Fish and Wildlife Coordination Act

A self-guided tutorial prepared for NMFS' Habitat Conservation Division

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July 2022

Welcome

Welcome

In 2019, the National Marine Fisheries Service's Habitat Conservation Division asked me to develop and teach a series of short workshops on the Fish and Wildlife Coordination Act. The actual workshops took place in 2020 and 2021 (all but the first two sessions were virtual because of the coronavirus pandemic). After the last workshop, I promised to develop and provide a self-guided presentation that would allow workshop participants and others to refresh their recollection of the materials we covered during the workshops.

I developed this self-guided tutorial to fulfill that promise. This tutorial is a complete re-working of the materials I used during the workshops to make it work better in a self-guided format. I re-designed the slides and graphics for individual viewing, I re-organized and re-wrote most of the text, and added extensive notes to document and support the materials I present in each slide. Notes include legal citations, definitions of acronyms, references and other sources of supporting information.

As I developed the materials in this tutorial, I tried to think of this as a conversation we might be having over coffee or tea in a shop. I use a conversational style and personal pronouns. I hope that works for you as well.

Welcome

(continued)

Before we start, I should explain why I'm qualified to write this tutorial. The U.S. Fish and Wildlife Service's Cortland (NY) Field Office hired me in 1978 to work on USACE civil works projects, highway projects, Section 404 permits, ESA consultations, and wetland mapping. In 1982, the National Marine Fisheries Service's Anchorage Field Office hired me to do similar work in northern Alaska with oil & gas leasing and marine mammal responsibilities added. After I left Alaska in 1988, I worked in USFWS Headquarters Office; was Chief of USFWS' Endangered Species program in the Great Lakes Region, served as staff to the Assistant Secretary of the Interior that oversees the USFWS and National Park Service; supervised the USFWS' South Florida Field Office; and served as NMFS' national consultation coordinator. I held this last position for 15 years until I retired in 2013.

After I retired, I've worked as an environmental consultant specializing in helping clients comply with the requirements of the Clean Water Act (404 permitting), Endangered Species Act, Federal Power Act, Marine Mammal Protection Act, and NEPA, among several other laws. I have also served on or chaired two National Academy of Sciences panels.

Over the past 45 years, I've completed extensive field work, completed several hundred reviews of Section 404 permits, co-authored more than a dozen FWCA 2(b) Reports, authored or co-authored several hundred ESA biological opinions, had to defend my assessments in more than 100 court cases, co-authored the 1994 Interagency Consultation handbook, and taught hundreds of basic and advanced classes on ESA consultation and FWCA consultation.

Production Notes

I made several assumptions when I constructed this tutorial. First, I assumed you will be viewing it on a personal computer which means you'll be sitting closer to the screen than you would during a formal in-class presentation. As a result, I used smaller type size than I would have used for classroom presentations. I tested the type using a 27-inch desktop screen, 14-inch laptop screen, a 10-inch tablet, and a handheld phone screen. The text was easily readable on all but the phone so I recommend viewing it on a tablet, laptop, desktop screen, or something larger.

Where applicable, I've included extensive notes, definitions or acronyms, and a list of references that support the materials contained in each slide. In some cases, the notes are extensive; this will generally occur when I believe I'm challenging conventional wisdom, correcting misperceptions, or when I feel you might want deeper background on a topic. So, I recommend checking the Notes or keeping the Notes visible as you work through the tutorial.

Contents

01. Mandate

Introduction

The **Fish and Wildlife Coordination Act** is one of the oldest environmental laws in the USA. More importantly, it's our country's first effort to incorporate fish and wildlife conservation measures into water resource planning and related civil works projects.

The Fish and Wildlife Coordination Act or FWCA was created largely in response to the disappearance of of fish populations, fishing opportunities, and wildlife populations caused by water pollution, channel deepening, dam construction, navigation projects, and similar federal activities that encroach on federal lands. From its beginnings in 1934, the FWCA was designed to make the expertise of State fish and wildlife agencies and the predecessors of NMFS and the USFWS available to other federal agencies.

This module briefly reviews the history of the FWCA to help you understand why Congress created the FWCA and what it was designed to achieve.

Contents of this module

- This module addresses 3 topics:
- A brief history of the FWCA and water resource development mandates
  - why Congress created the FWCA,
  - what the FWCA was designed to achieve, and
  - what roles Congress created for NMFS, USFWS, and the States
- An overview of the mandate, purposes, and consultation provisions of the FWCA
- An overview of litigation associated with the FWCA

A brief history

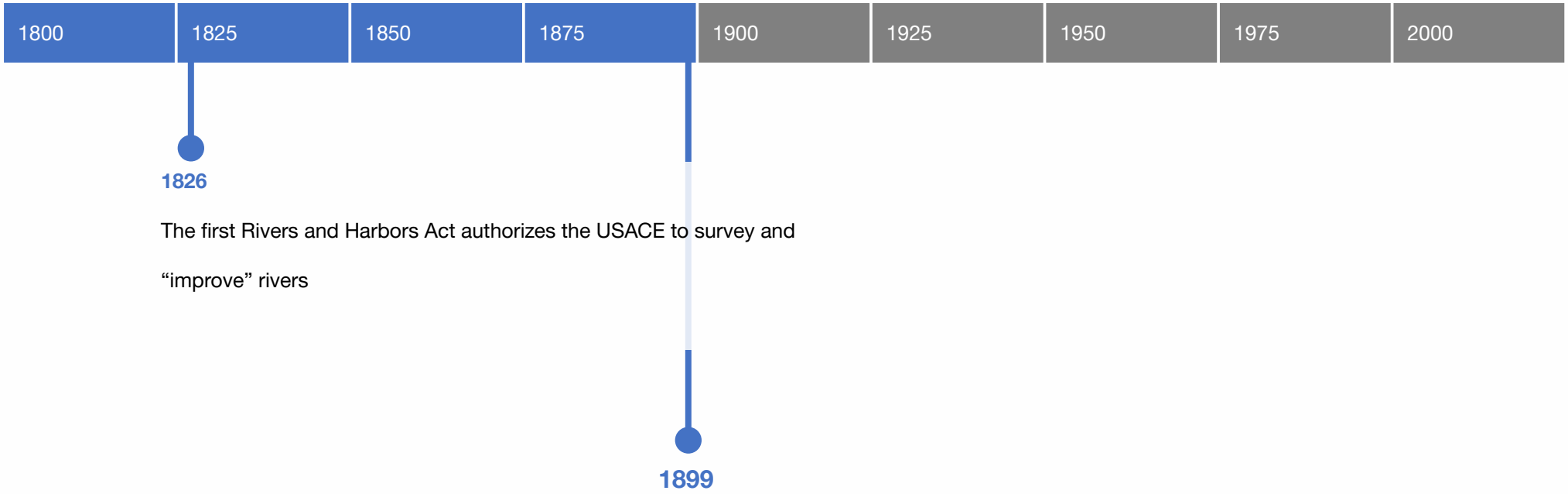
1802

The USACE is one of the first agencies Congress created. It was tasked with improving navigation almost 200 years ago.

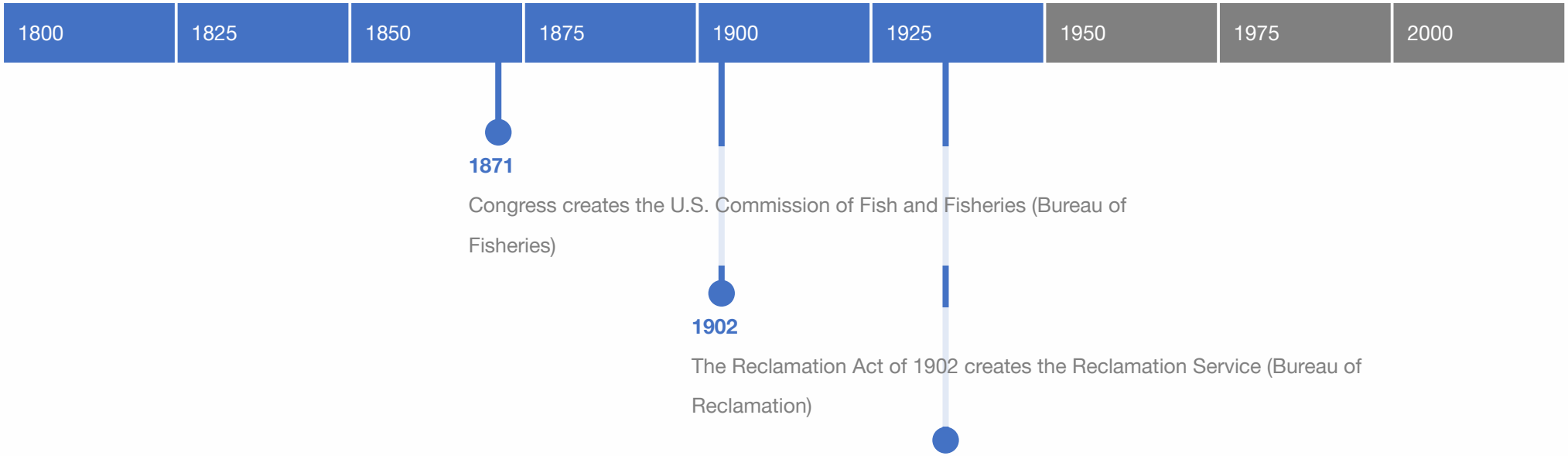
1824

Congress authorizes the USACE to “improve” navigation on the Ohio and Mississippi Rivers

A brief history



A brief history

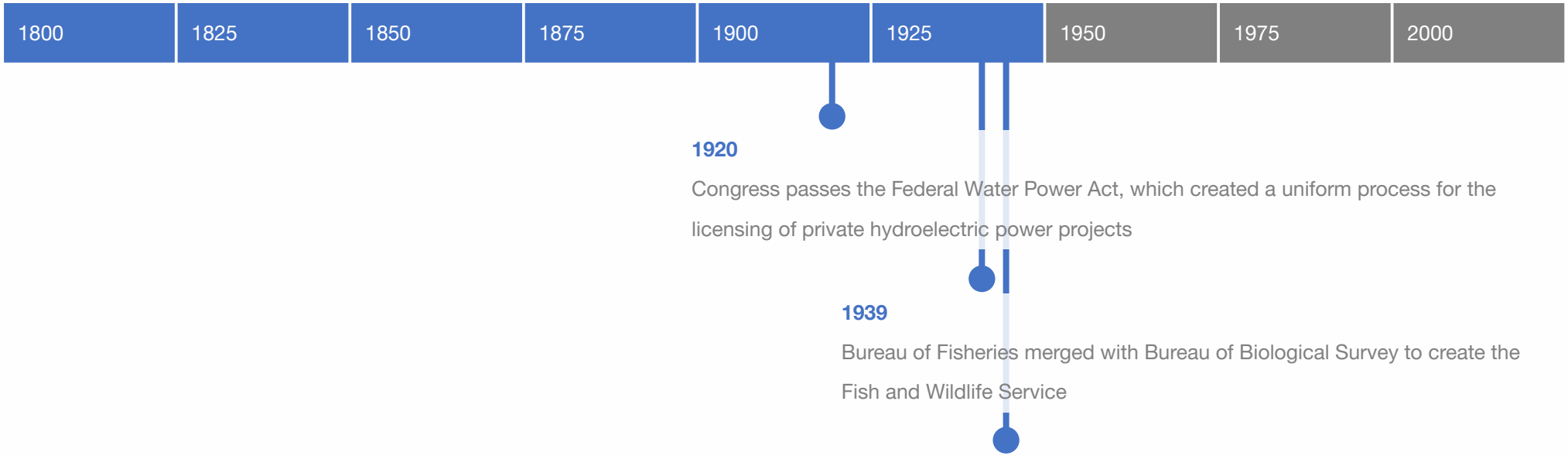


1934

“Coordination Act” was a response to the effect of water pollution and civil works projects (dams, lock construction, canals, etc.) on fish and wildlife populations and other natural resources

It authorized “investigations” into the effects of pollution, asked for reports on the findings, but it provided no new funding

A brief history

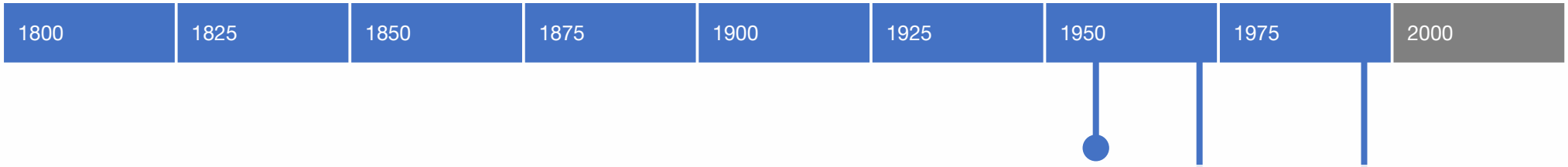


1946

FWCA amended to address the failures and inadequacies of the 1934 FWCA but amendments retreat from the earlier goal of developing a ”nation-wide” program

It continued to authorize “investigations” into the effects of pollution and civil works projects; mandated consultations and reports on the findings of investigations, and provided funding for this work, including transfer funds

A brief history



1958

FWCA is amended into the version of the Act that currently controls interagency consultations. The FWCA has been amended several times since 1958, but the consultation provisions haven't changed since 1958.

1969

NEPA enacted

1972

CWA enacted

1973

ESA enacted

1996

EFH enacted

History:

Main points

- The FWCA is one of the first federal environmental laws. It's the first effort to incorporate fish and wildlife conservation needs into water resource planning
- The FWCA was created largely in response to the disappearance of of fish and wildlife populations and fishing opportunities caused by water pollution, channel deepening, dam construction, navigation projects, and similar federal activities that encroached on federal lands
- The agencies that became NMFS and USFWS had been in place for more than 50 years when the FWCA was passed
- Before the FWCA was passed, these agencies and their State counterparts had established themselves as credible and reliable experts on fish and wildlife issues, including their ability to identify and resolve problems fish and wildlife faced
- **The FWCA was designed to make this expertise available to other federal agencies**

The Fish and Wildlife Coordination Act, as amended

Section	Title
661	Declaration of purpose, cooperation of agencies, surveys and investigations
662	Impounding, diverting, or controlling of waters
	a. Consultations between agencies
	b. Reports and recommendations; consideration
	c. Modification of projects; acquisition of lands
	d. Project costs
	e. Transfer of funds
	f. Estimation of wildlife benefits or losses
	g. Applicability to projects
	h. Exempt projects and activities
663	Impoundment or diversion of waters
664	Administration; rules or regulations; availability of lands to State agencies
665	Investigations as to effect of sewage, industrial wastes; reports
665a	Maintenance of adequate water levels in upper Mississippi River
666	Authorization of appropriations

FWCA Consultation Mandate

Except as hereafter stated in Subsection (h) of this section, **whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever**, including navigation and drainage, **by any department or agency of the United States**, or by any public or private agency under Federal permit or license, **such department or agency first shall consult with** the **United States Fish and Wildlife Service**, Department of the Interior, and **with the head of the agency exercising administration over the wildlife resources of the particular State** wherein the impoundment, diversion, or other control facility is to be constructed, **with a view to the conservation of wildlife resources by preventing loss of and damage to such resources** as well as providing for the development and improvement thereof in connection with such water-resource development.

FWCA, Subsection 2(a)

FWCA & NMFS

- You may note that the 1958 FWCA specifically refers to the USFWS, Department of the Interior, and State agencies, not NMFS
- When the 1958 FWCA was passed, the agency now known as NMFS or NOAA-Fisheries was the Bureau of Commercial Fisheries and was part of the U.S. Fish and Wildlife Service. When it was housed in the Department of the Interior, the Bureau of Commercial Fisheries undertook many of the functions identified in Sections 1 and 2 of the 1958 FWCA
- Reorganization Plan Number 4 of 1970 transferred “all functions vested by law in the Bureau of Commercial Fisheries of the Department of the Interior” and “all functions” administered through or primarily related to that Bureau to NMFS in the Department of Commerce
- As a result, NMFS has full authority to carry out FWCA functions for NOAA Trust Resources
- The rest of this tutorial recognizes that NMFS has full FWCA authority and functions

FWCA Mandate:

Main points

- Whenever a federal agency proposes to:
  - impound, divert, channel deepen, or otherwise control or modify waters of any stream or other body of water, or
  - permit or license any public or private agency to undertake such actions
- That agency is required to:
  - consult with NMFS, USFWS, and their State counterparts
  - provide NMFS, USFWS, and their State counterparts with timely notice of an action
  - provide NMFS, USFWS, and their State counterparts with an opportunity for continuous informal and formal involvement in all stages of planning for an action

FWCA Mandate:

Main points

- FWCA consultations are intended to:
  - prevent the loss of and damage to wildlife resources
  - provide for the development and improvement of those resources
- The Senate Report on the 1958 amendments to the FWCA made it clear that water resource development projects should be designed to
  - develop and improve fish and wildlife resources, where feasible
  - prevent damages to them
- So FWCA consultations primarily focus on
  - impact/effects analyses
  - avoiding, minimizing, rectifying, reducing or eliminating impacts over time or compensating for residual impacts
  - enhancement

FWCA: Agencies Are Required to Give Wildlife Equal Consideration

- The FWCA
  - Requires wildlife conservation to receive equal consideration and be coordinated with other water resource development programs
  - Establishes fish and wildlife conservation as a co-equal purpose or objective of federally funded or permitted water resource development projects or proposals

- **Always remember**: Action Agencies retain final decision-making authority

The FWCA Definition of “Wildlife”

- The FWCA only defines two words: "wildlife" and "wildlife resources"
- It defines these words to include:
  - birds, fishes, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent

Investigations of pollutants

- Section 665 of the FWCA authorizes the USFWS to:
  - investigate the effects of domestic sewage, mine, petroleum, and industrial wastes, erosion, silt, and other polluting substances on wildlife;
  - make reports to Congress concerning such investigations; and
  - recommend measure for alleviating the effects of these pollutants.
- Specific investigations cited in the FWCA include:
  - determination of water quality standards for maintenance of wildlife
  - identifying methods for abating and preventing pollution
  - collating and distributing data on the progress and results of such investigations for use by Federal, State, municipal, and private agencies, individuals, organizations, or enterprises

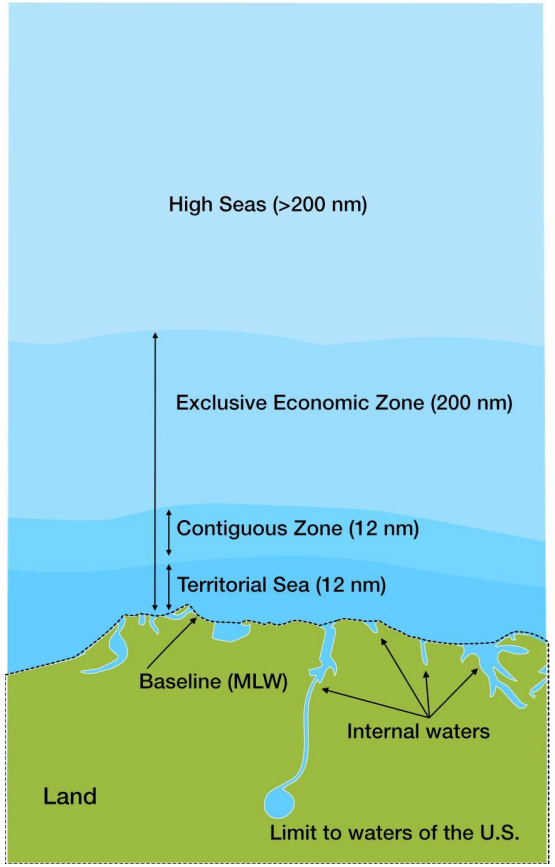
Activities Covered by the FWCA

- The following activities require FWCA consultation:
  - Construction and operation of dams, levees, and water diversion
  - Construction and operation of navigation features
  - Other actions dependent on or resulting in the diversion, control, or modification of a stream or other water body
  - Discharges of pollutants
  - Federal permits and licensing of activities that alter streams or other bodies of water (particularly pursuant to the CWA)

Activities Not Covered by the FWCA

- The following activities **do not** require FWCA consultation:
  - Tennessee Valley Authority projects
  - NRCS Small Watershed Program projects
  - Federally-constructed or managed impoundments that are smaller than 10 surface acres
  - Activities for or in connection with programs primarily for land management and use that are carried out by federal agencies on lands under their jurisdiction
  - Federal loan, grant, loan guarantees, and technical assistance that require a federal permit or license to modify water bodies

Geographic Scope of the FWCA



- The FWCA applies to
  - "any stream or other body of water" (with the exceptions noted in the previous slide)
  - any water resources development program or project in the U.S., its territories, and possessions
- The FWCA is applicable to activities that affect Waters of the U.S. as that term is defined by the USACE. Those waters include wetlands and other deepwater habitats so the FWCA encompasses the scope of activities include USACE permits issued pursuant to Section 404 (Clean Water Act) and Section 10 (Rivers & Harbors Act)
- The FWCA does not specify an offshore limit to the Act's applicability. Nevertheless, BOEM consults on the activities it undertakes and permits on the OCS so the geographic scope of the FWCA extends beyond State waters to at least the Territorial Sea

FWCA Reporting Mandate

In furtherance of such purposes, **the reports and recommendations of the Secretary of the Interior on the wildlife aspects of such projects** and any report of the head of the State agency exercising administration over the wildlife resources of the State, **based on surveys and investigations** conducted by the United States Fish and Wildlife Service and such State agency for the purpose of determining the possible damage to wildlife resources and for the purpose of determining means and measures that should be adopted to prevent the loss of or damage to such wildlife resources, as well as to provide concurrently for the development and improvement of such resources, **shall be made an integral part of any report prepared or submitted by any agency of the Federal Government responsible for engineering surveys and construction of such projects when such reports are presented to the Congress** or to any agency or person having the authority or the power, by administrative action or otherwise, (1) to authorize the construction of water-resource development projects or (2) to approve a report on the modification or supplementation of plans for previously authorized projects, to which this Act applies.

FWCA Subsection 2(b)

FWCA Reporting Mandate

“Recommendations of the Secretary of the Interior shall be as specific as is practicable with respect to features recommended for wildlife conservation and development, lands to be utilized or acquired for such purposes, the results expected, and shall **describe the damage to wildlife attributable to the project and the measures proposed for mitigating or compensating for these damages**. The reporting officers in project reports of the **Federal agencies shall give full consideration to the report and recommendations of the Secretary of the Interior** and to any report of the State agency on the wildlife aspects of such projects, and **the project plan shall include such justifiable means and measures for wildlife purposes as the reporting agency finds should be adopted to obtain maximum overall project benefits.”**

FWCA Subsection 2(b)

FWCA: Reporting

- Section 2(b) of the FWCA requires:
  - The reports and recommendations of the Secretary of the Interior and of its State counterpart to be made an integral part of any report an agency presents to Congress to
    - authorize the construction of water-resource projects
    - approve the modification or supplementation of previously-authorized projects
- The Secretary's reports should be based on surveys and investigations the Services conduct
- Those surveys are conducted for the purpose of determining possible damage and identifying measures to prevent those damages (and to develop and improve those resources)
- The Secretary's impact assessments ("damages to wildlife attributable to the project") and conservation and mitigation measures are required to be as specific as practicable

FWCA Reporting

- Section 2(b) of the FWCA
  - requires reporting officers in project reports to give full consideration to the report and recommendations of the Secretary and those of their State counterpart
- To satisfy this requirement, agencies such as the USACE and BOR have to do more than attach FWCA Reports to their planning documents
- They have to integrate the findings and recommendations presented in FWCA Reports into agency reports, including reports to Congress that request project authorization

WRDA Supplements the FWCA

- The Water Resources Development Act (WRDA), which authorizes the majority of USACE water resource projects, has been amended to include provisions that supplement and reinforce the FWCA's requirement for mitigation recommendations
- The amended WRDA defines "mitigation" to include restoration, establishment, enhancement, preservation, and land acquisition
- The amended WRDA recognizes two general kinds of mitigation:
  - Project-specific mitigation
  - Programmatic mitigation
- Regardless of the kind of mitigation, the Secretary of the Army is required to consult with appropriate federal and State agencies for both kinds of mitigation
- We'll revisit these provisions in Modules 4 and 7. However, these provisions should make two points clear:
  - Congress can expand or constrain the FWCA mandate through other statutes
  - because WRDAs authorize the majority of water resource projects in the U.S.,

FWCA: Transfer of Funds

In the case of construction by a Federal agency, that agency is authorized to transfer to the United States Fish and Wildlife Service, out of appropriations or other funds made available for investigations, engineering, or construction, such funds as may be necessary to conduct all or part of the investigations required to carry out the purposes of this section.

FWCA Section 2(e)

- Water resource development agencies are authorized to transfer funds to NOAA and USFWS for:
  - **Investigations**. These are the surveys and investigations discussed in Section 2(b) of the FWCA
  - Engineering or construction
  - Preparation of FWCA reports

FWCA: Legal Foundations

- Several important court cases reviewed the FWCA's mandate
  - ***Rank* v *Krug* (90 F. Supp. 773; S.D. California 1950)**

    The court concluded that citizens cannot force agencies to comply with the FWCA (the FWCA does not create a right of private action)
  - ***Zabel* v *Tabb* (439 F.2d 199; 5th Circuit 1970)** among others

    The court concluded that good-faith compliance with NEPA establishes FWCA compliance
  - ***Sun Industries Ltd*. v *Train* (394 F. Supp. 211; S.D. New York 1975; 532 F. 2d 280, 2nd Cir 1976)**

    Plaintiffs challenged issuance of a NPDES permit for a sewage treatment facility because EPA had not completed a FWCA consultation on the permit (EPA had tried to consult but FWS said it did not have the resources to consult). The court rejected FWS' claim that it could refuse to review the permit
  - ***National Wildlife Federation* v *Andrus* (440 F. Supp. 1245; D.D.C. 1977)**

    In contrast to *Zabel v Tabb*, the court in this case concluded the FWCA had a different purpose from NEPA: to inform Congress of the consequences of federal projects (as opposed to just informing action agency decision-makers). As a result, satisfying NEPA does not satisfy the consultation requirement of the FWCA

FWCA: Legal Foundations

- No regulations have been promulgated to implement the FWCA
  - The Services proposed regulations in 1979 (with draft EIS)
  - Proposed regulations were withdrawn in 1981 to comply with VP Bush's Regulatory Relief Program
- There are no contemporary court cases that address the FWCA
- As a result, the practices and procedures associated with the FWCA only exist in
  - the 1958 version of the FWCA
  - agency policy and guidance (Action Agency & the Services)
  - the memories and notes of those who have used it

FWCA & NEPA

- NEPA was originally proposed as an amendment to the FWCA so the two laws have similar provisions
  - NEPA requires action agencies to consult with and obtain comments from other federal agencies before preparing appropriate documents
  - it requires action agencies to append comments to NEPA documents that are circulated to the public and decision-makers
  - it requires action agencies to include appropriate mitigation
- This tutorial addresses the relationship between the FWCA and NEPA in greater detail in Module 4 (FWCA and Civil Works Projects) but the short summary is this: to achieve the purposes of the FWCA, it is essential to participate in every phase of the NEPA process on actions that may affect fish and wildlife resources

Why Use the FWCA?

- The FWCA gives NMFS, USFWS, and their State and Territorial counterparts the authority to address the conservation needs of all living marine resources under their respective jurisdictions
- It gives NMFS, USFWS, and their State and Territorial counterparts early access to project planning with an ability to influence alternatives that are developed
- It gives NMFS, USFWS, and their State and Territorial counterparts the opportunity to identify species early in their decline and prevent their ultimate listing as threatened or endangered
- It gives NMFS, USFWS, and their State and Territorial counterparts a platform and opportunity to advocate for enhancement measures that promote species' recovery
- FWCA Reports give NMFS, USFWS, and their State and Territorial counterparts an opportunity to communicate their views, concerns and recommendations on civil works projects directly to Congress

02. Trust Resources

Introduction

Module 1 established that the FWCA defines “wildlife" and "wildlife resources" to include:

- birds, fishes, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent

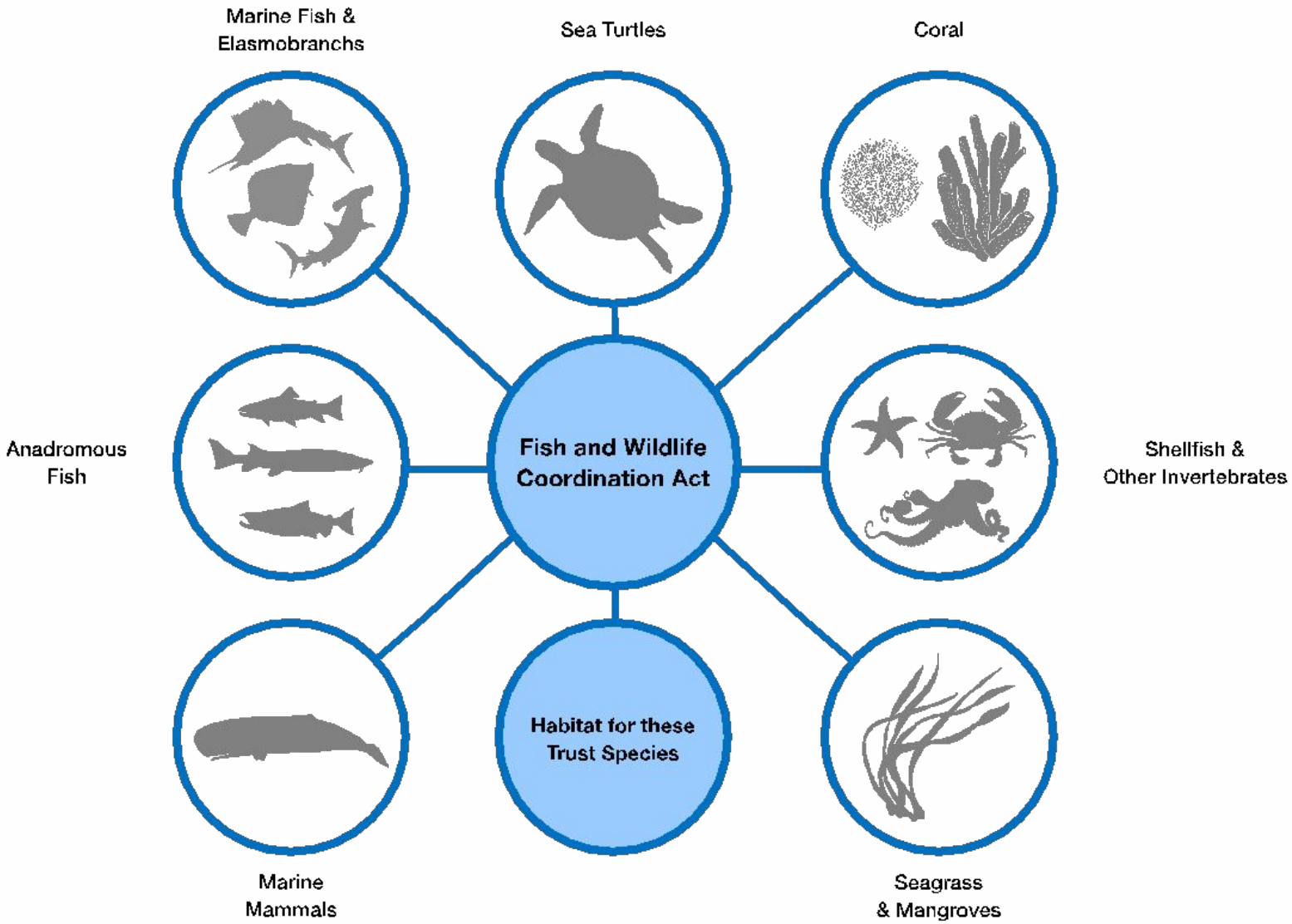
As the figure on the following slide illustrates,

- all of the species NMFS manages and all of the habitat for those species fall within the scope of the FWCA
- That includes endangered species, threatened species, species that are candidates for listing, species that have been de-listed; designated critical habitat; marine mammals; marine, coastal, and anadromous fish, regardless of whether they are “managed species”; and habitat for these species, regardless of whether it is “essential”

As a result, the FWCA allows NMFS to address habitat for listed species that has not been designated as critical, habitat for marine and coastal species regardless of whether the species is “managed” or the habitat is “essential”

NOAA Trust Resources and Scope of FWCA

The terms **“Wildlife” and “wildlife resources”** include all of the species NMFS manages and all of the habitat for those species as long as they fall within the geographic limits of the FWCA



03. Relationships

Introduction

As Module 1 describes, the **FWCA** makes the expertise of federal, State, and Territorial fish and wildlife agencies available to federal agencies that undertake, permit, or license activities that control or modify waters of any stream or other body of water **and** it requires those agencies to consult with the fish and wildlife agencies on these activities

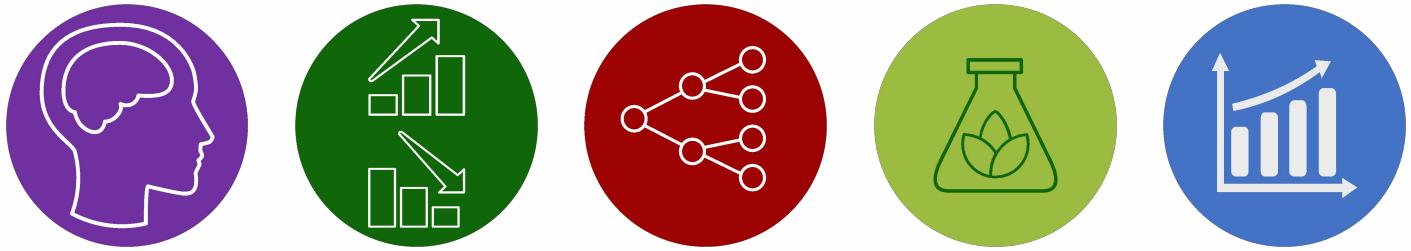
This module provides a brief of the various relationships involved in FWCA consultations:

1. relationships between NMFS, USFWS, and their State and Territorial counterparts
2. relationships between Action Agencies and NMFS during FWCA consultations
3. relationships between the FWCA and other NMFS authorities

The Fish & Wildlife Agencies

- The FWCA creates a statutory relationship between NMFS, USFWS, and State and Territorial fish and wildlife agencies and treats these groups as equal for the purposes of consultation. However, for species that are considered “resident” fish and wildlife, States have primacy
- The FWCA does not require these three groups to work together; however, **the history of FWCA consultations demonstrates that the conservation needs of the nation’s fish and wildlife resources are best served when these three groups work together and can reach common agreement on problems and solutions**
- The rest of this module refers to these groups collectively as “Fish & Wildlife Agencies”

Fish & Wildlife Agencies Roles



- During FWCA consultations, Fish & Wildlife Agencies personnel have 5 primary roles:
  - expertise on fish and wildlife resources; their ecology, distribution, and abundance; their habitat requirements; and the status and trends of the species and their habitats
  - the ability to design and execute field studies of fish and wildlife resources in areas affected by water resource development and other civil works projects
  - the ability to assess the effects of project alternatives on fish and wildlife resources
  - the ability to design and recommend measures that avoid, minimize, rectify, reduce, or compensate for the effects of project alternatives
  - ability to recommend measures that improve the status and trend of fish and

There are Important Differences Among Fish & Wildlife Agencies

- The jurisdiction of Fish & Wildlife Agencies overlap, but there are important differences
  - NMFS has jurisdiction primarily over living marine resources or species that spend all or most of their lives in salt or estuarine waters and species that were traditionally harvested for commercial purposes (for example, fur seals). It also has jurisdiction over anadromous fish species, which rear in salt water but typically migrate to freshwater to reproduce
  - USFWS has jurisdiction primarily over terrestrial and freshwater species and marine species that were traditionally hunted or harvested for sport or subsistence uses (for example, polar bears and walrus). It also has jurisdiction over catadromous fish species, which rear in freshwater but typically migrate to salt water to reproduce
  - NMFS and USFWS share jurisdiction over species such as sea turtles
  - State and Territorial fish and wildlife agencies have jurisdiction over fish and wildlife that reside within the boundaries of their states and territories, which includes resident fish and wildlife as well as species that occur within state and territorial boundaries during their migration

Skillsets Fish & Wildlife Agencies Require

- When working on water resource projects, Fish & Wildlife Agency personnel need in-depth knowledge of the following:
  - the planning processes, practices, terminology, interpretations, and environmental standards of the federal action agency
  - NEPA process and practices
  - best practices for assessing the impacts of water resource project, including a solid grasp of the effects of prior projects
  - best practices for planning and implementing effective mitigation
  - best practices for effectively monitoring the effects of water resource projects and reporting the results of those monitoring programs
  - the strengths of different impact study designs (BACI, B-A, After only, etc.) and the inferences those different designs allow
  - design, execution, and management of field investigations
  - analysis, presentation, and communication of study results

Action Agencies

- The FWCA creates opportunities for the Fish & Wildlife Agencies to work with and advise the following agencies (“Action Agencies”)
  - U.S. Army Corps of Engineers
    - Civil works
    - Regulatory
  - Bureau of Reclamation (BOR)
  - Federal Energy Regulatory Commission (FERC)
  - Bureau of Ocean Energy Management (BOEM)
  - Federal Highway Administration (FHWA)
  - U.S. Coast Guard (Section 9 of the Rivers and Harbors Act)
  - Nuclear Regulatory Commission (NRC)

Related Statutes

- FWCA consultations are usually associated with the following statutes:
  - Water Resources Development Act (33 U.S.C. 2201 *et seq*.)
  - NEPA (42 U.S.C. 4321 *et seq*.)
  - Clean Water Act (33 U.S.C. 1251 *et seq*., particularly 1341)
  - Federal Power Act (16 U.S.C. 791 *et seq*.)
  - Endangered Species Act (16 U.S.C. 1531 *et seq*.)
  - MSA Essential Fish Habitat (16 U.S.C. 1802; 50 CFR 660.75)
  - Rivers and Harbors Act of 1899 (33 U.S.C. 401 *et seq*.)
  - Coastal Zone Management Act (16 U.S.C. 1451 et seq.)
  - Coastal Barrier Resources Act (16 U.S.C. 3501 *et seq*.)
  - Estuary Protection Act (16 U.S.C. 1221 *et seq*.)

Federal Power Act & FWCA

Fish and wildlife protection, mitigation and enhancement; consideration of recommendations; findings

…That in order to adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat) affected by the development, operation, and management of the project, each license issued under this subchapter shall include conditions for such protection, mitigation, and enhancement. Subject to paragraph (2), such conditions shall be based on recommendations received pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) from the National Marine Fisheries Service, the United States Fish and Wildlife Service, and State fish and wildlife agencies.

16 U.S.C. §803(j)(a)

- The Federal Power Act requires FERC licenses to include conditions to protect, mitigate, and enhance fish and wildlife
- The Federal Power Act specifically requires FERC to consider and base its conditions on the recommendations of Fish & Wildlife Agencies that are submitted pursuant to the FWCA

Fish & Wildlife Agencies Roles During Water Resource Planning

- During water resource development planning, Fish & Wildlife Agency personnel represent their agencies
  - as cooperating agencies during water resource planning
  - as sources of information on and advocates for fish and wildlife resources, including
  - assessing the impacts of water resource projects and other activities on fish and wildlife resources and
  - measures to conserve and mitigate impacts on fish and wildlife resources
- Fish & Wildlife Agency personnel are also expected to
  - design and conduct field investigations
  - analyze, present, and communicate the results of those investigations and their analyses of other data that might be available and applicable

04. FWCA and Civil Works Projects

Introduction

As Module 1 describes, whenever a federal department or agency impounds, diverts, deepens the channel, or otherwise controls or modifies for any purpose whatever or authorizes a non-federal entity to do so, the FWCA *requires* that agency to consult with the USFWS, NMFS, and with the head of the relevant State agency.

The FWCA opens the door to Action Agency planning, permitting, and decision-making and gives you and your counterparts in other Fish & Wildlife Agencies opportunities to provide technical assistance, comments, and recommendations that address the conservation needs of fish and wildlife species and their habitat.

This module starts with a summary if the NEPA process because the planning and decision-making processes of almost every federal agency uses NEPA as their foundation. This module then summarizes the planning processes that USACE, BOEM, and FERC use for water resource projects and the role of **FWCA** consultations in those processes (**Note**: BOR procedures focus on operating existing facilities so they are not described in this module). This module focuses on the planning process the USACE for its water resource project to illustrate how FWCA consultations fit into these planning processes. Subsequent modules will describe how to harness the power of the FWCA during those consultations.

Reminder: extensive notes are attached to many of the slides in this Module.

Contents of this module

- This module addresses the following:
  - NEPA as the foundation for agency planning
  - Water Resource Project Planning
  - Water Resource Development Act
  - Water Resource Planning & NEPA
  - FERC’s Planning Processes
  - BOEM’s Planning Process

NEPA Policy

(a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

NEPA, Section 101(a)

- Most discussions of NEPA focus on the procedures for producing environmental documents. However, I believe it's important to start a discussion of the "National Environmental Policy Act" with an understanding of NEPA's actual statement of policy

- Although Courts concluded that this policy statement leaves agencies discretion when they conduct NEPA compliance for individual actions, it remains an important guiding principle

NEPA Policy

(b) In order to carry out the policy set forth in this chapter, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.
7. The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and

NEPA Procedure

(2) all agencies of the Federal Government shall—

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment…

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

i. the environmental impact of the proposed action,

ii. any adverse environmental effects which cannot be avoided should the proposal be implemented,

iii. alternatives to the proposed action,

iv. the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

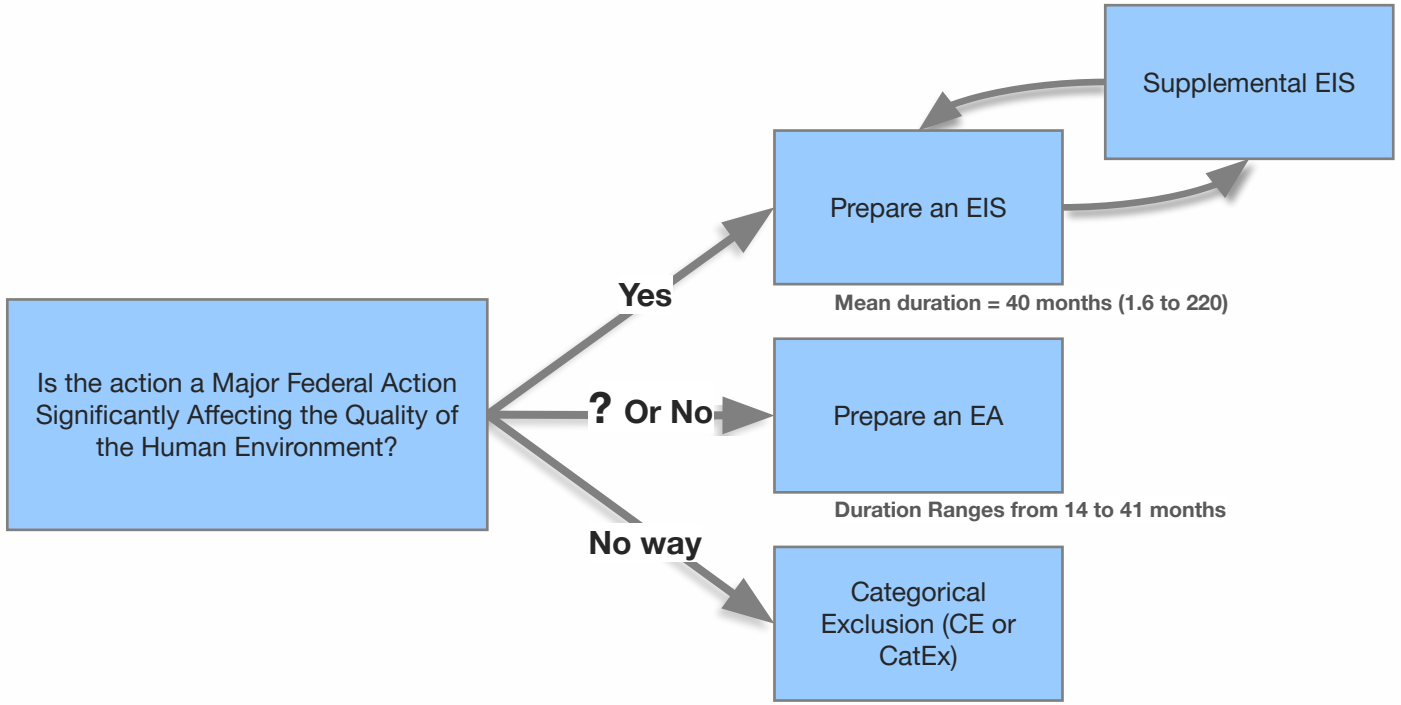
v. any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved….

NEPA

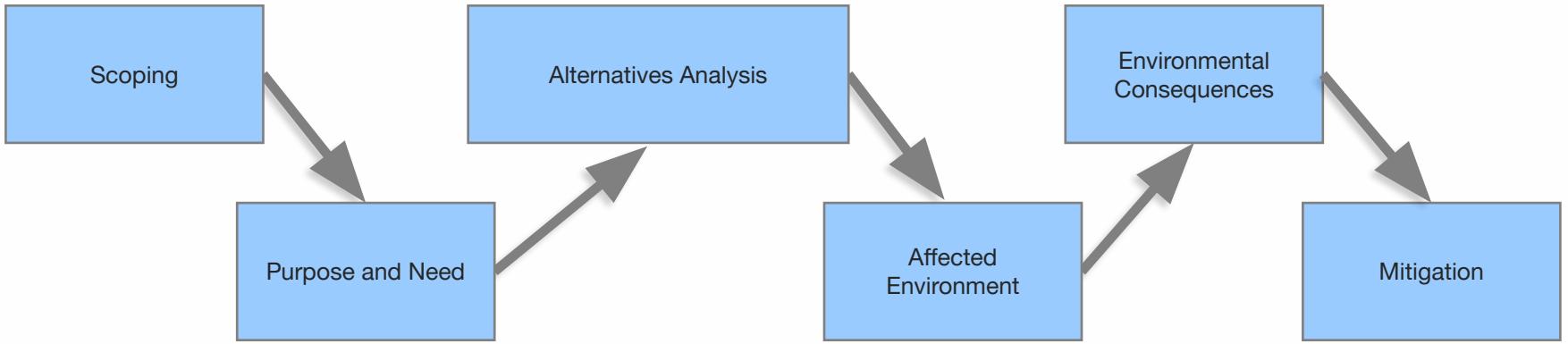
- Unless specifically exempted by statute or rule, NEPA applies to every federal agency discretionary action, including approving, financing, assisting, or conducting plans, projects, or programs, whether regional or site-specific
- Most action agencies either use NEPA to satisfy their environmental requirements or they integrate their environmental compliance procedures and NEPA procedures
- One key purpose of NEPA is to build a robust administrative record to support an agency's decision on an action

NEPA Procedure



- How an agency complies with the procedural requirements of NEPA will depend, in part, on whether the action the agency is considering is a “major federal action” “significantly affecting the quality of the quality of the human environment.”
- As this figure shows, if an agency answer “yes” to this question, they will generally prepare an EIS. If the answer is “no,” they will generally prepare an EA. In the past, some agencies have prepared EAs to determine if they need to prepare an EIS
- Categorical Exclusions apply to actions that agencies have previously concluded are either not major or do not have significant effects on the human environment

NEPA Procedure



- The process for developing EISs generally follows the steps illustrated in the figure above
- One of the most effective ways of using the FWCA (and other resource authorities) to address the conservation needs of fish and wildlife resources is to participate in as much of the NEPA process as time and resources allow
- Participating in the Scoping, identification of Purpose and Need, and Alternatives Analyses of the NEPA process for a project can prevent you and your colleagues in other Fish & Wildlife Agencies from encountering conflicts when an agency permits or authorizes a project
- Folding unmet conservation needs in the Purpose and Need of projects (from species

The Primary Federal Agencies

- The primary federal agencies that manage water resources in the U.S. or authorize activities that affect those resources are:
  - USACE
  - Bureau of Reclamation (BOR)
  - Federal Energy Regulatory Commission (FERC)
  - Bureau of Ocean Energy Management (BOEM)
- These agencies use different approaches for project planning but there are similarities.
- This module uses the USACE planning process to illustrate the general pattern, then separately describes the processes FERC and BOEM use because they differ substantially from the general pattern

USACE & WRDA

- Until 1974, most USACE civil works projects were authorized under various River and Harbor Acts and Flood Control Acts
- In 1974, Congress passed the first Water Resource Development Act, which authorized USACE flood control and flood damage reduction, navigation, and other projects across the U.S.
- Since 1974, WRDAs have been passed in even-numbered years (although they are not necessarily passed in every even-numbered year)
- In addition to authorizing USACE projects, Congress uses WRDAs to enact policies that affect water resource planning and projects. In some cases, Congress has used WRDAs to exempt projects from environmental laws
- If you plan on consulting on USACE water resource projects, you need to pay attention to WRDAs when they are proposed and the information the USACE makes available through its Planning Community Toolbox

USACE & WRDA

- The following examples illustrate the importance of WRDAs
  - Section 204 of the 1992 WRDA **authorizes projects to protect, restore, and create aquatic and ecologically related habitats**, including wetlands, in connection with dredging an authorized Federal navigation project
  - Section 206 of the 1996 WRDA **authorizes aquatic ecosystem restoration projects that will improve the quality of the environment**, are in the public interest, and are cost-effective
  - The 2007 WRDA established the following objectives for USACE water resource projects:
    - seek to **maximize sustainable** economic development
    - seek to **avoid unwise use of floodplains** and flood-prone areas and minimizing adverse impacts and vulnerabilities and
    - **protect and restore the functions of natural systems and mitigating any unavoidable damage to natural systems**

WRDA & Mitigation

- As described in Module 1, WRDA has been amended to include **Fish and Wildlife Mitigation** provisions
- These provisions define “mitigation” to include restoration, establishment, enhancement, preservation, and land acquisition
- These provisions recognize two general kinds of mitigation:
  - Project-specific mitigation
  - Programmatic mitigation
- WRDA requires the USACE to include a specific plan for mitigating damages to “ecological resources,” which includes damages to terrestrial and aquatic resources and fish and wildlife, in every request for project authorization the USACE submits to Congress (unless the USACE concludes that the project will have negligible adverse impacts on those resources)

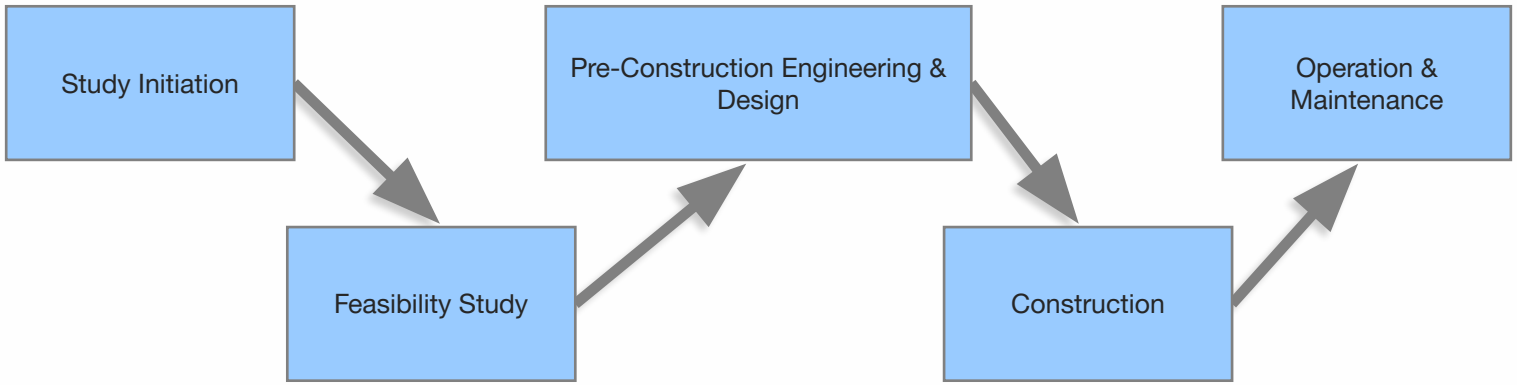
WRDA and Project-Specific Mitigation

- For water resources projects authorized to be constructed before, on, or after November 17, 1986, for which construction has not commenced the Secretary of the Army can choose to mitigate
  - before construction of a project commences, or
  - concurrent with the project
- Specific mitigation projects are required to include
  - plans for monitoring the implementation and success of each mitigation measure
  - criteria for measuring the success of mitigation measures; that is, their replacement of lost habitat functions and values
  - monitoring that is required to continue until ecological success criteria have been met
- These provisions require the USACE to consult with agencies such as NMFS, the USFWS, and their State and Territorial counterparts on
  - the ecological success of mitigation
  - The likelihood that a mitigation proposal will be ecologically successful

WRDA and Programmatic Mitigation

- WRDA also authorizes the USACE to develop programmatic mitigation plans to address potential impacts resulting from existing and future federal water resource projects. The USACE is directed to:
  - to develop these plans on a regional, ecosystem, watershed, or statewide scale
  - include specific goals for aquatic resource and fish and wildlife habitat restoration, establishment, enhancement, or preservation
  - identify priority areas for aquatic resource and fish and wildlife habitat protection or restoration
  - include measures to protect or restore habitat connectivity
  - encompass multiple environmental resources within a defined geographical area or focus on a specific resource, such as aquatic resources or wildlife habitat and
  - address impacts from all projects in a defined geographical area or focus on a specific type of project

USACE Water Resource Project Delivery Process



- USACE water resource projects can be authorized using a **continuing authorities**, **specific authorization**, or **other programmatic authorities**
- The USACE can use the Continuing Authorities Program to provide technical assistance or complete some small projects without Congressional authorization (see next slide for a summary of the CAP program)
- Larger, more complicated projects or projects that exceed CAP limits will usually typically require 2 separate authorizations from Congress
  - authorization to **study** the feasibility of a project and
  - authorization to **construct** flood risk reduction and ecosystem restoration

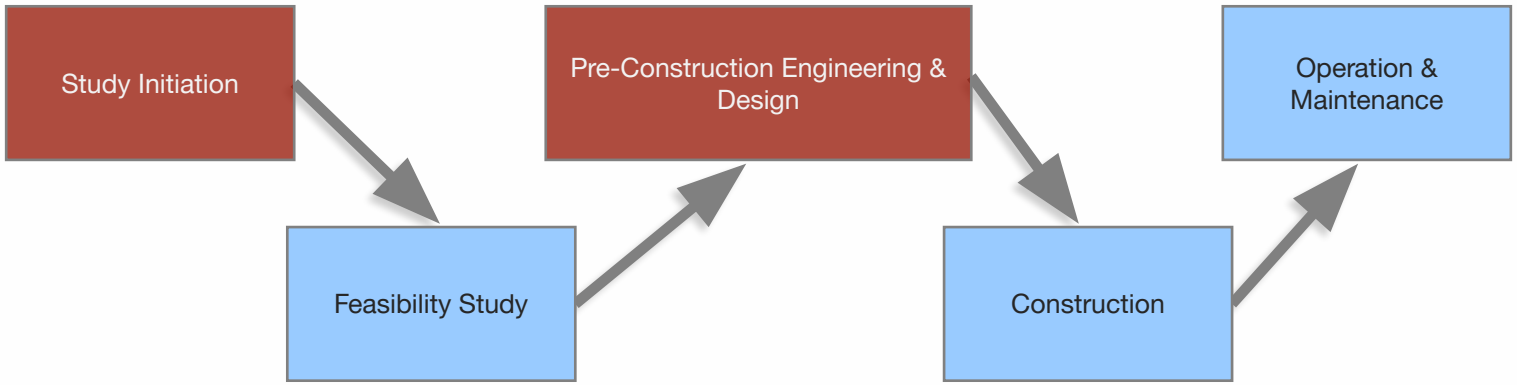
USACE Continuing Authorities Program

- The USACE's CAP allows the USACE to plan, design, and implement particular water resource projects without additional, project-specific authorization from Congress.
- Projects implemented under CAP have limited size, cost, scope and complexity.
- They are developed with a two-phase process: a **feasibility phase** and an **implementation phase**. Final designs, permitting, and any other necessary activities are completed during the implementation phase

Authority	Section 14, Flood Control Act of 1946	Section 103, River and Harbor Act of 1962	Section 107, River and Harbor Act of 1960	Section 111, River and Harbor Act of 1968	Section 204, WRDA 1992
Project purpose	Streambank and shoreline erosion protection of public works and non-profit public services	Beach erosion and hurricane and storm damage reduction	Navigation improvements	Shore damage prevention or mitigation caused by Federal navigation projects	Beneficial uses of dredged material

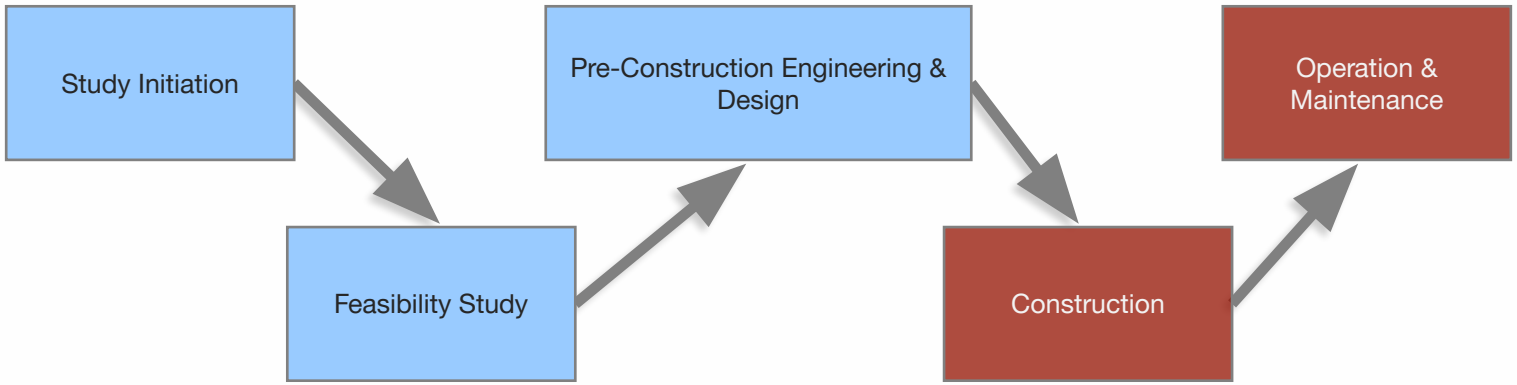
Authority	Section 205, Flood Control Act of 1948	Section 206, WRDA 1996	Section 208, Flood Control Act of 1954	Section 1135, WRDA 1986
Project purpose	Flood control	Aquatic ecosystem restoration	Removal of obstructions, clearing channels for flood control	Project modifications to improve the environment

USACE Water Resource Project Delivery Process



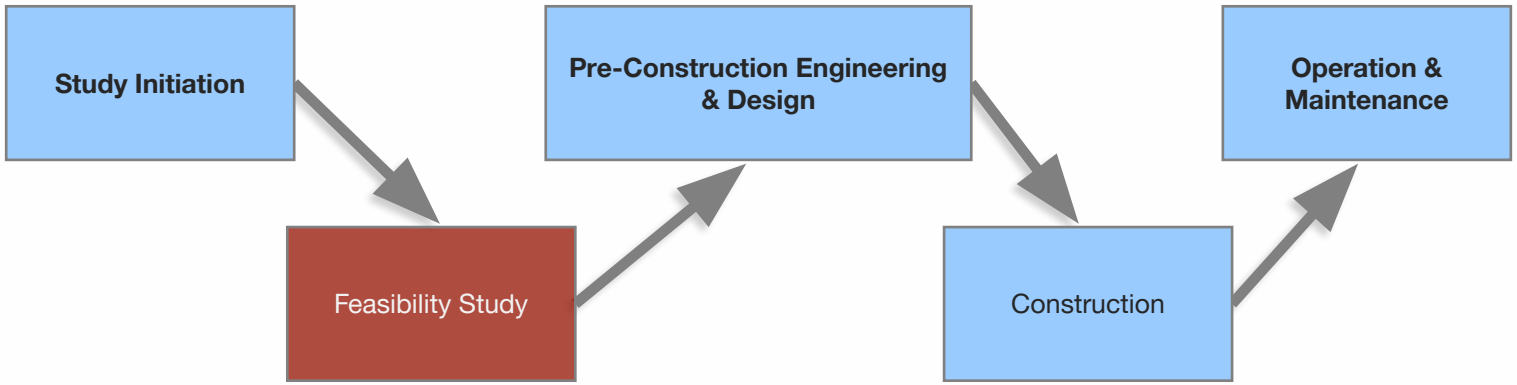
- The **Study Initiation phase** of the planning process typically begins with a local community that identifies a water resource problem. During this phase, the USACE asks if the problem falls within its mission areas (navigation, flood risk management, aquatic ecosystem restoration, etc.)
- The **Pre-Construction Engineering and Design (PED) phase** begins after a Division Engineer transmits the final Feasibility Report on a project and funds have been appropriated. During this phase, the USACE and its non-federal partner(s) complete detailed engineering & technical studies and design needed to begin construction of the project as recommended in the decision document
- In some cases, Resource Agency engineers may be involved in this phase of project planning; for example, with designs of fishways, fish passage features, or the design

USACE Water Resource Project Delivery Process



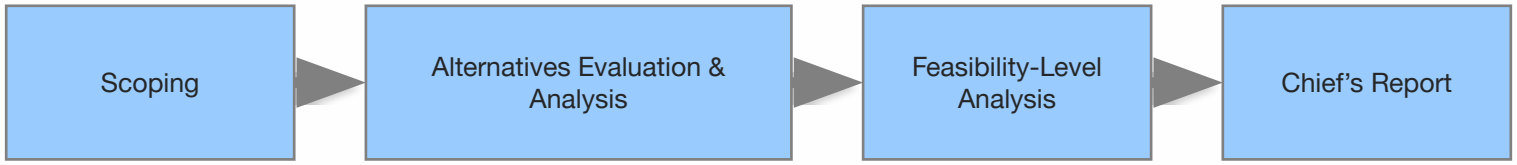
- Before the USACE can construct a project, it needs authorization and funding from Congress. That authorization can be project-specific, programmatic, or general
- Requirements and responsibilities for project operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) requirements are initially identified during the Feasibility Study phase

The Feasibility Study



- Of all of the phases we've discussed so far, FWCA consultations will focus on the Feasibility Study phase of USACE project planning
- ESA and EFH consultations between the USACE and Fish & Wildlife Agencies also occur during this phase of the USACE's water resource delivery process
- Feasibility Studies produce **Feasibility Reports** that describe the
  - economic, environmental, and social benefits and detriments of a recommended plan and alternative plans
  - the engineering features (including hydrologic and geologic information)
  - the public acceptability and

The Feasibility Study



- The Feasibility Study phase of USACE project planning consists of the 4 steps illustrated above. NEPA compliance procedures are integrated into each of these steps
- The Feasibility Reports that transmit the USACE's recommendations on the construction or operation of a project are **required** to include any formal FWCA Reports that NMFS, USFWS, and their State and Territorial counterparts submit (called "2(b)" reports after the relevant section of the FWCA)
- Because of its importance to FWCA consultations, the next few slides discuss the Feasibility Phase of the USACE's planning process in greater detail

The Feasibility Study

- Individual WRDAs will tend to authorize feasibility studies for suites of flood risk management, navigation, ecosystem restoration, and other projects across the country
- For example, this is an extract of the 2016 WRDA which displays 10 of the 29 feasibility studies that WRDA authorized for water resource development projects. Note how

SEC. 1201. AUTHORIZATION OF PROPOSED FEASIBILITY STUDIES.

The Secretary is authorized to conduct a feasibility study for the following projects for water resources development and conservation and other purposes, as identified in the reports titled "Report to Congress on Future Water Resources Development" submitted to Congress on March 17, 2017, and February 5, 2018, respectively, pursuant to section 7001 of the Water Resources Reform and Development Act of 2014 (33 U.S.C. 2282d) or otherwise reviewed by Congress:

(1) CAVE BUTTES DAM, ARIZONA.—Project for flood risk management, Phoenix, Arizona.

(2) SAN DIEGO RIVER, CALIFORNIA.—Project for flood risk management, navigation, and ecosystem restoration, San Diego, California.

(3) J. BENNETT JOHNSTON WATERWAY, LOUISIANA.—Project for navigation, J. Bennett Johnston Waterway, Louisiana.

(4) NORTHSHORE, LOUISIANA.—Project for flood risk management, St. Tammany Parish, Louisiana.

(5) OUACHITA-BLACK RIVERS, LOUISIANA.—Project for navigation, Little River, Louisiana.

(6) CHAUTAUQUA LAKE, NEW YORK.—Project for ecosystem restoration and flood risk management, Chautauqua, New York.

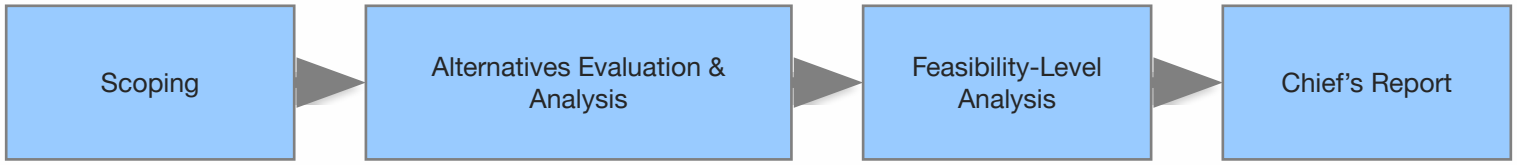
(7) TRINITY RIVER AND TRIBUTARIES, TEXAS.—Project for navigation, Liberty, Texas.

(8) WEST CELL LEVEE, TEXAS.—Project for flood risk management, Irving, Texas.

(9) COASTAL VIRGINIA, VIRGINIA.—Project for flood risk management, ecosystem restoration, and navigation, Coastal Virginia.

(10) TANGIER ISLAND, VIRGINIA.—Project for flood risk management and ecosystem restoration, Tangier Island, Virginia.

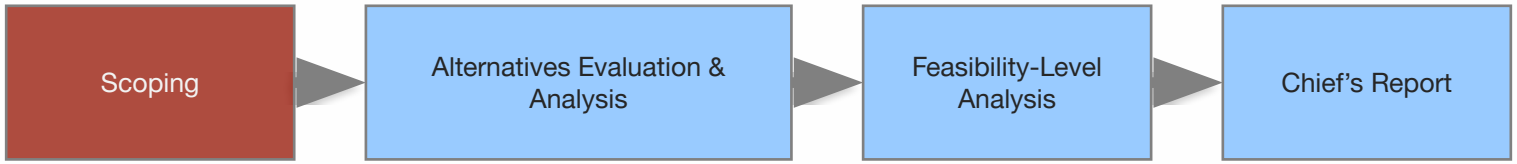
The Feasibility Study



- Since February 2012, USACE Feasibility Studies have been guided by what the USACE calls the "3 x 3 x 3 rule"
  - this rule states that feasibility reports will be produced in no more than 3 years; with a cost not greater than $3 million; and involve all 3 levels of Corps review – district, division and headquarters – throughout the study process
  - Some complex studies may require additional time or funds

The Feasibility Study

Scoping

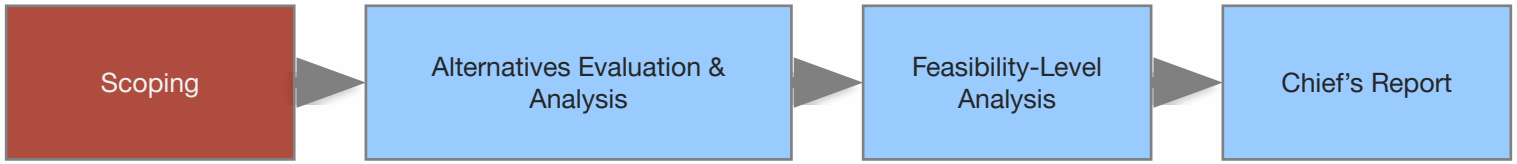


Duration: 3 – 6 months

- The first step of the Feasibility Phase is "Scoping," which has the same meaning as it does with NEPA
  - it begins with a NOI published in the Federal Register
  - the USACE will invite Cooperating Agencies to participate in the NEPA process
  - the USACE will initiate FWCA coordination and ESA & EFH consultations. The FWCA coordination process will include meetings to negotiate the scope and cost of FWCA Reports on a project and transmittal of Planning Aid Letters the Resources Agencies have agreed to provide
- During Scoping, the USACE will engage in informal ESA consultation, exchanges of lists of T&E species, initiate early EFH consultation, and seek technical assistance

The Feasibility Study

Scoping



Duration: 3 – 6 months

- During the Scoping step, the Fish & Wildlife Agencies will be asked to
  - identify sources of data and other relevant information
  - raise concerns about the significance of fish and wildlife resources and anticipated impacts, and
  - determine the fish and wildlife resources that should be evaluated in a study
  - identify fish and wildlife opportunities and planning objectives
  - identify ways to avoid and minimize impacts to fish and wildlife resources
- NMFS and USFWS will address most of these issues in Planning Aid Letters (for

The Feasibility Study

Alternatives Evaluation

Duration: 6 – 13 months

- During this step of Feasibility Studies, the USACE will
  - describe the affected environment/baseline of the project area
  - describe the impacts of project alternatives
  - identify mitigation measures for project alternatives
  - conduct ecological modeling for ecosystem restoration, mitigation, economics, etc.
  - prepare 404(b)(1) analyses for CWA compliance (as applicable)
  - draft monitoring and adaptive management plans for the project and mitigation proposed for the project

The Feasibility Study

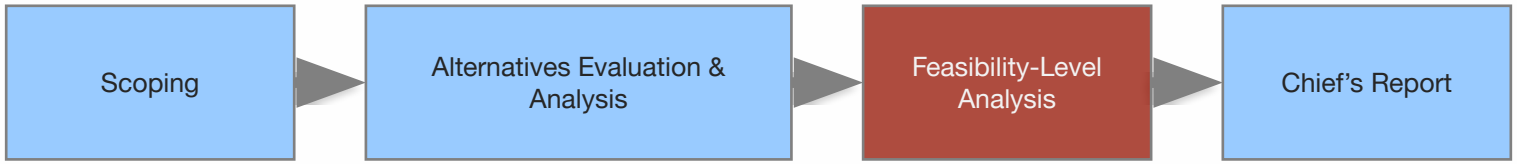
Alternatives Evaluation

Duration: 6 – 13 months

- During this step of Feasibility Studies, the USACE also
  - receives the Fish & Wildlife Agencies' draft FWCA Report (if one has been prepared)
  - prepares 404(b)(1) analysis (if applicable)
  - drafts monitoring and adaptive management plans
  - prepares draft ESA BA and EFH determinations

The Feasibility Study

Feasibility Analysis

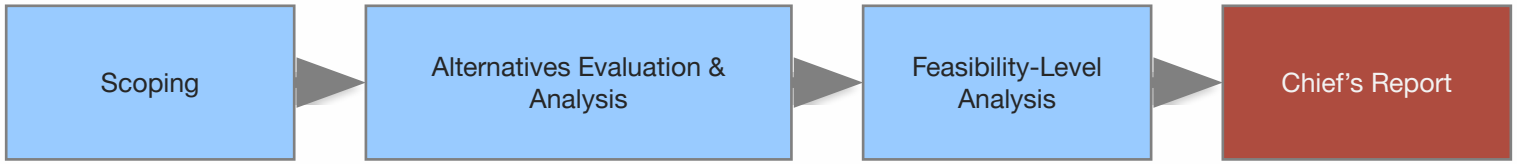


Duration: 6 – 13 months

- During this step of Feasibility Studies, the USACE will
  - release its Draft Integrated Report with Draft EA/FONSI or Draft EIS
  - hold public meetings on the project
  - identify relevant comments (public/agency/tribes) and develop response strategy
  - certify its mitigation model
  - prepare and submit BAs required by the ESA
  - initiate informal ESA consultation (if one is conducted)

The Feasibility Study

Chief's Report



Duration: 3 – 4 months

- The Feasibility Phase concludes when the Chief of Engineers submits his or her report to the Assistant Secretary of Army for Civil Works (ASA-CW), the White House Office of Management & Budget, and the relevant committees of the U.S. Congress
- FWCA Reports accompany the Chief of Engineer's submittal
- During this stage of a Feasibility Study, the USACE will:
  - Prepare NOIs for EIS
  - Release report to Federal and State Agency reviews
  - Complete draft ROD on the project

Feasibility Phase Milestones

Stage	Duration (in months)	USACE Milestones	FWCA Milestones	ESA Milestones	EFH Milestones
Scoping	3 – 6	• NOI • Alternatives Identification	• Initiate FWCA coordination • Negotiate FWCA report scope & cost	• Exchange lists of species and CH	• Initiate early EFH consultation • Seek technical assistance
Alternatives Evaluation & Analysis	6 – 13	• Tentatively Selected Plan (TSP) • Draft Feasibility Report released	• Planning Aid Letters • Draft FWCA Report (if any)	• USACE prepares BA • Informal consultation (NMFS/FWS respond to BA)	• USACE develops EFH assessment • USACE submits EFH assessment to NMFS
Feasibility-Level Analysis	6 – 13	• USACE decision on TSP • Civil Works Review Board reviews TSP • Final Feasibility Report transmitted	• Final FWCA Report (if any)	• Formal consultation (as warranted) • Draft and Final Biological Opinions	• NMFS develops and provides EFH recommendations • USACE responds to EFH recommendations
	3 – 4	• Ends with submittal of Chief of Engineers'	• Final FWCA Report attached and conveyed		

USACE Project Management

- The USACE's project delivery process (or project delivery business process) is organized around three fundamental principles:
  - Each project has a single **Project Delivery Team** and one **Project Manager**
  - All projects are managed under a **Project Management Plan**
  - **Project Delivery Teams** are responsible for project success. PDTs are drawn from USACE district(s), representatives of other federal and state agencies, stakeholders, other specialists, consultants, contractors, etc.
- Project Delivery Teams help the USACE identify
  - feasible alternatives,
  - assessment methodologies and help conduct impact assessments, and
  - develop, and evaluate mitigation alternatives
- This level of coordination presupposes that disagreements and disputes are resolved cooperatively during USACE project delivery processes

FERC Licensing Processes

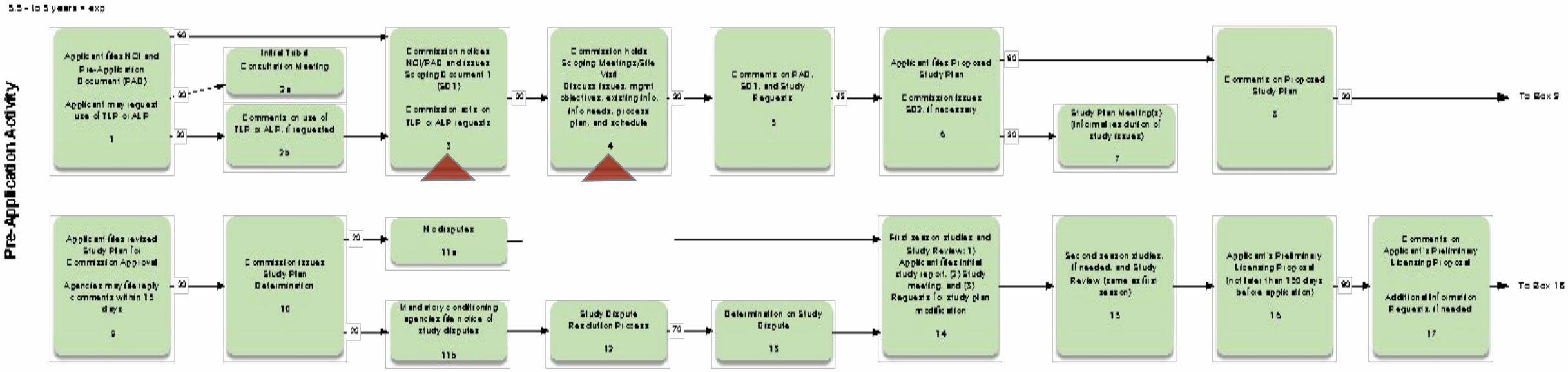
- FERC regulates the interstate transmission and sale of electricity, natural gas, and oil; siting of natural gas pipelines and storage facilities; operation of LNG terminals; hydropower, marine and hydrokinetic projects, and pumped storage projects, among other responsibilities
- However, this process summary focuses on FERC's hydropower licensing procedures because hydropower projects have the clearest relationship with FWCA consultations. Specifically, the Federal Power Act:
  - requires FERC licenses to include conditions to protect, mitigate, and enhance fish and wildlife and
  - requires FERC to consider and base its conditions on the recommendations of Fish & Wildlife Agencies that are submitted pursuant to the FWCA

FERC Licensing Processes

- FERC has three basic procedures for hydropower licensing:
  - Integrated (ILP). Since 2005, this has been FERC's default process for original, new, and subsequent licensing
  - Traditional (TLP)
  - Alternative (ALP)
- The ILP is primarily appropriate for projects that require close coordination and cooperation with stakeholders and FERC oversight during the pre-filing stage.
- The TLP may be appropriate for projects faced with fewer issues and that do not require FERC oversight during pre-filing
- The ALP may be appropriate for cooperative projects that only need limited FERC oversight
- Before potential applicants submit applications for original, new, and subsequent licensing, they must first consult with relevant Federal, State, and Interstate resource agencies, including NMFS, USFWS, among others

FERC Integrated Licensing Process

Pre-Application Activity

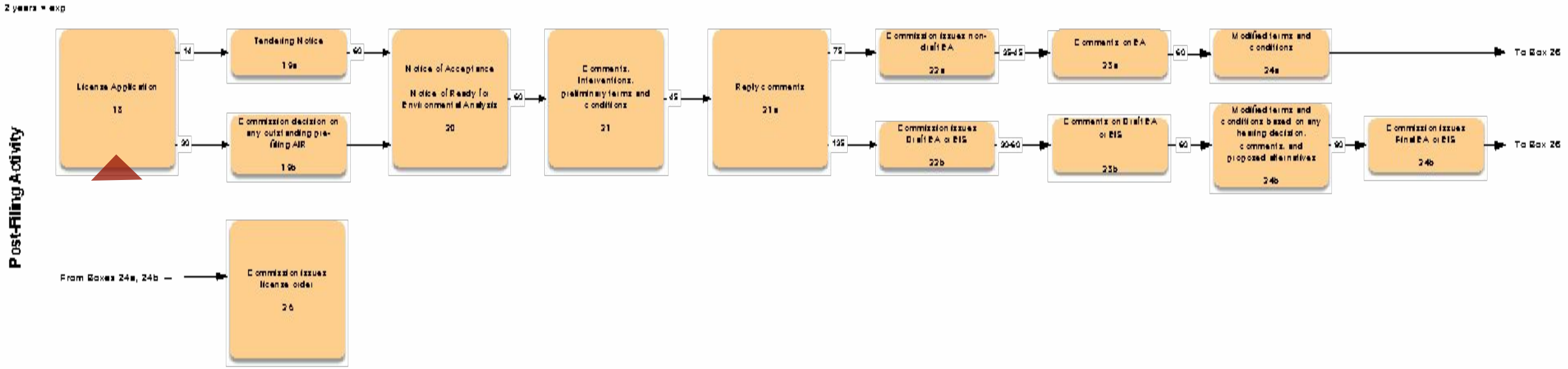


Numbers in white boxes are days

▲ Steps that provide opportunities for FWCA consultation

FERC Integrated Licensing Process

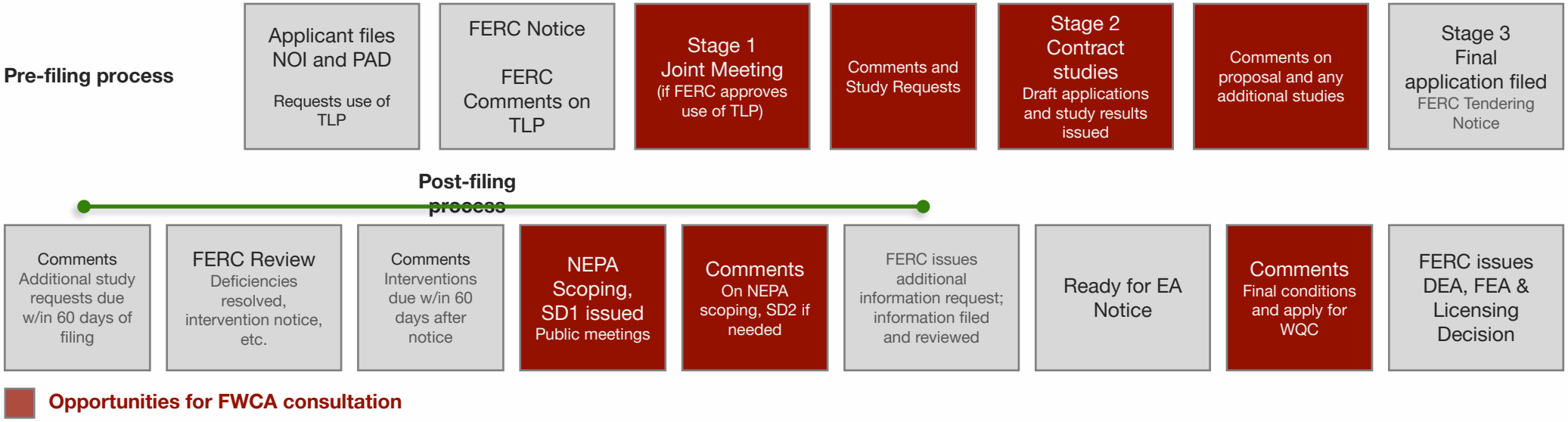
Post-Filing Activity



Numbers in white boxes are days

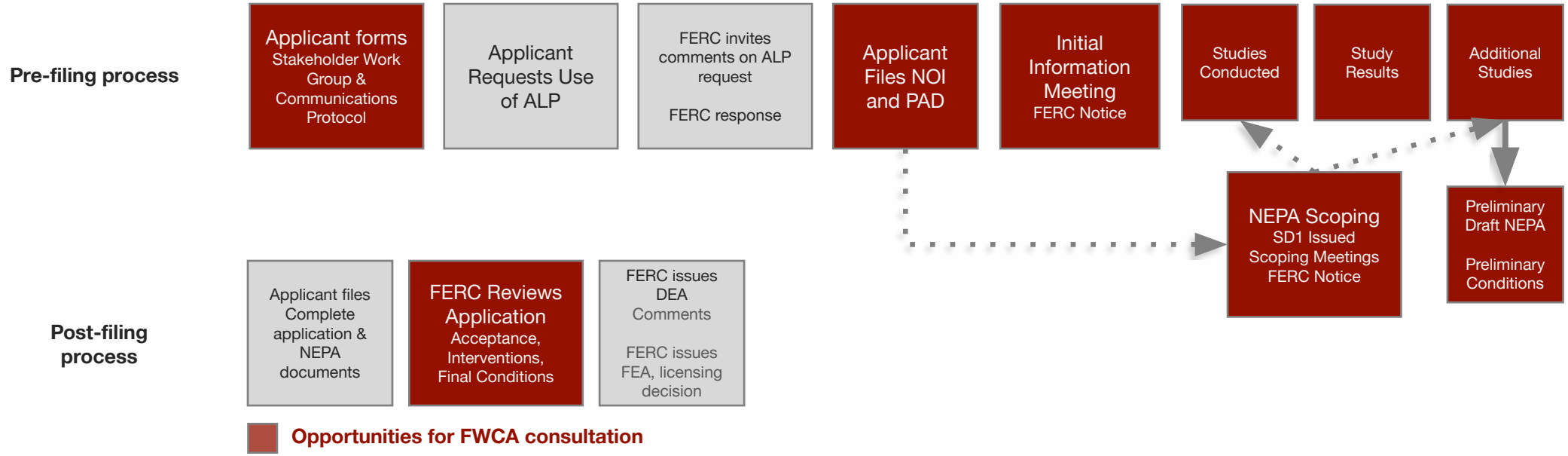
▲ Steps that provide opportunities for FWCA consultation

FERC's Traditional Licensing Processes



- This figure illustrates FERC's Traditional Licensing Process or TLP
- Applicants who want to use the TLP need FERC approval (see Boxes 1, 2b, and 3 of the flow chart on Slide 80) and must provide additional information to accompany their request
- If FERC does not approve the use of TLP, Applicants must use the ILP (see Slide 80)

FERC's Alternative Licensing Processes



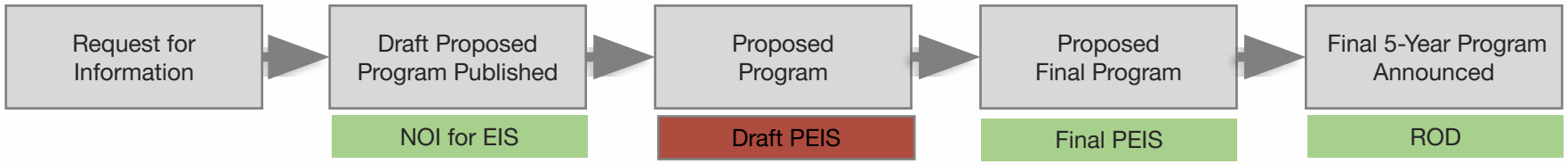
- Applicants who want to use the ALP need FERC approval (see Boxes 1, 2b, and 3 of the flow chart on Slide 80) and must provide additional information to accompany their request

BOEM Processes for Offshore

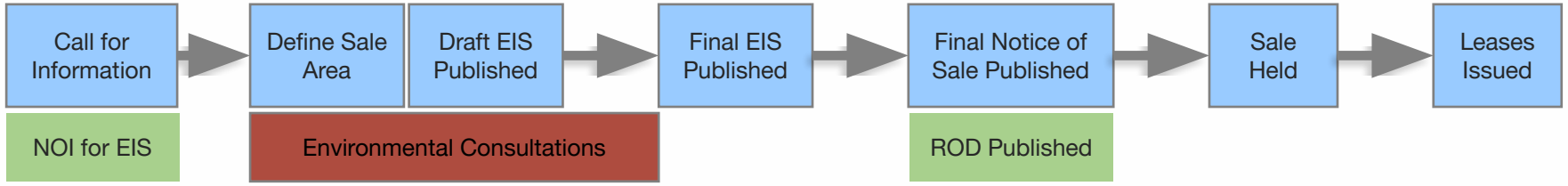
Oil and Gas Leasing

Pre-Lease Processes

Pre-Lease
National 5-Year Program



Pre-Lease
Planning for Specific Lease Sale



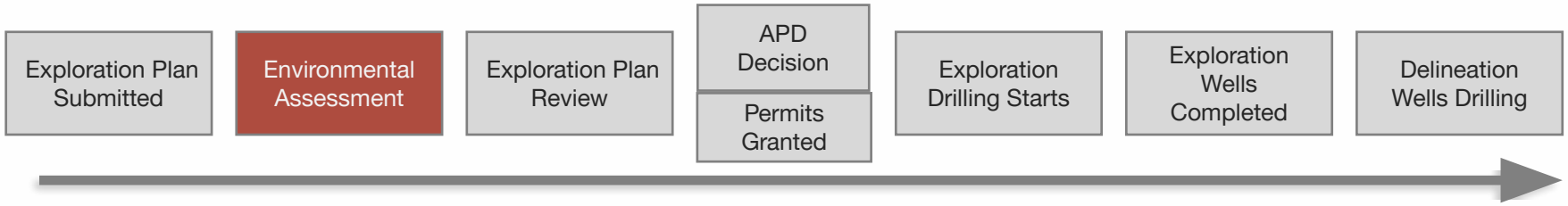
Opportunities for FWCA consultation

BOEM Processes for Offshore

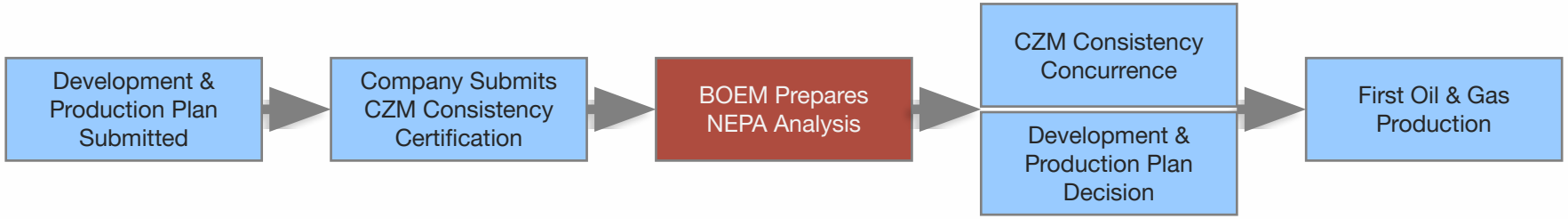
Oil and Gas Leasing

Post-Lease Processes

Post-Lease
Oil & Gas Exploration Plan



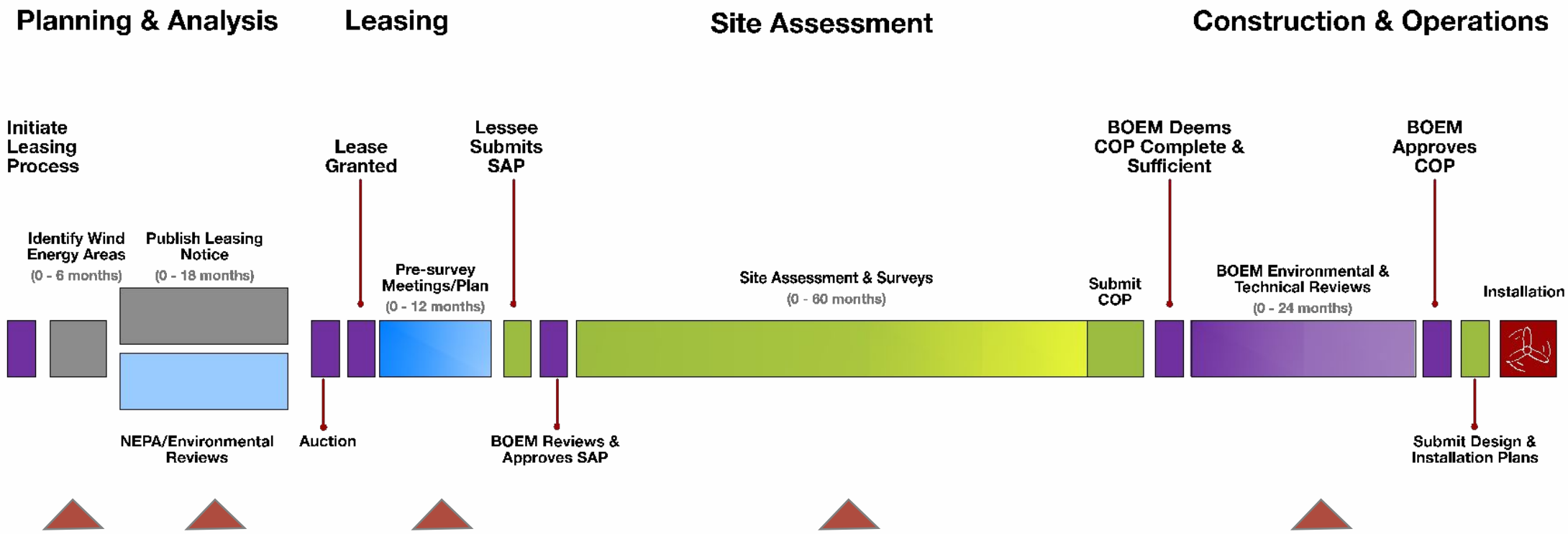
Post-Lease
Oil & Gas Production Plan



Opportunities for FWCA consultation

BOEM Process for Offshore

Wind Leasing



Phases that provide opportunities for FWCA consultation

Summary

This module summarized the planning processes that USACE, BOEM, and FERC use for the various projects they undertake or authorize and the role of **FWCA** consultations in those processes. It focused on identifying *when* the FWCA gives you opportunities to provide technical assistance, comments, and recommendations to USACE, BOEM, and FERC when they plan their projects.

It's important to understand these processes because it's important to know when you and your counterparts in other Fish & Wildlife Agencies need to provide technical assistance, comments, and recommendations. It's also important to understand the schedules you and your colleagues must meet. To harness the power of the FWCA, you cannot miss critical milestones or deadlines.

Now let's turn to the FWCA documents you will use to formally and informally provide technical assistance, comments, and recommendations to Action Agencies.

05. FWCA reports

Introduction

Module 4 summarized the planning processes that USACE, BOEM, and FERC use for the various projects they undertake or authorize and the role of **FWCA** consultations in those processes. This module shifts our focus to the FWCA documents you will use to formally and informally provide technical assistance, comments, and recommendations to Action Agencies

The last module analogized FWCA consultations to opening the door to Action Agency planning, permitting, and decision-making. During a FWCA consultation, your subject matter knowledge, experience (and grasp of relevant prior cases), reasoning processes, analytical skills, and ability to communicate effectively will influence your ability to use the FWCA to achieve the Act's purposes.

FWCA reports, particularly the reports submitted to satisfy the requirements of Section (b) of the FWCA, formally communicate your expertise to an Action Agency and, in some cases, the Secretary of the Army, OMB, and the U.S. Congress. These FWCA reports become part of the administrative record associated with a project that agencies must address and resolve.

FWCA Documents

- Reports prepared pursuant to the FWCA consist of
  - Planning aid reports, letters, or memoranda
  - FWCA Reports
  - FWCA letters, which respond to USACE Public Notices
- This module focuses on Planning Aid Letters and FWCA Reports. Module 6 focuses on FWCA letters that transmit NMFS and USFWS responses to USACE Public Notices
- Planning Aid Letters are typically transmitted during FWCA consultations on actions
- FWCA Reports are typically transmitted toward the end of FWCA consultations on actions

FWCA Planning Aid Letters, Reports, Memoranda

- Planning Aid Letters, memoranda, or notes represent communications between you and your counterparts in the other Fish & Wildlife Agencies and Action Agencies
- Planning Aid Letters are designed to
  - identify any significant fish and wildlife resources likely to be affected by a project
  - identify fish and wildlife resource problems and opportunities that should be addressed by the study
  - identify potentially significant impacts that could result from meeting other study purposes or objectives
  - highlight the potentially significant fish and wildlife issues or concerns; and
  - define the scope and level of FWCA coordination that would be necessary during the feasibility phase (along with a cost estimate for such effort)
- The information provided during **Study Initiation** and **Scoping Phases** will be based on available information because detailed studies will not be conducted at this time.

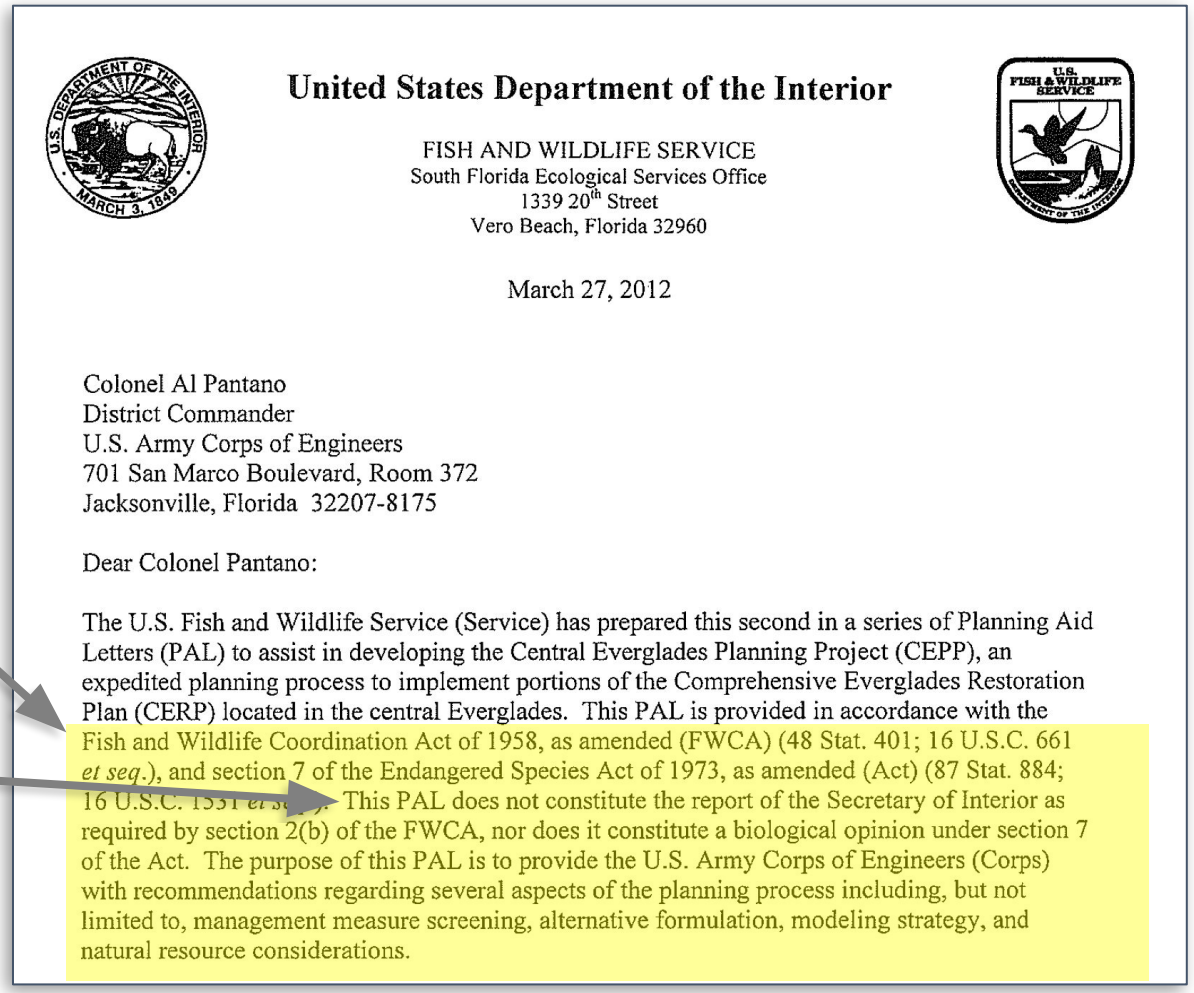
FWCA Reports vs Planning Aid Letters

- FWCA Reports are the formal reports authorized by Section 2(b) of the FWCA
  - they are designed to represent the official views of the Secretary on a project, which can be transmitted to ASA-CW and Congress
  - the language, tone, and level of scrutiny they are given will reflect that formality
- Although State agencies have the option of submitting their reports separately, FWCA 2(b) Reports are stronger when NMFS, USFWS, and their State and Territorial counterparts produce a combined report

A Sample Planning Aid Letter

Clearly identifies the authorities the PAL addresses

Ensures the PAL cannot be misrepresented



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

March 27, 2012

Colonel Al Pantano
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Dear Colonel Pantano:

The U.S. Fish and Wildlife Service (Service) has prepared this second in a series of Planning Aid Letters (PAL) to assist in developing the Central Everglades Planning Project (CEPP), an expedited planning process to implement portions of the Comprehensive Everglades Restoration Plan (CERP) located in the central Everglades. This PAL is provided in accordance with the Fish and Wildlife Coordination Act of 1958, as amended (FWCA) (48 Stat. 401; 16 U.S.C. 661 *et seq.*), and section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). This PAL does not constitute the report of the Secretary of Interior as required by section 2(b) of the FWCA, nor does it constitute a biological opinion under section 7 of the Act. The purpose of this PAL is to provide the U.S. Army Corps of Engineers (Corps) with recommendations regarding several aspects of the planning process including, but not limited to, management measure screening, alternative formulation, modeling strategy, and natural resource considerations.

Contents of FWCA Reports

- All FWCA (”2(b)”) Reports should
  - Identify the authorities they invoke (FWCA, ESA, EFH, MMPA, NEPA, etc.)
  - Acknowledge coordination with state agencies and other involved parties
  - Identify and describe the affected area
  - Identify the fish and wildlife Trust Resources that occur in the affected area
  - Describe the “baseline” conditions of fish and wildlife Trust Resources and the “future without project” forecast
  - Describe the methods you used to evaluate environmental effects and any studies or investigations you conducted
  - Describe the action’s expected effects on fish and wildlife Trust Resources (the “future with project” forecast)
  - Evaluate the biotic significance of any adverse or beneficial effects
  - Discuss and justify mitigation recommendations

USFWS Evaluation Framework

- The USFWS' Evaluation Framework for FWCA has the following structure:

1. Specify the resources likely to be impacted
2. Adopt an evaluation method or methods
3. Define the baseline condition and significant resources likely to be impacted
4. Determine the most probable future resource conditions without the project
5. Define resource problems, opportunities, and planning objectives
6. Define the alternatives
7. Determine the most probable future resource conditions with project alternatives
8. Define impacts
9. Evaluate and compare alternatives
10. Formulate conservation measures and the USFWS alternative
11. Develop recommendations
12. Establish the USFWS position
13. Write the report

A Sample Transmittal for FWCA Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

December 17, 2013

Colonel Alan M. Dodd
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Conservation Planning Activity Code: 04EF2000-2012-CPA-0270
Service Consultation Code: 04EF2000-2012-F-0290
Project: Central Everglades Planning Project

Dear Colonel Dodd:

Enclosed for your review is the Final Fish and Wildlife Coordination Act Report (FWCAR) on the Central Everglades Planning Project (CEPP). The Final FWCAR is based on the proposed action as described and analyzed in the U.S. Army Corps of Engineers' (Corps) Draft Integrated Project Implementation Report and Environmental Impact Statement and on model evaluations conducted by the U.S. Fish and Wildlife Service (Service) and other entities. This Final FWCAR provides the Service's evaluation of the Tentatively Selected Plan (TSP; Alternative 4R2) which was not complete at the time the draft FWCAR was submitted. This document reiterates guidance and recommendations for the benefit of fish and wildlife resources in the CEPP study area. This report is provided by the Service in accordance with the FWCA of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*) and the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

Clearly identifies the authorities the FWCA Report addresses

FWCA & EFH

NMFS can address these species in FWCA Reports without having to link them to economically-important taxa or taxa with EFH

Essential Fish Habitat

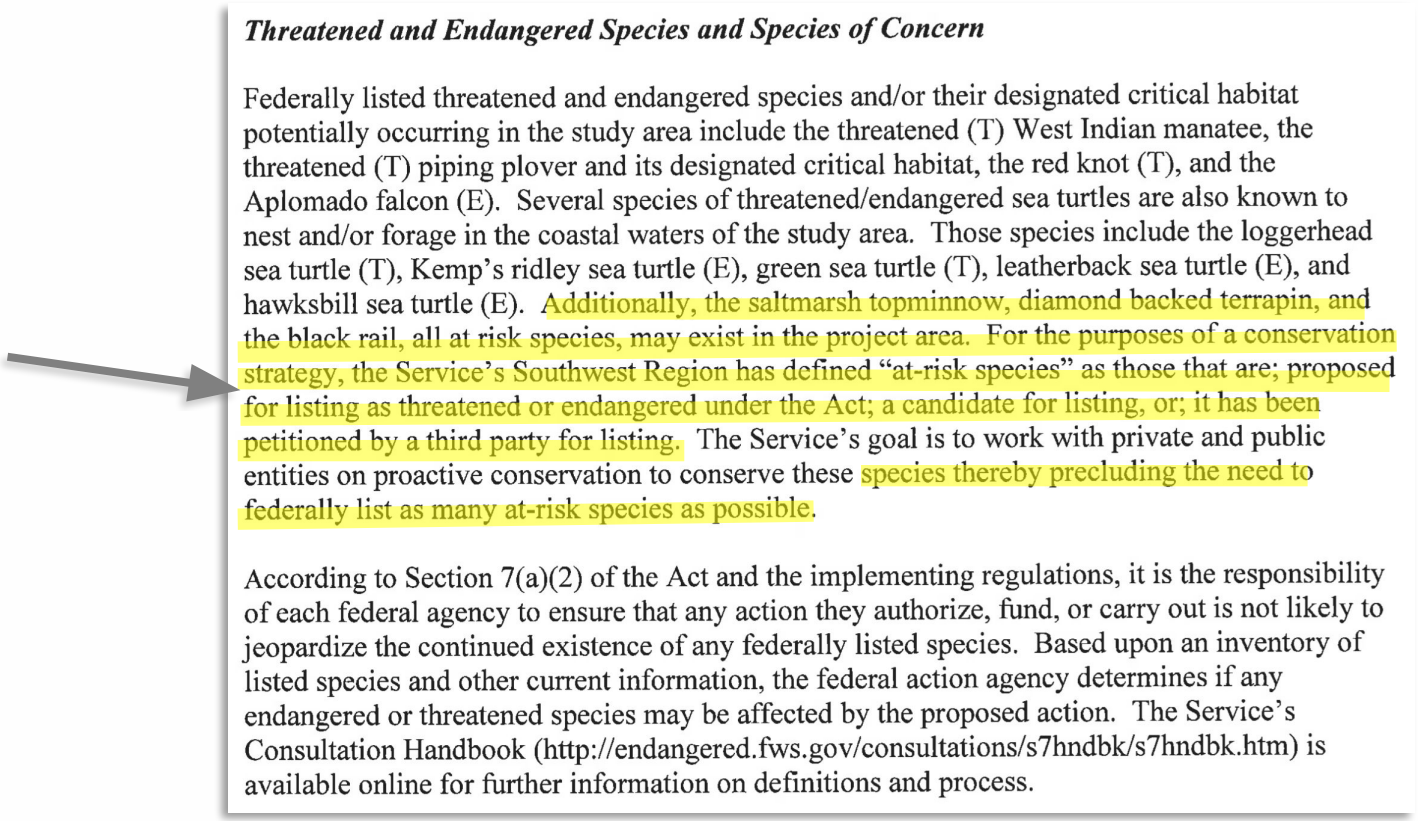
The project area marshes are located in an area that has been identified as essential fish habitat (EFH) for various life stages of federally managed species, including juvenile life stages of brown shrimp, white shrimp, and red drum. Categories of EFH in the project area include mud and shell substrates, submerged aquatic vegetation, estuarine water column, and estuarine emergent wetlands. Detailed information on federally managed fisheries and their EFH is provided in the 2005 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council. The generic amendment was prepared as required by the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297).

In addition to being designated as EFH for brown shrimp, white shrimp, and red drum, wetlands in the project area provide nursery and foraging habitats supportive of a variety of economically-important marine fishery species, including spotted seatrout, southern flounder, black drum, striped mullet, gulf menhaden, and blue crab. Some of these species serve as prey for other fish species managed under the Magnuson-Stevens Act by the Gulf of Mexico Fishery Management Council (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks). These wetlands also produce nutrients and detritus, important components of the aquatic food web, which contribute to the overall productivity of Louisiana's estuaries.

- In this example, NMFS created a subsection of a formal FWCA report ("2b" reports) to address EFH comments. In that section, NMFS wanted to address the conservation needs of several fish species that **are not managed species** (spotted seatrout, menhaden, etc.) of several prey species **that are not identified as EFH** in the FMP. It did so by linking their conservation needs to those of managed species such as mackerel, snapper, etc.
- Because these unmanaged species are "wildlife resources," the FWCA allows NMFS to address their conservation needs directly without having to link them to "managed" species

FWCA & ESA

NMFS can address "at-risk" species, proposed species, candidate species, and petitioned species in FWCA Reports without having to link them to Threatened or Endangered Species



Threatened and Endangered Species and Species of Concern

Federally listed threatened and endangered species and/or their designated critical habitat potentially occurring in the study area include the threatened (T) West Indian manatee, the threatened (T) piping plover and its designated critical habitat, the red knot (T), and the Aplomado falcon (E). Several species of threatened/endangered sea turtles are also known to nest and/or forage in the coastal waters of the study area. Those species include the loggerhead sea turtle (T), Kemp's ridley sea turtle (E), green sea turtle (T), leatherback sea turtle (E), and hawksbill sea turtle (E). Additionally, the saltmarsh topminnow, diamond backed terrapin, and the black rail, all at risk species, may exist in the project area. For the purposes of a conservation strategy, the Service's Southwest Region has defined "at-risk species" as those that are; proposed for listing as threatened or endangered under the Act; a candidate for listing, or; it has been petitioned by a third party for listing. The Service's goal is to work with private and public entities on proactive conservation to conserve these species thereby precluding the need to federally list as many at-risk species as possible.

According to Section 7(a)(2) of the Act and the implementing regulations, it is the responsibility of each federal agency to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed species. Based upon an inventory of listed species and other current information, the federal action agency determines if any endangered or threatened species may be affected by the proposed action. The Service's Consultation Handbook (http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm) is available online for further information on definitions and process.

- Similarly, FWCA reports can address at-risk, imperiled species, or species that may be imperiled without having to link them to species that have been listed as endangered or threatened

- That also applies to the habitat needs of species that do not have designated critical habitat

FWCA Reports

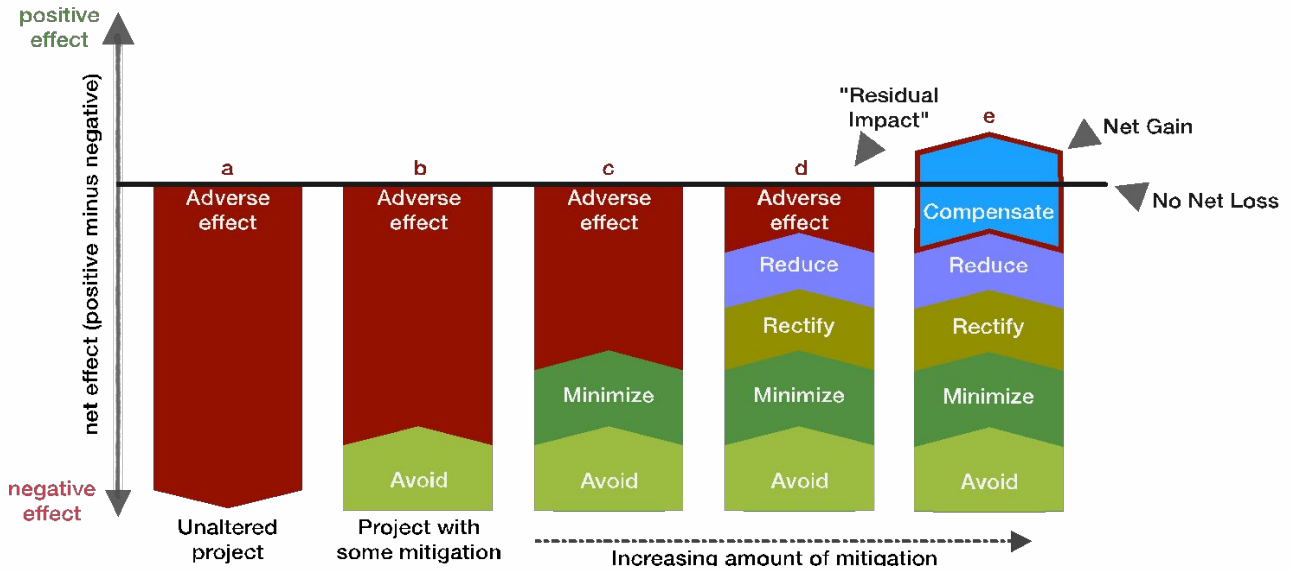
- To satisfy their FWCA responsibilities, 2(b) reports must:
  - clearly document the proposed project's impacts on fish and wildlife resources and
  - provide specific measures that should be taken to conserve those resources
- 2(b) reports must answer four basic questions:
  - What trust resources are likely to be affected by the project or action?
  - What alternatives are being considered or evaluated?
  - What are the impacts of the proposed project and alternatives on NOAA Trust Resources?
  - What changes or measures do you recommend to conserve fish and wildlife resources?
- The first three of these questions are addressed in Module 8
- The last of these questions typically includes mitigation, so let’s turn to that issue now

FWCA Reports: Mitigation

- FWCA Reports are designed to convey recommendations that prevent “loss of and damage to” fish and wildlife resources: that is, they will contain mitigation recommendations
- Discussions of mitigation often focus on compensatory mitigation, so it’s important to remember that CEQ’s NEPA regulations define mitigation as a sequence that includes:
  - avoiding an impact altogether by not taking a certain action or parts of an action
  - minimizing impacts by limiting the degree or magnitude of the action and its implementation
  - rectifying the impact by repairing, rehabilitating, or restoring the affected environment
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and finally
  - compensating for the impact by replacing or providing substitute resources or environments

FWCA Reports:

Mitigation Hierarchy



- This figure illustrates how the different kinds of mitigation in the hierarchy reduce the amount or intensity of an adverse effect or impact
- Column a displays the impacts associated with an unaltered project. Columns b through d display the effects of the different kinds of mitigation on that impact
- For example, if avoidance (column b) would completely eliminate an adverse effect it would not be necessary to also minimize, rectify, or reduce that effect
- Compensatory mitigation (column e) is designed to offset residual adverse effects that remain after all other mitigation methods have been applied (“no net loss”) or produce a net

FWCA Reports: Mitigation (continued)

- Mitigation recommendations in any FWCA consultation should address every component of the mitigation hierarchy *before* turning to compensatory mitigation
- Why? Because most published data-driven reviews of compensatory mitigation projects in the U.S. have concluded that mitigation efforts have not equaled or exceeded permitted losses of aquatic ecosystems, resulting in net loss in the area and function of aquatic ecosystems in the U.S., although some compensatory mitigation projects have successfully replaced losses associated with specific permitted projects
- Although there are specific exceptions, compensatory mitigation projects generally do not replace the area, functions, or values of impacted areas because
  - compensatory mitigation projects that are proposed often are never implemented or completed
  - even when compensatory mitigation projects are completed, these projects commonly fail to produce ecosystems and biotic communities that are ecologically equivalent to those destroyed or damaged by the project. These ecosystems and communities are often not self-sustaining, self-regulating, and self-organizing
  - compensatory mitigation projects often **fail to produce measurable and tangible benefits that would not have occurred** if the mitigation project had not been constructed

FWCA Reports: Mitigation

(continued)

- Because you cannot be certain you can replace the ecological functions, values, and biodiversity of an area once it has been destroyed or severely impaired, any mitigation recommendations you offer should follow the entire mitigation sequence:
  - avoid, minimize, rectify, and reduce impacts to fish and wildlife resources before turning to compensatory mitigation
- One consistent problem is that mitigation proposals are rarely informed by data and experience from prior compensatory mitigation projects. This is true for measures that are used to avoid, , minimize, rectify, and reduce impacts to fish and wildlife resources, but it is particularly true for compensatory mitigation proposals
- When you consider potential mitigation measures, you should carefully consider when those measures have been used in the past and distinguish between:
  - Those measures that are known to be effective in the circumstances
  - Those measures that are known to be ineffective in any circumstances
  - Those measures that are known to be ineffective in the circumstances
  - Those measures that are not known to be effective in the circumstances

FWCA Reports: Mitigation (continued)

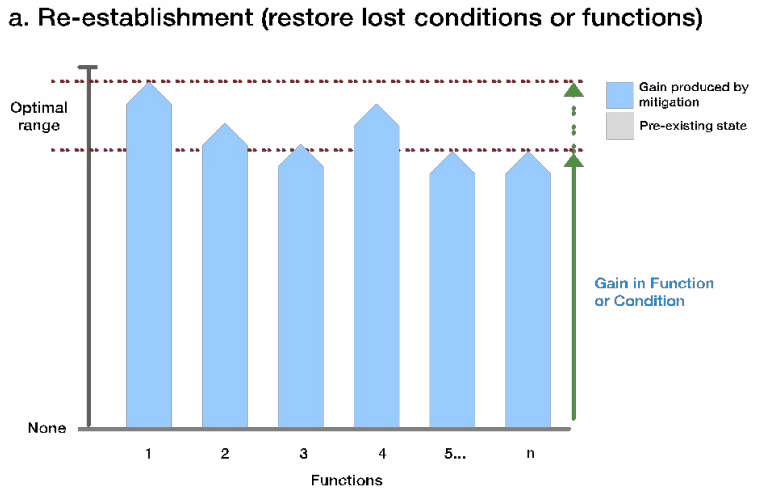
- As you develop mitigation recommendations or review mitigation proposals from an Action Agency or applicant, you should consider the following questions:
  - Is the mitigation likely to be implemented?
  - If the mitigation is likely to be implemented, is it likely to offset the impacts of the project or action?
  - If the compensatory mitigation project is implemented and is likely to offset impacts, is the fish and wildlife community the mitigation establishes, re-establishes, restores, or enhances likely to remain self-sustaining, self-regulating, and self-organizing over the long term?
- The best way to answer these three questions is to turn to your priors

FWCA Reports: Compensatory Mitigation

- Compensatory mitigation is required for “significant resource losses” or to ensure that USACE permits do not have “more than minimal individual and cumulative adverse effects on the aquatic environment”
- So, your FWCA Report or letter should present the reasoning and evidence that led you to conclude that the residual adverse effects of an action or permit would result in “significant resource losses” or would represent “more than minimal individual or cumulative adverse effects on the aquatic environment
- The fundamental objective of compensatory mitigation is to offset environmental losses caused by USACE permits that result in unavoidable impacts to waters of the United States
- Compensatory mitigation can be achieved using three primary methods:
  - restoration,
  - establishment, and
  - enhancement.
  - In certain circumstances preservation may also be appropriate

Kinds of Mitigation

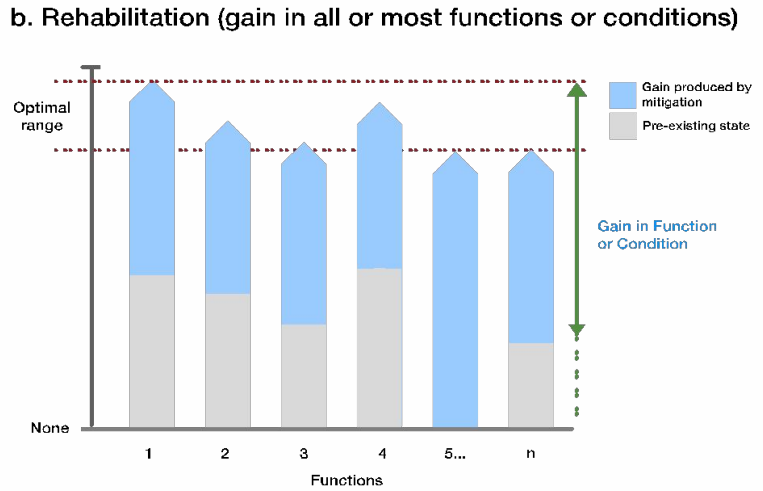
Re-establishment



- **Re-establishment** refers to compensatory mitigation projects that restore ecological characteristics, functions, biotic communities, or species occupancy to sites once had those characteristics, provided those functions, or supported those communities or species in the past
- As this figure illustrates, the target functions, values, communities, and occupancies no longer exist on mitigation sites, but would be restored to some historical condition by the compensatory mitigation project (absence of grey bars means the functions are absent)
- This kind of compensatory mitigation project requires some evidence that the site once supported the target functions and values. However, when that evidence exists, this kind of project can be more successful than projects that try to establish these conditions

Kinds of Mitigation

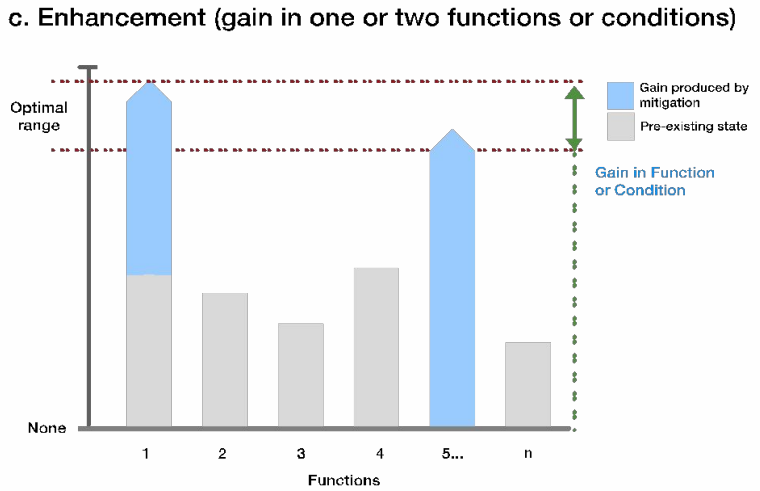
Rehabilitation



- **Rehabilitation** refers to compensatory mitigation projects whose objective is to improve all or most of the aquatic resource functions and conditions of a mitigation site until they approximate a reference condition or target state
- As this figure illustrates, rehabilitation is appropriate for sites that currently support the target functions, values, communities, and occupancies, but those functions and values are impaired or degraded (grey-shaded bars mean some functions exist)
- This kind of compensatory mitigation project should be supported by some evidence that the compensatory mitigation site historically supported higher functions and values (that is, the site is capable of providing the target functions and values)

Kinds of Mitigation

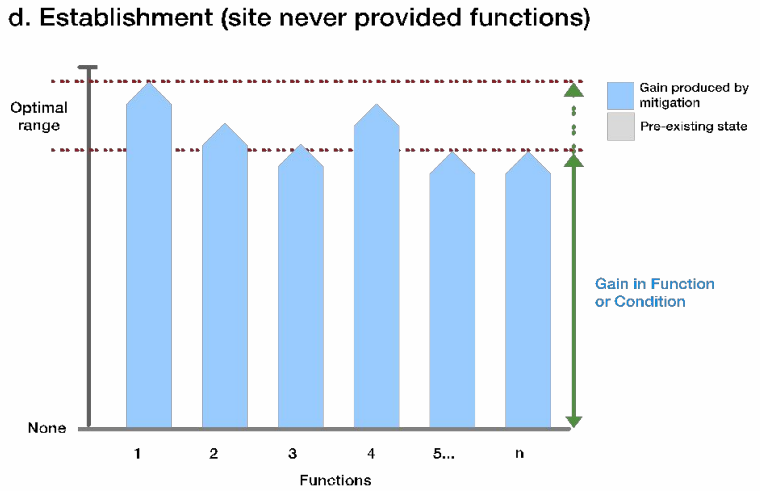
Enhancement



- **Enhancement** refers to compensatory mitigation projects whose objective is to improve one or two of the aquatic resource functions and conditions of a mitigation site until they approximate a reference condition or target state.
- Enhancement increases the ecological value of some aquatic resource functions on a mitigation site, but it can cause other resource functions to decline (grey-shaded bars mean some functions exist)
- Enhancement projects require some evidence that the resource functions or conditions a project is designed to improve existing in an impaired or degraded state

Kinds of Mitigation

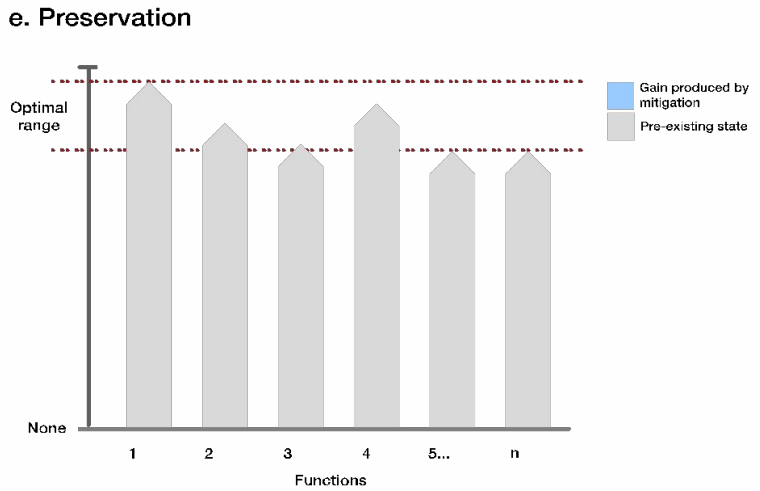
Establishment



- **Establishment** refers to compensatory mitigation projects whose objective is to “create” aquatic resource functions and conditions on a mitigation site that never provided those functions or conditions
- Establishment differs from Re-establishment because it occurs on sites that never supported the target functions, conditions, or biotic community

Kinds of Mitigation

Preservation



- **Preservation** refers to compensatory mitigation projects that use legal protections or physical barriers to remove threats to aquatic resources or prevent actions in or near an aquatic resource from causing the condition or function of resource to decline

- Preservation normally does not qualify as compensatory mitigation because it consists of protecting conditions that already exist at a site. However, the USACE may treat preservation as compensatory mitigation when a site supports resources that are ecologically-important, when those resources are threatened with destruction or degradation, and the site will be protected in perpetuity

FWCA Reports: Monitoring

- It is impossible to know what adverse effects an action will cause until the action is actually constructed. Similarly, it is also impossible to know if a compensatory mitigation project actually benefits the environment or fish and wildlife until the project is complete
- The USACE requires monitoring for civil works projects and for its CWA permits
- The only way to determine whether your assessment is correct is to monitor the effects that actually result from an action or mitigation project. Specifically,
  - was the action, “as built,” different than the action that had been permitted?
  - were mitigation measures and other permits conditions actually implemented?
  - if permit conditions were implemented, did they produce the desire result?
  - was your effects analysis accurate and reliable? What did you get right? What did you get wrong?
- The best way to design a monitoring program is to treat the action as an experiment with hypotheses, use scientific study designs as the foundation for the monitoring program (Before-and-After-Control-Impact, Before-After, etc. with appropriate numbers

FWCA Reports: Identify NMFS' Position on the Action

- FWCA Reports typically assess impacts and recommend mitigation measures. However, these report must also clearly articulate NMFS' position on a project (not your professional view, but the agency's view).
- For example,
  - for a civil works project, does NMFS support, oppose, or not oppose a Tentatively Selected Plan (as proposed or under specified conditions)?
  - for a permit or authorization, does NMFS support, oppose, or not oppose the issuance of the permit or authorization?
- It is not enough to provide recommendations with this position
- You should recognize and accept that you and your counterparts in the other Fish & Wildlife Agencies may take different positions on a civil works project, permit, or authorization or they may take the same position for different reasons
- In this case, the Fish & Wildlife Agencies that agree may submit a joint FWCA Report that acknowledges the dissenting view or the agency that dissents can submit a separate FWCA report.

Summary

This module summarized the planning processes that USACE, BOEM, and FERC use for the various projects they undertake or authorize and the role of **FWCA** consultations in those processes. It focused on identifying *when* the FWCA gives you opportunities to provide technical assistance, comments, and recommendations to USACE, BOEM, and FERC when they plan their projects.

It's important to understand these processes because it's important to know when you and your counterparts in other Fish & Wildlife Agencies need to provide technical assistance, comments, and recommendations. It's also important to understand the schedules you and your colleagues must meet. To harness the power of the FWCA, you cannot miss critical milestones or deadlines.

Now let's turn to the FWCA documents you will use to formally and informally provide technical assistance, comments, and recommendations to Action Agencies.

06. FWCA letters

Introduction

Module 5 summarizes FWCA reports, particularly the reports submitted to satisfy the requirements of Section (b) of the FWCA

FWCA reports are more common with civil works projects. For those of you who are familiar with ESA consultations, FWCA reports are comparable to ESA biological opinions

Most FWCA consultations result in FWCA letters. For example, FWCA letters are the common way of responding to USACE public notices or conveying comments on NEPA documents. FWCA letters tend to be shorter and less structured, but that is only a tendency: they still needs to contain sufficient reasoning and evidence to persuade an agency to support your position or to change their position on an action. In addition, a FWCA letter that elevates a USACE permit decision to the Assistant Secretary of Army for Civil Works would have to be as rigorous as a formal FWCA report

Like FWCA reports, FWCA letters can be organized into subsections to convey separate comments on EFH, ESA, MMPA, etc. When you combine these comments into a single document, the FWCA becomes the glue that connects these statutes. That organization allows you to use the FWCA to address gaps in the other statutes (for example, addressing the habitat needs of fish species that are not managed or of endangered or threatened species that have no critical habitat designation)

FWCA Letters

- FWCA Letters usually consist of comments and recommendations to federal agencies. The most common are comments on USACE Public Notices
- Because the scope of the FWCA encompasses all living marine resources under NMFS' jurisdiction and their habitats, FWCA can address concerns NMFS has about the effects of a proposed permit on:
  - marine mammals and their habitat
  - endangered and threatened species and their habitat (including critical habitat)
  - commercially-important fish species and their habitat (including essential fish habitat)
  - all other animal taxa under NOAA's jurisdiction and their habitat
  - coral, seagrasses, invertebrates and their habitat

07. FWCA and CWA Permits

Introduction

The CWA was enacted to “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The CWA created the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The CWA established the national goal of eliminating the discharge of pollutants into navigable waters by 1985 and, wherever attainable, of providing for the protection and propagation of fish, shellfish, and wildlife by 1983.

Section 404 of the CWA gives the USACE authority to regulate activities that involve discharges of dredged or fill material into waters of the United States. Section 404 requires applicants to receive a permit before discharging dredged or fill material into waters of the United States unless an applicant's activity is exempt from Section 404 regulation (for example, some farming and forestry activities are exempt).

Section 404(q) of the CWA requires the USACE to enter into agreements with the Secretaries of Agriculture, Commerce, Interior, and Transportation, and the heads of other appropriate Federal agencies. The MOA between the USACE and NMFS recognizes NMFS’ role in the USACE regulatory programs pursuant to the FWCA, CWA, NEPA, ESA, MSA, MMPA, MPRSA (among others). It establishes the rules of engagement for NOAA comments on USACE public notices.

This module focuses on how to use the FWCA to protect fish and wildlife resources during the USACE permitting process.

The foundation for FWCA comments on permit applications

- Your comments on USACE permits are intended to fulfill the two main purposes of FWCA consultations:
  - prevent the loss of and damage to wildlife resources
  - provide for the development and improvement of those resources
- You fulfill these two purposes by
  - assessing the probable effects of proposed permits on the habitat for fish and wildlife resources and
  - recommending measures to avoid, minimize, rectify, reduce, or eliminate those impacts, compensate for residual impacts, and enhance habitat conditions for fish and wildlife resources
- USACE public notices contain the following standard language: "*The decision whether to issue a permit* ***will be based on an evaluation of the probable impact including cumulative impacts*** *of the proposed activity on the public interest...* ***A permit will be granted unless its issuance is found to be contrary to the public interest***."
- If you hope to conserve fish and wildlife resources, you first need to describe the specific

Foundation:

404(b)(1) Guidelines

- The 404(b)(1) guidelines were established to implement the policies Congress enacted when it passed the CWA. The purpose of these Guidelines is to
  - restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material
- The 404(b)(1) guidelines contain two policy statements that should serve as the foundation for your effects' analyses and mitigation recommendations
  - "Fundamental to these Guidelines is the precept that dredged or fill material **should not** be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern"
  - "From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources."

Foundation:

404(b)(1) Guidelines

(continued)

- The 404(b)(1) guidelines also provide robust guidance for your assessment of the probable effects of permit applications on fish and wildlife resources
  - Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States
  - Effects contributing to significant degradation, considered individually or collectively, include:
    - Significant adverse effects on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.
    - Significant adverse effects on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes
    - Significant adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not

Foundation:

404(b)(1) Guidelines

(continued)

- …no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences
- For the purpose of this requirement, practicable alternatives include, but are not limited to:
  - Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;
  - Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;
- An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes

404(q) Memorandum of Agreement

- The CWA gives the USACE the authority to deny applications for CWA permits and NMFS has the authority to recommend the USACE deny a particular permit: the 1992 MOA contains the standards and procedures that apply to these recommendations.
- If NMFS recommends denial of a permit and the DE agrees, there is no dispute that needs to be resolved. However, if NMFS recommends denial and the DE disagrees, the MOA specifies how the two agencies will resolve that dispute.
- The MOA establishes separate processes for
  - policy disputes and
  - disputes over individual permit decisions
- Remedies associated with policy disputes are clarifications of USACE policies
- Remedies associated with disputes over individual permits include permit modifications, conditions, additional mitigation, and denials

Elevating Policy Issues

- The 1992 MOA allows NOAA to elevate policy or procedural issues it has with the USACE
- Policy elevations may be related to USACE patterns of practice or classes of activities, but they are expected to be independent of specific permit decisions. As a result
  - the USACE does not delay processing individual permits during policy elevations
  - remedies to these elevations consist of changes in policy, procedure, or practice that affect future permits (not permits already being processed)
  - for example, remedies may consist of Regulatory Guidance Letters issued by a DE, changes in USACE regulations, or changes in USACE national policy
- Policy elevations are initially resolved between NOAA-Fisheries RAs and USACE DEs
- Those individuals can elevate unresolved regional or national policy issues to the NOAA Administrator and ASA-CW who have 90 days to resolve the issue

Elevating Individual Permit Decisions

- The 1992 MOA also allows NOAA to elevate disputes over individual permit decisions
- A key step in the process of elevating individual permit decisions is notifying the DE, in writing, that NOAA believes a project (or permit) "**may** result in substantial and unacceptable impacts" to ARNIs (called a "3(a)" letter)
  - This notification **must** occur during the basic or extended comment period for a permit
- only individual permit decisions that involve ARNIs can be elevated
- At the Field Office level, NMFS' Regional Director (or Acting) must then notify the DE by letter (called a "3(b)" letter) that NMFS believes
  - the discharge will have substantial and unacceptable impact on ARNIs
  - why there will be substantial and unacceptable impacts, and
  - why the permit must be modified, conditioned, or denied to protect the ARNIs
- NMFS should explain how it made these determinations, ideally based on site-specific information and limit itself to matters within NMFS' authority and jurisdiction

Note: see the next slide for a visual presentation of elevation milestones and schedules

404(q) Elevation Schedules

Day 0

USACE publishes PN

Before Day 30

If USACE provides fewer than 30 days to review a PN, NOAA must request the full 30-day review before the comment period ends

At least 3 days before end of basic comment period (30 days)

If NMFS wants an extension beyond 30 days, RA must request extension in writing and explain why extension is requested

Within the basic or extended comment period (30 to 60 days)

If NMFS intends to elevate a permit, the RA must notice the DE by letter that the permit "**may** result" in substantial and unacceptable impacts to an ARNI ("3a" letter)

No more than 25 days after the basic or extended comment period

If NMFS intends to elevate a permit, the RA must notice the DE by letter that the permit "**will** result" in substantial and unacceptable impacts to an ARNI ("3b" letter)

5 days after receiving NMFS "3b" letter

DE provides NMFS RA with a copy of the draft permit (see notes)

No more than 15 days after receiving DE letter

RA must notify DE, by letter, of intent to elevate (or not)

Not more than 20 days after receiving RA notice

USOA must notify ASA-CW of intent to review permit

Not more than 30 days after USOA request

ASA-CW makes final permit decision

Note: Projects that require EISs, MMPA authorizations will usually have different review schedules

Individual Permit Elevation Schedules

- The 404(q) MOA allows NMFS to request at least 30 days to review a USACE permit, if the USACE initially provided a comment period that is less than 30 days
- If NMFS believes that it may want to elevate a permit — for example, because of potential substantial and unacceptable impacts to endangered or threatened species — NMFS needs to notify the USACE of that issue within the 30-day comment period
- If NMFS decides to elevate a permit decision, it has to do so within 25 days of the public comment period ending
- The timelines for most informal and formal consultations typically preclude these options

Aquatic Resource of National Importance

- The 404(q) MOA between NOAA and the USACE limits the elevation of individual permit decisions to those cases that involve “Aquatic Resources of National Importance” or ARNIs
- Specifically, the MOA limits elevations to those cases in which the net loss caused by a project will result in “unacceptable adverse effects to aquatic resources of national importance.”
- Despite its importance, the term ARNI is not defined other than by the phrase “As a basis for comparison, these cases will cause resource damages similar in magnitude to cases elevated under Section 404(c) of the Clean Water Act.”

NMFS Guidance: ARNI

- NMFS' 2000 Guidance document on 404(q) elevations lists the following resources as ARNIs
  - species of "national economic importance" listed pursuant to the Water Resources Development Act of 1986 economically important fish
    - these species contribute 1% or more of the total ex-vessel of the fishery landings (how that percentage is calculated is not specified)
  - anadromous fish and species subject to treaties & international conventions
  - habitats in areas where Federal dollars have been expended in planning or restoration (for example, SAMPs)
  - resources that have national, regional, or local importance other than economic (for example, a scarce, unique or irreplaceable habitat even if it supported no commercially important fish or shellfish)
  - designated critical habitat for endangered or threatened species
  - EFH may be ARNIs; HAPCs are probably ARNIs

"Substantial and Unacceptable" Impacts

- To support an elevation, FWCA should explicitly argue that the USACE permit **will** have substantial and unacceptable impacts on an ARNI
- Neither of these terms — "substantial and unacceptable impacts" — are defined in regulation
- However, NMFS has issued guidance on both terms

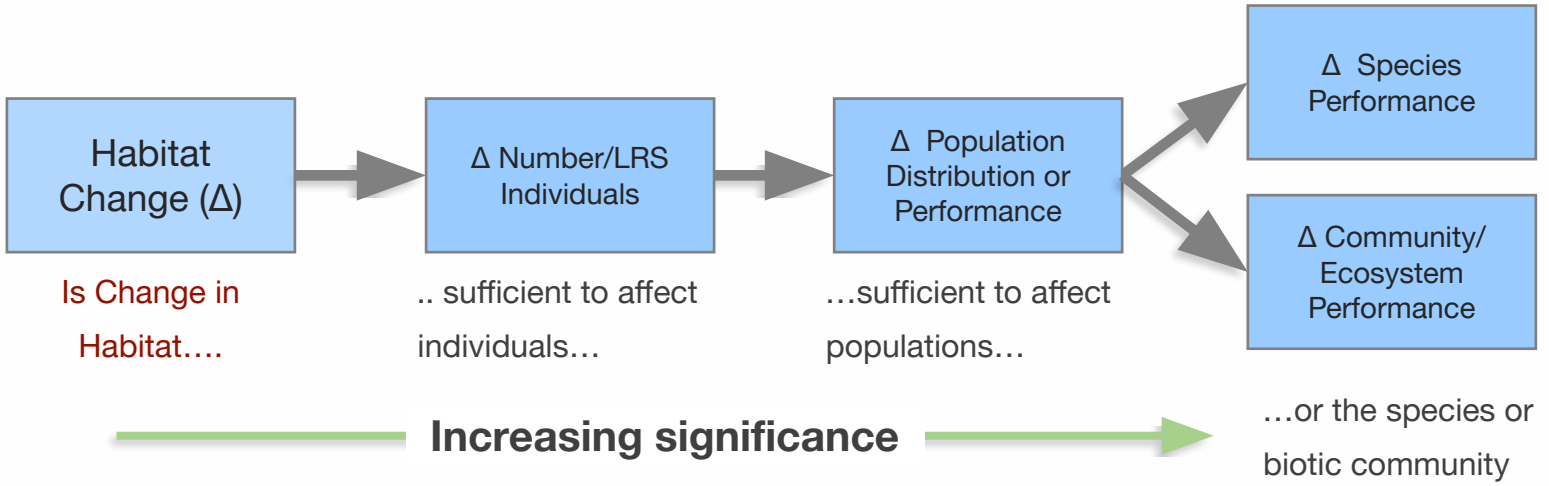
NMFS Guidance: “Substantial”

- To support a permit elevation, the MOA requires you to explicitly argue that the USACE permit will have substantial and unacceptable impacts on an ARNI. However, the terms — “substantial and unacceptable impacts” — are not defined in regulation
- Fortunately, NMFS’ 2000 Guidance document on 404(q) elevations states that determinations of whether an impact is “substantial” should consider:
  - the number of ARNIs impacted, in terms of both abundance and diversity
  - the degree to which aquatic system functions will be impaired, such as reduced spawning and feeding area, alteration to hydrology of downstream flows, etc.
  - the significance of the impact on the ARNI
  - the significance of socio-economic impacts, including those in consumptive and non-consumptive sectors.
  - the cumulative and secondary effects of this impact with other impacts of similar nature or with similar or synergistic effects
  - the duration of the impact and the implications to ARNIs

NMFS Guidance: "Unacceptable"

- NMFS' 2000 Guidance document on 404(q) elevations also states that the following factors suggest an impact may be "unacceptable":
  - when a practicable alternative exists, as defined in the CWA Section 404(b)(1) Guidelines
  - when insufficient mitigation is being required or monitoring is inadequate monitoring to ensure mitigation success
  - when aquatic habitat loss has not been avoided and minimized
  - when impacts are contrary to specific provisions of fishery management plans, watershed management plans, restoration plans, sanctuaries, recovery plans, etc.
  - when impacts are caused by a project with a questionable likelihood of success or the design of the proposed mitigation is questionable
  - when impacts create unacceptable secondary or cumulative risks to the environment beyond the initial impact
  - when a NEPA document is required, but was not done or is inadequate

Substantial and Unacceptable Impact



- To establish that an effect on habitat is substantial, you need to establish that the effect is individually or cumulatively large enough to **affect individual fish and wildlife that occupy or use the habitat** (this effect can be a positive or negative)
- An effect that increases or decreases the abundance or lifetime reproductive success (LRS) of those individuals would be substantial
- Individual-level effects are more substantial if you expect them to have population-level consequences
- This reasoning applies even when an action or project affects fish and wildlife directly rather than through habitat (for example, sound fields produced by pile-driving)

An Unused CWA Tool…

- 40 CFR 230.80 of the 404(b)(1) guidelines allows EPA and the USACE to identify sites that will be considered as:
  - possible future disposal sites, including existing disposal sites and non-sensitive areas; or
  - **areas generally unsuitable for disposal site specification**
- The latter of these areas will not be available for disposal site specification but do not prohibit applications for permits to discharge dredged or fill material in such areas
- Either type of identification constitutes information to facilitate individual or General permit application and processing
- **The (b)(1) Guidelines allow NMFS and USFWS to ask EPA and the USACE to designate a specific area as unsuitable for placement of dredged or fill material**

Summary

This module summarized the planning processes that USACE, BOEM, and FERC use for the various projects they undertake or authorize and the role of **FWCA** consultations in those processes. It focused on identifying *when* the FWCA gives you opportunities to provide technical assistance, comments, and recommendations to USACE, BOEM, and FERC when they plan their projects.

It's important to understand these processes because it's important to know when you and your counterparts in other Fish & Wildlife Agencies need to provide technical assistance, comments, and recommendations. It's also important to understand the schedules you and your colleagues must meet. To harness the power of the FWCA, you cannot miss critical milestones or deadlines.

Now let's turn to the FWCA documents you will use to formally and informally provide technical assistance, comments, and recommendations to Action Agencies.

08. Make your case

Introduction

The strength of the FWCA depends on your ability to make your case in meetings, email exchanges, FWCA reports and letters, etc. By “make your case,” I mean “to argue for something or to defend an idea.”

The FWCA requires federal agencies to give fish and wildlife resources ““equal consideration” and establishes fish and wildlife conservation as a “co-equal purpose” of federally funded or permitted water resource development projects or proposals. However, in every FWCA consultation, you should still assume that you will have to argue that fish and wildlife need to receive equal consideration and their conservation needs must be a co-equal purpose of projects.

If you conclude that a federal action, permit, or license will or will not adversely affect fish and wildlife resources, your FWCA report or letter on the action needs to make the case for your conclusion. If you recommend mitigation measures, you need to make the case that an action’s effects warrant mitigation and that your recommendation will, in fact, produce the mitigation that is warranted.

In FWCA consultations, making your case means presenting your effects analyses in the strongest way possible, addressing the regulatory standards that apply to the action, anticipating and responding to objections and counter-arguments, and using language that is both easily understood and not easily misunderstood.

This module presents strategies for making a compelling case.

Introduction

(continued)

If you consider what the preceding slide says, you might wonder if the same principle applies to Action Agencies and Applicants. Do they also need to make the case for their claims and conclusions? The answer is simple: Yes, they do. Absolutely.

As the next few slides make clear, the “arbitrary and capricious” standard of the Administrative Procedure Act applies to every final action Federal agencies take and every final decision they make. In final agency documents on projects, permits, licenses, and final regulations (records of decision, findings of no significant impact, etc.), agencies make the case that their decisions are in the public’s interest, that an action satisfies applicable standards, that their conclusion or decision was not “arbitrary or capricious.”

Before you concur with an agency’s conclusion, you should ensure that the agency has, in fact, made the case for that conclusion. If they did not or if their case could be stronger, your concurrence letter should strengthen their case. If an agency’s conclusion is not well-reasoned or supported by the evidence, your concurrence letter can serve as a stronger foundation for the agency’s conclusion or decision. And if the case against an agency’s conclusion or decision is substantially stronger than the case for it and that case is related to fish and wildlife resources, your FWCA report or letter should make that clear as well.

So, in addition to presenting strategies for making a compelling case, this module guides you through the process of evaluating the case other agencies present to you.

Making your case

- To make your case, you need four ingredients:
  - A clear understanding of the point you want to make, need to make, or intend to make
  - A solid grasp of the relevant evidence and its strength
  - A clear understanding of how to present and evaluate the reasoning that supports your conclusion (which includes an understanding of how arguments can go wrong)
  - A clear understanding of your audience
- Making your case is a skill. Making a compelling or convincing case requires more skill. Like any skill, it is relatively easy to learn, but becoming competent takes time, deliberate practice, and patience with your mistakes and missed opportunities
- This module guides you through the process of using these four ingredients in a FWCA consultation.

The rest is up to you

Ingredient 1

Understand the case you need to make

Know the case you need to make

Before you can make a case, you need to answer two questions:

- **What point do you need to/want to/intend to make?**

  This is the claim or proposition you intend to establish in your verbal or written argument. You may need to convince an agency that FWCA consultation is required on an action, that NMFS has authority under the FWCA, that an area serves as habitat for a species, that an action will affect trust resources, that those effects are substantial, etc.

- **Does that point require you to inform, support, convince, or persuade your audience?**

  Each one of these purposes requires you to make a slightly different case. If you're trying to inform — for example, identifying fish and wildlife resources that occur in a project area — you still need to get your audience to accept your information as true. If you're trying to support an agency — for example, concurring with their conclusions — you need to ensure that you agree with their reasoning and evidence as well as their conclusion. If you're trying to persuade or convince your audience — for example, to accept a project modification — you need to make the case that the modification is warranted, that it will avoid a problem, and failing to make the change will be harmful to fish and wildlife resources

- The rest of this topic explores these questions in greater detail

The points you need to make in FWCA consultations

- To comply with the consultation mandate of the FWCA, your FWCA letters and reports should directly address the following points:

1. **Will the proposed action control, modify, or degrade waters of the United States or other bodies of water?**
2. **If you answer "Yes" to Question 1, will the control, modification, or degradation adversely affect fish and wildlife species or their habitat? Do any of these species or habitats have special designations? ("ARNIs," special aquatic sites, endangered, threatened, designated critical habitat, etc.)**
3. **Are the effects you identify in answer to Question 2 "substantial and unacceptable"?**
4. **Is it feasible to mitigate these adverse effects so they are no longer "substantial" or "unacceptable"?**
5. **If you answer "No" to Question 5, are there practicable alternatives to the proposed action?**
6. **Can you recommend measures that develop and improve wildlife resources?**

- These points would apply to USACE permits, civil works projects, discharges of pollutants,

Your effects analyses are critical…

- The first three of the points listed in the previous slide encompass the **effects** of actions **on waters of the United States, trust fish and wildlife resources, and habitat for those resources** so effects analyses are essential to every FWCA consultation

- Your effects analyses should clearly specify:

1. **What is affected?** Does the action affect the environment (for example, water quality, flow regimes, etc.); habitat (the quantity, quality, or availability of some habitat condition for a particular species); the ecology of individual organisms; or some combination of these? Be specific

2. **How large is the effect?** This is the expected magnitude of the effect

3. **What was the direction of the effect?** Will the effect be beneficial, adverse, both (beneficial for some, adverse for others)?

4. **When would the effect begin to appear?**

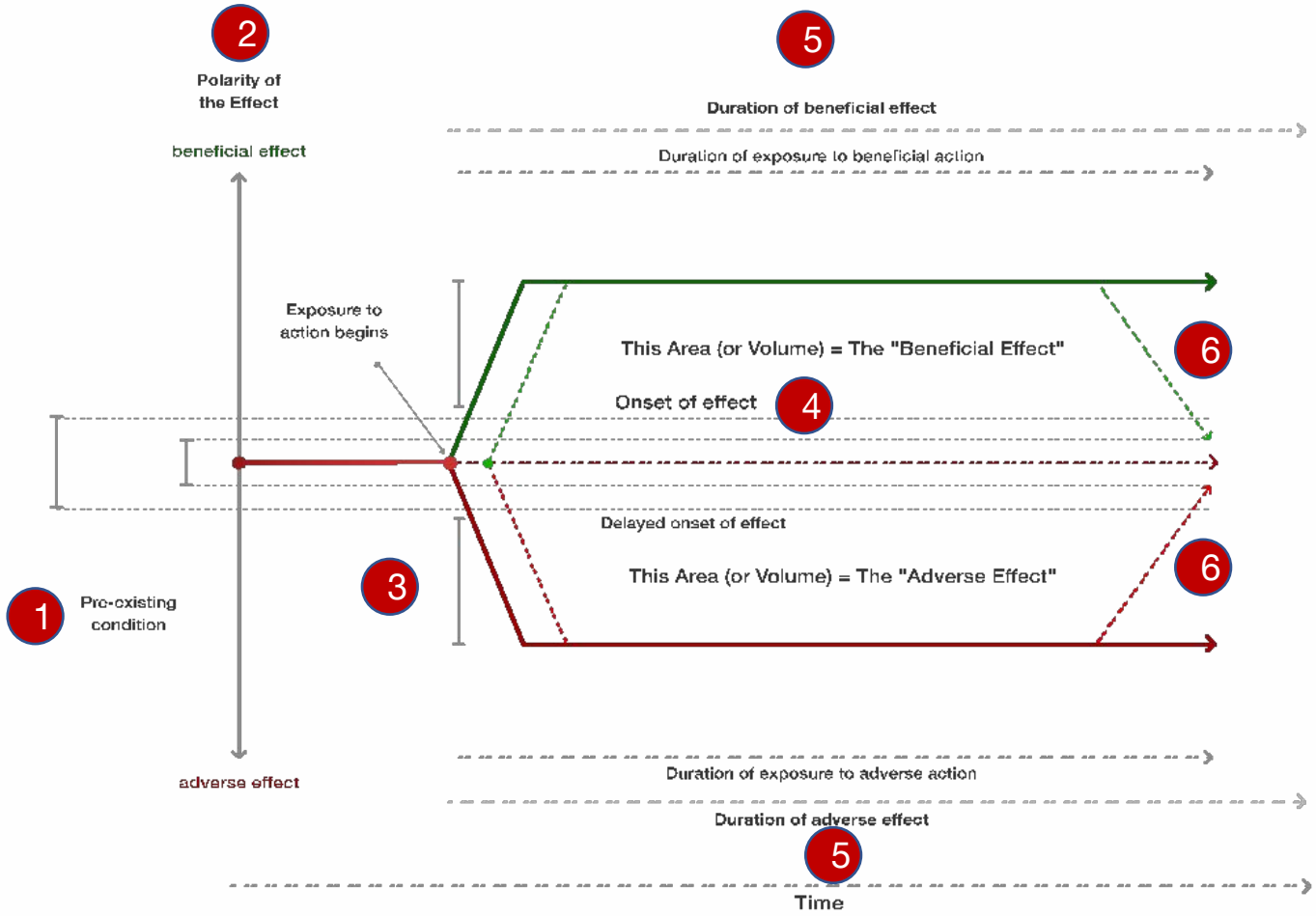
5. **How long will the effect last?**

6. **Can the affected system recover without help?**

A schematic of an effects analysis

This figure illustrates the various elements your effects analyses should describe

1. The pre-existing condition
2. Direction or polarity of the change
3. Magnitude or size of the change. You should assume that magnitudes that fall with the limits of detectable change or a “normal” range of variation are trivial or “de minimis” unless you have strong evidence that is is not
4. Time to onset of the change
5. Duration of the change
6. Recovery (rarely)



Effect as a “change”

- The second component of this concept of effect is a “change” in one or more of the “systems” we identified in the previous slide
- In FWCA consultations, this change represents a departure from a pre-existing state, condition, or circumstance that serves as a reference. That pre-existing state or condition is your “baseline” or “environmental baseline”
- This “change” implies

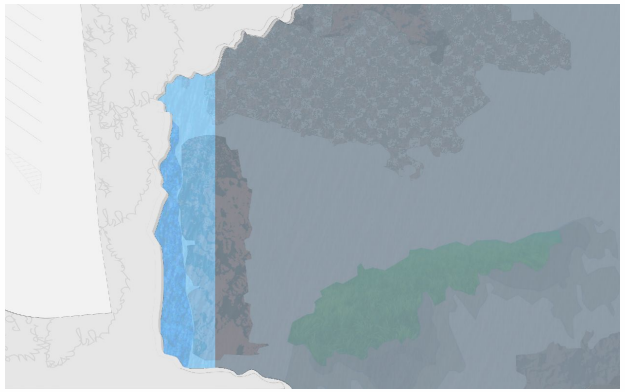
  “Change from Condition or State A to Condition or State B”

  - this change can refer to a change in the environment, generally; a change in the habitat; or a change in individual organisms, populations, species, and biotic communities
  - **this concept of “change” implies that the difference between “Condition or State A” and “Condition or State B” is important or “significant” to the system you’re considering. Don’t focus on changes that are trivial**
- Before you recommend or insist on mitigation, you should first establish that the ”effect” is not trivial; that it warrants mitigation

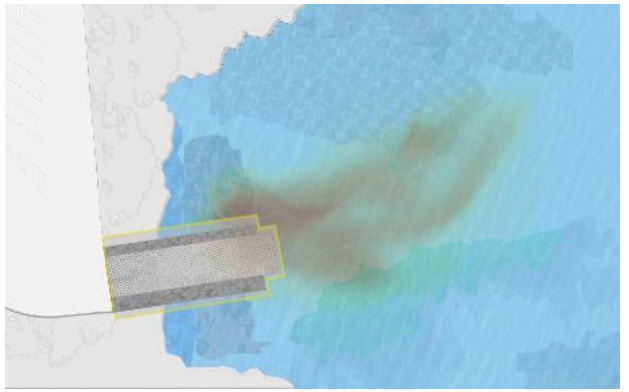
Effect as a “change”

(continued)

Pre-existing condition (Condition A)



“Changed” condition (Condition B)



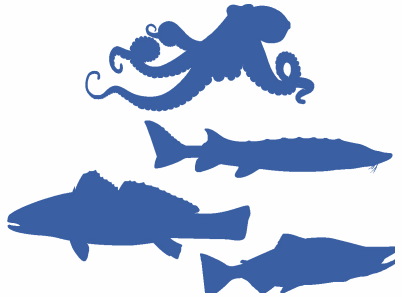
- When we say that something has changed “from Condition or State A to Condition or State B,” we implicitly answer the questions: “changed from what?” or ”what was it like before?”
- “Condition or State A….” represents the “pre-existing condition,” “baseline,” or “environmental baseline.” Without some knowledge of that condition or state, it would be difficult to establish that a condition or state has changed
- If there is no meaningful difference between “Condition or State A” and “Condition or State B” it would be difficult to establish that an “effect” has occurred or that the effect is important

Example 1:

The action kills

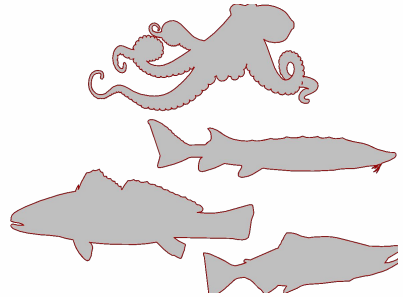
Pre-existing condition

Alive



“Changed” condition

Dead



Components of “change”

- Direction or polarity
- Magnitude
- Time to onset
- Duration
- Recovery

- The figures above provide a simple illustration of how to use “effect” as a “change from a pre-existing condition”
  - Most people understand that killing an organism is a negative, severe, and irreversible “change” in the organism’s condition
  - Nevertheless, a description of this kind of “effect” would should still identify the number of individuals expected to die (*magnitude of the effect*); when the deaths would be expected to begin (*time to onset*); the time interval over which deaths are expected to occur (*duration*); the age/stage, gender, population affiliation, of the individuals that are expected to die, etc.
  - That kind of description would be complete and unambiguous

Example 2:

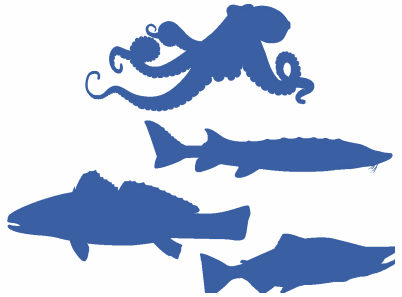
The action doesn't kill

Components of "change"

- Direction or polarity
- Magnitude
- Time to onset
- Duration
- Recovery

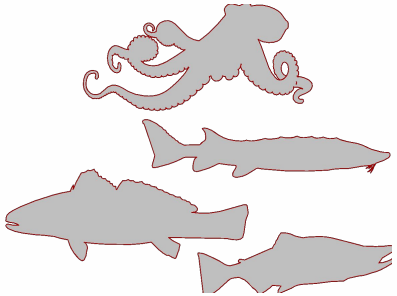
Pre-existing condition

Alive



"Changed" condition

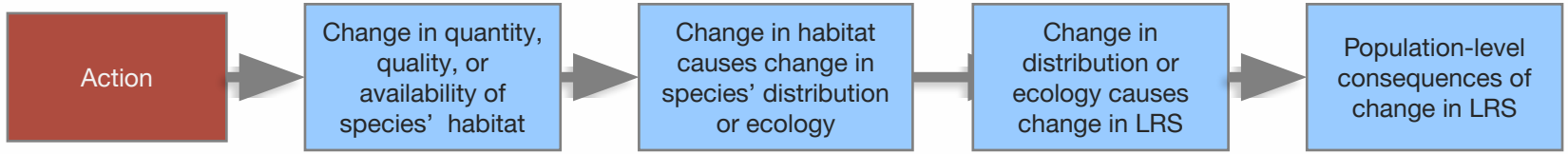
Not dead



- When you don't expect organisms to die as a result of an action, you should focus on the organism's reproductive success which integrates an organism's survival, development, and reproduction.
- Do not use the term "sub-lethal" because it perpetuates the popular belief that actions that do not kill organisms are less important than actions that kill them
- With reproductive success,
  - the **direction** of the change can be positive, negative, or both (for example, an increase in adult longevity coupled with reduced fecundity or maternity)
  - the **magnitude** would represent how much survival, age-to-maturity, maternity, or other components of reproductive success are expected to change

Example 3:

Effects on habitat



Components of "change"

- Direction or polarity
- Magnitude
- Time to onset
- Duration
- Recovery

- The same definition applies to habitat-based effects analyses, although these analyses involve more steps
  - The action causes some feature of the environment to change (positive change, negative, change, or both)
  - The direction, magnitude, and duration of that change is sufficient to qualify as a change in the quantity, quality, or availability of habitat for a species
  - That change is sufficient to cause a change in the LRS of the members of the species that use the habitat. Beneficial effects should increase their LRS; adverse effects should reduce their LRS
  - In some cases, the environment or habitat may recover before habitat-related effects cause a change in LRS. That recovery might occur naturally or because of

Causation

- Effects analyses are essential to every FWCA consultation and establishing a causal link between an Action and some environmental change is essential to every effect analysis
- Causation describes a particular relationship between a cause and its effects. In particular, causation asserts the following relationship:

  If Cause X occurs, Effect Y will follow (with probability P)

- For the purposes of FWCA assessments, we would revise this relationship as follows:

  If Action/Exposure occurs in a particular place and time, then Environment, Habitat, or Species is expected to experience a change in that place and time (with probability P)

- To support your argument, you should establish at least one of three things:
  - the effect regularly follows your putative cause even if the effect doesn't always follow the cause (the Action/Exposure is sufficient for the effect)
  - alternative causes of the effect, including chance, are not operational or are insufficient to produce the effect
  - the effect — the change in Subject Y — **would not** occur (in a particular place and

Causation

(continued)

- During FWCA consultations, be prepared for the following kinds of counter-arguments
  - if you argue that an Action is expected to cause an Effect, the Action Agency or Applicant argues that their action **will not cause** that effect
    - they may argue that the effect is “natural,” would occur regardless of the Action, or will be caused by something unrelated to their Action
  - project proponents argue that the magnitude or duration of the effect is much smaller than you claim (or is too trivial to warrant attention) **or**
  - the mitigation or conservation measures you propose **will not** produce the outcome you want to achieve
  - if you argue that an Action **is not expected** to cause an effect, be prepared for an interest group that argues that the Action **will cause** that effect
- You are more likely to encounter these counter-arguments if you oppose an action, recommend denying a permit, or recommend mitigation or conservation measures that substantially change an Action
- These arguments and counter-arguments all deal with causation. The strength of your

The probability of an effect

- The overwhelming majority of FWCA assessments evaluate actions and projects that are expected to occur in the future. As a result, those assessments are forecasts. By extension, they represent probabilities rather than certainties
- As a result, the statements in your assessments should be framed in terms of probable outcomes rather than “certain” outcomes. You should always avoid discussing “possible” or “potential” outcomes unless those discussions conclude by identifying “probable” outcomes
- Most people struggle to think clearly about probabilities. The overwhelming majority of people use a “coin toss” as their point of reference when they think about probabilities, so
  - “Equally likely” = “even odds” = Probability(Heads) = Pr(Tails) = 0.5
  - Using this metaphor “Likely” means >.50 and “Not likely” means <.50
  - The weakness of this metaphor becomes obvious if you introduce a different game of chance (for example, a single die has 6 sides that are equally likely even though the probability of any result is only 1 in 6)
- People treat probabilities below some pre-determined mental threshold as not worthy of further consideration (that is, they treat them as effectively zero)

Use plain language probability terms

Category	Qualitative Term	Expected Frequency of Occurrence
Certain event. An event or outcome that, based on the evidence, would reasonably be expected to occur at least once over the life of a project, regardless of the project's duration (expectation of at least one occurrence over the life of a project is 100%)	**Common event**	An event or outcome that would reasonably be expected to occur numerous times a year or more than once during a project that lasts for less than a year
	Frequent event	An event or outcome that would reasonably be expected to occur several times a year or at least once during a project that lasts for less than a year
	Seasonal event	An event or outcome that would reasonably be expected to occur more than once seasonally and would be expected to occur once during a project that occurs during that season
Uncertain event. An event or outcome that, based on the evidence, has less than 100% probability of occurring at least once over the life of a project, regardless of the project's duration	**Likely event**	An event that has more than 6 in 10 chances of occurring after repeated instances are considered
	About as likely as not	An event that has between 3 and 6 in 10 chances of occurring (1 to less than 2 chances in 3) after repeated instances are considered
	Less likely than not	An event that has between 1 and 3 in 10 chances of occurring after repeated instances are considered
	Low likelihood event	An event that has between 1 in 10 and 1 in 100 chances of occurring after repeated instances are considered
Unlikely event. An event or outcome that, based on the evidence, has less than 1% probability of occurring at least once over the life of a project, regardless of the project's duration	**Unlikely event**	An event that has less than 1 in 100 chance of occurring after repeated instances are considered
Improbable event. An event that is possible or conceivable, but would never be expected to occur over the life of a project, regardless of the project's duration. That category includes the so-called "black swans": high consequence events whose probability of occurring is considered small enough to ignore	**Improbable event**	An event that has less than 1 in 1,000 chance of occurring after repeated instances are considered

- Because most people generally struggle to interpret numerical probabilities, it helps to provide plain language interpretations of probabilities in your FWCA assessments
- This table is designed to help you convert numerical probabilities (for example, probability less than 0.05) into expected frequencies (0.05 = 1 chance in 20) and present that expected frequency in plain language (0.05 = low likelihood event)

Concentrate on consequential effects

- After you have identified the effects of an action or project — that is, after you have identified all 6 components of an effect described earlier in this module — and established that those effects are probable, you still need to answer one critical question:

So what?

- For example, the sound field created by pile-driving for a bridge abutment injures or kills a handful of juvenile anadromous fish each day for 10 days. Sediment from a new forest road increases the embeddedness of gravel substrates downstream and increases juvenile mortalities by 5% above base rates. Installing the monopile foundations for an offshore wind energy project causes small marine mammals to abandon the area within a 5-mile radius of the foundations.

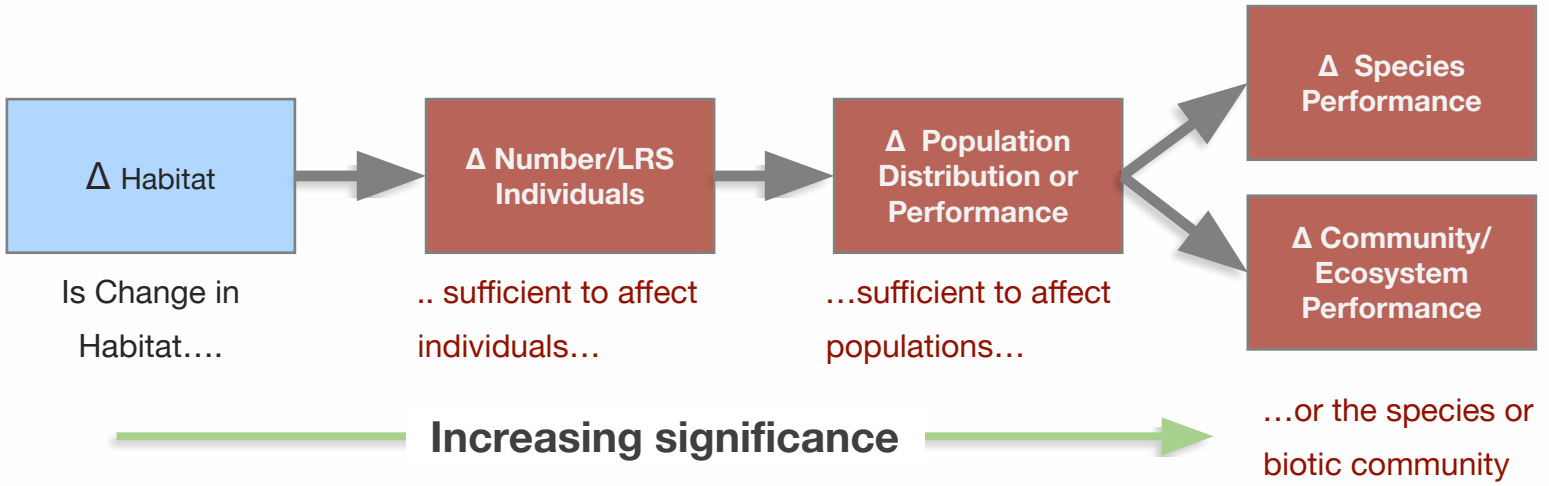
So what?

- **To answer these “so what?” questions, you need to do more than establish that an effect has consequences. You need to establish that those consequences are ecologically important or significant (individually or cumulatively)**

- To do that, you need to place effects into context by looking at how they propagate at

Concentrate on consequential effects

(continued)



- To establish that an effect on habitat is consequential, you need to establish that the effect is large enough to **affect individual fish and wildlife that occupy or use the habitat** (this effect can be a positive or negative)
- An effect is more consequential if you expect it to increase or decrease the abundance or LRS of those individuals (supported by reasoning and evidence)
- Individual-level effects are more consequential if you expect them to have population-level effects (again, supported by reasoning and evidence)
- This reasoning applies even when an action or project affects fish and wildlife directly rather than through habitat (for example, sound fields produced by pile-driving)

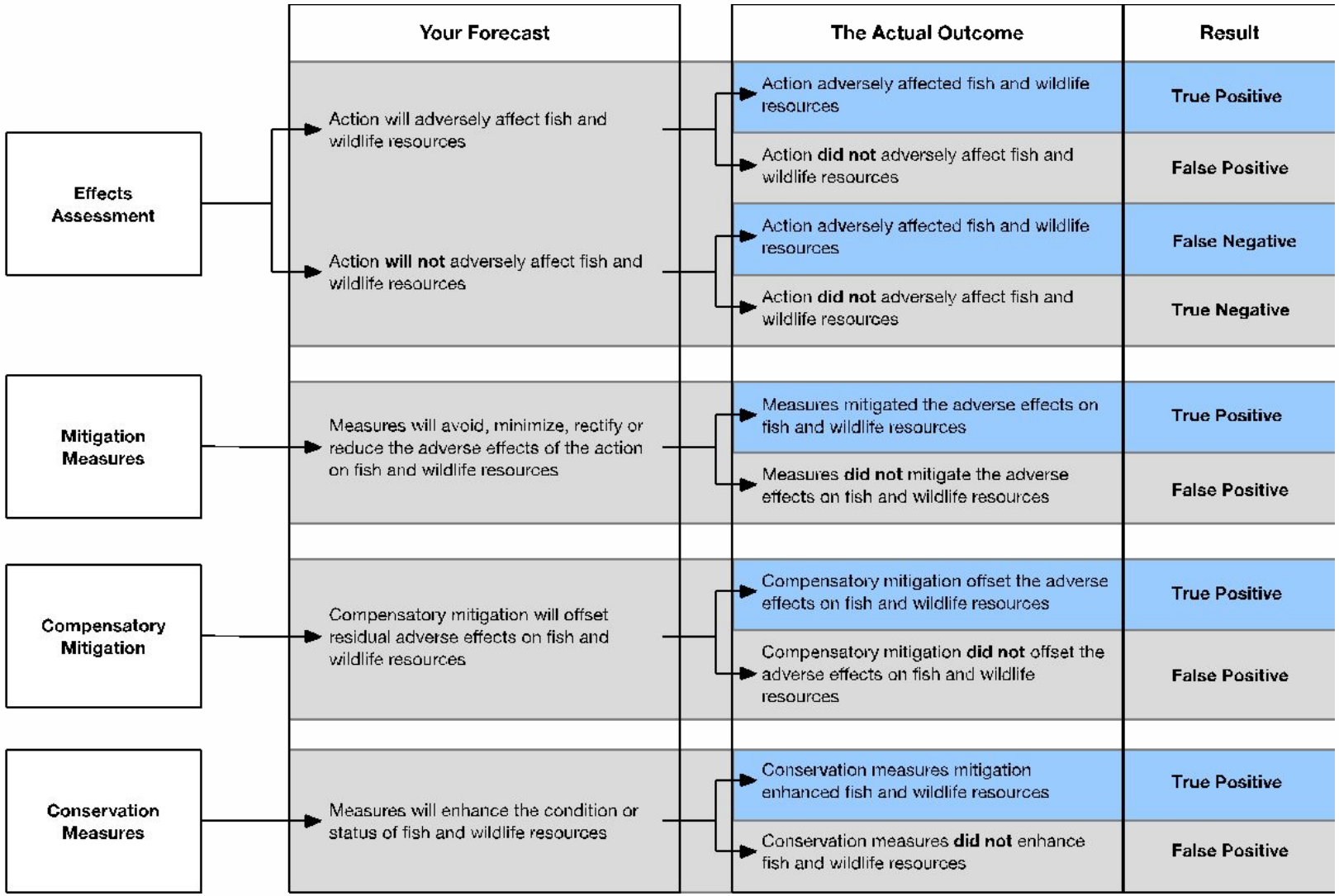
Concentrate on consequential effects

(continued)

- FWCA assessments commonly list the species that occur in or use the habitats affected by an action or project. However, these lists provide only weak support for assessments if you do not identify the strength of the association between the species and the habitat
- Your FWCA assessments will be stronger if:
  - your list of species is based on field investigations of the project area and
  - your assessment focuses on two categories of species:
    - **Indicator species**. These are species whose status and trend follow the status and trend of the environment or habitat conditions (or both). In addition to being valuable to effects analyses, indicator species are also valuable when setting performance objectives for mitigation and for monitoring
    - **Keystone species**. These are species whose impact on the resilience and stability of a biotic community is disproportionate relative to its abundance (although they may not be indicators of specific conditions)
- The status and trend of strong or perfect indicator species (see notes) will follow the status and trend of their habitats. In many cases, the reverse is also true: the status and trend of strong or perfect indicator species will allow you to forecast the status and trend

Your objective

- In every FWCA consultation, your objective is to reach **True Positive** and **True Negative** conclusions **AND** help ensure that Action Agencies do the same (see Note 1)
- If you conclude that an action will adversely affect fish and wildlife resources, those effects should materialize (see Note 2)
- If you conclude that an action **will not** adversely affect fish and wildlife resources, those resources should not be adversely affected
- The same reasoning applies to mitigation measures, regardless of whether you or the action



Ingredient 2

Evidence

Introduction

We all make assumptions. We generally assume that our intuitions are correct; we assume that our personal experiences are representative of what others experience; we assume that our past experience is a reliable guide to the future; we assume that information we've been given by the people and sources we trust are correct. And these are only a small sample of the assumptions we make.

One problem is that our assumptions are often wrong and our experiences either are not representative or are not reliable guides to the future.

Another problem is that the people we work with make assumptions that are completely different from ours and many of their assumptions are also wrong or are not representative.

Evidence allows us to address these and other problems. **By "evidence," I mean data or other information that can be used to critically evaluate the truth or falsity of statements, claims, and propositions. With evidence we can critically evaluate our assumptions and those of others.**

However, unlike the ESA and MMPA, the FWCA does not establish specific standards of evidence that would apply to FWCA consultations. Fortunately, the APA, IQA/DQA, and the principles that form the foundation for the scientific method provide standards that can guide you during FWCA consultations.

Standards of evidence

You can ensure that your FWCA consultations satisfy the APA's "arbitrary and capricious" standard, the DQA requirements, and the principles of scientific inference with a single standard of evidence:

> **Your claims and conclusions should be based on the "best" evidence available, which is the strongest evidence that is representative, relevant, credible, and current**

Evidence is ***relevant*** if it might cause you to change your belief about the truth or falsity of a statement or the probability of an outcome.

Evidence is ***representative*** if it would apply to the circumstances surrounding a particular action or area.

Evidence is ***credible*** if it is accurate, free from errors of fact, fair (versus imbalanced), impartial or objective (versus biased), and produced by valid methods.

Evidence is ***current*** if it is still applicable; that is, it has not been retracted or modified or superseded by newer evidence.

Be systematic

- Studies of how people actually reason (as opposed to how people like to believe they reason) have demonstrated that most people:
  - Quickly form intuitive judgments or conclusions
  - Seek evidence that *confirms* their intuitive judgments
  - Form arguments that explain why their intuitive reasoning is sound
- **Most people do not actively seek evidence that challenges or disputes their intuitive judgments (”disconfirming evidence”)**
- When presented with disconfirming evidence, most people :
  - Reject the evidence completely or
  - Give that evidence lesser weight than confirming evidence
- Scientists are not exempt from this tendency, which is why the scientific method — which focuses on disconfirmation rather than confirmation — is so critical to the practice of science
- **You can counter these biases by being systematic during your search for and**

What is a systematic review?

- A systematic review is a formal procedure for **identifying**, **selecting**, **appraising**, and **analyzing** data and other evidence to answer clearly-formulated questions. The procedure is usually specified before you conduct the review
  - Systematic reviews are procedures for identifying all the relevant data and other information that is available to answer specific questions (rather than just the "best" data or information)
  - Systematic reviews can be used to identify the information available as well as to update the information we have already collected
- Consequently, the results of systematic reviews will usually satisfy the information standards associated with the APA, ESA, OMB's Information Quality Management guidelines, MMPA, etc.
- Because they can require a lot of time and resources, systematic reviews are best done by teams rather than by individuals. For example, they might be conducted by a team of biologists assembled from the Fish & Wildlife Agencies during a FWCA consultation on a civil works project
- Fortunately, an increasing number of systematic reviews are being published in

Steps of Systematic Reviews

- Systematic reviews typically consist of the following steps:

1. Formulate answerable question(s);
2. Describe how you will search for, identify, select, retrieve, and critically appraise sources of data and analyze data extracted from those sources. Your description should provide enough detail to allow someone else to replicate your results;
3. Execute the procedure you describe in Step 2;
4. Extract data from the sources you identify and retrieve in Step 3;
5. Analyze the data you extracted (using methods appropriate to your questions);
6. Interpret and present results

- The study guide that accompanies this tutorial provides a more thorough explanation of systematic reviews if or when you're interested in them. However, I want to briefly discuss
  - search procedures because you will probably conduct internet searches during your FWCA consultations even if you don't search systematically
  - data analysis and interpretation

Searching for evidence

- Searches consist of the following elements:
  - the search engines you use (Google, Google Scholar, Bing, BASE, CORE, etc.)
  - the keywords or search terms you place into search engines, websites, indices, and databases
  - operators such as “and,” “or,” “not” you use to combine keywords into search strings (for example, “wetland” AND “restoration”)
  - websites, indices, or databases used in a search (for example, Scite.ai, ReefBase, ECOTOX, etc.)
- The combination of these four elements will determine if your searches are likely to identify all sources of relevant information
- Your searches should not be biased: your searches should be able to identify information that supports as well as information that does not support a particular position.
  - For example, if you search for beneficial effects of a specific mitigation measure, you should also search for the adverse effects of the same mitigation measure

Searching for evidence

(continued)

- There is an art to identifying relevant websites, databases, and other “sources of sources,” constructing search strings (keywords connected by operators) that works with those sites, and using those search strings to interrogate them
- Before you use search engines like Google, Google Scholar, or Academia, check to see if the publisher provides tips and guidance on conducting searches
- When you begin a search on a new topic, it often helps to start by searching for authors that you know have published widely on the subject. If you then click on the “Related articles” link, you will identify additional data sources
- Your search skills with improve faster if you keep notes on the combinations of search strings and operators that produce the greatest number of true positive results (”hits”) and the smallest number of false positive results (“misses”)
- if the USFWS and your State and Territorial counterparts are participating in the FWCA consultation, try to share this work with them. Your search procedure should contain enough detail to allow you and your counterparts to work together as a team

Searching for evidence

(continued)

- Most of you will use Google or Google Scholar for your searches
  - However, studies have demonstrated that using search engines other than Google/Google Scholar will produce results you would not locate by searching Google/Google Scholar alone (up to 30% additional results)
  - So, you should search Google and Google Scholar and complement those searches by searching Yahoo!, Bing, ResearchGate, IngentaConnect, Web of Science, the Collaboration for Environmental Evidence has a searchable database of systematic reviews (called CEEDER). etc.
  - **Warning**: if you type the same search terms into Google or Google Scholar twice, you will typically get different results both times. That means you will not be able to replicate your searches if you use either of these search engines
- Your searches need to include dissertations, theses, conference proceedings, and "gray" literature. "Gray literature" would include data from NOAA science centers, data Action Agencies/Applicants have been required to collect to comply with regulatory actions (such as CWA 404 permits), and data in monitoring reports
- Since electronic searches commonly fail to locate studies older than 1994 and those

Priors, Priors, Priors

- Module 7 introduced the concept of **“priors”: Earlier projects of similar kind, their effects on the environment, their effects on the fish and wildlife that occupied the area, and the consequences for those species**
- Your searches for evidence should specifically target published sources, dissertations, theses, and grey literature (include monitoring reports) that contain relevant prior case examples
- Although “priors” are some of the most valuable evidence you can present in a FWCA consultation, it is rare to see any consultations rely on “priors” to support their analyses or mitigation recommendations
- When you examine “priors” you are looking for common patterns. Do all, most, some, or none of your “priors” have a common characteristic or feature? Once you identify a common pattern, you would assume your specific case will reflect that pattern
- Your reasoning would rely on the following basic structure
  - Identify a general pattern from your priors, if there is one (general circumstance)
  - Make a general inference from that general pattern
  - Argue that a specific circumstance is an example of the general pattern

Priors, Priors, Priors

(continued)

- For illustration purposes, let's use the data from GAO's 2005 report on the USACE's 404 program for "priors" (this presentation is for illustration purposes; in an actual FWCA consultation, you would combine these data with data from other studies)
- GAO reported that **permittees submitted 21 of the 89 monitoring reports they were required to submit**
  - These data suggest the following pattern:
    - on average, only **23.6%** of monitoring reports were submitted (95% CI = 15.98 to 33.39%). Based on these data, **76.4%** (95% CI = 66.11 to 84.02%) monitoring report were not submitted
    - applicants are **3 times more likely to fail to submit** monitoring reports than they are to submit them
- You could draw several conclusions from these data and analyses. Before you infer too much about the behavior of permit applicants, you should ask if the relevant USACE permits
  - specify when applicants are required to submit monitoring reports and
  - if so, does anyone contact applicants when their monitoring reports are overdue?
- If the answer to either of these questions is "no," your first step would be to specify reporting

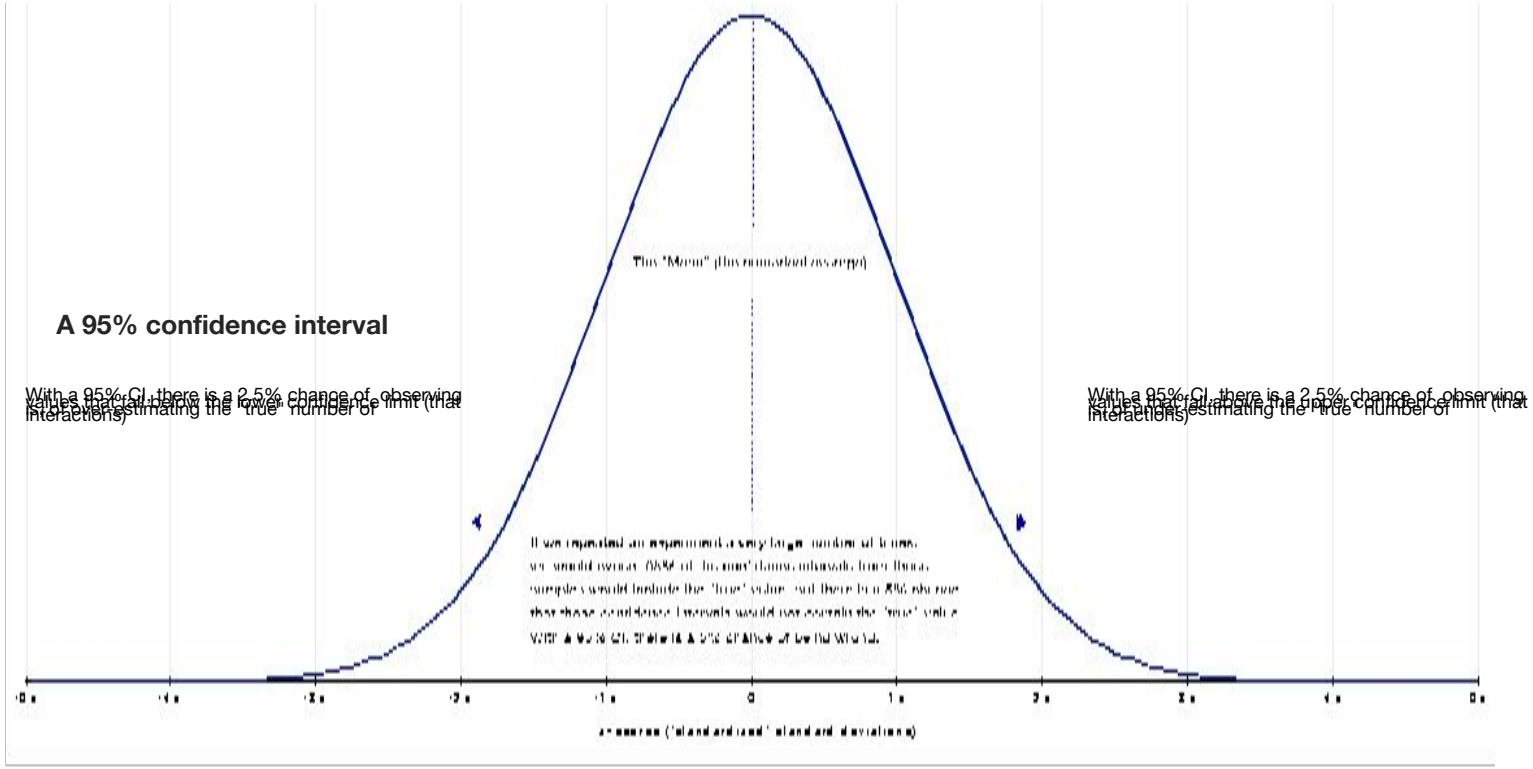
Data analysis

- Once you've collected relevant data and other potential evidence, you need to know what to do with it
- There are 3 primary ways of analyzing data:
  - Graphic analysis
  - Statistical analysis
  - Meta-analysis
- I cannot do justice to these 3 kinds of analyses in this tutorial and won't even try (but see notes for further resources). However, several points are important
  - if you still believe that data analysis consists of null hypothesis testing and calculating p-values, consider updating your statistical skills
  - you should become comfortable with simple **Bayesian analysis** and calculating and interpreting **event probabilities**, **effect sizes and confidence intervals**, and **meta-analyses**
  - if you don't use R, you should at least be competent with Excel or comparable

Confidence intervals

- Anyone who works on FWCA consultations is required to make decisions from limited data
- For example, a monitoring program concludes that an average of 14 Menhaden were affected by an action every year over a 10-year interval. This point estimate — 14 Menhaden— summarizes the samples collected over the 10-year period, but it tells us nothing about how much variation were in the samples, the level of uncertainty associated with the point estimate, or how confident we can be that future interactions will be close to that point estimate
- Confidence intervals (CIs) represent ranges of plausible values that encompass a variable's "true" value (estimated by a certain statistic with a given probability). They capture our level of confidence as well as our level of uncertainty
- Whenever you encounter a point estimate in an Action Agency document, you should ask for the confidence interval associated with that estimate
- In the applied sciences, confidence intervals are more informative than p-values (for example, p = 0.05). You should know how to calculate them, interpret them, and incorporate them

Confidence intervals



- If we calculated a 95% confidence interval for the “average” number of Menhaden affected by an action, in the long run we would be correct 95% of the time if we claimed that the actual number of Menhaden interactions was contained within the upper and lower bounds of our interval (we could also decide to use 80%, 90%, 99%, etc. intervals)
- Why is this important? Because a confidence interval will reflect our prior experience while a proposed action is a “new” repeated “experiment.” Confidence intervals allow us to properly capture our uncertainty about the “true” value this ”new” experiment will take

How strong is your evidence?

- When you construct your case, you should be aware of the strength of your evidence. In some cases, the evidence that supports your case may be strong but the evidence that does not support it may be stronger
- Your evaluation of the strength of your evidence will allow you to properly qualify your claim and help you
  - avoid making a case that is weaker than the case for the alternative claim **and**
  - avoid making a case you cannot defend
- The same principles you would apply to your evidence would also apply to the evidence an Action Agency, Applicant, or other stakeholder or interested group presents in NEPA documents, permit applications, etc.
- When any of us present evidence, it helps to understand how strong it is. You can use three criteria to evaluate the strength of your evidence:
  - the kind of evidence
  - the amount of agreement within the evidence

Evidential strength:

1. Kind of evidence

- The first criterion is **the kind of evidence**, which requires you to distinguish between
  - a systematic review and meta-analysis,
  - multiple independent studies,
  - a single empirical study (which can include a field investigation you conduct)
  - a model (a mathematical simulation)
  - other kinds of evidence (testimonials, single observations, etc.).
- All other things being equal, a systematic review that is executed according to a procedure (a “protocol”) that was subjected to independent review by people with the relevant subject matter expertise would represent the strongest kind of evidence

Evidential strength:

2. Agreement

- The second criterion for evaluating the strength of your evidence is:
  - **how much agreement is there within your evidence?**
  - Evidence gets stronger the more agreement there is among multiple, independent sources
    - *High agreement* would occur when all or the overwhelming majority of evidence supports or rejects a conclusion or claim, with very little or no disagreement
    - *Mixed agreement* would occur when the majority of evidence supports or rejects a conclusion or claim, but a substantial portion of evidence supports different conclusions
    - *Low agreement* would occur when a substantial portion of evidence supports a conclusion or claim, but the remainder supports alternative conclusions or claims
  - As always, “evidence” refers to the data and other information you extract from a study or source, not the source of the data. Your conclusions about the amount of agreement would consider a study’s sample size and sample

Evidential strength:

3. Representativeness

- The third criterion for evaluating the strength of your evidence is:
  - **How representative is the evidence?**
    - Evidence that consists of information about the **same species** or life form in the same circumstances would be “identical” and would provide the strongest support for a conclusion or claim (all other things being equal).
    - Evidence that consists of information about “similar” species/life forms and circumstances — meaning, they are close enough to be treated as the same — would represent the next tier of representativeness.
    - Evidence that refers to “analogous” species and life forms and circumstances — there are some similarities, but important differences — is ranked lower
    - The bottom of the representativeness hierarchy is evidence that establishes a general pattern across species, lifeforms, and circumstances, but is not otherwise representative of a specific case

Meta-Analysis

- With rare exceptions, data from two independent studies will produce different results. For example, if you have 2 studies of the effects of boat docks on seagrass, the two studies will reach different results. If you have 3 studies, you will have 3 different results, and so on
- To make matters worse, different studies will have different sample sizes and sample variance
  - **What do you do when this happens?**
- Meta-analyses are analyses of data from different studies. They allow you to combine data produced by different studies, even when they appear to conflict
- Meta-analyses would allow you to consider almost all of the data available and weight those data consistently without forcing you to decide which data are “best”
- Meta-analyses also allow you to:
  - reconcile the results of large studies with small studies
  - determine if you’re dealing with a single “population” or multiple “populations”

Meta-Analysis

Column 1 Column 2 Column 3 Column 4 Column 5 Column 6 Column 7 Column 8

Study	Original Data			Proportions		95% Confidence Interval for Proportions (using Wilson Score Method)	
	n initiated	n not initiated	No. projects	p(initiated)	p(not initiated)	Lower 95% CI	Upper 95% CI
Study 1	55	2	57	0.9649	0.0351	0.8808	0.9903
Study 2	69	6	75	0.9200	0.0800	0.8363	0.9628
Study 3	64	33	97	0.6598	0.3402	0.5610	0.7464
Study 4	214	131	345	0.6203	0.3797	0.5680	0.6699
Study 5	84	30	114	0.7368	0.2632	0.6492	0.8090
Study 6	22	58	80	0.2750	0.7250	0.1892	0.3814
Study 7	14	0	14	1.0000	0.0000	0.7847	1.0000
Study 8	42	3	45	0.9333	0.0667	0.8214	0.9771
Totals	**564**	**263**	**827**	**0.7638**	**0.2362**	**0.6613**	**0.8171**

The problem

- The Applicant presents Study 7 to support their argument (it has the highest implementation rates)
- You focus on Study 6 instead because it produces the lowest implementation rates

- For example, consider 8 studies that looked at whether mitigation projects that were required by federal permits had actually been initiated. Note that the sample sizes of the studies vary widely (range = 14 to 345)
- The Applicant presents Study 7 to demonstrate you that you should assume they are certain to undertake their mitigation project. You might present Study 6 to demonstrate the project is not likely
- How would you make sense of these data? How do you resolve this dispute?

Meta-Analysis

(continued)

The problem

- The Applicant presents Study 7 to support their argument (it has the highest implementation rates)
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	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
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				Cell 1		Cell 2	Cell 3

- You might turn to what appears to be a simple solution: calculate the mathematical averages of Columns 5, 7, and 8 (Cells 1, 2, and 3) and apply them to the project (mean = 76.4%; 95% CI = 66.1 to 81.7%)
- Both you and the Applicant might not recognize your mistake: simple mathematical averaging ignores the widely varying sample sizes in the different studies
- Simple averaging assumes Study 7 (n = 14) provides the same information as Study 4 (n = 345)

Meta-Analysis

(continued)

The problem

- The Applicant presents Study 7 to support their argument (it has the highest implementation rates)
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Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
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				Cell 1		Cell 2	Cell 3

- Meta-analyses use the sample size and variance associated with studies to weight them. The result is a much less biased estimate
- A meta-analysis of the proportions in these 8 studies produced the following mean proportion and 95% confidence interval: mean = ~ 64.3% of mitigation projects are initiated (95% CI = 60.5 to 68%)
- If nothing else suggests the Applicant is more or less likely to undertake their project than this, you would apply these results to the project and add conditions to bring the

Summary

How you identify, collect, analyze data and other evidence in your FWCA consultations and consultation documents allows you to challenge your own assumptions and the assumptions of Action Agencies, Applicants, and your counterparts make about a project and its effects

If you base the claims and conclusions you make during FWCA consultations on evidence that is **representative**, **relevant**, **credible**, and **current**, you increase the rigor and power of your claims and conclusions. If you base your claims on as many prior cases as you can identify and carefully consider and respond to counter-examples, you make it harder to dismiss your claims and conclusions

Meta-analyses, which are now common in applied sciences such as epidemiology and medicine and are becoming increasingly common in regulatory sciences, are a powerful tool for aggregating the results of multiple studies. They allow you to consider all of the relevant evidence available rather than just the “best” evidence

You would substantially increase the strength and value of your FWCA consultations if you add meta-analyses to your skillset. Meta-analyses also allow you to work cooperatively with your counterparts in the other Fish & Wildlife Agencies. Working together as a team would be an excellent way to find common ground and reach consensus

Ingredient 3

Reasoning to a conclusion

Introduction

Reasoning from evidence to a conclusion is the centerpiece of making a case. The reasoning process involves working through a series of intermediate points (or premises) to your conclusion. Your goal is to establish that the conclusion logically extends from your reasoning and evidence.

We can distinguish between “good” arguments and “bad” arguments, “strong” arguments and “weak” arguments. “Good” arguments provide premises that are sufficient to support the argument’s conclusion. “Bad” arguments do not. “Strong” arguments are ”good” arguments that anticipate and respond to counter-arguments or challenges.

There are numerous methods for determining whether an argument is a “good” one, some require an application of the rules of formal logic while others apply rules of informal logic. Regardless of the system of logic being applied, good arguments will meet the following criteria:

- their premises are relevant to the truth of the conclusion
- their premises are acceptable, believable, warranted
- their premises provide sufficient grounds for the truth of the conclusion, and
- they provide an effective rebuttal to all reasonable challenges to their conclusions

How to Evaluate Arguments

- Writing can use the power of words and language to inspire, motivate, persuade, or influence without providing good reasons for its conclusions
- The process of evaluating an argument — an argument you're developing or an argument you've received — starts by stripping away elements that have emotional appeal so you can examine the reasoning itself. This is called converting your arguments into "standard form"
- That process consists of the following steps:
  - Identify the point, claim, or conclusion the argument presents (if there is one)
  - Identify the reasons and evidence (premises) the argument presents to support its claim or conclusion
  - Reconstruct the argument, in writing, and apply the principle of charity
  - Evaluate each premise using the criteria of relevance, acceptability, sufficiency,
- Your ability to critically evaluate arguments protects you from bias and increases your ability to produce legally-defensible consultations

Argument: The Standard Form

Standard form

Inference Bar

1. Premise 1
2. Premise 2
3. Premise 3
...

4. So: Conclusion

The conclusion should be a logical extension of the premises

Alternate form

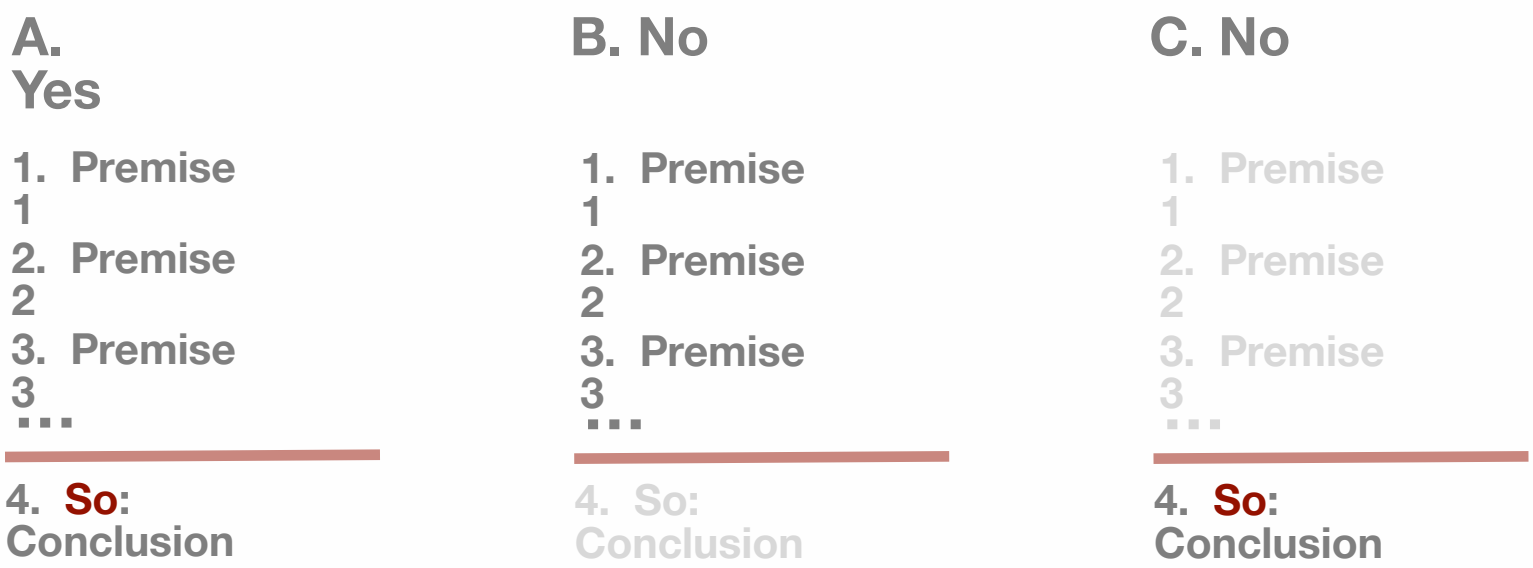
1. Conclusion because
2. Premise 1
3. Premise 2
...

4. Premise n

- The standard form (on the left) represents the process of reasoning to a conclusion. The alternate form (on the right) starts with the conclusion followed by the reasoning that supports it
- You would use the standard form to evaluate an argument, regardless of how you choose to present it
- When you use standard form to reconstruct an argument — whether it's your argument or someone else's —do not intentionally make the argument seem weaker than it is

Step 1: Is this an argument?

The first question you need to ask is if you are actually looking at an argument. That means you are looking for (1) a specific claim or conclusion with (2) reasons and evidence that are intended to support it. If one of these two elements is missing, you may not be looking at an argument



A. This is an argument because it contains a conclusion and the reasons and evidence that supports or led to it

B. This is not an argument because it merely lists reasons or evidence but does not present a conclusion the reasoning and evidence supposedly supports

C. This is also not an argument. It presents a conclusion that is not accompanied by the reasoning or evidence that supports it

Step 2: Does the argument support the claim?

1. Premise 1
2. Premise 2
3. Premise 3
...

4. **So**: Conclusion

- Once you have decided you have an argument — or you have been presented with an argument — examine the reasoning and evidence to see if the claim or conclusion logically flows from the reasoning presented
  - When you examine the reasoning, pay careful attention to the words the argument uses. You need to assume that the word chosen were intentional; that the statement says what it means and means what it says
  - Are the premises presented acceptable? Look for gaps, conflicts, and contradictions in the reasoning presented
  - Does the claim or conclusion logically follow from the premises presented?
- To illustrate the process of determining if an argument supports its claim, the next slide presents the reasoning that extracted from a recent NMFS letter to the USACE on a permit application

  Note: I could not find an example of a recent FWCA letter so, I extracted this reasoning from a final NMFS EFH letter. I modified some of the specifics of the letter to protect the identity of the Region that issued the letter. Those specifics are irrelevant to the conclusion
- The slide that follows the argument I extracted contains a partial analyses of the argument.

Example argument

Background: The permit applicant proposed to destroy 1.104 acres of woody emergent vegetation, 0.64 acres of submerged aquatic vegetation, and 3.10 acres of open water to place fill for a residential housing project adjacent to an inland estuarine system. To mitigate these impacts, the applicant proposed to protect 0.23 acres of woody emergent vegetation and purchase 0.6 credits at a mitigation bank.

Note: the study guide presents a more complete analysis of this case as well as more examples

1. The proposed permit would adversely affect 4.95 acres of estuarine bottom, emergent vegetation, and submerged aquatic vegetation that qualifies as HAPCs
2. The project would lead to **substantial** and **unacceptable** impacts to **ARNIs**
3. The Regional Fishery Management Council identified the vegetated areas and bottom habitats as EFH for several species, including **n** species that are NOAA Trust Resources
4. HAPCs are subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in environmentally-stressed areas
5. The woody emergent vegetation and submerged aquatic vegetation directly benefit fishery resources by providing water quality benefits, foraging opportunities, and nursery habitat
6. **Several fish species and invertebrates inhabiting the project area are ARNI**... including (list of species)…
7. These species use the submerged aquatic vegetation as spawning, refuge, foraging, or nursery areas
8. **Therefore**, the NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

The USACE should not authorize the project as currently proposed. The **NMFS would reconsider this recommendation if** the District concluded project plans reflect all practicable avoidance and minimization of impacts of SAV, woody emergent vegetation, and estuarine unconsolidated bottom and appropriate compensatory mitigation were provided, as demonstrated through functional assessments comparing project impacts to mitigation areas.

Partial analysis

The letter supports its claim that the permit would affect ”aquatic resources of national importance” (ARNI)

However, **the letter does not support its claim that project impacts are “substantial” and “unacceptable.”** General statements about the rarity of HAPCs does not establish that the permit would adversely affect ARNIs or that those effects are substantial

This language does not qualify as a recommendation to deny the permit, particularly since the PN clearly states that the USACE intends to issue the permit unless issuance is contrary to the public interest

If the impacts to an ARNI are substantial and unacceptable, why didn’t the letter recommend permit denial?

1. The proposed permit would adversely affect 4.95 acres of estuarine bottom, emergent vegetation, and submerged aquatic vegetation that qualifies as HAPCs
2. The project would lead to **substantial** and **unacceptable** impacts to **ARNIs**
3. The Regional Fishery Management Council identified the vegetated areas and bottom habitats as EFH for several species, including **n** species that are NOAA Trust Resources
4. HAPCs are subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in environmentally-stressed areas
5. The woody emergent vegetation and submerged aquatic vegetation directly benefit fishery resources by providing water quality benefits, foraging opportunities, and nursery habitat
6. **Several fish species and invertebrates inhabiting the project area are ARNI**... including (list of species)…
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Respond to counter-arguments

- The last slide illustrates counter-arguments that an Action Agency or Applicant could use to argue that NMFS' conclusion is not warranted or supported. A strong argument would have anticipated these counter-arguments and would have pre-empted or responded to them
- That includes anticipating and addressing other considerations your target audience may believe outweigh your arguments, such as competing objectives (for example, economic and social considerations) and "better" alternatives. You need to address these considerations to ensure that fish and wildlife resources are given "equal consideration" and that their conservation is treated as a "co-equal purpose or objective" of federally funded or permitted water resource development projects
- During your meetings, calls, and other communications with the Action Agency and Applicants, you should pay careful attention to the arguments they raise in favor of their project or permit
  - From those arguments, identify the ones you expect them to raise to counter the argument you make in your case
  - Reconstruct the major counter-arguments and respond to them in your verbal presentations, FWCA reports, and FWCA letters

Does this presume that FWCA reports will be long?

- **No.**
- As discussed in the Introduction to this Module, the length of your documents will depend on three main factors:
  1. how well or poorly your target audience will be able to follow your reasoning,
  2. the complexity of the issues you need to address in a FWCA consultation, and
  3. the strength of your writing and reasoning skills
- If your target audience has limited understanding of the issues you need to address, it will take you longer to walk them through the steps that connect their pre-existing understanding to your conclusion (see “Know your audience”).
- If the action you are consulting is complex, it will take longer to address all of the relevant issues.
- If your writing and reasoning skills are not as developed as you would like, it will take you longer to explain a concept or idea.

Ingredient 4

Know your audience

Introduction

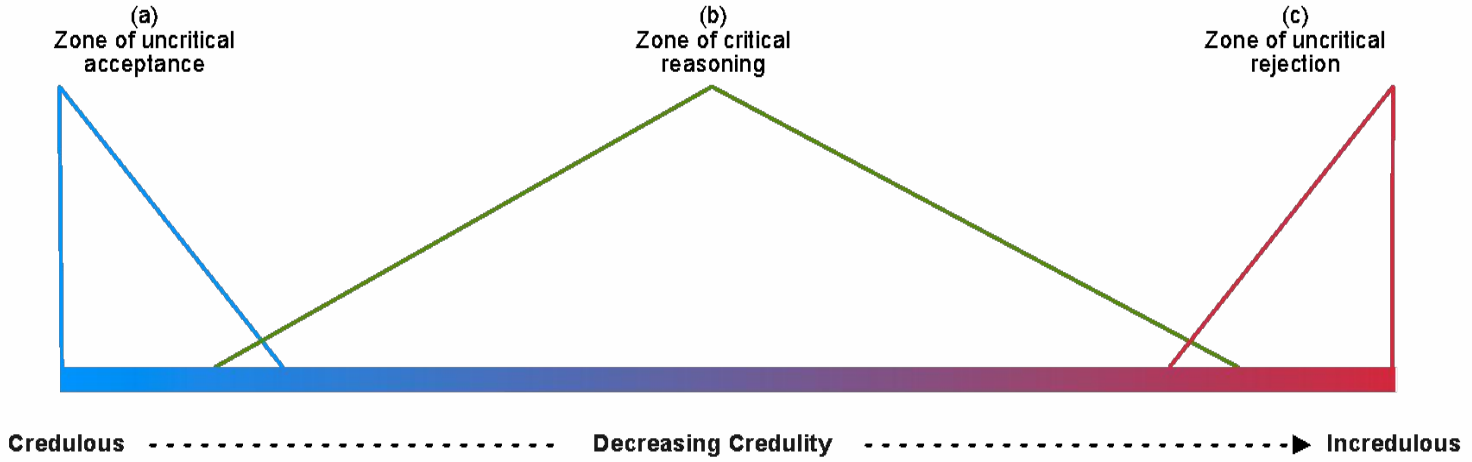
The final ingredient you need to make your case is a clear understanding of who you need to convince or persuade. When you make your case, you need to know your audience

Are you speaking to a counterpart at the USACE? Are you preparing a briefing for your Regional Administrator? Have you drafted a letter to the District Engineer? Have you prepared a FWCA report that will eventually end up on the desk of the ASA-CW, OMB, and Congress? Are you speaking to members of the public during a public information meeting? Your answer to these questions identifies your target audience and you need to prepare your case for that audience. The case you would make in a briefing for your Regional Administrator will be different than the case you would make in a letter to a District Engineer,

The more you know about the people you're talking to or writing to; how they make and respond to arguments; the kind of arguments they find persuasive; the kinds of arguments they do not find persuasive; how they respond to and weigh evidence; their background knowledge on the biology and ecology of fish and wildlife and how human activities affect fish and wildlife populations; their biases; and how they interpret and execute their mandates, the more you'll be able to construct a case that has a chance of convincing or persuading them

FWCA consultations — the formal and informal interactions that occur between you and Action Agency personnel and your counterparts in the other Fish & Wildlife Agencies — give you a chance to learn how to communicate effectively with these individuals. That will often make the difference between being able to protect fish and wildlife resources and failing to do so.

Place your audience on the skepticism continuum



- This figure illustrates a range of skepticism bounded by **complete credulity or uncritical acceptance** on the left and **incredulity or uncritical rejection** on the right. In between lies critical reasoning. As the figure illustrates, there are degrees to all 3 of these zones
- A person's position in this continuum will vary from one question or proposition to another. They may uncritically accept one proposition, uncritically reject a different proposition, and think critically about a third proposition
- During FWCA consultations, remember that this model applies to you as well. Be alert for propositions that you accept or reject uncritically. Look for evidence that supports and does not support your position, consider that evidence carefully, and revise your initial view to align yourself with the evidence

Place your audience on the skepticism continuum

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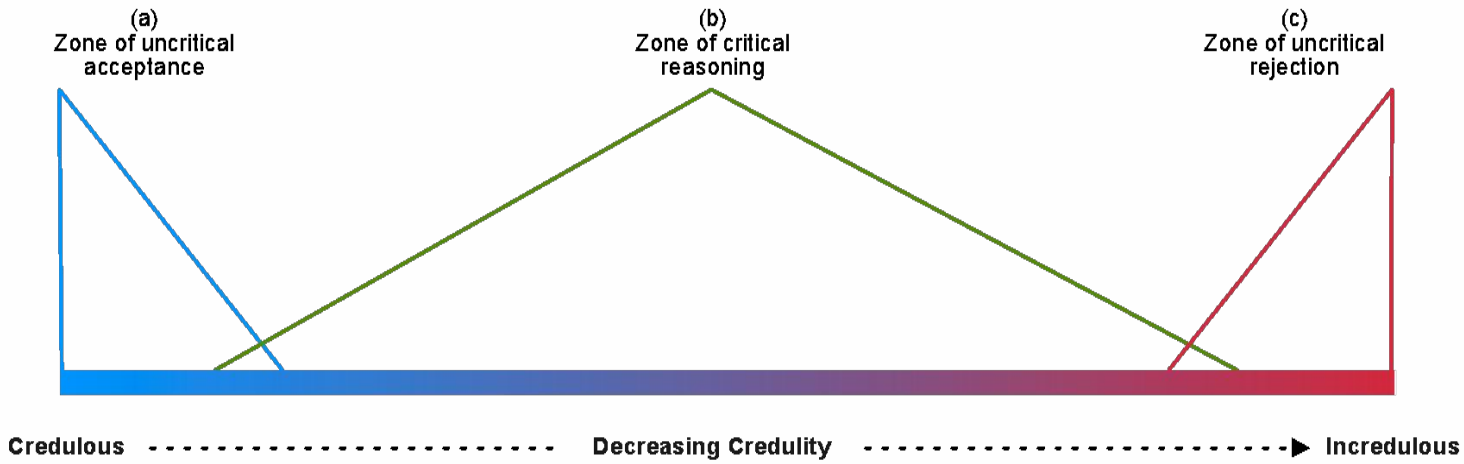


Credulous individuals uncritically accept the arguments or conclusions that confirm their preconceptions. These individuals do not need to be convinced of the "rightness" of the positions they accept and it can be extremely difficult or impossible to convince them to change their initial position

Individuals in this region will consider and critically evaluate arguments and conclusions. These individuals can be convinced to change their initial position but the amount of evidence they require will depend on where they occur in this region

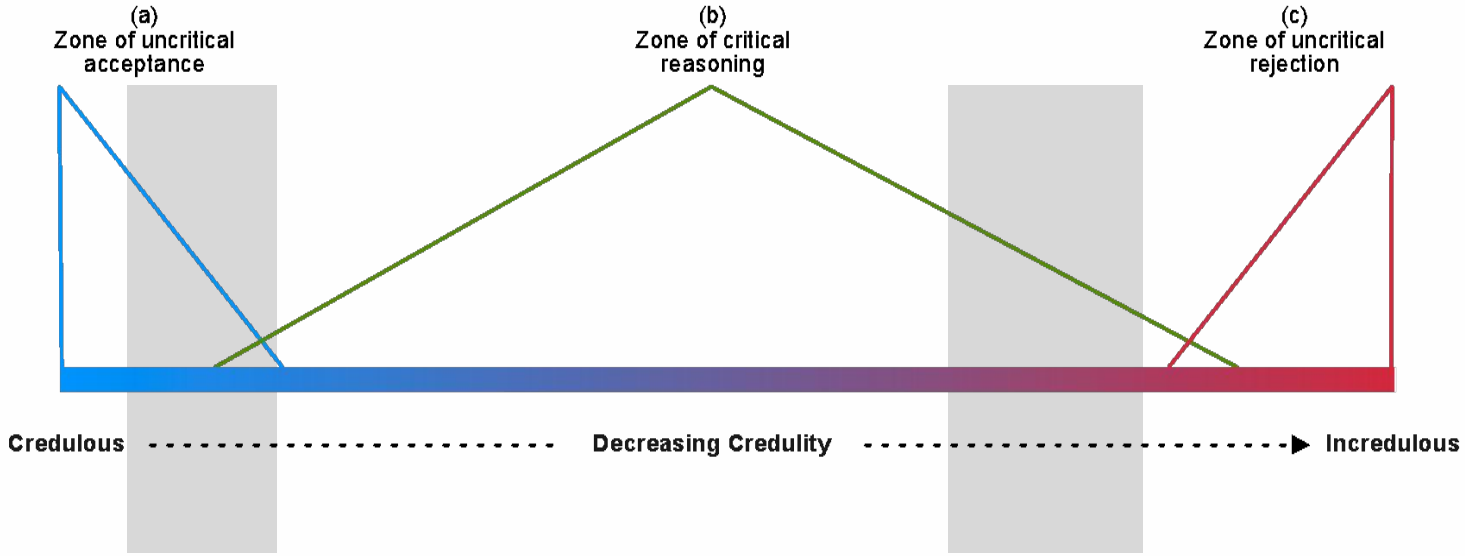
Incredulous individuals uncritically reject the arguments or conclusions that challenge their preconceptions. These individuals do not need to be convinced of the "wrongness" of the positions they reject and it can be extremely difficult or impossible to convince them to change their initial position

When you prepare your arguments during FWCA consultations and in FWCA consultation documents, you should know where your audience lies on this continuum on the issues the consultation will address. The meetings and other interactions that occur during the FWCA consultation allow you to figure this out

Remember: USACE PNs state that the USACE will issue a permit unless issuance is contrary to the public interest. If you want to oppose a permit, you should assume the USACE is to the right of this continuum

Place your audience on the skepticism continuum

(continued)



It would be a mistake to prepare arguments that might satisfy an audience in this region….

… when your actual audience is here….

- If you don't know where your audience lies on this continuum on the issues a FWCA consultation will consider, you have no idea how to prepare your arguments and evidence. In this case you can only hope your arguments will be effective
- If you know your audience, you can prepare arguments and present evidence that addresses their position directly, you can prepare effective arguments. You are positioned to persuade your audience

The “Can I?”/ “Must I?” dichotomy should inform your arguments

- Even when people are open to thinking critically about an issue, argument, or conclusion, their reasoning will be influenced by their preferences, biases, and beliefs. These biases can appear as a subtle but important shift in how they respond to arguments, claims, and conclusions
- When people encounter claims, arguments, or conclusions **they like** or agree with, they will ask “**Can I believe this?**”
  - They answer this question by looking for evidence that supports their desired belief. Sometimes they stop looking when they find any evidence, no matter how weak
- When people encounter claims, arguments, or conclusions **they don’t like** or disagree with, they will ask “**Must I believe this?**”
  - They answer this question by looking for evidence that refutes or allows them to dismiss a conclusion. Sometimes they stop looking when they find any evidence, no matter how weak
- The explanations, narratives, and arguments you present during FWCA consultations and in FWCA consultations documents need to recognize these two perspectives

Understand your audience's language

- Every agency uses terminology that is specific to their statutes, regulations, policy and guidance. They also use terms of art that are not defined formally but are generally understood within their organization
- Significant misunderstanding and disputes can occur during FWCA consultations when participants interpret terms differently
  - For example, effects analyses required by almost every environmental program rely on the concept of "pre-existing conditions." Fish & Wildlife Agencies use the term "environmental baseline" to refer to those conditions. However, NEPA, CWA, ESA, FWCA, and EFH all define the concept differently
  - Similarly, seemingly simple terms like "conservation," "habitat," populations," "population stocks," "species," and "stocks" can have different meaning depending on whether EFH, ESA, or the MMPA are being invoked
- If you become fluent in the regulatory languages associated with the different laws, regulations, policy and guidance you encounter during FWCA consultations, you will be able to communicate much more effectively, your arguments will be stronger, you will be able to recognize disputes that result from different interpretations of the same term, and resolve those disputes

Include as many inferential steps as your audience requires

- Almost any argument or reasoning process rests on a foundation of background knowledge. If your target audience does not have that background knowledge or if their background knowledge is incomplete, flawed, or lacks the depth necessary, they will not follow the reasoning process that led you to a particular conclusion

  For example, someone who doesn't understand the dynamics of populations will not fully grasp the potential demographic consequences of killing reproductive adults, causing those adults to fail to reproduce, or causing juveniles to fail to recruit into the adult population

- When you provide verbal explanations during FWCA consultations, watch your audience and look for people who are not following your reasoning or are struggling to follow it. Pause to make certain your explanation is as clear and transparent as you think it is (it often is not). If it is is clear and transparent, you need to step back, connect with that individual then re-build your argument

- **A clear argument should start with what your specific audience already knows or accepts and present a clear and logical pathway that leads to your intended conclusion**

- However, always remember that even well-reasoned arguments supported by a wealth

So….

- Your explanations and arguments will be more effective if you start with a fair and honest understanding of your audience's perspective. What do they understand about the ecology of fish and wildlife populations? What don't they understand? Using that foundation, you can guide them through the reasoning and evidence that leads you to a particular conclusion
- When you present your verbal and written arguments
  - provide as many inferential steps as your audience needs to follow the reasoning that leads to your conclusion
  - be prepared to provide the background information you believe they need based on your interactions with them during a FWCA consultation
- Provide explanations that use your audience's language or, at least, make certain you translate your language into theirs
- Speak and write to your specific audience about issues that are specific to a particular project. Generic arguments are generally ineffective
- These guidelines will be critically important with FWCA Reports that are submitted to the ASA-CW, OMB, and Congress or 404(q) elevation letters that may be read by

09. Harness the power of FWCA

Introduction

The FWCA requires Action Agencies to consult with NMFS and its counterparts in the other Fish & Wildlife Agencies, invite you to participate formally and informally in project planning. Throughout this tutorial, I have analogized the FWCA mandate to opening the door to Action Agency planning, permitting, and decision-making and letting you in

What you do once you're through this "door" determines whether the FWCA tangibly and measurably benefits fish and wildlife. The depth of your subject matter knowledge; the breadth and applicability of your experience; your ability to identify, analyze, interpret, and present relevant data; your ability to reason fairly and clearly; your ability to communicate effectively and persuasively; and how well you work with Action Agency personnel and your Fish & Wildlife counterparts will largely determine whether your consultation helps conserve fish and wildlife

This module presents a series of recommendations that, in the past, have helped NMFS biologists use the FWCA to conserve fish and wildlife. Because the FWCA places you in the role of expert advisor to Action Agencies and allows you to receive transfer funds from them, many of these recommendations represent practices you might find in a private private consultancy or institute. These recommendations do not guarantee that your FWCA consultations will successfully conserve species, but they will increase your chances

Use the FWCA to Fullest Effect

- To use the FWCA to fullest effect:
  - Know your audience
  - Your professional reputation matters
    - Understand other agency procedures and practices
    - Do not miss statutory, regulatory, or other agency deadlines
    - Make certain you add value
    - Be rigorous with your effects analyses
    - Build public support
  - Think and act strategically
  - Status and trend assessments are critical
  - Take time to reflect
  - Celebrate your victories

Recommendation 1

Your professional reputation matters

Introduction

The FWCA places you in the role of expert advisor to Action Agencies and allows you to receive funds from them for investigations and report preparation. Action Agencies that rely on FWCA recommendations in their decision-making need to trust that recommendations are supported by sound reasoning; credible, relevant, and reliable evidence and analyses; and that the recommendations recognize the scope and limits of their authority and their legal obligations,

Funding transfers typically rely on scopes of work that specify the funding agency's need, the work NMFS and its cooperators (if nay) have agreed to perform, deliverables, delivery schedules, etc. When scopes of work are negotiated, the names and qualifications of lead personnel are commonly discussions. Agencies that agree to these fund transfers need to trust that the work will be completed on schedule and that the deliverables will fulfill their need.

In both cases, your agency's reputation, your region's reputation, your office's reputation, and your professional reputation matter. It's worthwhile to remember something Warren Buffett has said is several interviews:

> *"It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently"*

The following recommendations are designed to safeguard your reputation.

Understand Other Agency Procedures & Practices

- To use the FWCA effectively you need to become fluent with the procedures, practices, and standards that apply to the statutes that authorize agency actions
- Specifically:
  - Water Resources Development Act, particularly how the USACE and BOR implement it
  - NEPA procedure
  - Clean Water Act
  - Federal Power Act and how FERC implements it
  - the standards, criteria, and terms of art the different agencies use to describe and assess ecological effects
  - Section 706 of the Administrative Procedure Act (5 U.S.C 706)
- Understand the terminology the Action Agencies you work with use as well as how they interpret and apply those terms. That fluency will allow you to communicate more effectively with Action Agency personnel. It will allow you to prepare arguments those

Don’t miss statutory or regulatory deadlines

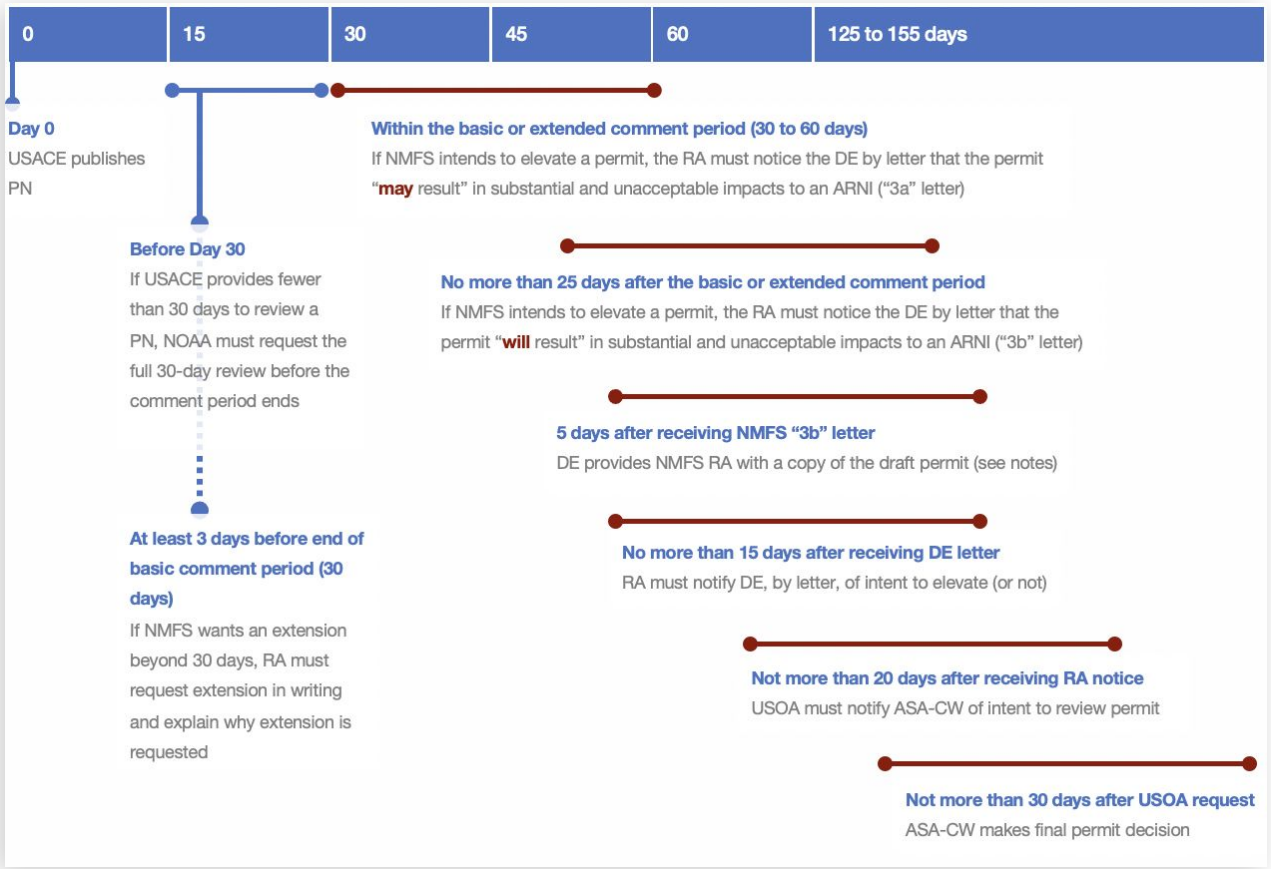
- If you work hard to prepare a FWCA report, planning aid letter, or FWCA letter; if you present compelling arguments that rest on a foundation of robust evidence and analyses, your work will have been pointless if you miss a critical deadline or milestone
- If you have negotiated a scope of work and received transfer funds from an Action Agency, you are obligated to meet the deadlines and schedules contained in the SOW (SOWs are often renegotiated but missing a delivery date in a SOW can make it harder to receive transfer funds in the future)
- When Fish & Wildlife Agencies miss planning schedules and milestones for civil works projects, project proponents often blame those agencies for project delays even when the project has been delayed for other reasons
- When NMFS or USFWS miss the deadlines in their MOAs with the USACE, the USACE can ignore comments and recommendations or NMFS/USFWS loss opportunities to elevate permit decisions
- Having a reputation for quality and timeliness is important when you’re negotiating SOWs, representing your agency in NEPA proceedings, or commenting on a project

Do Not Miss Planning Schedules or Milestones

Stage	Duration (in months)	USACE Milestones	FWCA Milestones	ESA Milestones	EFH Milestones
Scoping	**3 – 6**	• NOI • Alternatives Identification	• Initiate FWCA coordination • Negotiate FWCA report scope & cost	• Exchange lists of species and CH	• Initiate early EFH consultation • Seek technical assistance
Alternatives Evaluation & Analysis	**6 – 13**	• Tentatively Selected Plan (TSP) • Draft Feasibility Report released	• Planning Aid Letters • Draft FWCA Report (if any)	• USACE prepares BA • Informal consultation (NMFS/FWS respond to BA)	• USACE develops EFH assessment • USACE submits EFH assessment to NMFS
Feasibility-Level Analysis	**6 – 13**	• USACE decision on TSP • Civil Works Review Board reviews TSP • Final Feasibility Report transmitted	• Final FWCA Report (if any)	• Formal consultation (as warranted) • Draft and Final Biological Opinions	• NMFS develops and provides EFH recommendations • USACE responds to EFH recommendations
Chief's Report	**3 – 4**	• Ends with submittal of Chief of Engineers' Report to ASA-CW, OMB, and Congress	• Final FWCA Report attached and conveyed with Chief's Report		

- During the Scoping Phase of project planning, NMFS negotiates FWCA scopes, deliverables, schedules for producing deliverables, and costs
- An old saying applies here: do not over-promise and under-deliver. Over the long-term, your reputation and the reputation of your office, Region, and agency matters. Treat these deliverables and schedule as contractual obligations that you have to meet

Do Not Miss 404(q) Elevation Schedules



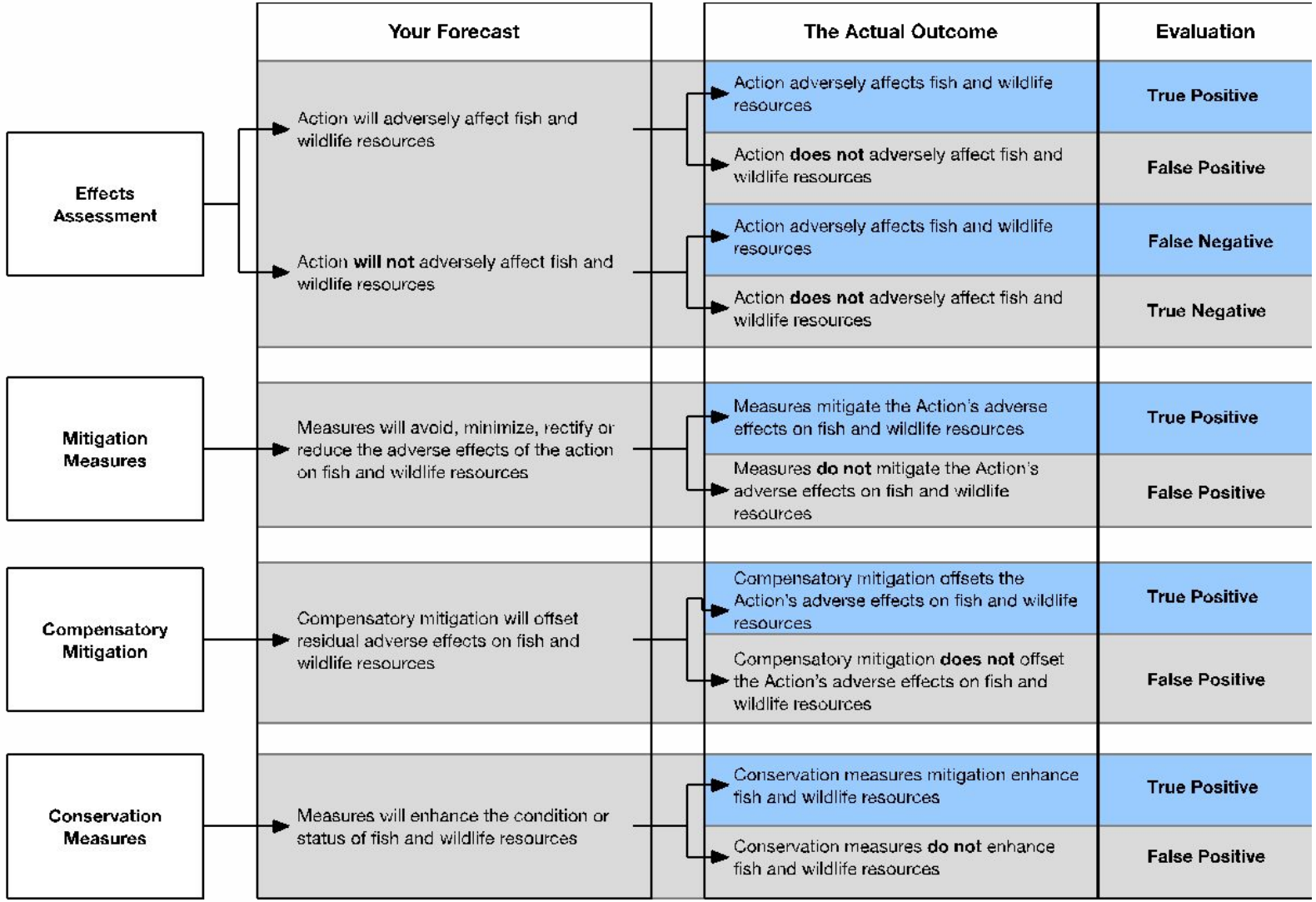
- If you miss the schedules in the 404(q) MOA and depicted here, the USACE can ignore NMFS' recommendations and positions on a proposed permit
- If you think you will need additional time, reach out to the USACE and negotiate the additional time you think you'll need

Make certain you add value

- Everyone is busy. You're busy. Other agencies are busy. Applicants are busy
- No one has enough time. As a result, assume that no one will read something they don't need to read. Documents that no one reads have no influence
- You need to give Action Agencies and Applicants a good reason to read your documents. Write and edit your documents as if you expect someone to read them
- Focus on providing Action Agencies and Applicants documents whose quality and rigor are at least comparable to what they would receive from private consultancies. This will be particularly important for FWCA reports that are funded with transfer funds
- Provide Action Agencies and Applicants with insights and understanding they wouldn't have without you. If you stay up-to-date with the relevant scientific literature or relevant "priors," you will be positioned to provide Action Agencies and other stakeholders with information that might not encounter for months or years (see notes)
- USACE Public Notices present brief evaluations of a permit's expected impacts on endangered species EFH, cultural resources, etc. They also state that the USACE intends to issue a permit unless issuance is contrary to the public interest. ***If you want to add value to the USACE's process, your comment letter will give the USACE***

Be A Credible Source

- In every FWCA consultation, your goal is to reach **True Positive** and **True Negative** conclusions
- If you establish a reputation for focusing on producing accurate forecasts (True Positive and True Negative conclusions) and for studiously avoiding false conclusions, you will be seen as credible and will be respected as an “honest broker”
- That reputation can lead agency decision-makers to accept your recommendations when they might disp



Build public support

- A national survey conducted in 2017 concluded that most children and adults in this country are disconnected from nature
  - More than half of adults reported spending 5 hours or less in the outdoors
  - Parents reported that their 8 to 12-year-old children spent 3 times as many hours on electronic devices than playing outside
- Nevertheless, almost 75% of adults support increasing the number of programs that allow Americans to enjoy nature, the outdoors, and wildlife. More than half support more funding for these programs
- Most Americans have no idea what you or your agency do. At the same time, you have no idea whether or how much the public might support the position you take in a FWCA consultation
- The data from this national study suggest that there are substantial opportunities for you, your colleagues, and your agencies to build public support for your work. Look for those opportunities
- For example, many Action Agencies often incorporate ”public information meetings” into their NEPA procedures. These forums allow members of the public to ask

Recommendation 2

Know the status & trends of species & habitat….

You need to know the status of the species and their habitats

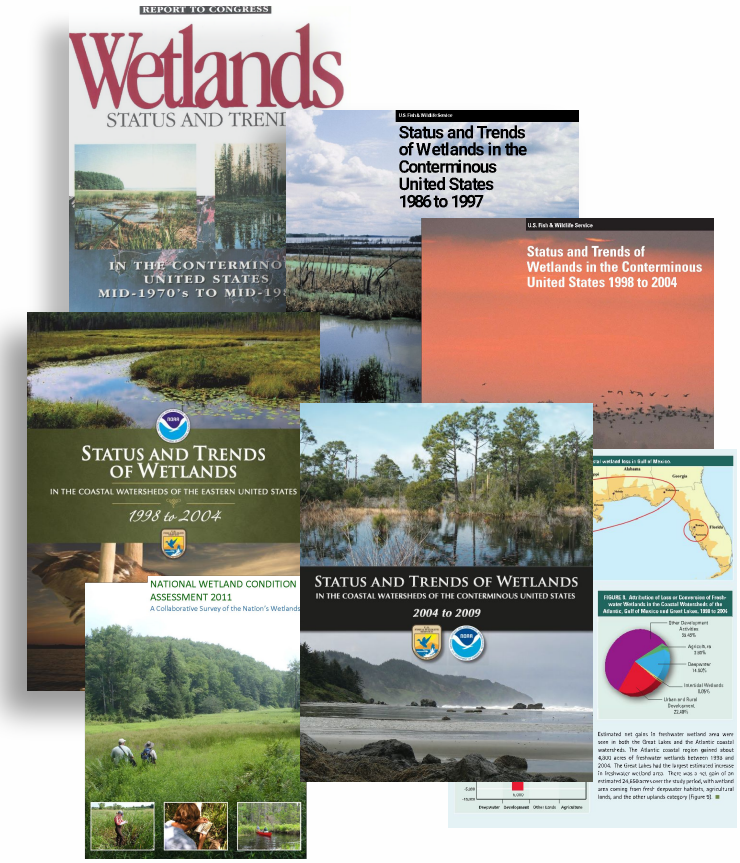
As a society, we tend to withhold action until we perceive a problem. The civil works projects that require FWCA consultations typically represent a federal response to societal problems: flooding, navigation, water supply, power supply, etc. Similarly, federal permits and licenses are issued for actions and projects that also respond to perceived societal problems … or to create opportunities.

The FWCA requires Action Agencies to give wildlife "equal consideration" and to treat wildlife conservation as a co-equal purpose during project planning and decision-making. However, this is not likely to occur unless decision-makers believe that their decisions will create problems for fish and wildlife, their habitats, and ecosystems that are too substantial to dismiss.

If fish and wildlife species or their habitats are believed to be "common," "ubiquitous," or "abundant," their needs will be discounted during decision-making processes.

In the past, the Fish & Wildlife Agencies conducted, updated, and publicized national, regional, and state-wide assessments of the status and trends of fish and wildlife species, their habitats, and the ecosystems that sustain both. Those assessments identified species and habitats that warranted focused conservation action and helped counter the public perception that species, habitats, or ecosystems were "fine" when, in fact, they were not

Habitat assessments



- It's important to have a firm grasp of how well or poorly those ecosystems and habitats are doing
- Your assessment of the status and trend of fish and wildlife resources and your mitigation recommendations will typically focus on the status and trends of the ecosystems and habitat types that support them
- In the past NMFS and its counterpart Fish & Wildlife Agencies published national, regional, and state-wide assessments of aquatic habitats in the United States
- The data in those publications provided the foundation for assessments of the baseline condition of these habitats in FWCA reports, consultations, analyses of the potential effects of USACE and other agency permits on these habitats, and mitigation recommendations
- These national assessments have historically supported FWCA claims about the national significance of aquatic resources and provided the foundation for mitigation recommendations

Species' status assessments

- The status of many species is assessed and routinely updated. This applies to species listed as endangered or threatened, species that are being considered for listing (candidate species), marine mammals, species subjected to commercial and subsistence harvests, many migratory birds, and some species managed for sport harvests
- However, that leaves a substantial number of fish and wildlife species whose status and trends are unknown or are known only poorly. Regulatory assessments typically assume, often without sufficient evidence, the conservation needs of these species will be addressed by conserving other, better-known species. When this assumption turns out to be correct, these species can be conserved. When this assumption turns out to be incorrect, these species are at risk
- Regardless, you cannot use FWCA consultations to protect and conserve the fish and wildlife species under your jurisdiction if you do not understand their status and trends and their conservation needs

Recommendation 3

Take time to reflect

Introduction

In their book, *Superforecasting, the Art and Science of Prediction*, Philip Tetlock and Dan Gardner wrote “To learn from failure we must know when we fail”

To improve your FWCA assessments, take time to critically evaluate your FWCA assessments and conclusions. Regardless of whether the Action Agency accepted or rejected your assessment and recommendation, was your reasoning sound and well-supported by evidence? Reflect on the counter-arguments you received: could you have responded to them better? What arguments turned out to be critical? What arguments turned out to be pointless?

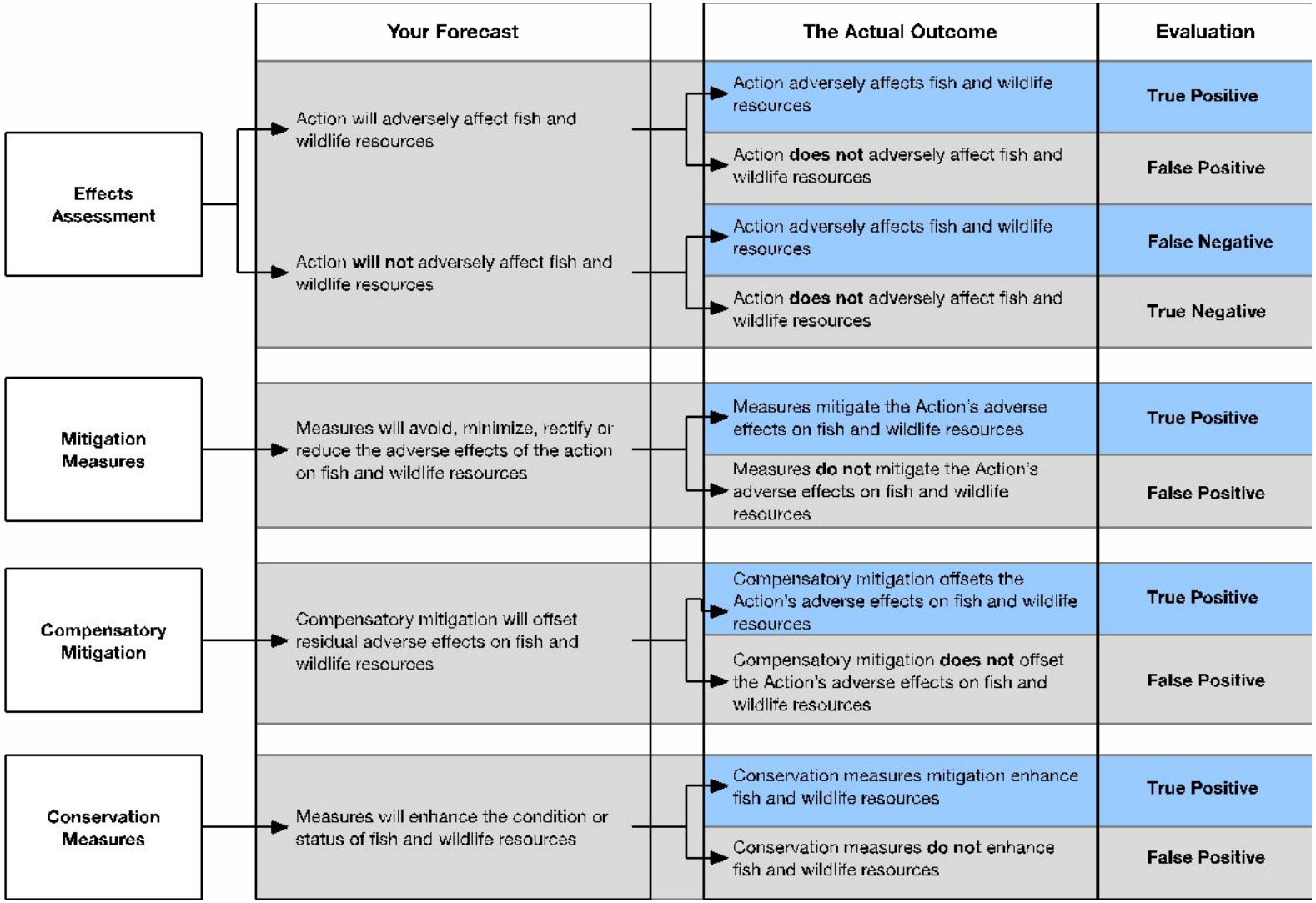
Conduct post-project monitoring and learn from it. Did the adverse effects you expected to occur actually occur? If they occurred, was it because the Action Agency did not implement the mitigation measures you recommended? Would your recommendations have prevented those effects? If they did not occur, was it because your recommendations worked or were the species just lucky?

If the Action Agency implemented a compensatory mitigation project, did the project actually benefit the species you expected it to benefit? Did it benefit them for the reasons you expected or were the species just lucky?

Your reflections can and should inform your FWCA assessments in the future. If you formalize them as written notes to your project file and share those notes with your

How did you do?

- This tutorial has noted several times that your objective in FWCA consultations is to reach **True Positive** and **True Negative** conclusions (see Notes)
- After you complete a FWCA consultation, you should continue to search for data and other information that might have led you to a different conclusion
- Pay careful attention to monitoring and other after-action reports to determine what you got right and what you got wrong
- Revise and update your assessment meth[illegible] in the future



How did you do?

		Actual Outcome: The Expected Effect Occurred	Actual Outcome: The Expected Effect Did Not Occur	Row Totals
Your Forecast	You expect an adverse effect	**# True Positive**	# False Positive	**Total Adverse**
	You expect no adverse effect	# False Negative	**# True Negative**	**Total Not Adverse**

- You could use this matrix to evaluate the reliability of the forecasts in your effects analyses
  - **Positive predictive value**: the probability of an adverse effect occurring if you expect one to occur (# True Positive ÷ Total Adverse)
  - **Negative predictive value**: the probability of no adverse effect occurring if you do not expect one to occur (# True Negative ÷ Total Not Adverse)
  - For example, if half of the effects you forecast were correct (positive or negative) were correct, your probability of producing a correct forecast would be 0.5. About as good as a coin toss
  - If your forecasts were correct twice as many times as they were incorrect (for example, if 20 of 30 forecasts were correct), your probability of producing a correct forecast would be 0.67

Recommendation 4

Celebrate your victories

Introduction

FWCA consultations can give you many reasons to celebrate:

- Receiving transfer funds that allow you to conduct field investigations or hire additional staff to help with FWCA workloads
- Completing a productive season of field work or a successful field investigation
- Delivering a FWCA Report to an Action Agency or briefing decision-makers within NMFS, NOAA, the Department of Commerce, the White House, and Congress
- Working collaboratively with Action Agency representatives, Applicants, and your counterparts in the USFWS and State agencies to accomplish any one of these things
- When you develop a record of reliable, well-calibrated effects analyses
- Being recognized as a “honest-broker” whose recommendations command respect

These accomplishments are important and should be applauded. However, they are just means to an end. **The purpose of the FWCA is to conserve wildlife resources by preventing those resources from being destroyed or damaged by human activity**.

When one of your FWCA consultations measurably improves the status or condition of NOAA Trust Resources, take at least a moment to celebrate. When one of your colleagues

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