Oregon's Aquatic Resources Mitigation Framework: Integrated Watershed Approach

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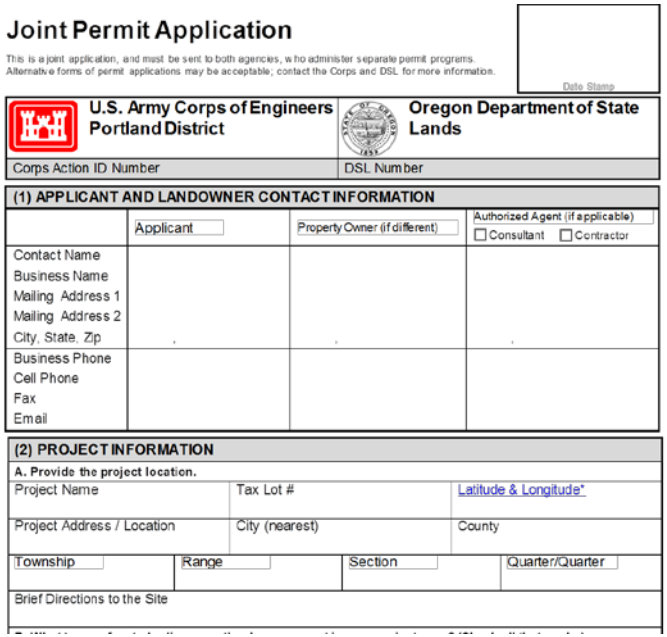
Photo credit: Bruce Taylor

How is aquatic resource mitigation currently handled in Oregon?

- U.S. Army Corps Portland District and Oregon Department of State Lands collaboratively, but independently, administer a permit process to protect, conserve & provide for the best use of Oregon's aquatic resources
- Mitigation is currently acreage-based; informed, but not relying on function assessments and not taking a watershed approach
- Stream compensatory mitigation is inconsistent and not well-defined
- EPA, Corps, DSL have shared goals for improving the regulatory programs & mitigation outcomes



Joint Permit Application

This is a joint application, and must be sent to both agencies, who administer separate permit programs. Alternative forms of permit applications may be acceptable; contact the Corps and DSL for more information.

Date Stamp

U.S. Army Corps of Engineers
Portland District

Oregon Department of State Lands

Corps Action ID Number	DSL Number

(1) APPLICANT AND LANDOWNER CONTACT INFORMATION

	Applicant	Property Owner (if different)	Authorized Agent (if applicable) ☐ Consultant ☐ Contractor
Contact Name Business Name Mailing Address 1 Mailing Address 2 City, State, Zip	,	,	,
Business Phone Cell Phone Fax Email			

(2) PROJECT INFORMATION

A. Provide the project location.

Project Name	Tax Lot #	Latitude & Longitude*
Project Address / Location	City (nearest)	County

Township	Range	Section	Quarter/Quarter

Brief Directions to the Site

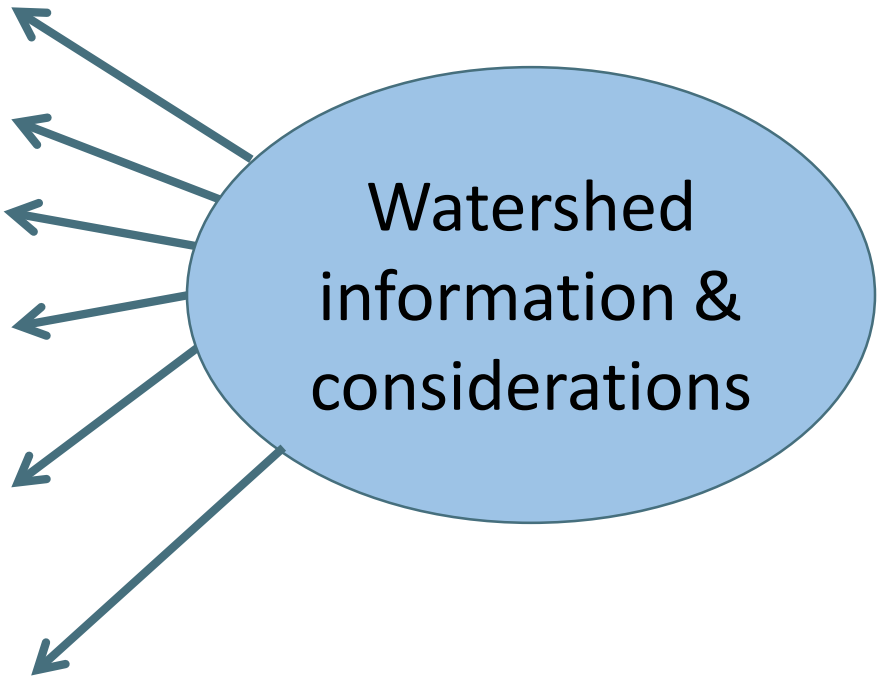
How are the agencies improving the mitigation program?

Implement a **function-based, watershed approach** to aquatic resource mitigation in order to improve success of compensatory mitigation:

- Operate in alignment with the 2008 Federal Rule
- Ensure the protection and replacement of ecological functions and services
- Ensure the replacement of limited habitat types
- Consider local watershed needs and priorities
- Broaden the spatial and temporal scope of mitigation decision-making
- Increase interagency consistency and transparency in mitigation decision-making

Which program elements will be used to achieve a watershed approach?

PROGRAM ELEMENTS
Site selection
Eligibility
Function assessment tools
Mitigation accounting
Stewardship
Performance standards
Monitoring requirements
Program effectiveness



Achieving a watershed approach using…

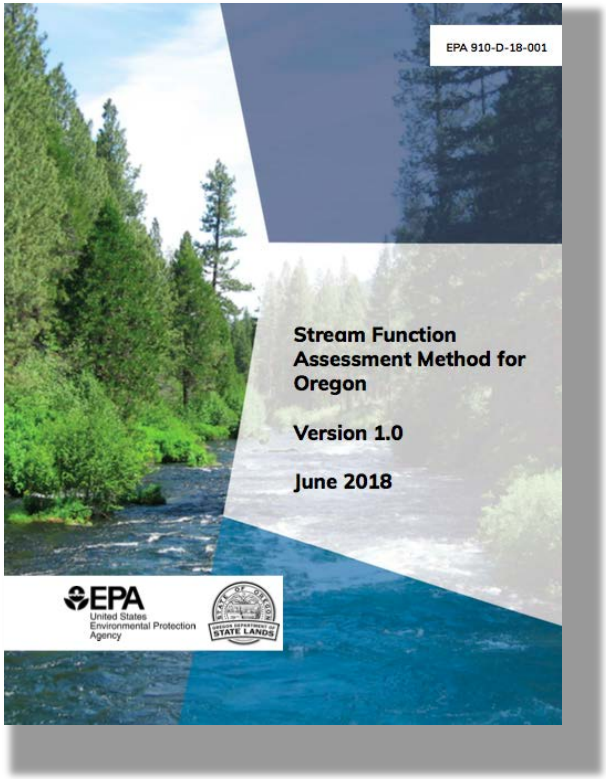
function assessment tools

Oregon's aquatic resource function assessment tools are:

- Oregon Rapid Wetland Assessment Protocol (ORWAP)
- Stream Function Assessment Method (SFAM)

Function assessment methods are designed and field tested to:

- quantify functions (*processes that create and support an aquatic ecosystem*) and values (*ecological and societal benefits that aquatic ecosystems provide*)
- reflect landscape and watershed processes



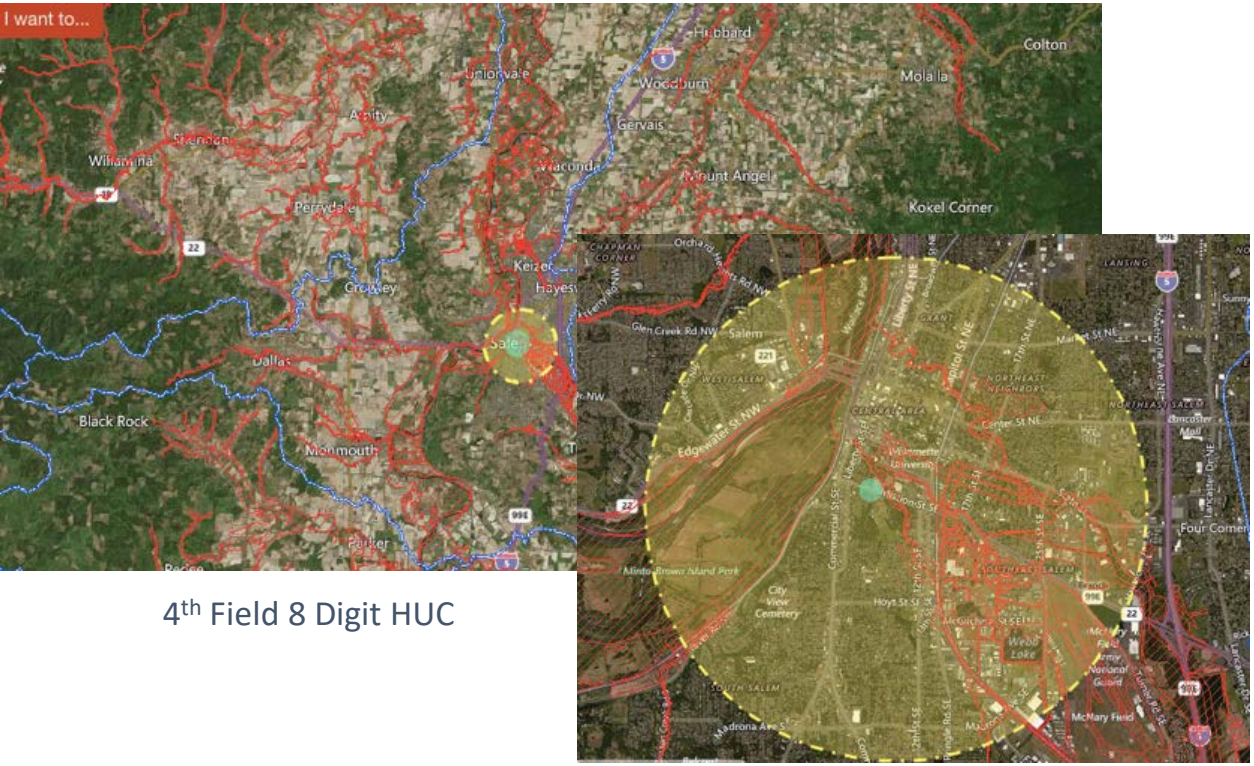
SFAM Functions & Values

Function Group	Specific Functions/Values
Hydrologic	Surface Water Storage Sub/Surface Transfer Flow Variation
Geomorphic	Sediment Continuity Substrate Mobility
Biologic	Maintain Biodiversity Create and Maintain Habitat Sustain Trophic Structure
Water Quality	Nutrient Cycling Chemical Regulation Thermal Regulation

- 11 Functions were selected to represent the majority of stream and riparian processes necessary to sustain healthy stream ecosystems
- Each Function has an associated Value
- Functions and Values are categorized within 4 functional groups

Measuring Stream Values

- Values are assessed by evaluating the landscape context of a site (i.e. what is happening upstream & downstream)
- **16 value measures** determine the **opportunity** to provide a particular function and the **local significance** of that function



4th Field 8 Digit HUC

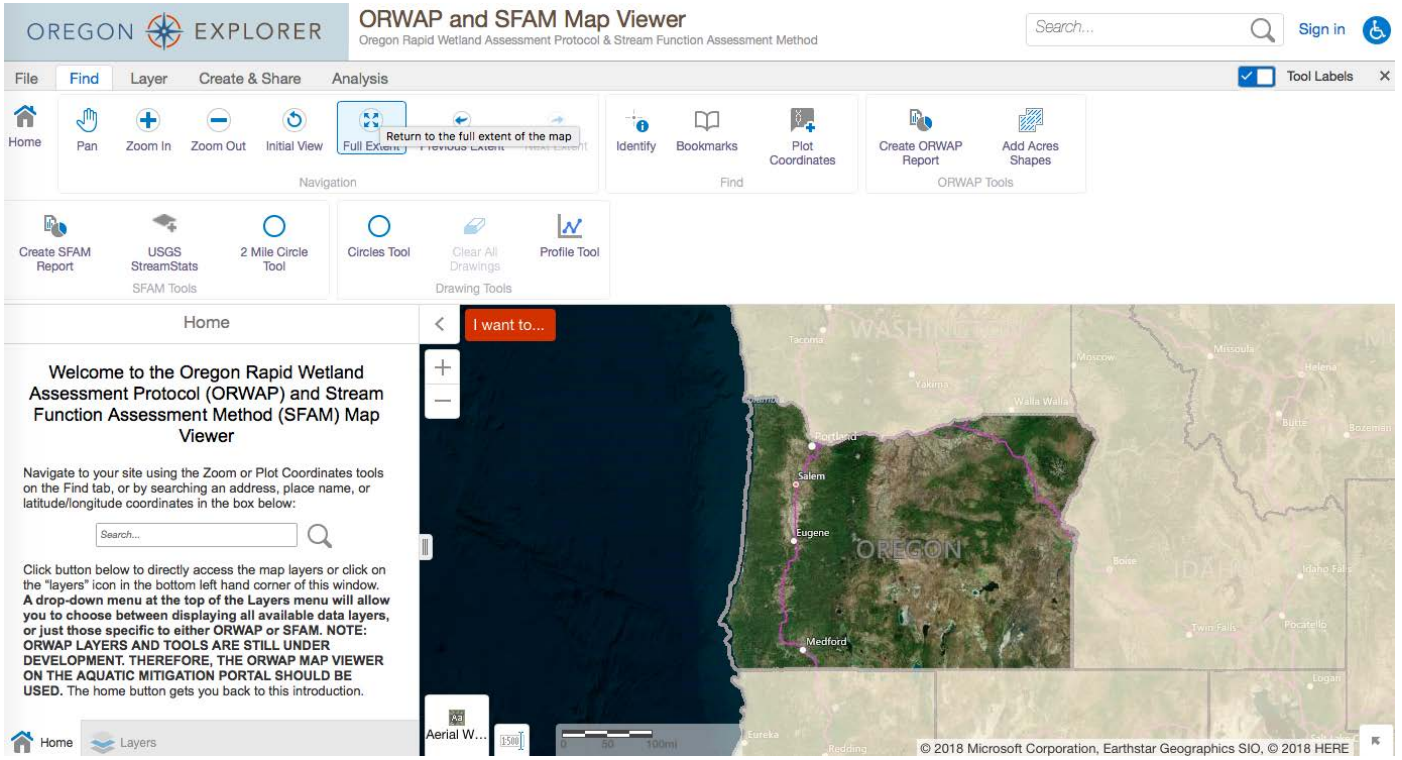
VALUE MEASURES (16):

- Rare Species
- Water quality impairments
- Protected areas
- Impervious area
- Riparian area
- Riparian continuity
- Downstream infrastructure
- Zoning
- Downstream flooding
- Impoundments
- Fish passage barriers
- Water source
- Land cover
- Watershed position
- Flow restoration needs
- Unique habitat features

ORWAP & SFAM Map Viewer

Online digital library that integrates and provides access to stream-related data from state and federal agencies, local governments, and the scientific community.

Contains a set of tools designed for navigation, viewing and identifying data, and creating images and reports that are used to complete an assessment



Achieving a watershed approach through…

strategic **site selection**

Site selection is the determination of whether a proposed site meets criteria to be developed as a compensatory mitigation site (e.g. watershed position, hydrologic connectivity, buffers, absence of stressors, etc.)

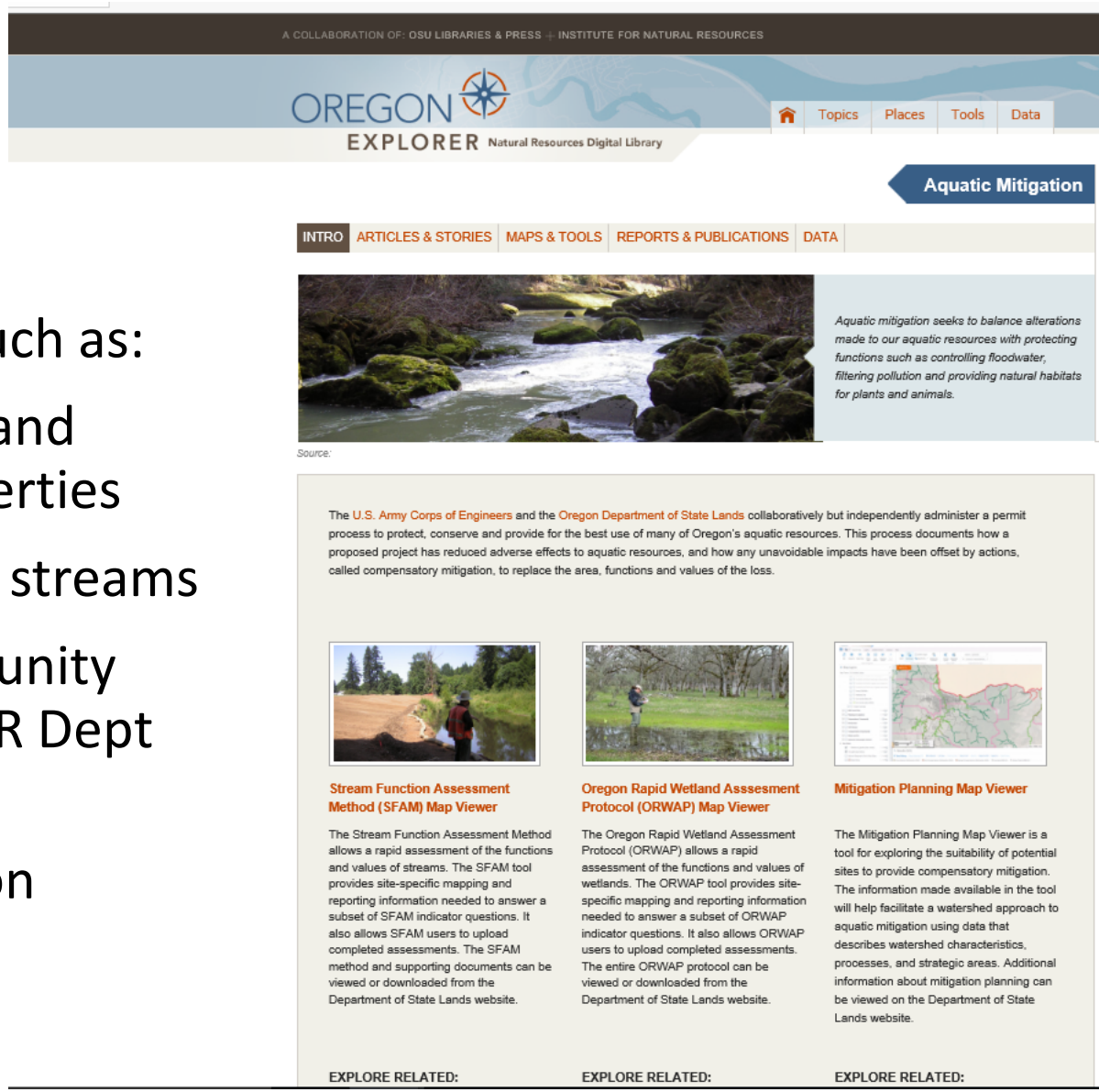
GOALS:

- Facilitate strategic identification of sites that present best opportunities for sustainable mitigation projects
- Incorporate scientific understanding of ecological processes
- Provide the regulated community with information and guidance that will result in improved mitigation outcomes

Mitigation Planning Map Viewer

Includes information such as:

- Restoration projects and publicly-owned properties
- Water quality limited streams
- Conservation Opportunity Areas identified by OR Dept Fish and Wildlife
- Water flow restoration priorities



Achieving a watershed approach through…

minimum criteria for site **eligibility**

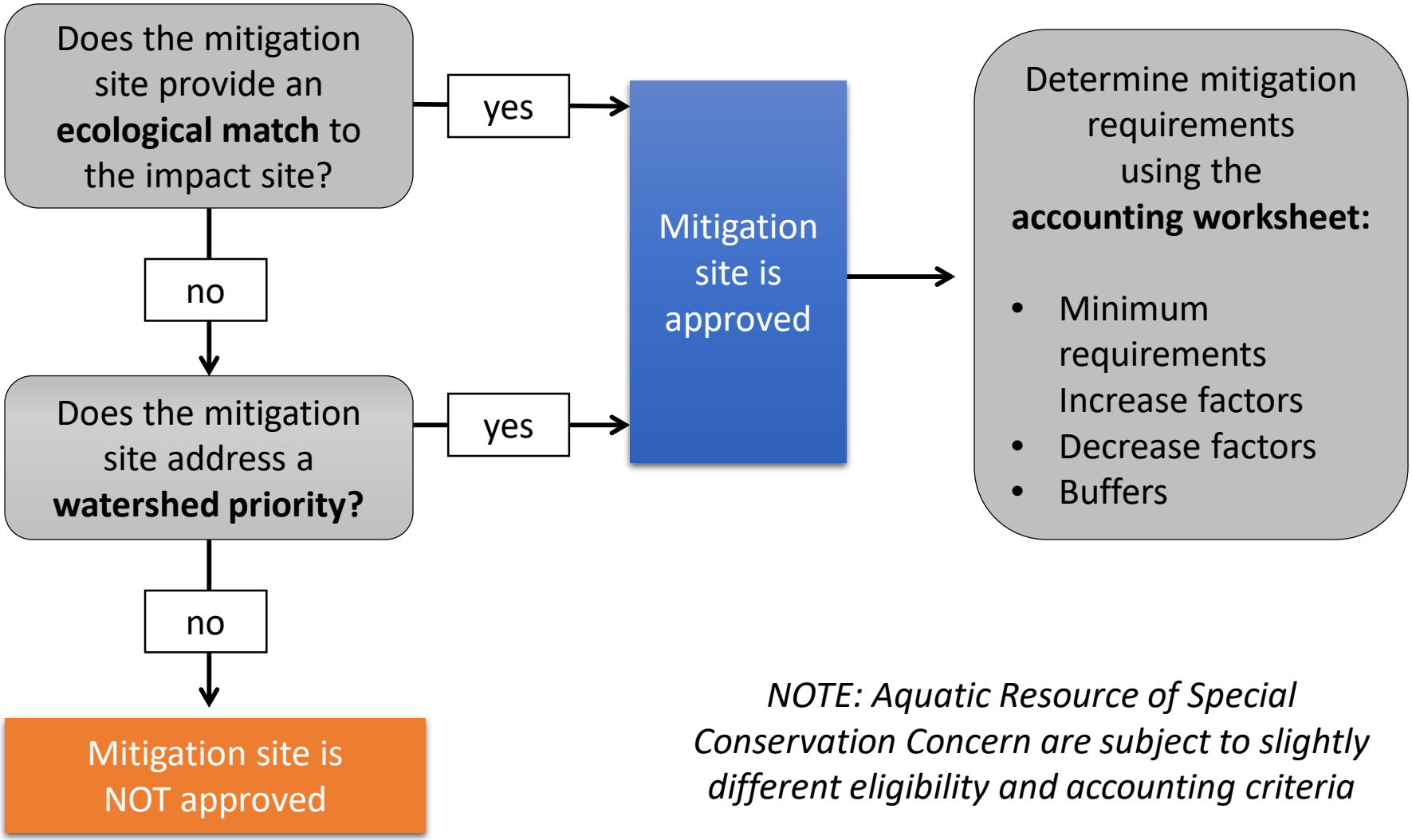
Eligibility is the determination of whether a proposed mitigation site provides an ecological match (i.e. is of the appropriate class(es) and has the appropriate function and services) to offset permitted impacts.

GOALS:

- Set minimum standards for mitigation site approval
- Achieve replacement of lost functions and services within a watershed
- Promote protection and restoration of unique, at-risk, or difficult to replace aquatic resources

STEP 1. DETERMINING CM SITE ELIGIBILITY

STEP 2. MITIGATION ACCOUNTING



NOTE: Aquatic Resource of Special Conservation Concern are subject to slightly different eligibility and accounting criteria

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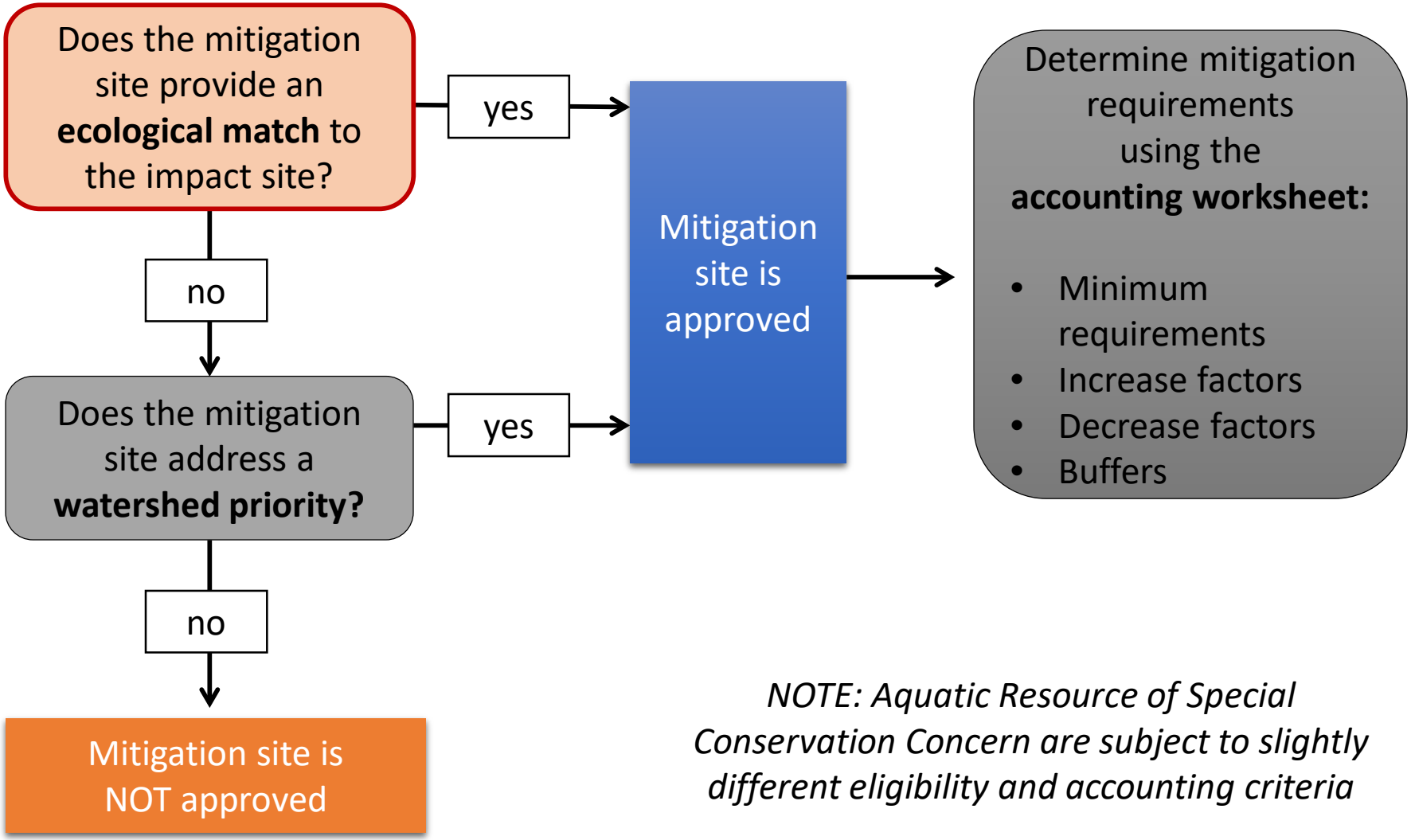

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Eligibility Criteria for Streams

Ecological match: *replacing impacted class(es) and thematic groups of functions/values in-kind*

- ❑Same watershed (8-digit HUC)
- ❑Same flow permanence (intermittent or perennial)
- ❑Same stream size (S/M/L based on flow expectations)
- ❑Essential Salmonid Habitat designated reach, if applicable
- ❑Group level function and value replacement

	IMPACT SITE		MITIGATION SITE	
GROUPED FUNCTIONS	Function Group Rating	Value Group Rating	Function Group Rating	Value Group Rating
Hydrologic Function (SWS, SST, FV)	Moderate	Moderate	Higher	Moderate
Geomorphic Function (SC, SM)	Moderate	Lower	Moderate	Moderate
Biologic Function (MB, CMH, STS)	Moderate	Moderate	Moderate	Higher
Water Quality Function (NC, CR, TR)	Lower	Moderate	Lower	Moderate

STEP 1. DETERMINING CM SITE ELIGIBILITY

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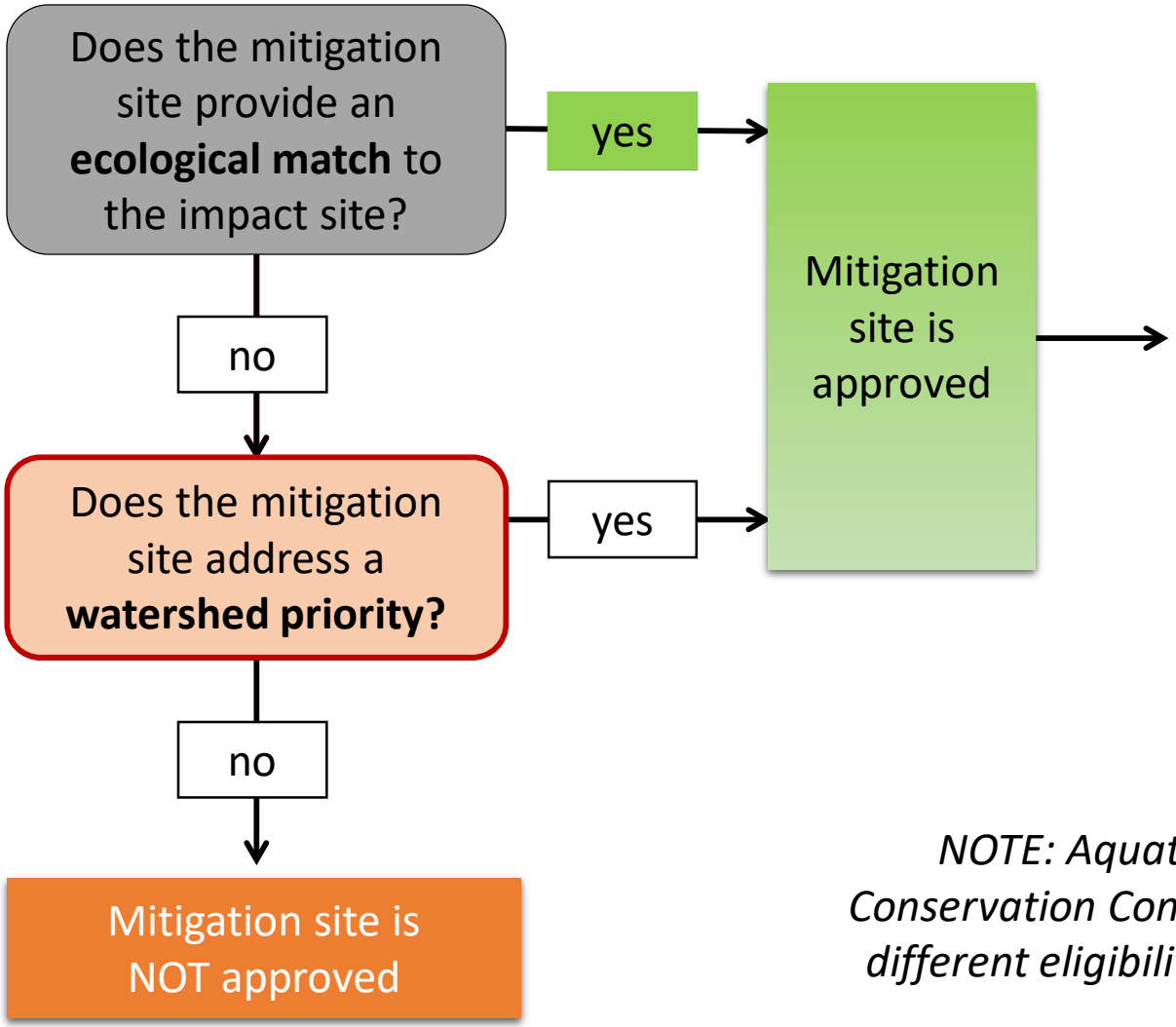

Determine mitigation requirements using the **accounting worksheet:**

- Minimum requirements
- Increase factors
- Decrease factors
- Buffers

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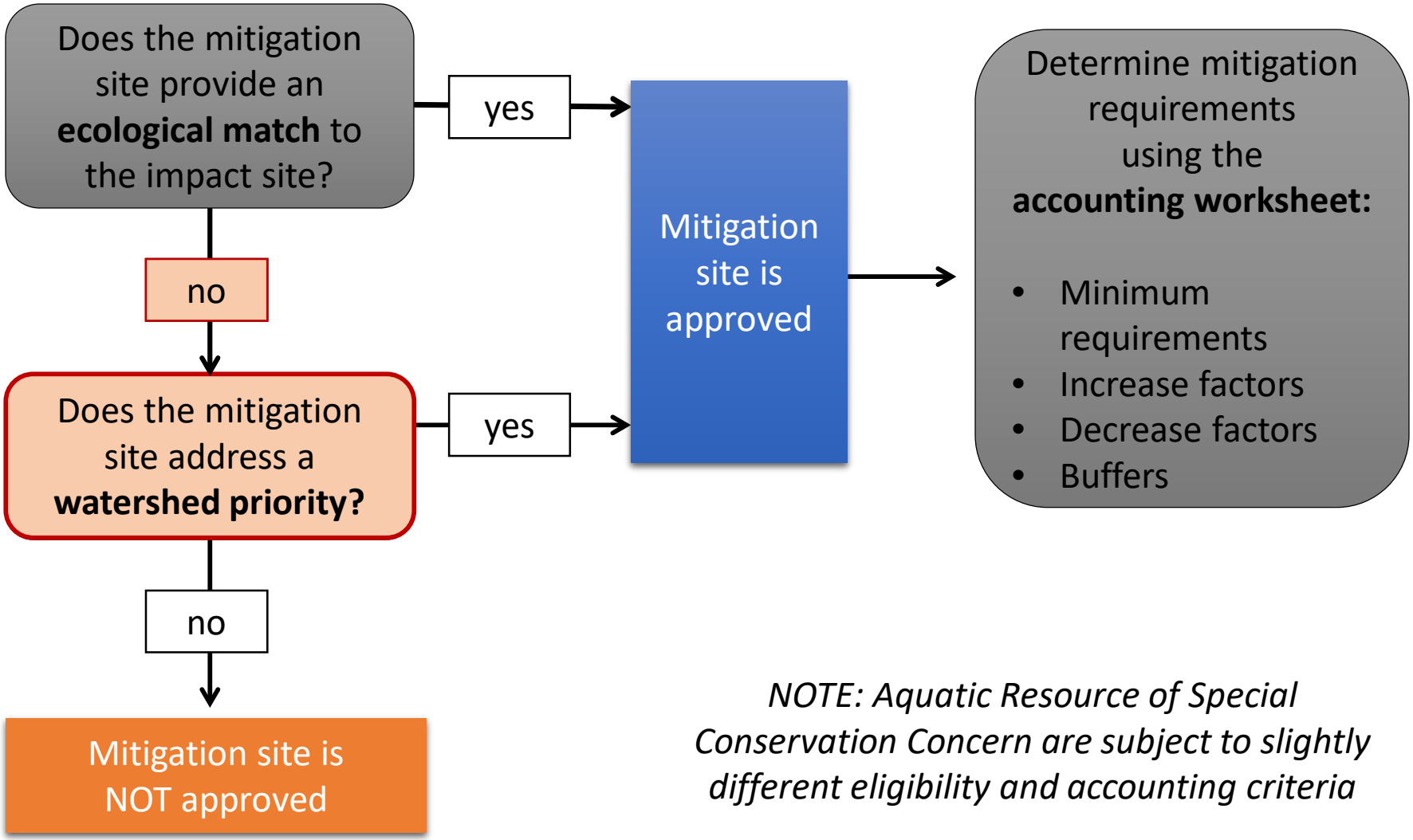

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Exceptions for watershed priorities

To qualify, an out-of-kind CM site must:

- ❑address a watershed priority, as identified in a planning or assessment document, report, or other data (must consider one or more specific factors); and
- ❑provide a high level of the functions and values that are relevant to the targeted priority (either currently or post-construction based on the function assessment).
- ❑Applicant must provide written rationale to demonstrate why an exception for a watershed priority is appropriate.

Watershed priorities may consider:

- how specific types/locations of projects will provide identified priority aquatic function for the watershed;
- habitat requirements of important aquatic-resource dependent species;
- loss or conversion trends of aquatic resource habitats;
- sources of watershed impairment;
- current development trends that adversely affect aquatic resources or necessitate the presence of specific aquatic resource functions; or
- requirements of other regulatory and non-regulatory programs that affect the watershed.

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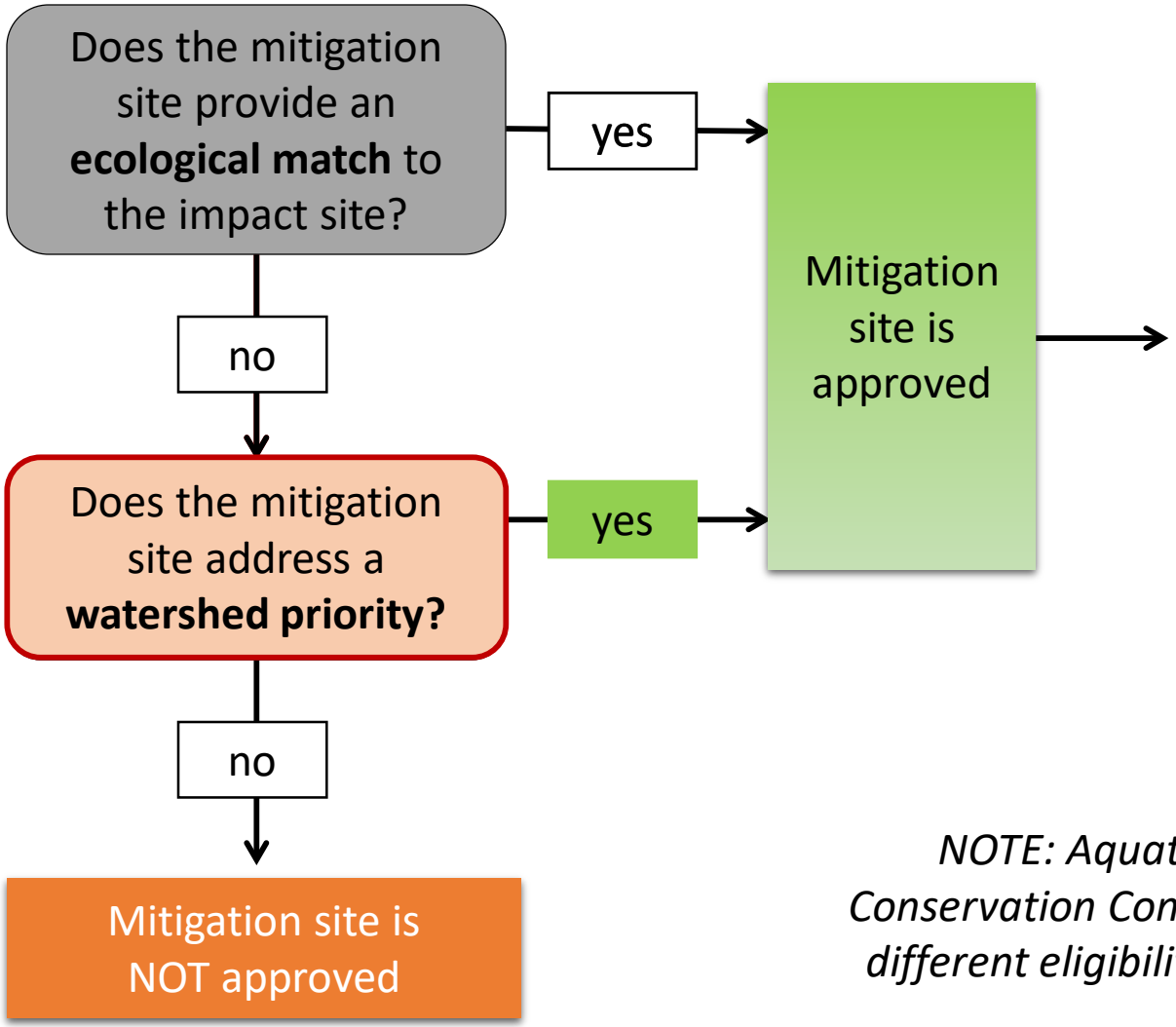

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Achieving a watershed approach through…

function-informed **accounting protocols**

Accounting protocols are methods used to calculate the amount of mitigation required to offset impacts. Calculations are based on a direct comparison of assessed acreage, function, and services between impact and mitigation sites.

GOALS:

- Reflect agencies' mitigation outcome objectives in a science-based way
- Promote mitigation decisions (function-informed, watershed-based) that are consistent, predictable, transparent, and defensible
- Account for temporal loss of function and long-term sustainability

Mitigation Accounting

Proposed policy will begin with minimum compensation ratio, but may be adjusted higher based on:

- ❑ The degree of function and value replacement (+)
- ❑ Temporal loss of functions (+)
- ❑ Degree of mitigation site protection and stewardship (-)
- ❑ High level (80%) of functions and values at the mitigation site compared to the impact site (-)

In conclusion: Steps toward achieving a watershed approach

- Determine where and how watershed information can be incorporated into mitigation program elements
- Identify what data is available and meets desired criteria
- Make spatial data easily accessible
- Develop protocols for how agencies will use available data to inform decisions
- Track and summarize information at a watershed scale through program effectiveness monitoring

Acknowledgements

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