen, OR (b3) Is in an Arid or Semi-arid hydrologic unit.	1	Arid or Semi-arid hydrologic unit - See the ORWAP Report's Hydrologic Landscape Class (under Location Information).	
		The AA is <u>not</u> in an Arid or Semi-arid hydrologic unit, but has persistent ponded water, no tributary, and is not fed by wastewater, concentrated stormwater, or irrigation water, or by an adjacent river or lake.	0		
		None of above is true, OR AA contains a hot spring. Some groundwater may nonetheless discharge to or flow through the wetland.	0		
F38	Unshaded Herbaceous Vegetation (Extent) (HerbExpos)	The annual maximum areal cover of herbaceous vegetation (excluding SAV, ferns, and mosses, but including forbs & graminoids) that is not beneath a woody canopy reaches:		Do not include submersed and floating-leaved aquatics (SAV) in the category of "herbaceous vegetation", or when defining the "vegetated part" of the site.	
		<5% of the vegetated part of the AA. Enter 1 and SKIP to F42.	1	For sites larger than 10 acres, this should be determined from aerial imagery rather than estimated in the field.	NoHerb
		5 to <25% of the vegetated part of the AA.	0		
		25 to <50% of the vegetated part of the AA.	0		
		50-95% of the vegetated part of the AA.	0	[WBF,WBN]	
F39	Forb Cover (Forb)	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs - are flowering non-woody vascular plants (excludes grasses, sedges, ferns, mosses).	
		<5% of the herbaceous part of the AA.	0	[POL]	
		5 to <25% of the herbaceous part of the AA.	0		
		25 to <50% of the herbaceous part of the AA.	0		
		50 to 95% of the herbaceous part of the AA.	0		
F40	Species Dominance - Herbaceous (HerbDom)	Determine which <u>two native</u> herbaceous (forb, fern, and graminoid) species comprise the greatest portion of the herbaceous cover that is unshaded by a woody canopy. Then select one:		[INV,WBF,SBM,PD,POL,Sens,EC]	
		Those species together comprise <u>more than half</u> of the areal cover of <u>native</u> herbaceous plants at any time during the year, i.e., one dominant species or two co-dominants. Also mark this if <20% of the vegetated cover is native species.	0		
		Those species together comprise <u>less than half</u> of the areal cover of <u>native</u> herbaceous plants at any time during the year.	0		

F41	Invasive or Non-native - % of Vegetative Cover (Invas)	Vegetative cover (annual maximum) is:		In the <u>ORWAP SupplInfo</u> , see P_Invas worksheet for list of invasives and P_Exo for non-native species list. Examples of woody invasives are Himalayan blackberry, English ivy, scotch broom, and gorse. For known distributions of invasive plants in your area see: http://nr.oregonstate.edu/orbic/invasive-species and http://www.weedmapper.org/maps.html but do not limit your answer based only on that information. Consider most crops to be non-native. [WBF,PD,POL,Sens,EC]	InvasDom
		Overwhelmingly (>80% cover) non-native species AND >10% of the herbaceous cover is <u>invasive species</u> . (See ORWAP SupplInfo file for species designations).	0		
		Overwhelmingly (>80% cover) non-native species AND ≤10% of the herbaceous cover is <u>invasive species</u> ; OR 50-80% of cover is non-native species regardless of invasiveness.	0		
		Mostly (50-80%) native species.	0		
		Overwhelmingly (>80%) native species.	0		
F42	Mowing, Grazing, Fire (VegCut)	There is evidence that grazing by domestic or wild animals – or mowing (multiple times per year), plowing, herbicides, harvesting, or fire – has <u>repeatedly</u> reduced the AA's vegetation cover (plants that normally grows taller than 4") to <u>less than 4 inches</u> , or has created an obvious browse line, over the following extent:		Repeatedly - means the condition occurred in at least half of the last 10 years. [SR,AM,WBN,SBM,PD,EC]	NoMowGraze
		0% (No evidence of such activities).	1		
		Trace to 5% of the normally vegetated AA (grazing, mowing, or fire have occurred but vegetation height effects are mostly unnoticeable).	0		
		5 to <50% of the normally vegetated AA.	0		
		50 to 95% of the normally vegetated AA.	0		
>95% of the normally vegetated AA.	0				
F43	Historically Lacking Trees (HistVeg)	According to the ORWAP Report, the <u>presettlement vegetation class</u> in the vicinity of the AA was prairie, sagebrush, or other open lands not dominated by trees. In addition, the AA is not within the biennial floodplain of a river where trees and shrubs typically dominate when conditions are unaltered. Enter 1, if true.	0	In the <u>ORWAP Report's</u> Location Information table. This question is used as a classification variable mainly to set appropriate expectations for the extent of forest cover.	HistOpenland
F44	Moss Wetland (Moss)	The AA's ground cover is primarily a deep layer of moss, and/or soils are mainly peat or organic muck. Also, the soil remains water-saturated to within 3 inches of the surface during most of a normal year. Surface water within the AA often is absent or confined to small scattered pools or ditches. Enter 1, if true.	0	Includes most bogs and fens. May be a floating island. [NR,CS,OE,WBF,WBN,Sens]	
F45	Woody Extent (WoodyPct)	Within the vegetated part of the AA, woody vegetation (trees, shrubs, <u>robust vines</u>) taller than 3 ft occupies:		<u>Robust vines</u> - include Himalayan blackberry and others that are generally erect and taller than 1 ft. <u>Vegetated part</u> - should not include floating-leaved or submersed aquatics. For sites larger than 1 acre, this should be determined from aerial imagery rather than estimated only in the field. [NR,WC,CS,SBM,PD,Sens]	NoWoody
		<5% of the vegetated AA, and fewer than 10 trees are present. Enter 1 and SKIP to F51.	0		
		<5% of the vegetated AA, but more than 10 trees are present.	0		
		5 to <25% of the vegetated AA.	0		
		25 to <50% of the vegetated AA.	0		
		50 to 95% of the vegetated AA.	0		
>95% of the vegetated part of the AA.	1				
F46	Woody Diameter Classes (TreeDiams)	Select <u>All</u> the types that comprise >5% of the woody canopy cover in the AA or >5% of its <u>wooded upland edge</u> if any:		<u>Wooded upland edge</u> - includes woody plants located within one tree-height of the wetland-upland boundary. DBH is the diameter of the tree measured at 4.5 ft above the ground. [CS,SBM,POL,Sens]	
		Deciduous 1-4" diameter (DBH) and >3 ft tall.	0		
		Evergreen 1-4" diameter and >3 ft tall.	0		
		Deciduous 4-9" diameter.	1		
		Evergreen 4-9" diameter.	0		
		Deciduous 9-21" diameter.	1		
		Evergreen 9-21" diameter.	1		
		Deciduous >21" diameter.	0		
		Evergreen >21" diameter.	1		

F47	Snags (Snags)	The number of large snags (diameter > 12 inches) in the AA plus 100 ft uphill of its edge is:		Snags - are standing trees at least 20 ft tall that are mainly without bark or foliage. [SBM,POL]	
		Few or none.	1		
		Several.	0		
F48	Abovewater Wood (WoodOver)	The number of horizontal wood pieces thicker than 4 inches that are partly submerged during most of the spring or early summer, thus potentially serving as basking sites for turtles, birds, or frogs and cover for fish is:		Only the wood that is at or above the water surface is assessed because of the impracticality of assessing underwater wood accurately when using a rapid assessment method. [FA,FR,AM]	
		None.	1		
		Few.	0		
		Several (e.g., >3 per 300 ft of channel or shoreline).	0		
F49	Downed Wood (WoodDown)	The number of downed wood pieces longer than 6 ft and with diameter >4 inches that are not submerged during most of the growing season, is:		Exclude temporary "burn piles." [INV,AM,SBM,POL]	
		Few or none.	1		
		Several.	0		
F50	Exposed Shrub Canopy (ShrExpos)	Within the vegetated part of the AA, shrubs shorter than 20 ft that are not overtopped by trees occupy: Select first statement that is true.		Vegetated part - should not include floating-leaved or submersed aquatics. [SBM,PD]	
		<5% of the vegetated AA and <0.01 acre (400 sq ft).	1		
		5 to <25% of the vegetated AA or the water edge (whichever is greater in early summer).	0		
		25 to <50% of the vegetated AA or the water edge (whichever is greater in early summer).	0		
		50 to 95% of the vegetated AA or the water edge (whichever is greater in early summer).	0		
		>95% of the vegetated part of the AA or the water edge (whichever is greater in early summer).	0		
F51	N Fixers (Nfix)	The percentage of the vegetated area in the AA <u>or</u> along its water edge (whichever has more) that contains nitrogen-fixing plants (e.g., alder, baltic rush, scotch broom, lupine, clover, alfalfa, other legumes) is:		For a more complete list, see <u>ORWAP_SuppInfo</u> , worksheet NFIX (includes native and non-native species). Do not include algae. [OE,INV,Sens]	
		<1% or none.	0		
		1 to <25%.	0		
		25 to <50%.	1		
		50 to 75%.	0		
		>75%.	0		
Note for the next four questions: If the AA lacks an upland edge, evaluate based on the AA's <u>entire perimeter</u> and outward into whatever areas are adjacent. In many situations, these questions are best answered by measuring from aerial images.					
F52	Upland Perennial Cover - % of Perimeter (PerimPctPer)	The percentage of the AA's <u>edge (perimeter)</u> that is comprised of a band of upland perennial cover wider than 10 ft and taller than 6 inches, during most of the growing season is:		Perennial cover - vegetation that includes wooded areas, native prairies, sagebrush, as well as relatively unmanaged commercial lands in which the ground is disturbed less frequently than annually such as perennial ryegrass fields, hayfields, lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, row crops (vegetable, orchards, Christmas tree farms), residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. [WCv,SRv,PRv,INV,FA,AM,WBF,WBN,SBM,PD,POL,POLv,Sens,STR]	
		<5%.	0		
		5 to <25%.	1		
		25 to <50%.	0		
		50 to <75%.	0		
		75 to 95%.	0		
		>95%.	0		

F53	Upland Perennial Cover - Width (Buffer) (BuffWidth)	Along the greatest extent of the AA's <u>upland edge</u> , the width of <u>perennial cover</u> taller than 6 inches that extends upslope from the AA until mostly shorter or non-perennial cover is reached is: [NOTE: the width is not necessarily the maximum width. Base on vegetation that occurs most of the growing season.]		Upland edge - is the land within 3 ft of the wetland's perimeter that is not wetland. [WCv,SRv,PRv,INV,FA,AM,WBN,SBM,PD,POL,Sens,STR]	
		< 5 ft, or none.	0		NoUpPerCov
		5 to <30 ft.	0		
		30 to <50 ft.	0		
		50 to <100 ft.	0		
		100 to 300 ft.	0		
> 300 ft.	1		AllUpParren		
F54	Upland Trees as % of All Perennial Cover (UpTreePctPer)	Within 100 ft landward from the AA's <u>edge (perimeter)</u> , the percentage of the upland perennial cover that is woody plants taller than 20 ft is:		Base this on the cumulative canopy width of the trees. [WSv,FA,WBF,WBN,SBM]	
		<5%, or there is no upland perennial cover along the upland edge.	0		
		5 to <25% of perennial cover.	0		
		25 to <50% of perennial cover.	0		
		50 to <75% of perennial cover.	0		
		75 to 95% of perennial cover.	0		
>95% of perennial cover.	1				
F55	Weeds - % of Upland Edge (UpWeed)	Along the AA's <u>edge (perimeter)</u> , the cover of invasive woody or herbaceous plants occupies: [If vegetation is so senesced that apparently-dominant edge species cannot be identified even to genus, answer "none"].		See <u>QRWAP_SupplInfo file</u> , worksheet P_Invas. Some of the most common invaders along upland edges of Oregon wetlands are Himalayan blackberry, knotweed, sweetbrier rose, Russian olive, English ivy, nightshade, pepperweed, medusahead, white clover, ryegrass, quackgrass, false brome, bentgrass, dandelion, oxeye daisy, pennyroyal, bull and creeping thistles, tansy ragwort, poison hemlock, and teasel. If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an invasive species, assume the unidentified plant to also be invasive.	
		<5%, or none.	1		
		5 to <25%.	0		
		25 to <50%.	0		
		50 to <75%.	0		
		75 to 95%.	0		
>95%.	0	[PD,STR]			
F56	Bare Ground & Accumulated Plant Litter (Gcover)	Consider the parts of the AA that go dry during a normal year. Viewed from 6 inches above the soil surface, the condition in most of that area just before the year's longest inundation period begins is:		Bare ground- includes unvegetated soil, rock, sand, or mud between stems if any. Bare ground under a tree or shrub canopy should be counted. Wetlands that are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season.	
		<u>Little or no (<5%) bare ground</u> is visible between erect stems or under canopy and there is little or no dead detached plant tissue (thatch) remaining on top of the ground surface and ground surface is extensively blanketed by moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0		
		<u>Some (5-20%) bare ground</u> or remaining thatch is visible. Herbaceous plants have moderate stem densities and do not closely hug the ground.	0		
		<u>Much (20-50%) bare ground</u> or thatch is visible. Low stem density and/or tall plants with little living ground cover during early growing season.	0		
		<u>Mostly (>50%) bare ground</u> or thatch.	1		
		Not applicable. All of the AA is inundated throughout most years.	0	[WS,WC,SR,PR,NR,CS,OE,INV,AM,SBM,POL,Sens,EC]	
F57	Ground Irregularity (Girreg)	In parts of the AA that lack persistent water, the number of small pits, raised mounds, hummocks, boulders, upturned trees, animal burrows, islands, natural levees, wide soil cracks, and microdepressions is:		Microtopography - refers mainly to vertical relief of <3 ft and is represented only by inorganic features, except where plants have created depressions or mounds of soil.	
		Few or none, or the entire AA is always water-covered. Minimal <u>microtopography</u> : <1% of the AA, e.g., many flat sites having a single hydroperiod.	0		
		Intermediate.	1		
		Several (extensive micro-topography).	0	[WS,SR,PR,NR,INV,AM,SBM,PD,POL,EC]	

F58	Soil Composition (SoilTex)	Based on digging into the substrate and examining the <u>surface layer</u> of the soil (2 inch depth) that was mapped as being predominant, its composition (excluding <u>duff</u> and living roots) is mostly:		Do not base the texture on soil maps unless the AA is inaccessible. See <u>ORWAP Manual's</u> protocol (Step 2 of section 5.3 and the soil chart in Appendix B). Judge which soil type is predominant <u>only</u> in the part of the AA that is not inundated at the time of your visit. Duff - is loose organic surface material, e.g., dead plant leaves and stems). Organic soils are much less common in floodplains. [WS,PR,NR,CS,OE,PD,Sens]		
		Loamy: includes silt, silt loam, loam, sandy loam.	0			
		Clayey: includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam.	0			
		Organic: includes muck, mucky peat, peat, and mucky mineral soils (blackish or grayish). Exclude live roots unless they are moss.	0			
		Coarse: includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash.	1			
F59	Cliffs or Banks (Cliff)	Within 300 ft of the AA, there are elevated terrestrial features such as cliffs, bluffs, talus slopes, or unarmored stream banks that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1, if true.	0	[SBM,POL]		
F60	Restored or Created Wetland (NewWet)	The AA is (or is within, or contains) a "new" wetland resulting from human actions (e.g., excavation, impoundment) or other factors affecting what was upland (non-hydric) soil. Or, some part of the AA was originally a wetland, was artificially drained for many years, and has since had its water regime partly or wholly restored or rehabilitated (e.g., by ditch plugs, berms, tile breakage, non-maintenance).		Include wetlands whose area was likely expanded by road berms which impeded runoff, but do not include wetlands created by beaver dams except for the part where flooding affected uplands (not just existing wetlands and streams). Determine this using historical aerial photography, old maps, soil maps, consultation with landowners, and/or permit files as available. See <u>ORWAP Map Viewer's</u> Hydric Soil layer (expand Soils). Also, locations of some restoration wetlands can be found in the ORWAP Map Viewer under Restoration. Another potential source is the <u>Conservation Registry</u> : https://oregonexplorer.info/content/conservation-registry?topic&ptopic . [PR,NR,CS,OE,PD,Sens]		
		Yes, and constructed or restored mostly within last 3 years.	0			
		Yes, and constructed or restored mostly 3-7 years ago.	0			
		Yes, and constructed or restored mostly >7 years ago.	0			
		Yes, but time of origin or restoration unknown.	0			
		No.	1		NotNewWet	
		Unknown if wetland is constructed, restored, or natural.	0			
F61	Ownership (Ownership)	Most of the AA is:		An initial indication of ownership can be found on the <u>ORWAP Map Viewer</u> under the Land Ownership layer (expand Land Classification). However, it is advisable to ask local sources or use local maps with higher precision. [PUV]		
		Publicly owned (municipal, county, state, federal).	0			
		Owned by non-profit conservation organization or easement holder who allows public access to this AA.	0			
		Other private ownership, including tribal. Enter 1 and SKIP to F63.	1		PrivateOwn	
F62	Special Protected Area Designation (Desig)	The AA is part of an area designated as a Special Protected Area according to the USGS Protected Areas Database of the U.S. Enter 1, if true.	0	See the ORWAP Map Viewer Report under the Location Information section for "In Special Protected Area?" [PUV]		
F63	Conservation Investment (Conslvest)	The AA is not a mitigation wetland, but public funds or community volunteer efforts have been applied to preserve, create, restore, or enhance the condition or functions of the wetland. (e.g. CRP or WRP wetlands, community projects). Enter 1, if true. (If unknown, leave 0).	0	Locations of some restoration wetlands can be found in the <u>ORWAP Map Viewer</u> under Restoration. Another potential source is the <u>Conservation Registry</u> : https://oregonexplorer.info/content/conservation-registry?topic&ptopic [PUV]		
F64	Compensation Wetland (MitWet)	The AA is all or part of a compensation site used explicitly to offset impacts elsewhere. Enter 1, if true. (If unknown, leave 0).	0	Answer to the best of your knowledge. Sources for information include the property owner, DSL, and/or the ACOE. [PUV]		
F65	Sustained Scientific Use (SciUse)	Plants, animals, or water in the AA have been monitored for >2 years, <u>unrelated to any regulatory requirements, and data are available to the public</u> . Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Enter 1, if true. (If unknown, leave 0)	0	[PUV]		
F66	Visibility (Visibil)	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 300 ft of the AA is (Select ONE):		[WBFv,WBNv,SBMv,PUv,STR]		
		<25%.	1			
		25 - 50%.	0			
		>50%.	0			

F67	Non-consumptive Uses - Actual or Potential (RecPoten)	Select All statements that are true of this AA as it currently exists:		The question assumes access is allowed.			
		Walking is physically possible in >5% of the AA during most of year (e.g., free of deep water and dense shrub thickets).	0				[PUv]
		All or part of the AA (or an area within sight of the AA and within 100 ft) would be physically accessible to people in wheelchairs (e.g., paved and flat).	0				
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat.	0				
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0				
F68	Core Area 1 (VisitNo)	The percentage of the AA almost never walked or driven by humans during an average growing season probably comprises: [Note: If more than half the wetland is visible from areas within 100 ft of the AA, include visits by people to those areas that are actually walked or driven (not simply viewed from).]		Judge this based on proximity to population centers, roads, trails, accessibility of the AA to the public, wetland size, usual water depth, and physical evidence of human visitation.			
		<5% and no inhabited building is within 300 ft of the AA.	0				Exclude visits that are not likely to continue and/or that are not an annual occurrence (e.g., by construction, maintenance, or monitoring crews). [AM,WBF,WBN,SBM,PD,PUv,STR]
		<5% and inhabited building is within 300 ft of the AA.	0				
		5 to <50% and no inhabited building is within 300 ft of the AA.	0				
		5 to <50% and inhabited building is within 300 ft of the AA.	0				
		50 to 95% with or without inhabited building nearby.	0				
>95% of the AA with or without inhabited building nearby.	1						
F69	Core Area 2 (VisitOften)	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [The Note in the preceding question applies here as well].		See note above.			
		<5%.	1				[AM,WBF,WBN,SBM,PD,PUv,STR]
		5 to <50%.	0				
		50 to 95%.	0				
		>95% of the AA.	0				
F70	Consumptive Uses (Provisioning Services) (Hunt)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select All that apply.		Evidence of these consumptive uses may consist of direct observation, or presence of physical evidence (e.g., recently cut stumps, fishing lures, shell cases), or might be obtained from communication with the land owner or manager.			
		Low-impact commercial timber harvest (e.g., selective thinning).	0				[FRv,WBFv,PUv]
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0				
		Waterfowl hunting.	0				
		Fishing.	0				
		Trapping of furbearers.	0				
None of the above.	1						
F71	Domestic Wells (Wells)	Wells or water bodies that currently provide drinking water are:		If unknown, assume this is true if there is an inhabited structure within the specified distance and the neighborhood is known to not be connected to a municipal drinking water system (e.g., is outside an urban growth boundary or other densely settled area).			
		<300 ft and downslope from the AA or at same elevation.	1				[NRv]
		300 to 1500 ft and downslope or at same elevation.	0				
		>1500 ft downslope, or none downslope, or no information.	0				

F72	Wetland Type of Conservation Concern (Rare Type)	Does the AA contain, or is it part of, any of these wetland types? Select All that apply.	W	Consult the <u>ORWAP Report</u> under the Location Information table for "Rare Wetland Types." But be aware that it may not apply to the exact AA you have delimited. [PDiv, Sens]	
		<u>Mature forested wetland</u> (anywhere): a wetland in which mean diameter of trees (d.b.h., FACW and FAC species only) exceeds 18 inches, and/or the average age of trees exceeds 80 years, or there are >5 trees/acre with diameter >32 inches.	1	To qualify, the diameter of >15 inches must be the mean measured from at least 10 trees.	
		<u>Boa or Fen</u> : contains a sponge-like organic soil layer which covers most of the AA and often has extensive cover of sedges and/or broad-leaved evergreen shrubs (e.g., Ledum). Often lacks tributaries, being fed mainly by groundwater and/or direct precipitation.	0		
		<u>Playa, Salt Flat, or Alkaline Lake</u> : a nontidal ponded water body usually having saline (salinity >1 ppt or conductivity >1000 µS) or alkaline (conductivity >2000 µS and pH >9) conditions and large seasonal water level fluctuations (if inputs-outputs unregulated). If a playa or salt flat, vegetation cover is sparse and plants typical of saline or alkaline conditions (e.g., Distichlis, Atriplex) are common.	0	See <u>ORWAP SuppInfo</u> file, worksheet P_Salt for species typically occurring in tidal or saline conditions.	Playa
		<u>Hot spring</u> (anywhere): a wetland where discharging groundwater in summer is >10 degrees (F) warmer than the expected water temperature.	0		
		<u>Native wet prairie</u> (west of the Cascade crest): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, and dominated primarily by native graminoids often including species in column E.	0	Deschampsia caespitosa, Danthonia californica, Camassia quamash, Tritoleia hyacinthina, Carex densa, C. aperta, and/or C. unilateralis	
		<u>Vernal pool (Willamette Valley)</u> : a seasonally inundated wetland, underlain by hardpan or claypan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and with native plant species distinctly different from those in slightly higher areas, and often including species in column E.	0	Downingia elegans, Isoetes nuttallii, Tritoleia hyacinthina, Eleocharis spp., Eryngium petiolatum, Plagiobothrys figuratus, Plagiobothrys scouleri, Grindelia nana, Veronica peregrina, Lasthenia glaberrima, Cicendia quadrangularis, Kickxia elatine, Gnaphalium patustre, and/or Callitriche spp.	
		<u>Vernal pool (Medford area)</u> : a seasonally inundated acidic wetland, underlain by hardpan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and having concentric rings of similar native vegetation, often including species in column E.	0	Downingia vina, Isoetes nuttallii, Pilularia americana, Tritoleia hyacinthina, Eleocharis spp., Eryngium petiolatum, Plagiobothrys brachtaeatus, Plagiobothrys scouleri, Grindelia nana, Veronica peregrina, Alopecurus saccatus, Lasthenia californica, Deschampsia danthonioides, and/or Callitriche spp.	
		<u>Vernal pool (Modoc basalt & Columbia Plateau)</u> : a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located on shallow basalt bedrock and often having species in column E.	0	Blennosperma nanum, Camassia quamash, Epilobium densiflorum, Callitriche marginata, Cicendia quadrangularis, Eryngium vaseyi, Psilocarphus brevissimus, and/or Sedella pumila.	
		<u>Interdunal wetland (Coastal ecoregion)</u> : a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located between sand dunes where wind has scoured the sand down to the water table (deflation plain, blowout pond), and often with significant cover of the native species in column E.	0	Carex obnupta, Argentina eggedii, Juncus lesueurii, J. nevadensis, J. falcatus, Sisyrrinchium californicum, and/or Salix hookeriana	
<u>Ultramafic soil wetland (mainly southwestern Oregon)</u> : a low-elevation wetland, usually with a sponge-like organic soil layer, occurring in an area with exposed serpentine or peridotite rock, and/or in soils with very low Ca:Mg ratios.	0				
None of above.	0				

Site: Clark Residence		Name: Eric Henning		Date: 8/1/2021			
Form S Stresser Data ORWAP V 3.2					Data	Comments	
S1	Aberrant Timing of Water Inputs (AItiming) <i>In the "Data" column, place an X next to any item that is likely to have caused the timing of water inputs (but not necessarily their volume) to shift by hours, days, or weeks, becoming either more muted (smaller or less frequent peaks spread over longer times, more temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times).</i>						
	Control structure that regulates inflow to the AA (including tide gates), or flow regulation in tributaries, or water level in adjoining water body is regulated.						
	Irrigation runoff or seepage.						
	Snow storage areas that drain directly to the wetland.						
	Increased pavement and other impervious surface in the CA.						
	Straightening, ditching, dredging, and/or lining of tributary channels in the CA.						
	<i>If any items were checked above, then for each row of the table below, you may assign points (3, 2, or 1). However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.</i>						
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)			
	Spatial extent within the AA of timing shift.	>95% of AA.	5-95% of AA.	<5% of AA.	0		
	When most of the timing shift began.	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	0		
	<i>Score the following 2 rows only if the altered inputs began within past 10 years, and only for the part of the AA that experiences those.</i>						
	Input timing now vs. previously.	Shift of weeks.	Shift of days.	Shift of hours or minutes.	0		
	Flashiness or muting.	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	0		
					Sum= 0		
					Final score= 0.00		
S2	Accelerated Inputs of Nutrients (NutrLoad) <i>In the "Data" column, place an X next to any item – occurring in either the AA or its RCA – that is likely to have accelerated the inputs of nutrients (nitrogen, phosphorus) to the AA.</i>						
	Stormwater or wastewater effluent (including failing septic systems), landfills.					X	
	Fertilizers applied to lawns, ag lands, or other areas in the RCA.						
	Livestock, dogs.						
	Artificial drainage of upslope lands.						
	Other waterborne human-related nutrient sources within the RCA.						
	<i>If any items were checked above, then for each row of the table below, you may assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly more nutrients, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.</i>						
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)			
	Usual load of nutrients.	Large (e.g., feedlots, extensive residential on septic) or 303d* for nutrients.	Moderate (e.g., grazing, light residential on septic, light agriculture).	Limited (e.g., a few animals, lawns, sewered residential).	2		
	Frequency & duration of input.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2		
	AA proximity to main sources (actual or potential).	0 - <50 ft.	50-300 ft. or in groundwater.	In other part of contributing area.	2		
					Sum= 6		
					Final score= 0.67		
S3	Accelerated Inputs of Contaminants and/or Salts (Contamin). <i>In the "Data" column, place an X next to any item – occurring in either the AA or its RCA – that is likely to have accelerated the inputs of contaminants or salts to the AA.</i>						
	Stormwater or wastewater effluent (including failing septic systems), landfills, snow storage areas.					X	
	Metals & chemical wastes from mining, shooting ranges, oil/ gas extraction, other sources.						
	Irrigation of lands, especially those with saline soils.						
	Oil or chemical spills (not just chronic inputs) from nearby roads.						
	Road salt.						
	Pesticides applied to lawns, ag lands, roadsides, or other areas in the RCA, but excluding spot applications for controlling non-natives in the AA.					X	
	Artificial drainage of contaminated or saline soils.						
	Erosion of contaminated soils.						
	Other contaminant sources within the RCA.						
	<i>If any items were checked above, then for each row of the table below, you may assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly higher levels of contaminants and/or salts, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.</i>						
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)			
	Usual toxicity of most toxic contaminants.	Industrial effluent or 303d* for toxics.	Wastewater treatment plant, cropland, fossil fuel extraction, pipeline, power station, managed landfill.	Low density residential or commercial.	1		
	Frequency & duration of input.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1		
	AA proximity to main sources (actual or potential).	0 - <50 ft.	50-300 ft. or in groundwater.	In other part of contributing area.	2		
					Sum= 4		
					Final score= 0.44		
	* See ORWAP Map Viewer for waters designated as 303d; see Oregon DEQ web site for reasons.						

S4 Excessive Sediment Loading from Runoff Contributing Area (SedRCA).				
<i>In the "Data" column, place an X next to any item present in the RCA that is likely to have elevated the load of waterborne or windborne sediment reaching the AA from its RCA.</i>				
Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation clearing, fires.				
Erosion from construction, in-channel machinery in the RCA.				
Erosion from off-road vehicles in the RCA.				
Erosion from livestock or foot traffic in the RCA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ gas extraction.				
Accelerated channel downcutting or headcutting of tributaries due to altered land use.				
Other human-related disturbances within the RCA.				
<i>If any items were checked above, then for each row of the table below you may assign points (3, 2, or 1) in the last column that describe the combined maximum effect of those items in increasing the amount or transport of sediment into the AA. To estimate that, contrast it with the condition if checked items never occurred or were no longer present.</i>				
	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Erosion in RCA.	Extensive evidence, high intensity*.	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the RCA.	Current & ongoing.	1-12 months ago.	>1 yr ago.	0
Duration of sediment inputs to the AA.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & mainly during high runoff or severe wind events.	0
AA proximity to actual or potential sources.	0 - <50 ft., or farther but on steep erodible slopes.	50-300 ft.	In other part of contributing area.	0
* High-intensity= plowing, grading, excavation, erosion with or without veg removal; low-intensity= veg removal only with little or no apparent erosion or disturbance of soil or sediment.				Sum= 0
				Final score= 0.00
S5 Soil or Sediment Alteration Within the Assessment Area (SoilDisturb).				
<i>In the "Data" column, place an X next to any item present in the AA that is likely to have compacted, eroded, or otherwise altered the AA's soil.</i>				
Compaction from livestock, machinery, off-road vehicles, or mountain bikes, especially during wetter periods.				
Leveling or other grading not to the natural contour.				
Tillage, plowing (but excluding disking for enhancement of native plants).				
Fill, riprap, other armoring, excluding small amounts of upland soils containing organic amendments (compost, etc.) or small amounts of topsoil stockpiled or imported from another wetland.				
Excavation.				
Dredging in or adjacent to the AA.				
Boat traffic in or adjacent to the AA and sufficient to cause shore erosion or stir bottom sediments.				
Artificial water level or flow manipulations sufficient to cause erosion or stir bottom sediments.				
<i>If any items were checked above, then for each row of the table below you may assign points (3, 2, or 1) in the last column that describe the combined maximum effect of those items in altering the AA's soils. To estimate that, contrast it with the soil condition if checked items never occurred or were no longer present.</i>				
	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Spatial extent of altered soil.	>95% of AA or >95% of its upland edge (if any).	5-95% of AA or 5-95% of its upland edge (if any).	<5% of AA and <5% of its upland edge (if any).	0
Recentness of significant soil alteration in AA.	Current & ongoing.	1-12 months ago.	>1 yr ago.	0
Duration.	Long-lasting, minimal veg recovery.	Long-lasting but mostly revegetated.	Short-term, revegetated, not intense.	0
Timing of soil alteration.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & mainly during scattered events.	0
				Sum= 0
				Final score= 0.00

ORWAP V.3.2 Site Name:	Clark Residence
Investigator Name:	Eric Henning
Date of Field Assessment:	8/1/2021
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

Normalized Scores & Ratings for this Assessment Area (AA):								
Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity	Function Score (raw)	Values Score (raw)
Water Storage & Delay (WS)	5.74	Moderate		0.00	Lower		5.74	0.00
Sediment Retention & Stabilization (SR)	5.14	Moderate		4.03	Moderate		5.36	3.07
Phosphorus Retention (PR)	0.00	Lower		0.00	Lower		0.38	0.00
Nitrate Removal & Retention (NR)	4.62	Moderate		10.00	Higher		5.66	10.00
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower		0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower		0.00	0.00
Amphibian & Reptile Habitat (AM)	5.43	Moderate		3.06	Lower		4.92	3.06
Waterbird Nesting Habitat (WBN)	4.34	Moderate		5.00	Moderate		3.60	5.00
Waterbird Feeding Habitat (WBF)	3.69	Moderate		6.67	Moderate	MH	3.33	6.67
Aquatic Invertebrate Habitat (INV)	2.94	Lower		1.47	Lower		4.72	2.03
Songbird, Raptor, Mammal Habitat (SBM)	4.14	Moderate	LM	5.00	Moderate		5.67	5.00
Water Cooling (WC)	6.67	Higher		0.00	Lower		5.83	0.00
Native Plant Diversity (PD)	7.62	Higher		10.00	Higher		6.83	10.00
Pollinator Habitat (POL)	7.01	Moderate	MH	7.11	Higher		6.12	5.75
Organic Nutrient Export (OE)	6.09	Moderate					5.39	
Carbon Sequestration (CS)	2.58	Lower					2.95	
Public Use & Recognition (PU)				1.74	Lower			2.59

Other Attributes:	Score	Rating	Rating Break Proximity		
Wetland Sensitivity (SEN)	6.55	Higher			7.22
Wetland Ecological Condition (EC)	2.64	Lower	LM		4.17
Wetland Stressors (STR)	3.16	Moderate	LM		2.90

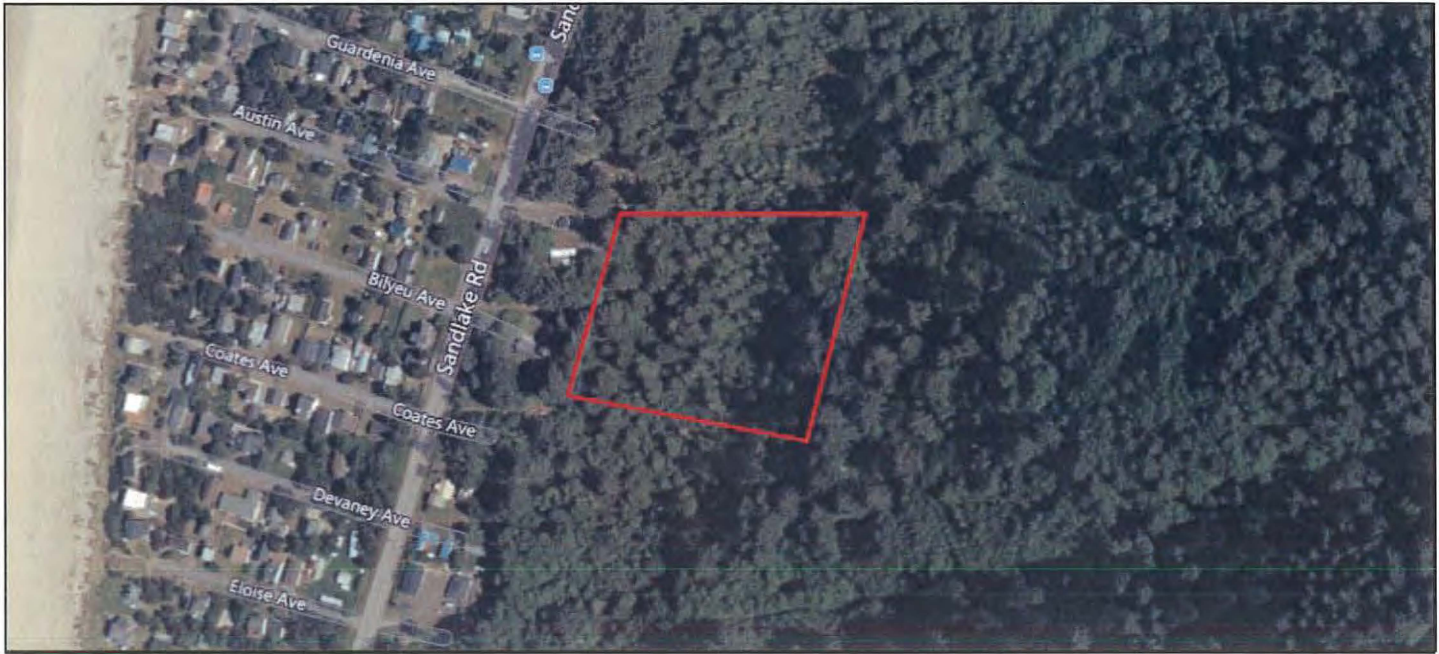
GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Lower	
Water Quality Support (SR, PR, or NR)	Nitrate Removal & Retention (NR)	Moderate		Higher	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Moderate		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Native Plant Diversity (PD)	Higher		Higher	

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

Report Generated: August 9, 2021 01:56 PM

Assessment Area: 4 Acres

Location Map



Location Information

Latitude	45.2520771913495	Longitude	-123.962655302651
Elevation	18 ft	Annual precipitation	83 in
Watershed (HUC12)	Sand Creek-Frontal Pacific Ocean (171002030902)		
Presettlement Vegetation Class	Douglas fir		
Rare Wetland Type(s)	None		
Hydrologic Landscape Class	Very wet		
In Special Protected Area?	No		

[View Salinity Maps \(pdf\)](#)

Soil Information

Soil Name	Heceta fine sand, 0 to 3 percent slopes
Soil Symbol	14A
Hydric Rating	Yes
Hydric Percent	90
Percent Area	63.5%
Erosion Hazard	Slight

This report was generated using the ORWAP Map Viewer, a tool of the Oregon Explorer (<http://oregonexplorer.info>).

Dom. Cond. Non-irrigated Capability Class

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Soil Name Klotchie-Necanicum complex, 30 to 60 percent slopes
 Soil Symbol 20E
 Hydric Rating No
 Hydric Percent 0
 Percent Area 27.1%
 Erosion Hazard Severe

Dom. Cond. Non-irrigated Capability Class

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Soil Name Waldport fine sand, 0 to 5 percent slopes
 Soil Symbol 9B
 Hydric Rating No
 Hydric Percent 5
 Percent Area 9.4%
 Erosion Hazard Slight

Dom. Cond. Non-irrigated Capability Class

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Watershed Information

HUC Best

HUC Code	HUC Name	Is HUC Best?	Greatest Criteria met	FW, s/f, lg (Acres)	FW, em, lg (Acres)	EST, em, lg (Acres)	EST, s/f, lg (Acres)
HUC8: 17100203	Wilson-Trask-Nestucca	No	n/a	236.4	257.9	214.1	1.5
HUC10: 1710020309	Spring Creek-Sand Lake-Neskowin Creek Frontal	No	n/a	236.4	52.2	214.1	0
HUC12: 171002030902	Sand Creek-Frontal Pacific Ocean	Yes	proportional	236.4	52.2	214.1	0

[abbreviations: FW- freshwater (wetland); em- Emergent; lg- largest; s/f- Shrub/Forested; EST- Estuarine (wetland)]

HUC 12 Functional Deficit

HUC Code	HUC Name	WS	SR	NT	WC	INV	AM	FH	WB
HUC12: 171002030902	Sand Creek-Frontal Pacific Ocean								

[abbreviations: WS= Water Storage, SR= Sediment Retention, NT= Nutrient Retention (PR or NR), WC= Water Cooling (Thermoregulation), INV= Invertebrate Habitat, AM= Amphibian Habitat, FH= Fish Habitat (FA or FR), WB= Waterbird Habitat (WBF or WBN)]

Rare Species Scores

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0.16	0.16	Low
Nesting Waterbirds	0.33	0.33	Intermediate
Songbirds, Raptors, and Mammals	0.22	0.22	Intermediate
Invertebrate Species	0	0	None
Plant Species	0.33	0.33	Intermediate

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the "certainty" that ORBIC assigns to each of those records.

Element of Occurrence (Rare Species)

[View wildlife list](#) for Sand Creek-Frontal Pacific Ocean (171002030902)

Within Assessment Area	No EO Records	Element of Occurrence Record(s) in HUC12
Within 1 mile	No EO Records	<p>1 Western snowy plover [1 occurrences] <i>Charadrius nivosus nivosus</i> ORBIC State Status: S2 ORBIC Global Status: G3T3 ODFW Strategy Species: No</p> <p>2 Aleutian cackling goose [2 occurrences] <i>Branta hutchinsii leucopareia</i> ORBIC State Status: S3N ORBIC Global Status: G5T3 ODFW Strategy Species: No</p> <p>3 Chum salmon (Pacific Coast ESU) [3 occurrences] <i>Oncorhynchus keta pop. 4</i> ORBIC State Status: S2 ORBIC Global Status: G5T3Q ODFW Strategy Species: Yes</p> <p>4 Steelhead (Oregon Coast ESU, winter run) [8 occurrences] <i>Oncorhynchus mykiss pop. 31</i> ORBIC State Status: S2S3 ORBIC Global Status: G5T2T3Q ODFW Strategy Species: No</p> <p>5 Coho salmon (Oregon Coast ESU) [5 occurrences] <i>Oncorhynchus kisutch pop. 3</i></p>
In HUC12 watershed	22 EO Records	

This report was generated using the ORWAP Map Viewer, a tool of the Oregon Explorer (<http://oregonexplorer.info>).

ORBIC State Status: S2
ORBIC Global Status: G5T2Q
ODFW Strategy Species: No

6 American peregrine falcon
[2 occurrences]

Falco peregrinus anatum

ORBIC State Status: S3
ORBIC Global Status: G4T4
ODFW Strategy Species: No

7 Bighead sedge
[1 occurrence]

Carex macrocephala

ORBIC State Status: S2
ORBIC Global Status: G5
ODFW Strategy Species: No

- *HUC Best: Oregon watersheds (HUC8, HUC10, HUC12) with greatest type diversity, proportional area, or density of wetlands according to available National Wetland Inventory maps.*

"Type diversity" is the number of unique NWI codes in the watershed (e.g., PEMA, PEMC, PEMCx) and excluded types that have no vegetation component (e.g., PUBH, R3US2).

"Density" is the number of vegetated NWI polygons divided by the acreage of the watershed; many of these polygons may be contiguous with each other, forming a single wetland.

"Proportional Area" is the proportion of the watershed's total area occupied by vegetated wetlands as mapped by NWI.

- *The digital maps used to determine this do not show many wetlands or cover the entire state. Data were compiled only from watersheds that have been at least 90% mapped by NWI (see worksheets for HUC8, 10, and 12). Data were received in November 2008 from ORBIC.*

• *METHODS: The above 3 metrics can be strongly correlated with watershed size and with each other. To minimize that bias, the rankings of the residuals from a regression analysis were used, rather than simply the top-ranking watersheds, to identify the most "important" watersheds for each metric at each scale. That is, the watersheds were identified that were in the top 5% in terms of variety of mapped wetland types for watersheds of that size, the largest area of mapped wetlands as a proportion of the watershed area for watersheds of that size, and/or the greatest number of mapped wetland polygons for watersheds with that much wetland area.*

• *Global rank. ORBIC participates in an international system for ranking rare, threatened and endangered species throughout the world. The system was developed by The Nature Conservancy and is now maintained by NatureServe in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries. The ranking is a 1-5 scale, primarily based on the number of known occurrences, but also including threats, sensitivity, area occupied, and other biological factors. In this book, the ranks occupy two lines. The top line is the Global Rank and begins with a "G". If the taxon has a trinomial (a subspecies, variety or recognized race), this is followed by a "T" rank indicator. A "Q" at the end of this line indicates the taxon has taxonomic questions. The second line is the State Rank and begins with the letter "S". The ranks are summarized as follows: 1 = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences; 2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences; 3 = Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences; 4 = Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences; 5 = Demonstrably widespread, abundant, and secure; H = Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered; X = Presumed extirpated or extinct; U = Unknown rank; ? = Not yet ranked, or assigned rank is uncertain.*

• *This report contains both centroid-based and polygon-based data. The Location Information and Watershed Information sections of the report contain centroid based data (determined by the center point of the polygon), while the remaining sections are polygon-based (determined from the entire polygon).*

• *The rare species results in this report are based on a subset of the ORBIC rare species dataset. The ORWAP tool only reports on rare species that meet the following criteria: wetland habitat species that are tracked by ORBIC, excluding historical or extirpated sites or those with low mapping accuracy. More information about specific sites and additional species can be obtained from ORBIC through data requests, see <https://inr.oregonstate.edu/orbic/data-requests> for details.*

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Oregon

Kate Brown, Governor

Department of State Lands

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www.oregon.gov/dsl

State Land Board

July 19, 2021

Ben Clark
56564 Meteor Drive
Bend, OR 97707

Kate Brown

Governor

Re: **WD # 2021-0143 Approved**
Wetland Delineation Report for the Clark Site
Tillamook County; T4S R10W S6 TL601

Shemia Fagan
Secretary of State

Tobias Read
State Treasurer

Dear Mr. Clark:

The Department of State Lands has reviewed the wetland delineation report prepared by Zion Natural Resources Consulting for the site referenced above. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland boundaries as mapped in Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, one wetland (Wetland A, totaling approximately 3.29 acres) was identified. It is subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). In addition, Wetland A is a mature, forested wetland, and therefore, part or all of this wetland may meet the state's criteria for Aquatic Resources of Special Concern. This could affect the eligibility protocols for compensatory mitigation if a DSL permit is required.

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact the Jurisdiction Coordinator for Tillamook County, Daniel Evans, PWS, at (503) 986-5271.

Sincerely,



Peter Ryan, SPWS
Aquatic Resource Specialist

Enclosures

ec: Eric Henning, Zion Natural Resources
Tillamook Planning Department
Kinsey Friesen, Corps of Engineers
Dan Cary, SPWS, DSL
Oregon Coastal Management Program