

ERTG Project Template



Prepared by the Expert Regional Technical Group of the Columbia Estuary Ecosystem Restoration Program

Prepared for the Bonneville Power Administration, U.S. Army Corps of Engineers, and NOAA Fisheries

FINAL

May 2020

May 2020

ERTG #2020-01

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Preface

In 2009, the Bonneville Power Administration (BPA) and U.S. Army Corps of Engineers (USACE) formed the Expert Regional Technical Group (ERTG) in response to the National Marine Fisheries Service's (NMFS's) 2008 Biological Opinion on the operation of the Federal Columbia River Power System. The purpose of the ERTG is to review ecosystem restoration¹ actions in the floodplain of the lower Columbia River and estuary proposed for the Columbia Estuary Ecosystem Restoration Program. The ERTG's work is directed by a Steering Committee composed of representatives from BPA, NOAA Fisheries, and USACE.

As with the original ERTG Project Template (*ERTG Template for LCRE Habitat Restoration Project Summary*, ERTG #2010-01), the purpose of the new Project Template (ERTG #2020-01) is to provide restoration project sponsors with a standard form to fill out as part of the ERTG review process. The primary revision concerns incorporating *Landscape Principles for CEERP Restoration Strategy* (ERTG #2017-02) and *Landscape Principles: Applications and Operation for CEERP Restoration Strategy* (ERTG Doc #2019-01) into the information solicited in the Project Template. ERTG #2020-01 replaces ERTG #2010-01. The Project Template is designed to provide specific material characterizing a proposed restoration project. Using the Project Template helps foster consistency and transparency of the project review process.

Note that with the incorporation of landscape principles there are now two types of projects that can be proposed: *traditional* and *matrix-only*. Matrix-only projects should follow the habitat capacity/quality scoring for shoreline matrix habitat. Traditional projects that include matrix habitat should address both traditional and matrix scoring habitat quality/capacity scoring criteria. Both project types should address the landscape scoring criteria.

The latest Project Template (ERTG #2020-01) was prepared by the ERTG (Dan Bottom, Janine Castro, Greg Hood, Kim Jones, Kirk Krueger, and Ron Thom). It was reviewed by the Steering Committee (Jason Karnezis, Lynne Krasnow, Cynthia Studebaker, and Michael Turaski). A draft was distributed regionally for review. The ERTG appreciates comments provided by Alex Uber (WDFW) and Katie Blauvelt and Andy Wilson (PC Trask and Associates). Katie Blauvelt and Andy Wilson prepared Attachments 1, 2, and 3.

Suggested citation: ERTG (Expert Regional Technical Group). 2020. *ERTG Project Template*. ERTG #2020-01, prepared for the Bonneville Power Administration, U.S. Army Corps of Engineers, and NOAA Fisheries. Portland, Oregon. Available from <https://www.cbfish.org/EstuaryAction.mvc/Documents>.

¹ As used here, the term "restoration" refers to conservation, protection, enhancement, restoration, or creation.

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Introduction

The information requested below provides a basis for scoring of restoration project proposals for the Columbia Estuary Ecosystem Restoration Program (CEERP). Refer to the *ERTG Scoring Criteria* (ERTG #2020-02) and definitions below when developing the project information. CEERP’s overarching goal is to understand, conserve, and restore ecosystems in the lower Columbia River and estuary.

In addition to information regarding certainty of success, habitat access, and habitat capacity outlined in the original Project Template, the new template now requires the explicit consideration by project sponsors of principles of landscape ecology in their descriptions of how an individual project is related to natural and restored patches, major tributaries, hydrogeomorphic reaches, and salmonid stocks. The four primary landscape objectives, described in ERTG #2017-02 (*Landscape Principles*) and #2019-01 (*Landscape Applications and Operations*), incorporated into this template are: 1) restore historical habitat conditions within each reach; 2) improve habitat at the confluence of major tributaries and at hydrogeomorphic reach transitions; 3) decrease distances (i.e., fill gaps) between patches of habitat that support juvenile salmon; and 4) improve shoreline matrix habitat conditions between habitat patches along migratory pathways for ESA listed salmon stocks. In the revised template, we request that the sponsors describe how landscape connectivity will be improved for juvenile salmon by connecting to sites up and downstream, increasing synergy with existing nearby habitats, improving the shoreline migration corridor (e.g., matrix) habitat, contribution to reach-scale deficiencies, and enhancing accessibility of the site to local and mainstem juvenile fish.

Project Description

Project Information:	
Project name	<i>Project name</i>
Date	<i>Date the template was prepared</i>
Prepared by	<i>Name, phone number, and email address</i>
Sponsoring agency	<i>Contact name, phone number, and email address</i>
Funding agency	<i>Contact name, phone number, and email address</i>
Site	<i>Site location, river, river mile, latitude/longitude</i>
Project status or stage	<i>Status or stage of the proposed project</i>

Project Description:	
Problem statement	<i>Summarize the site-specific problem(s) the proposed restoration(s) is intended to address. What are the causes of the problems?</i>
Vision/goal	<i>Describe the expected outcome, i.e., what the site would look like if restoration is successful.</i>
Objectives	<i>State the project’s objectives in terms of functions for salmon. For example, how will access, capacity etc. be increased or enhanced? Also, provide details on how the project will improve the landscape structure as stated in the introduction above.</i>
Restoration actions, phases, sizes by year	<i>List the proposed restoration actions and phases by year. For each restoration action, state the number of barriers to be removed, the width of the breach or reconnection, and/or the number of acres/miles to be restored by year. In a</i>

multi-year effort, be sure to identify the action(s)/phase(s) that are being proposed at this time.

Subactions:

Subaction(s) and project goals; maps of the site, landscape, and site location in the LCRE	<i>Identify the appropriate subaction and state the size (number of acres or miles) the project subaction will provide.</i>
Project goal map	<i>Provide a detailed map of the site delineating location of various actions to be taken. Include a table with the area of each action (see Attachment 1 for an example).</i>

Pre-Assessment:

Condition of physical metrics	<i>Describe the major stressors and physical controlling factors². Basically, summarize the existing condition of the site. What is the average tidal range, salinity? What is the ordinary-high-water tide elevation? Extreme-high-water elevation? Two-year flood elevation?</i>
Condition of habitat metrics	<i>Describe the key results of vegetation survey(s).</i>
Condition of functional metrics	<i>Assess using existing data whether juvenile salmonids are present in the area and within the site. Describe the species composition and population sizes in the immediate or nearby watershed; use any available historical and current fish species and abundance data. Provide context for the potential of the site for fish availability.</i>

Performance Anticipated:

Physical change	<i>Describe how the action(s) will affect physical controlling factors.</i>
Habitat change	<i>Describe the expected condition of habitat after restoration.</i>
Process/function change	<i>Describe the expected changes in ecosystem processes and functions, e.g., juvenile salmon feeding, rearing, refuge, water quality improvement, off site food web support.</i>

Certainty of Success Scoring Criterion (site-scale):

Landowner support	<i>Describe the willingness and support of the landowner.</i>
Constraints or show-stoppers	<i>Describe potential issues that could inhibit or prevent execution and fulfillment of the project goals and objectives.</i>
Restoration technique	<i>Describe the level of acceptance and maturity of the restoration technique; e.g., tried and true or experimental.</i>
Natural processes and self-maintenance	<i>Explain the extent to which natural processes would be restored and how well the restoration action(s) are anticipated to be maintained through natural processes.</i>

Potential Benefit for Habitat Access/Opportunity Scoring Criterion (site-scale):

Connectedness to mainstem	<i>Describe how well the project site is currently connected and will be connected to the main stem after the restoration. Include any historical data on habitat access and quality.</i>
Species impacted	<i>Describe which species, stocks, or populations are likely to benefit, based on the best available data.</i>

Potential Benefit for Habitat Capacity/Quality Scoring Criterion (site/patch-scale):

Habitat complexity	<i>Describe habitat complexity, channels, large woody debris.</i>
Water quality	<i>Describe water quality.</i>

² Controlling factors are the basic physical and chemical conditions that construct and influence the structure of the ecosystem.

Invasive species	<i>Describe impacts from invasive plant and animal species.</i>
Adjacent lands	<i>Describe the condition of adjacent lands</i>

Landscape-Scale Elements Scoring Criterion (applies to traditional and matrix-only projects):

	<i>Using the Landscape Principles documents (ERTG #2017-02 and ERTG #2019-01) as guides and for definitions of terms (e.g., “habitat patch”, “shoreline matrix”), describe:</i>
	<i>(A) How landscape connectivity will be improved for juvenile salmon. As part of this, describe how the project will result in restoration or enhancement of the site area, connectivity to sites up and downstream (stepping-stones), and/or improve the migration corridor, e.g., matrix habitat.</i>
Habitat patch area	<i>(B) Indicate, if appropriate, the area of the habitat patch (the minimum patch size is 5 ac). Indicate if this patch is part of an existing functional patch.</i>
Shoreline matrix habitat	<i>(C) If a matrix-only project, indicate the length of shoreline and area of the proposed matrix habitat restoration.</i>
Landscape metrics	<i>(D) Address the following questions:</i> <ol style="list-style-type: none"> <i>1. Is the project filling a gap along a migratory pathway, i.e., is it creating a new wetland channel confluence with a migratory pathway?</i> <ol style="list-style-type: none"> <i>a. If yes, what is the length of the gap between patches it is filling?</i> <i>b. If the project is not filling a gap, what is the project's proximity to the nearest upstream and downstream patches, i.e., is it improving an existing patch that is isolated or clustered?</i> <i>2. What is the distance from the project to the mainstem Columbia River?</i> <i>3. What is the distance from the project to the nearest tributary on the same side of the mainstem navigation channel?</i> <i>4. What is the distance from the project to the nearest reach boundary?</i> <i>5. What are the reach-scale statistics for the reach-state (OR or WA) that the project is located in? For example, if the project is in Reach B-Oregon, what is the total patch area % of historical, the patch area within reach transitions % of historical, the patch area within tributary transitions % of historical, the total # of gaps >5km, etc. for Reach B-Oregon? (see Attachment 2, Reach Scale Statistics)</i> <i>6. How does the project address deficiencies associated with the landscape conditions reported in the previous question?</i>
Landscape elements maps	<i>Include the following maps and in them indicate the distance to adjacent reach boundary transition zones, distances to adjacent tributaries, distances between the site and adjacent functional habitat patches. (see example in Attachment 3, Landscape Elements Map)</i> <ol style="list-style-type: none"> <i>1. Map of the project site in its landscape</i> <i>2. Map of the project's location in the lower Columbia River and estuary</i>

Potential Benefit for Habitat Capacity/Quality Scoring Criterion (shoreline matrix habitat):

Habitat type	<i>Describe the anticipated restored habitat type, e.g., fringing marsh, low terrace, sand flat, etc.</i>
Functionality of natural processes	<i>Describe the anticipated functionality and level of restoration of natural processes.</i>
Bank gradient	<i>What is the expected bank gradient?</i>
Matrix length	<i>What is the planned length along the shoreline of the restored matrix habitat?</i>
Water velocity conditions	<i>Describe anticipated water velocity and circulation conditions in the matrix habitat. Provide modeling and field monitoring analyses as evidence.</i>

Small channels

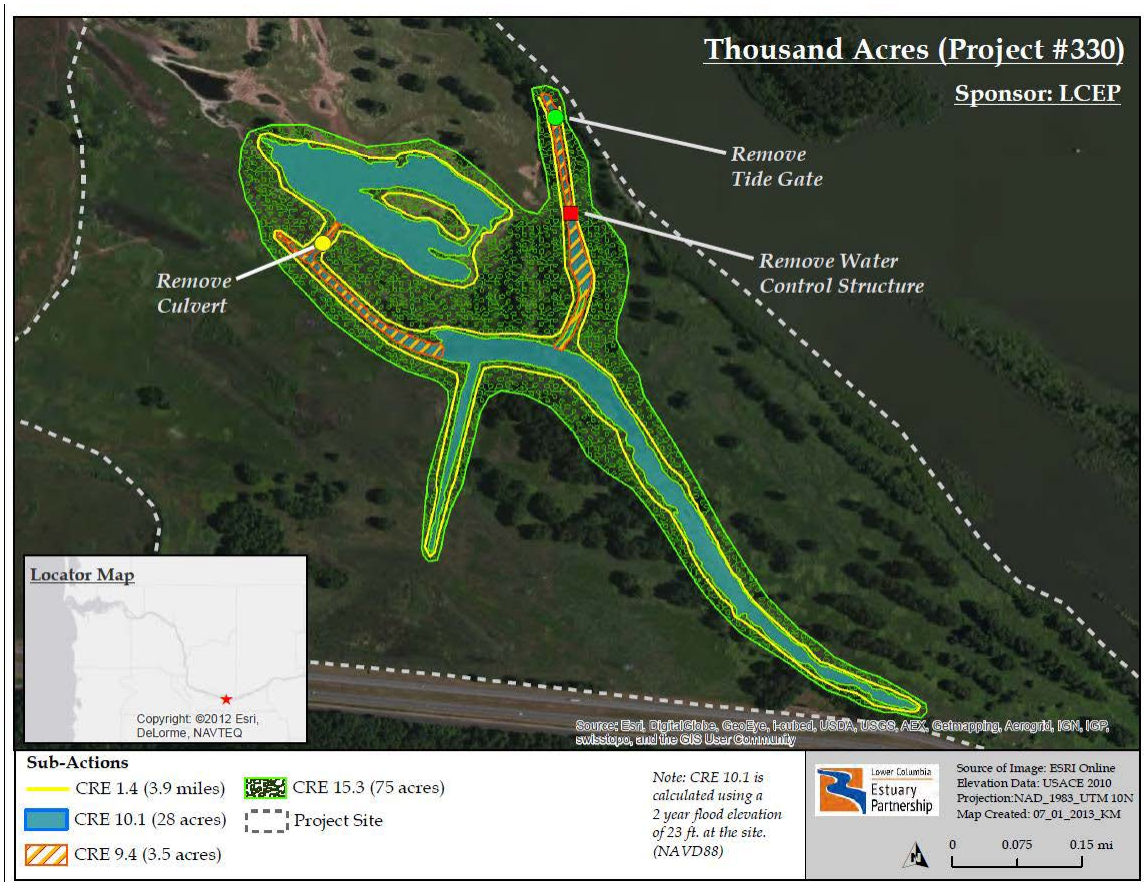
Will small channels be restored or form in the matrix habitat?

Supplementary Figures, Tables, Photos:

Provide a digital photograph(s) of the site; note the point and orientation of the photograph, time of year, and tide/water level stage. Provide an aerial image from a satellite or plane. Annotate the image to convey information about the project. Include map(s) with landform types delineated.

[For convenience, Attachment 4 contains a blank project template.]

Attachment 1. Example Project Goal Map

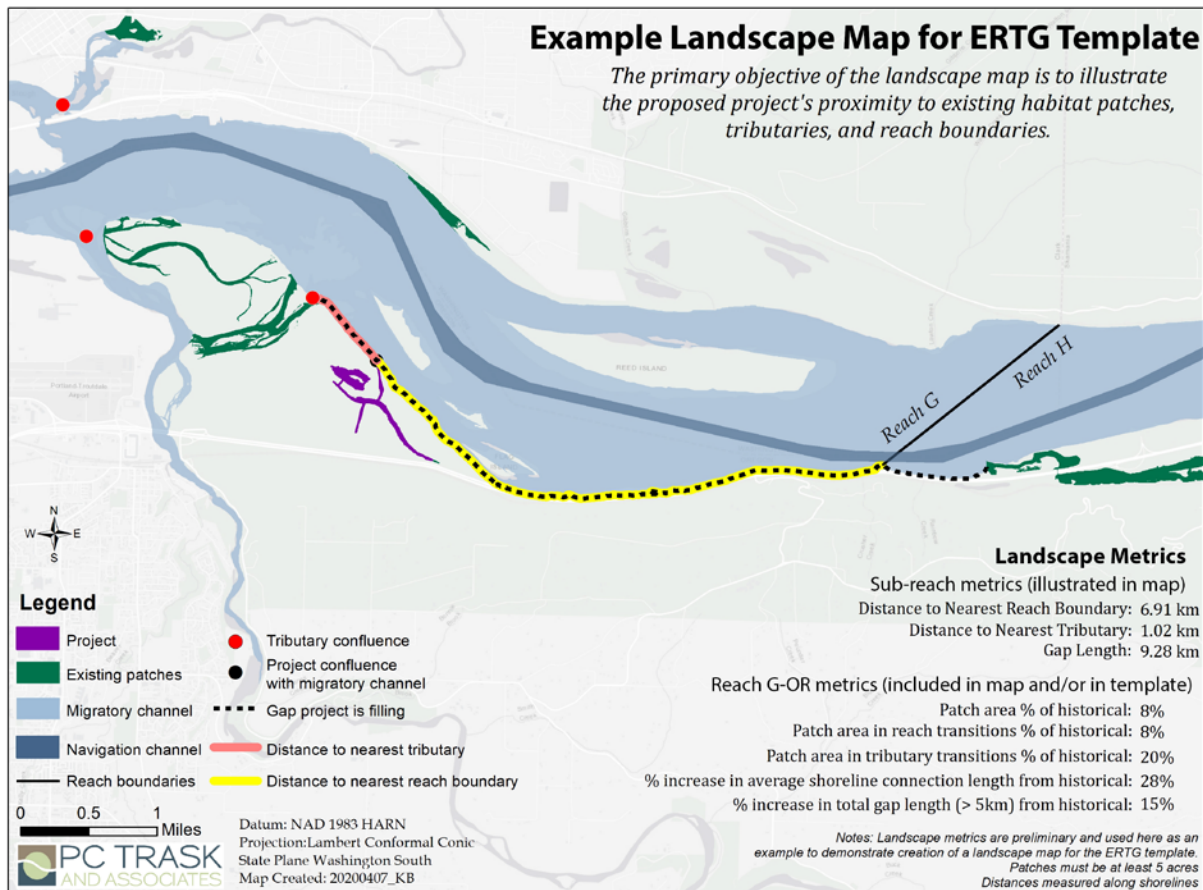


Attachment 2. Reach Scale Statistics

Reach-Stats-->	A-WA	B-WA	C-WA	D-WA	E-WA	F-WA	G-WA	H-WA	A-OR	B-OR	C-OR	D-OR	E-OR	FOR	G-OR	H-OR
TRANSITION HABITATS																
Reach transition - historical (acres)	112	3948	8939	4509	2951	5743	545	173	2085	5940	2032	372	1074	2275	3237	232
Reach transition - current (acres)	98	1304	1027	153	144	563	0	66	306	1521	514	125	184	1338	268	213
Reach transition - % of historical (acres)	88%	33%	11%	3%	5%	10%	0%	38%	15%	26%	25%	34%	17%	68%	8%	92%
RT Rank	8	6	5	2	3	4	1	7	2	5	4	6	3	7	1	8
Tributary transition - historical (acres)	4309	9040	9483	3754	1570	5207	554	0	7449	17346	11942	372	222	1737	1192	0
Tributary transition - current (acres)	312	2653	1077	399	75	563	46	0	496	8400	1910	125	75	1343	250	0
Tributary transition - % of historical (acres)	7%	29%	11%	11%	5%	11%	8%	100%	7%	48%	16%	34%	34%	72%	19%	100%
TT Rank	2	5	4	4	1	4	3	6	1	5	2	4	4	6	3	7
GAPS																
Mean shoreline connection length - historical (km) ^a	0.47	0.78	0.76	7.19	2.49	4.89	4.35	1.49	0.57	0.25	0.70	4.39	1.62	4.41	2.90	3.63
Mean shoreline connection length - current (km) ^a	0.50	1.05	0.84	7.79	3.00	7.11	4.66	1.55	0.89	0.27	1.04	4.39	2.09	7.11	3.71	3.63
Mean shoreline connection length - % increase from historical (km) ^a	6%	35%	11%	8%	20%	45%	7%	4%	56%	8%	49%	0%	29%	61%	28%	0%
SCL Rank	7	2	4	5	3	1	6	8	2	6	3	7	4	1	5	7
Mean nearest patch connection length - current (km)	2.58	2.25	2.54	6.02	2.47	5.01	8.31	3.91	1.81	0.86	1.69	6.46	2.10	4.56	6.47	10.41
NP Rank	5	8	6	2	7	3	1	4	6	8	7	3	5	4	2	1
Gaps over 5 km count - nearest patch (current) ^b	1	4	1	3	3	4	2	3	5	0	4	2	2	3	3	2
Gaps over 5 km count - historical shoreline ^b	4	8	5	6	7	6	4	2	6	3	5	2	1	11	8	3
Gaps over 5 km count - current shoreline ^b	3	10	4	5	5	5	4	3	12	8	9	2	3	7	6	3
Gaps Rank (current)	4	1	3	2	2	2	3	4	1	3	2	7	6	4	5	6
Total gap length (> 5 km) - nearest patch (current) ^b	15.26	47.71	19.66	35.85	21.48	41.50	41.44	22.52	37.23	5.90	33.76	12.91	14.39	28.05	41.17	31.23
Total gap length (> 5 km) - historical shoreline (km) ^b	28.47	83.08	49.85	89.08	52.04	50.12	55.94	16.85	50.49	25.46	39.55	12.91	13.43	175.50	82.88	36.39
Total gap length (> 5 km) - current shoreline (km) ^b	28.80	107.03	66.60	89.08	52.77	63.70	60.23	22.42	108.33	55.81	82.96	12.91	23.32	201.79	95.04	36.39
Total gap length (> 5 km) - % increase from historical (km)	1%	29%	34%	0%	1%	27%	8%	33%	117%	119%	110%	0%	74%	15%	15%	0%
TGL Rank	6	3	1	7	6	4	5	2	2	1	3	6	4	5	5	6
TOTAL PATCHES																
Patch area - historical (acres)	4309	9595	10837	6076	4692	11061	800	478	10425	17603	17948	372	3109	26024	6895	342
Patch area - current (acres)	312	2659	1617	482	763	5024	73	342	1230	8479	2781	125	329	7859	519	324
Patch area - % of historical	7%	28%	15%	8%	16%	45%	9%	72%	12%	48%	15%	34%	11%	30%	8%	95%
PA Rank	1	6	4	2	5	7	3	8	3	7	4	6	2	5	1	8
Patch count - current	10	29	14	6	13	8	4	6	38	58	31	1	9	7	7	2
FUNCTIONAL MATRIX																
Functional matrix - historical (ZYF acres)	4558	8420	10402	4761	4733	4847	272	218	11089	13303	17479	420	3289	10386	783	128
Functional matrix - current (ZYF acres)	655	2890	1623	485	1315	1461	219	215	1847	6856	2835	53	567	3852	717	121
Functional matrix - % of historical (ZYF acres)	14%	34%	16%	10%	28%	30%	81%	99%	18%	52%	16%	13%	17%	37%	92%	95%
FM Rank (ZYF)	2	6	3	1	4	5	7	8	3	6	2	1	4	5	7	8
Functional matrix - historical (100m buffer acres)	447	2111	1574	248	513	467	163	116	2194	3847	2852	35	305	606	285	117
Functional matrix - current (100m buffer acres)	447	1182	696	202	432	384	153	115	909	2921	1333	32	266	305	235	113
Functional matrix - % of historical (100m buffer acres)	92%	56%	44%	81%	84%	82%	94%	99%	41%	76%	47%	91%	87%	50%	82%	97%
FM Rank (100m)	6	2	1	3	5	4	7	8	1	4	2	7	6	3	5	8
Sum of Ranks	41	39	31	28	36	34	36	55	21	45	29	47	38	40	34	59
Mean Landscape Quality Rank	4.6	4.3	3.4	3.1	4.0	3.8	4.0	6.1	2.3	5.0	3.2	5.2	4.2	4.4	3.8	6.6

^a Inland streamflow not included if patch-size and < 100 m perimeter.
^b Inland streamflow not included if shoreline (perimeter) > 5 km. For gaps spanning a reach to reach line:
 1) Count: full gaps based with an adjacent reach
 2) Length: a segment of gap within reach based separately

Attachment 3. Example Landscape Elements Map



Attachment 4. Blank Project Template

To prepare an ERTG Project Template for a proposed project, the blank project template may be copied and pasted into a new Word document.

Project Information:

Project name

Date

Prepared by

Sponsoring agency

Funding agency

Site

Project status or stage

Project Description:

Problem statement

Vision/goal

Objectives

Restoration actions, phases, sizes by year

Subactions:

Subaction(s) and project goals; maps of the site, landscape, and site location in the LCRE

Project goal map

Pre-Assessment:

Condition of physical metrics

Condition of habitat metrics

Condition of functional metrics

Performance Anticipated:

Physical change

Habitat change

Process/function change

Certainty of Success Scoring Criterion (site-scale):

Landowner support

Constraints or show-stoppers

Restoration technique

Natural processes and self-maintenance

Potential Benefit for Habitat Access/Opportunity Scoring Criterion (site-scale):

Connectedness to mainstem

Species impacted

**Potential Benefit for Habitat Capacity/Quality
Scoring Criterion (site/patch-scale):**

Habitat complexity

Water quality

Invasive species

Adjacent lands

**Landscape-Scale Elements Scoring Criterion
(applies to traditional and matrix-only projects):**

Habitat patch area

Shoreline matrix habitat

Landscape metrics

Landscape elements maps

**Potential Benefit for Habitat Capacity/Quality
Scoring Criterion (shoreline matrix habitat):**

Habitat type

Functionality of natural processes

Bank gradient

Matrix length

Water velocity conditions

Small channels

Supplementary Figures, Tables, Photos:
