The Endangered Species Act and Habitat Conservation Plans

An overview for

The Barton Springs/Edwards Aquifer Conservation District Management Advisory Committee

The Endangered Species Act of 1973, as amended

§ 2: Findings and Purposes

§ 3: Definitions

§ 4: Listing and Recovery

§ 5: Land Acquisition

§ 6: Cooperation with the States

§ 7: Interagency Cooperation

§ 8: International Cooperation

§ 9: Prohibited Acts

§ 10: Exceptions

§ 11: Penalties and Enforcement

§ 12-18: Misc

ESA § 2: *Findings and Purpose*

- Some species of fish, wildlife and plants are now extinct "*as a consequence of economic growth and development untempered by adequate concern and conservation*."
- Other species are in danger of extinction
- Species have aesthetic, ecological, educational, historical, recreational, and scientific value
- U.S. pledges to conserve species facing extinction
- "…*provide a means whereby the* ***ecosystems upon which*** [listed] ***species depend may be conserved****, to provide a program for the conservation of such species. . .* "

ESA § 3: *Definitions*

Conservation:

"…to use and the use of all methods and procedures which are necessary to bring any [listed] species to the point at which the measures provided pursuant to this Act are no longer necessary."

Take:

"To **harass, harm**, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

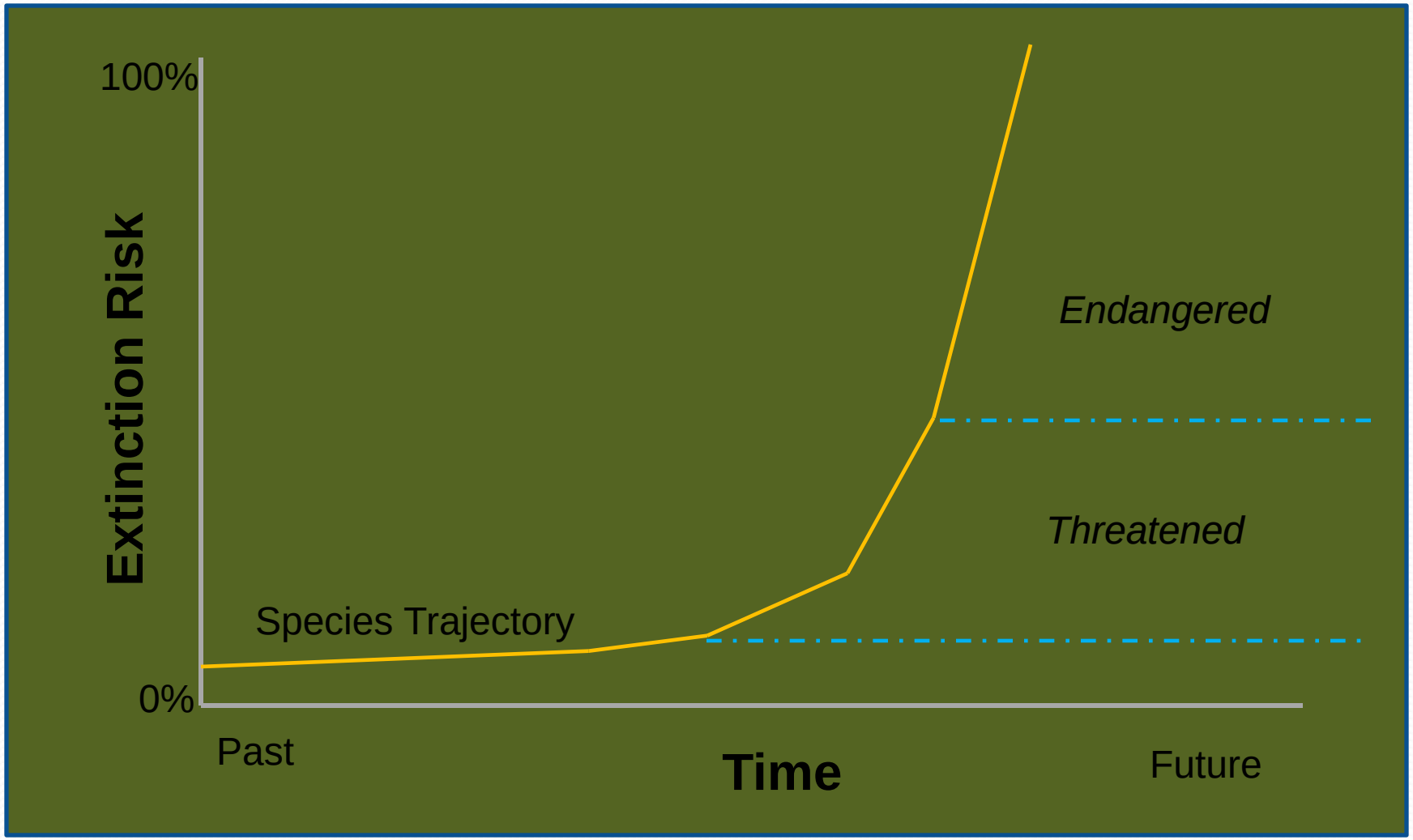
Harass:

"…an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly impair normal behavioral patterns including breeding, feeding or sheltering." (50 CFR 17.3)

Harm:

"…significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." (50 CFR 17.3)

A Species' Extinction Trajectory



§ 9: *Prohibited Acts*

Prohibitions protect listed wildlife species from threats of "take" and commercial trade

§ 10: *Exceptions*

Provides the ability for the Secretary to issue permits providing exceptions to the prohibitions against take in certain conditions.

Includes 10(a)(1)(B) “Incidental take permits”

Created to parallel the §7 consultation process by which Federal actions may result in incidental take of listed species

§ 10(a)(1)(B)

Incidental take:

"…take that is incidental to, and not the purpose of, carrying out of an otherwise lawful activity"

50 CFR 17.3

Purpose of § 10(a)(1)(B)

- To permit non-Federal projects to “take” listed species while ensuring their long-term survival and enhancement
- To promote the long-term conservation of listed species
- To reduce conflicts between endangered species and economic activities
- To develop partnerships between the public and private sectors

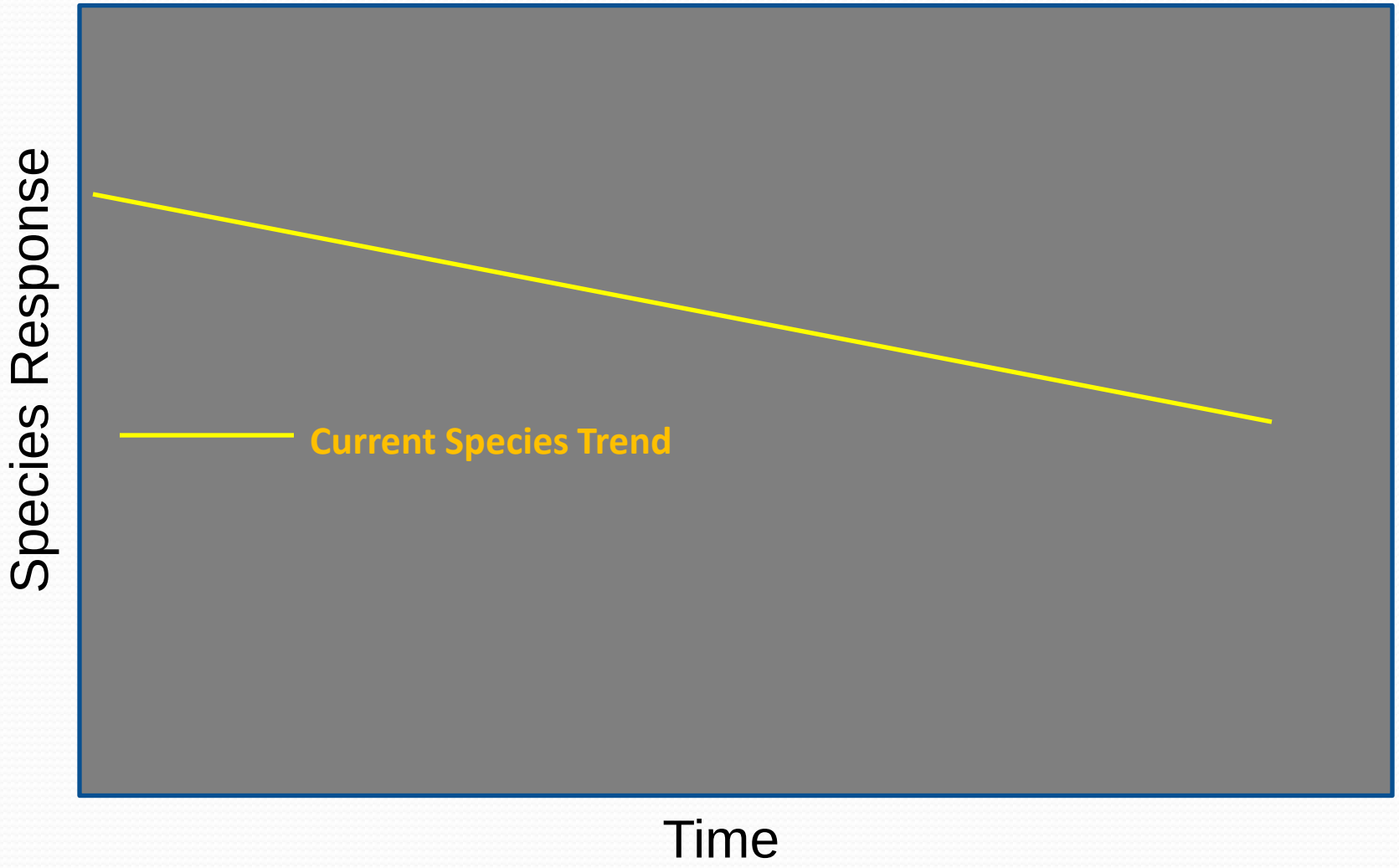
§ 10(a)(1)(B) Incidental Take Permits

- Available to private landowners, corporations, Tribal governments, State and local governments, and other non-Federal landowners
- Require development of a [Habitat] Conservation Plan

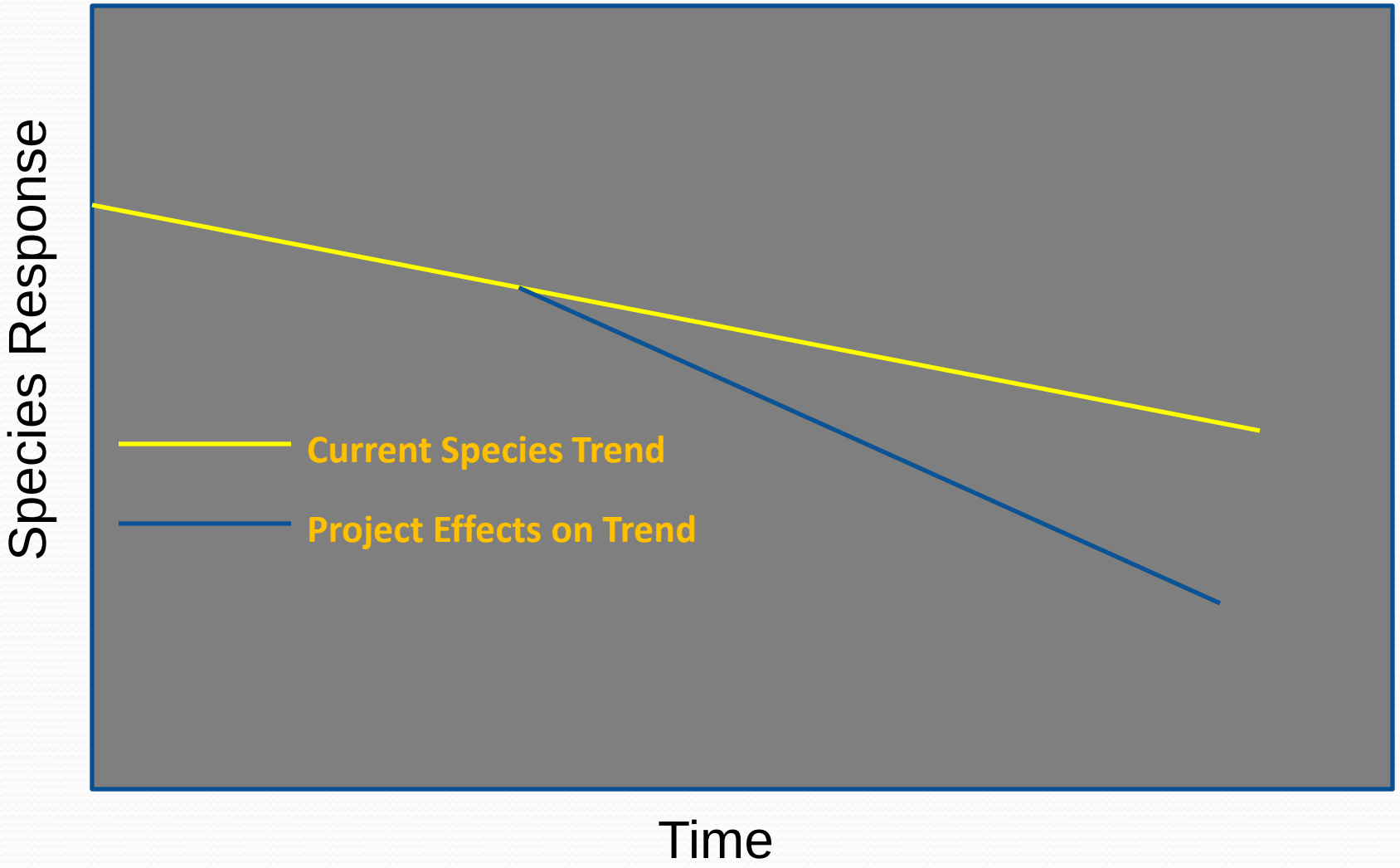
[Habitat] Conservation Plan

- Describes the anticipated effects of the proposed taking and how impacts will be minimized, mitigated, and funded
- An HCP is submitted by Applicant(s) as part of permit application

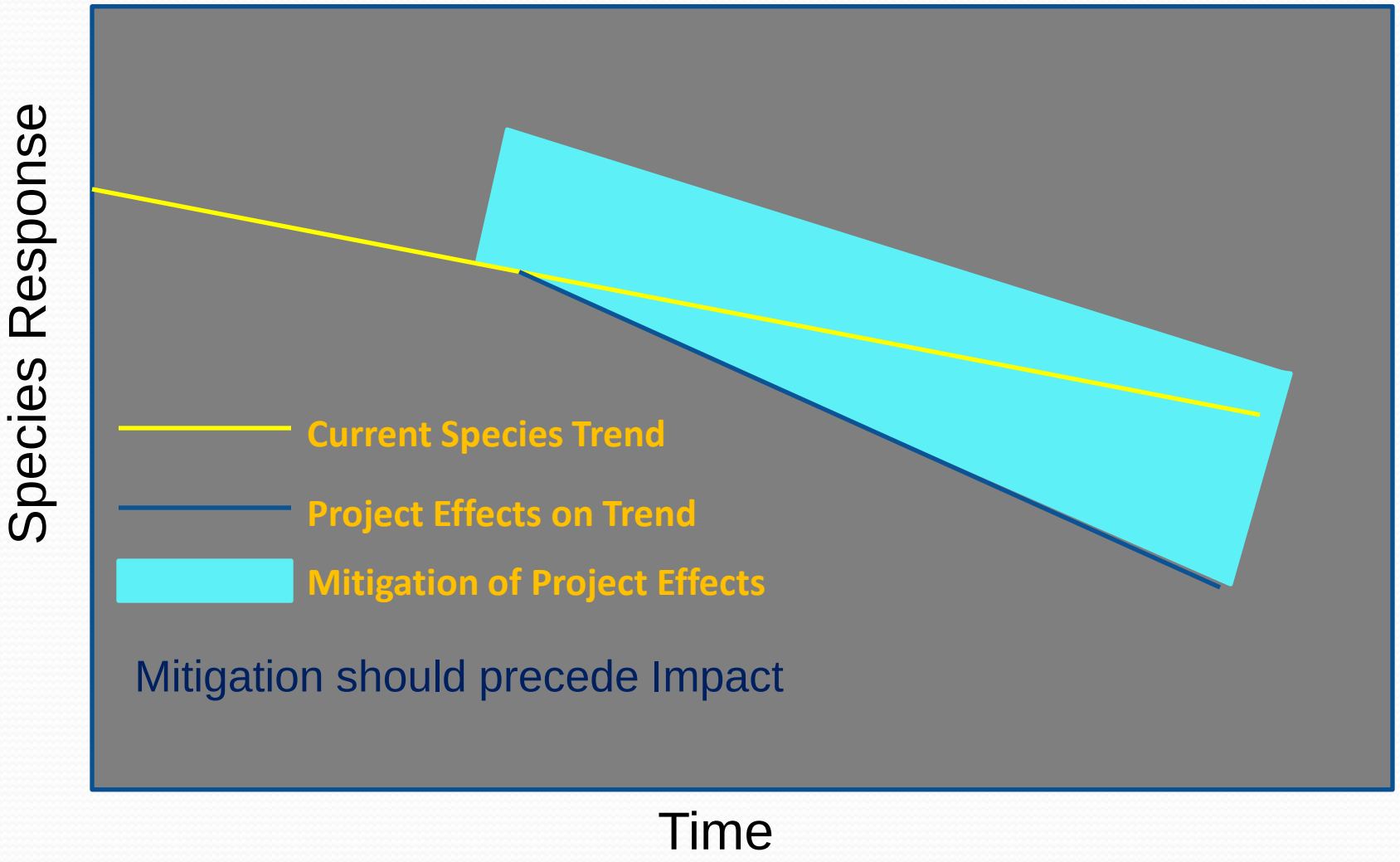
Habitat Conservation Plan Concept



Habitat Conservation Plan Concept



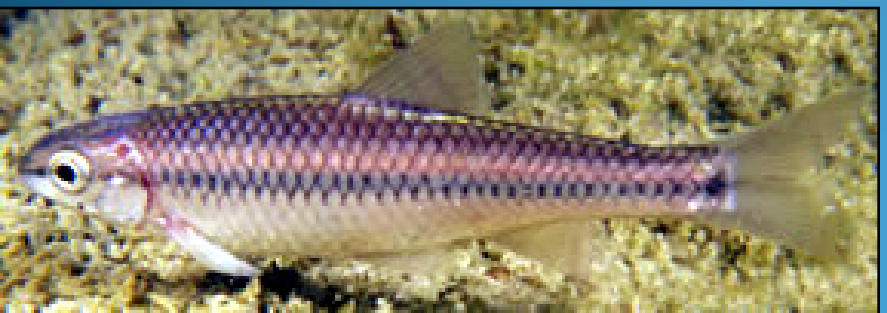
Habitat Conservation Plan Concept



Laws, Regulations, and Policies

ESA Section 10

Habitat Conservation Planning



First a quick review…

Statutes

Regulations

Policies

Guidance

Section 10(a)(1)(B)

"The Secretary may permit, under such terms and conditions as he shall prescribe…any taking otherwise prohibited by section 9(a)(1)(B) if such taking is incidental to, and not the purpose of, the carrying out an otherwise lawful activity."

Section 10(a)(2)(A)

A conservation plan must specify:

1. The impact which will result from the taking
2. What steps the Applicant will take to minimize and mitigate such impacts, and funding available to implement the steps
3. Alternatives the Applicant considered
4. Other measures as required by the Secretary

Section 10(a)(2)(B)

If the Secretary finds, after public comment, that…

1. The taking will be incidental
2. The impacts of the taking will be minimized and mitigated to the maximum extent practicable
3. Adequate funding to implement the conservation plan is ensured
4. The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild,

   The other measures will be met and assurances that the plan will be implemented are provided.

. . . then the Secretary shall issue the permit.

Permit Regulations

General Permit Procedures: 50 CFR Part 13 **FWS**

Permit Regulations: 50 CFR Part 17 **FWS**

Conservation plan requirements: 50 CFR 17.22 – 17.32(b)(1)(iii) – **FWS**

"No Surprises": 50 CFR 17.22(b)(5) **FWS**

Issuance criteria: 50 CFR 17.22,17.32 (b)(2)(i) – **FWS**

Other Laws to Consider

Process Oriented:

- National Environmental Policy Act (NEPA)
- National Historic Preservation Act (NHPA)
- Administrative Procedures Act (APA)
- Federal Advisory Committee Act (FACA)
- Freedom of Information Act (FOIA)
- Privacy Act
- And others…

The “Five Point Policy”

Became policy when added to the HCP Handbook in 2000 (65 FR 35242):

1. **Biological goals and objectives**
2. **Monitoring**
3. **Adaptive management**
4. **Permit duration**
5. **Public participation**

Five Point Policy

Biological goals and objectives

- Defines the expected biological outcome for each species, ecosystem or habitat, and the actions that will be implemented to achieve these goals
- Must be consistent with species recovery goals
- Promotes effective monitoring

Five Point Policy

Monitoring

Consists of three separate components:

- Compliance monitoring
- Effects monitoring
- Effectiveness monitoring

Five Point Policy

Adaptive Management

- Process for addressing uncertainty
- HCP must outline agreed-upon responses to change
- Requires monitoring and feedback focused on achieving established biological goals and objectives

Five Point Policy

Permit duration

- Related to duration of proposed activities
- Considers time required to implement and achieve benefits to species (as described in biological goals and objectives)
- Must consider biological/ecological uncertainty

Five Point Policy

Public Participation

- 30 days: low-effect and permit amendments
- 60 days: EA, common strategies
- 90 days: EIS, and/or large, controversial projects
- May incorporate input from Tribes, Science Advisors, peer review processes

Other Coordination

State and Local:

- some state laws prohibit take of state listed species
- most states have “sunshine laws” that are similar to FACA

Hint : *Know your state and local laws and issues!*

Biological Goals and Objectives

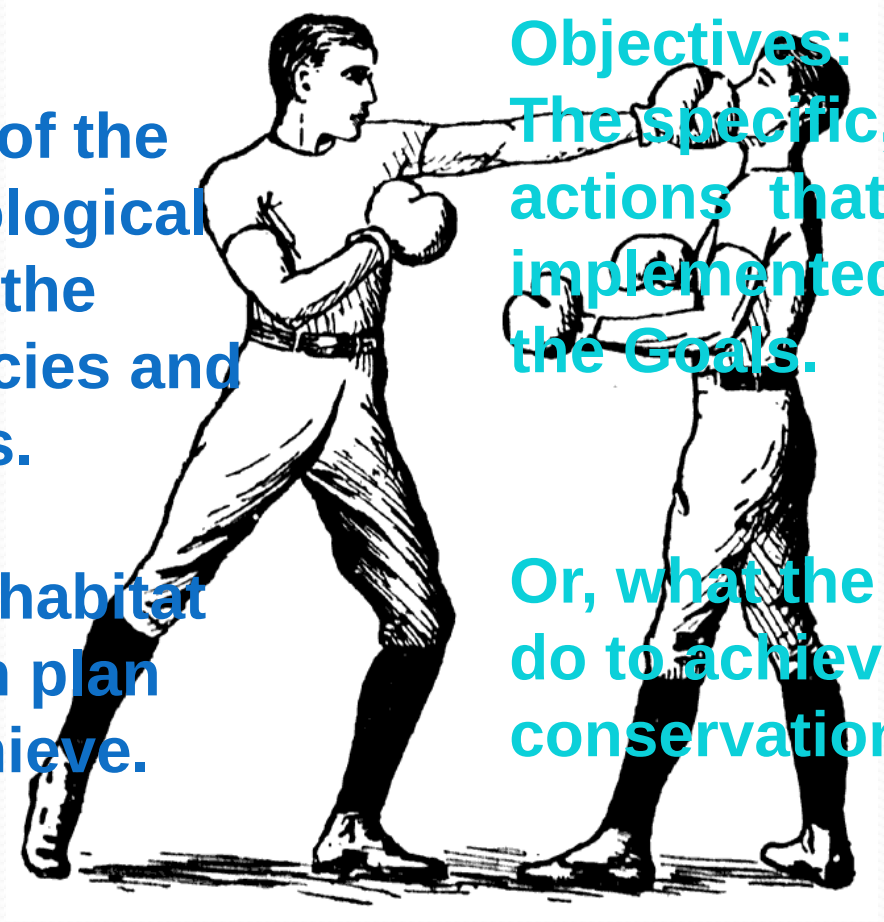
ESA Section 10

Habitat Conservation Planning

Goals vs. Objectives

Goals:
A statement of the expected biological outcome for the covered species and their habitats.

Or, what the habitat conservation plan hopes to achieve.



Objectives:
The specific, measurable actions that will be implemented to achieve the Goals.

Or, what the Applicant will do to achieve the habitat conservation plan goals.

Biological Goals

Biological goals define what you want the HCP to accomplish for the target species.

Be S.M.A.R.T.

Specific: What is the conservation plan trying to accomplish? Focus on the biology and ecology of the species you are working with.

Measurable: May be quantitative or qualitative, but must be discernable

Achievable: Is this something the Applicant can control or affect?

Realistic: Beware the overreach…

Timely: Is this goal possible given the duration of the project and the scope of the permit?

Biological Objectives

The “step down” e.g., the actions that will be implemented to achieve the biological goals

The measurable targets used to determine whether biological goals are being met

The biological objectives will guide development of monitoring and adaptive management protocols

Provide benchmarks to determine effectiveness of the plan’s conservation program

Examples of Measurable Objectives

- Increase the number of Chiricahua leopard frog populations by 25% in Pima County preserves by 2015 through re-introduction efforts
- Eliminate 50% of the crayfish in Sabino Creek by 2012
- Protect or enter into agreements that will conserve 28,428 acres of occupied golden-cheeked warbler nesting habitat in Travis County by 2016

Permit Duration

ESA Section 10 Habitat Conservation Planning

Permit Duration: Considerations

What is the duration of the activities that will be covered by the conservation plan?

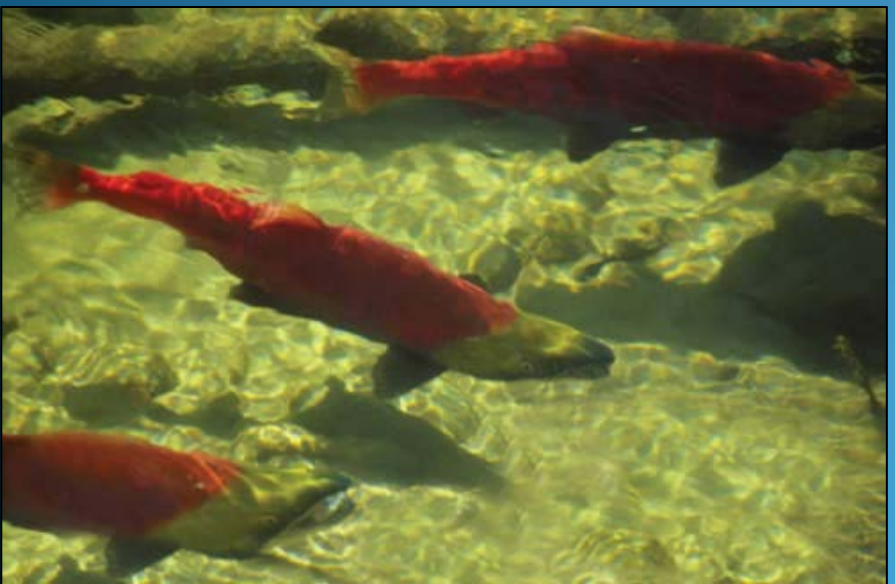
How much time is necessary to implement and achieve the benefits of the conservation program?

The permit term must provide for all mitigation, monitoring, adaptive management, and other requirements or conditions.

Permit Duration: Considerations

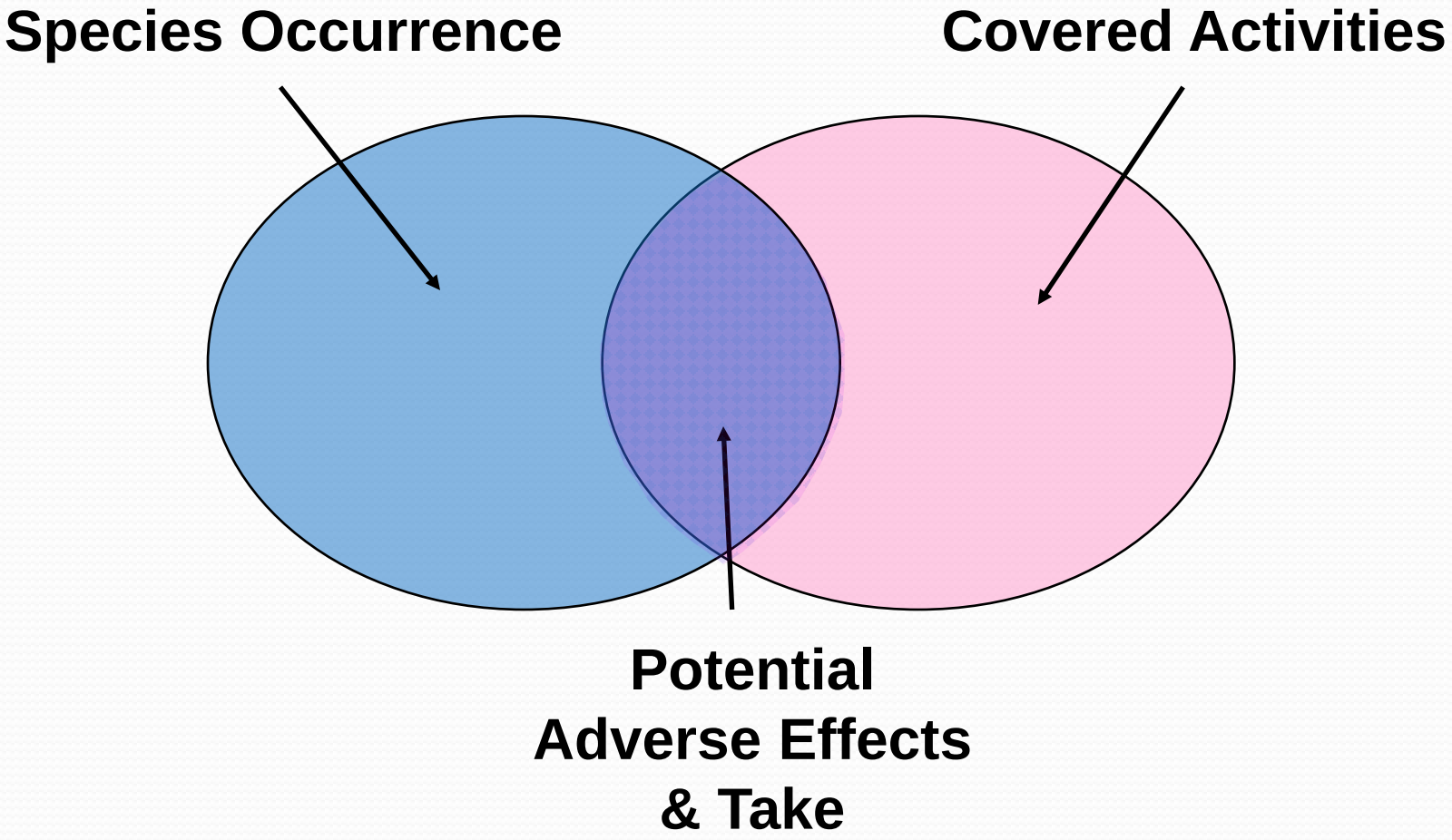
- Extent of information vs. uncertainty upon which the HCP is based
- Applicant's desire for long-term assurances
- Longer permit duration may ensure long-term commitment to the conservation program
- Conversely, data or information gaps may support a shorter duration with the possibility of renewal
- There may be increasing numbers and scales of uncertainties associated with long duration permits (think about potential population growth, novel diseases, climate change, etc…)

Covered Species



ESA Section 10 Habitat Conservation Planning

What species are likely to be adversely affected by covered activities?



USFWS Permit Issuance Considerations

Is there sufficient biological and ecological information to complete the required Section 7 and NEPA analysis for each species?

- Species distribution and ecology
- Threats and stressors
- Effects of proposed activities on species
- Conservation needs

Does the proposed HCP meet permit issuance criteria for each species?

Environmental Baseline

ESA Section 10 Habitat Conservation Planning

What is the Environmental Baseline?

The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.

50 CFR §402.02

What is the Environmental Baseline?

"The environmental baseline is an analysis of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem, within the action area. The environmental baseline is a "snapshot" of a species' health at a specified point in time."

-USFWS and NMFS Consultation Handbook

Baseline includes…

The environmental baseline includes factors such as:

Status of the species

Status of delineated Critical Habitat

Factors contributing to the current status

Baseline therefore may incorporate:

Species abundance and productivity

Current and historic range

Distribution (including occupied and unoccupied habitat)

Population trends and age class distributions

Connectivity between populations

Current habitat quality and quantity

Historic weather patterns and hydrographs

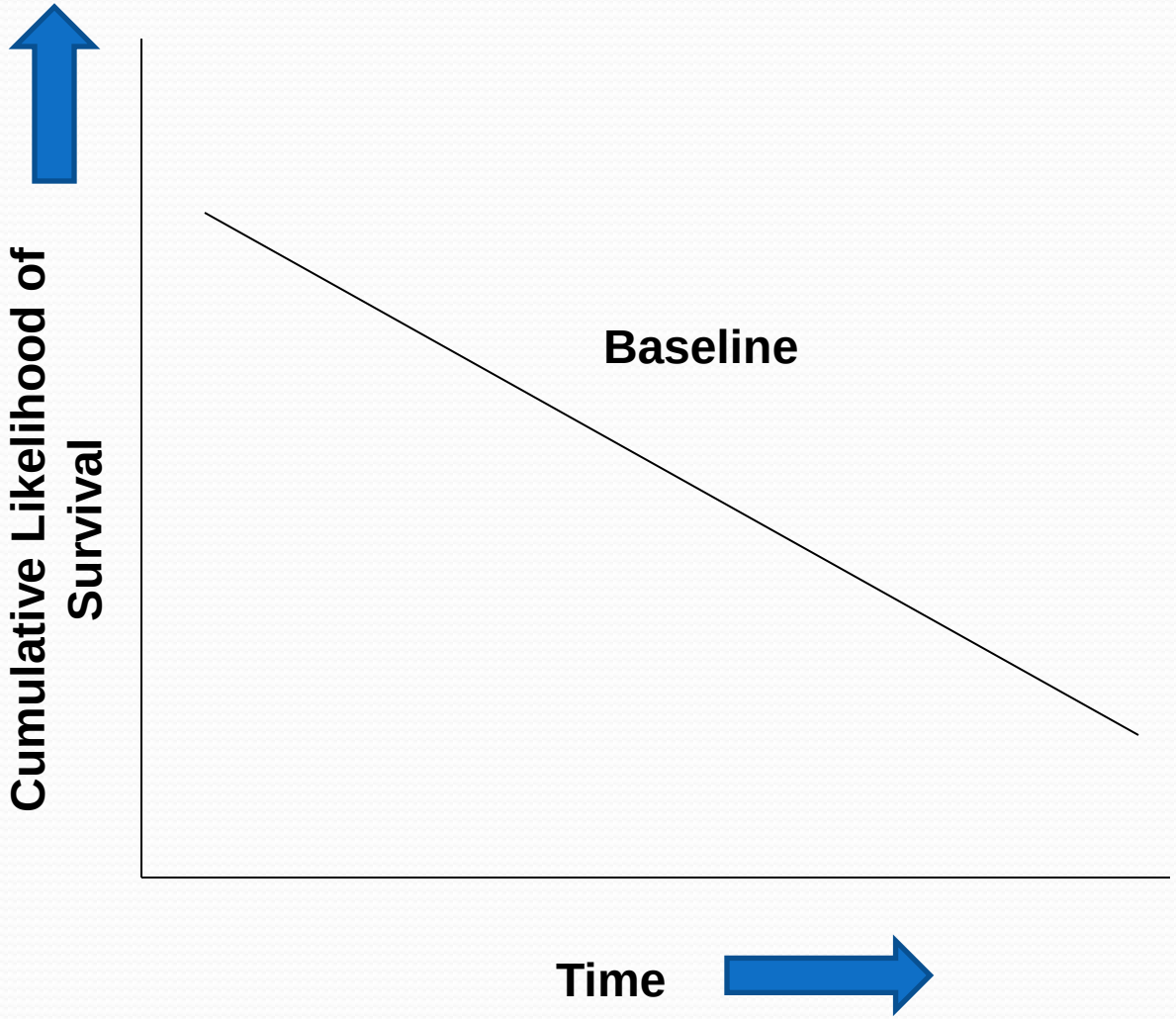
Historic human uses with species impacts (pumping, recreation, etc.)

Specific events causing significant impacts (contaminant spills, construction of a feature that altered habitat, etc.)

Non-point factors (runoff, increased nutrients, etc.)

Any and all factors describing the current state of the species and its habitat and how and why the species arrived at this status

Environmental Baseline



What is Jeopardy?

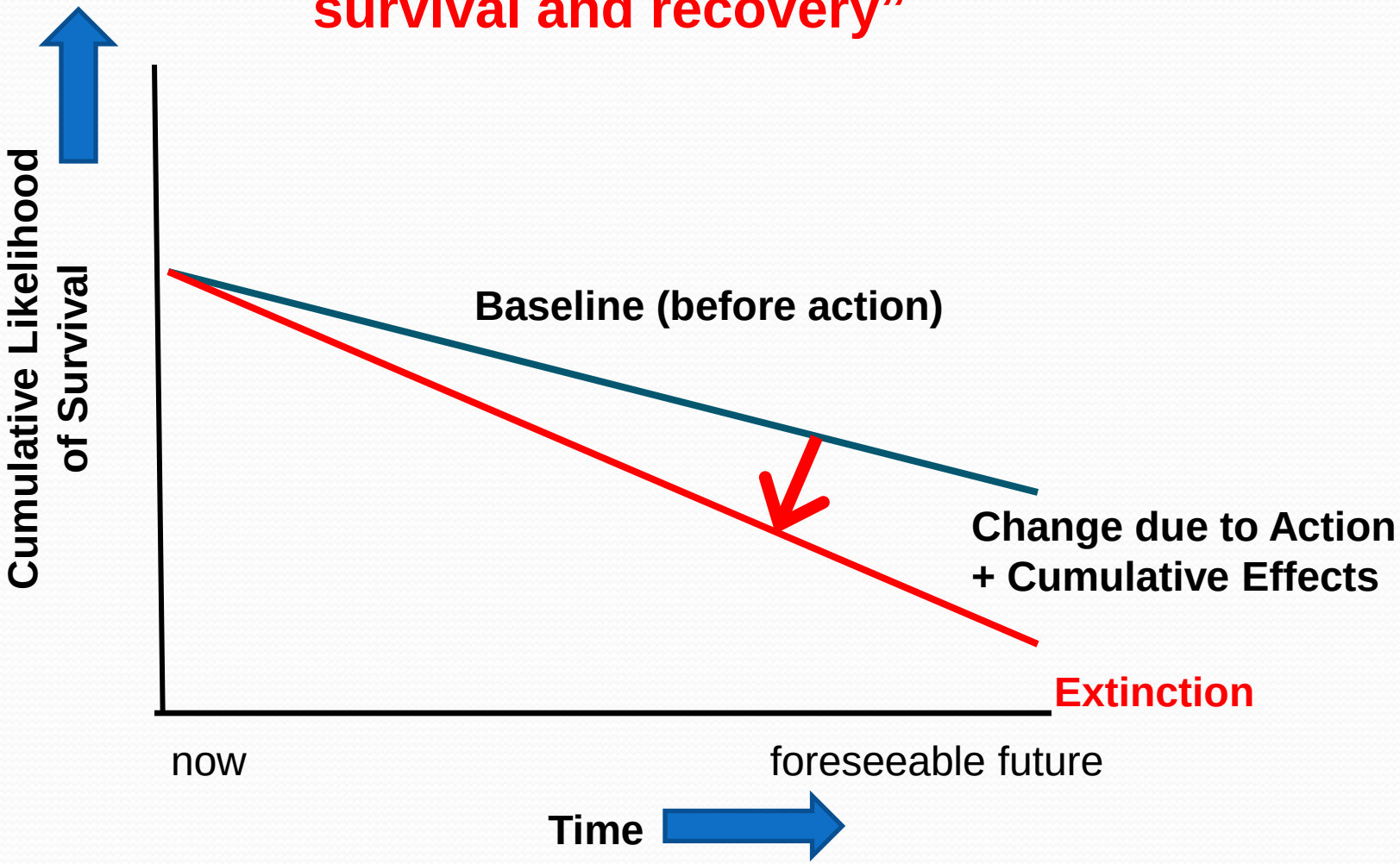
To “Jeopardize the continued existence of”

is to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers or distribution of that species.

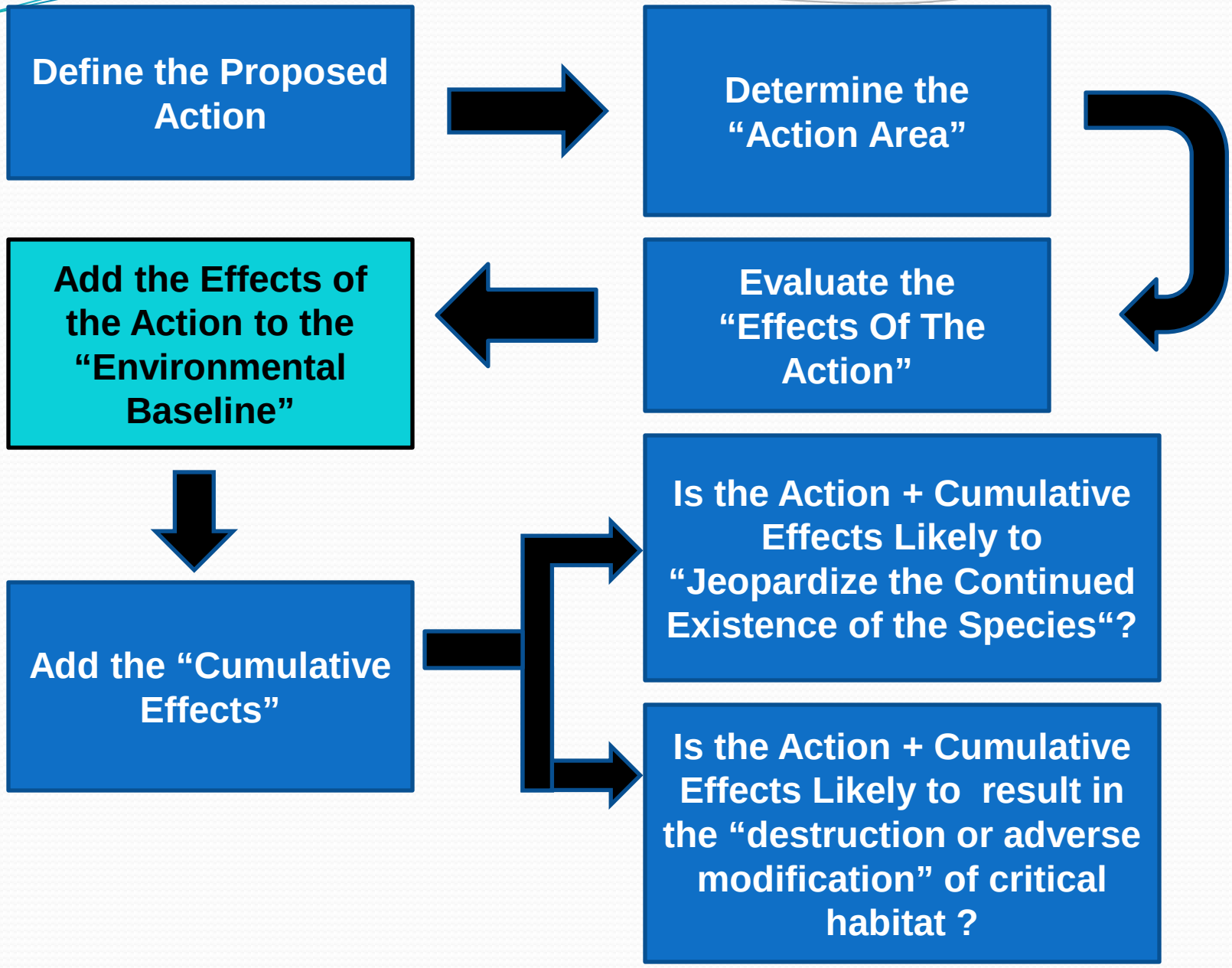
50 CFR §402.02

To jeopardize the continued existence of

"Appreciable reduction in the likelihood of survival and recovery"



Jeopardy Analysis



An Example

Texas wild-rice
(*Zizania texana*)

Warning:

First a quick disclaimer:

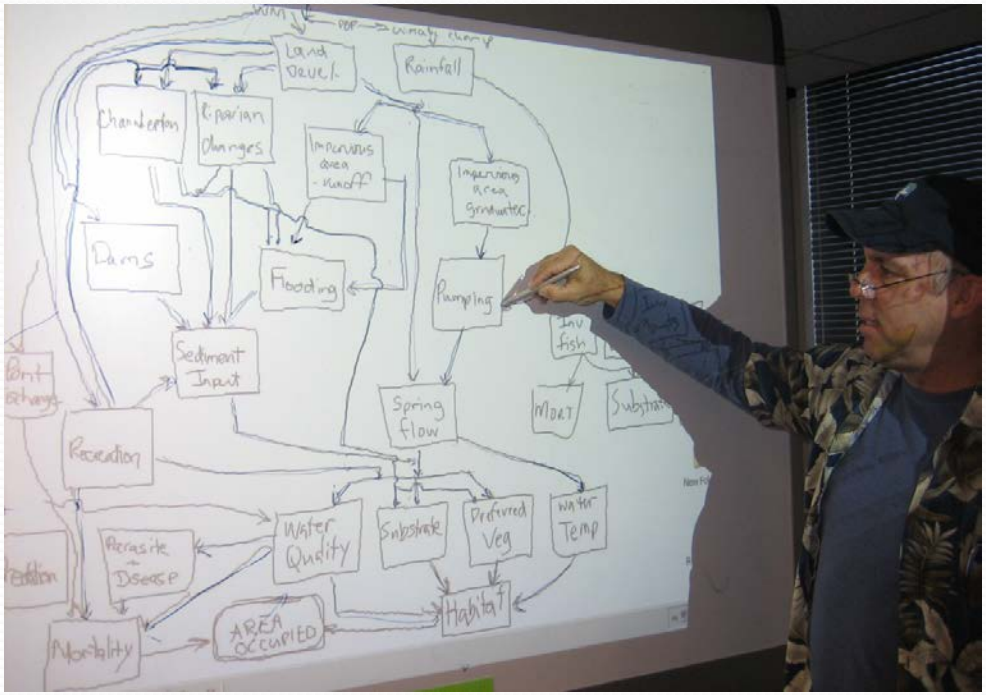
These is only an example!

This example has been selected to illustrate concepts, and does not represent any actual determination by the Service.

Influence Diagrams

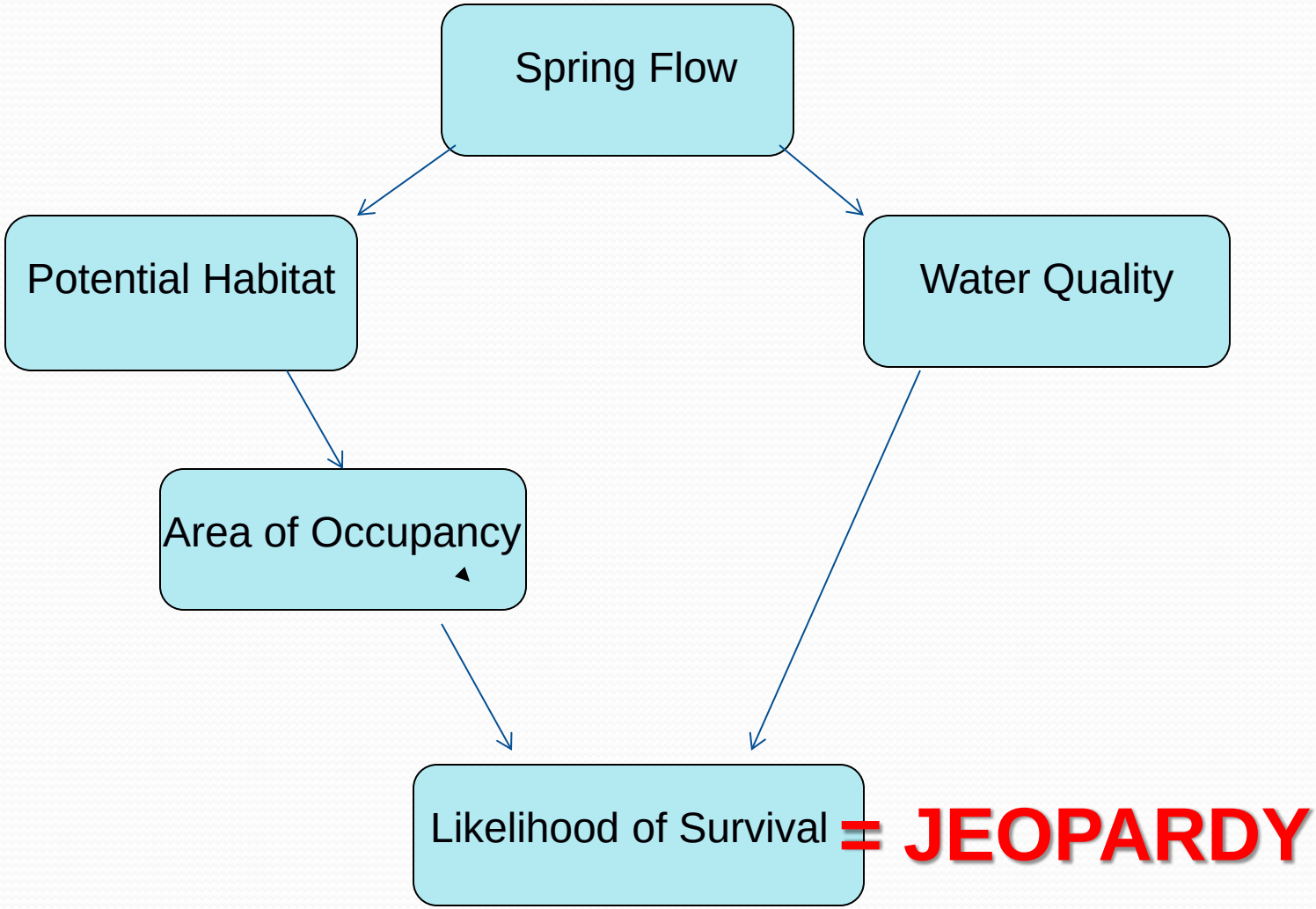
Influence diagrams identify both intrinsic and extrinsic factors and illustrate relationships that impact outcomes.

The EARIP Biological Modeling Team convened species workgroups that developed influence diagrams for each of the species included in the HCP.

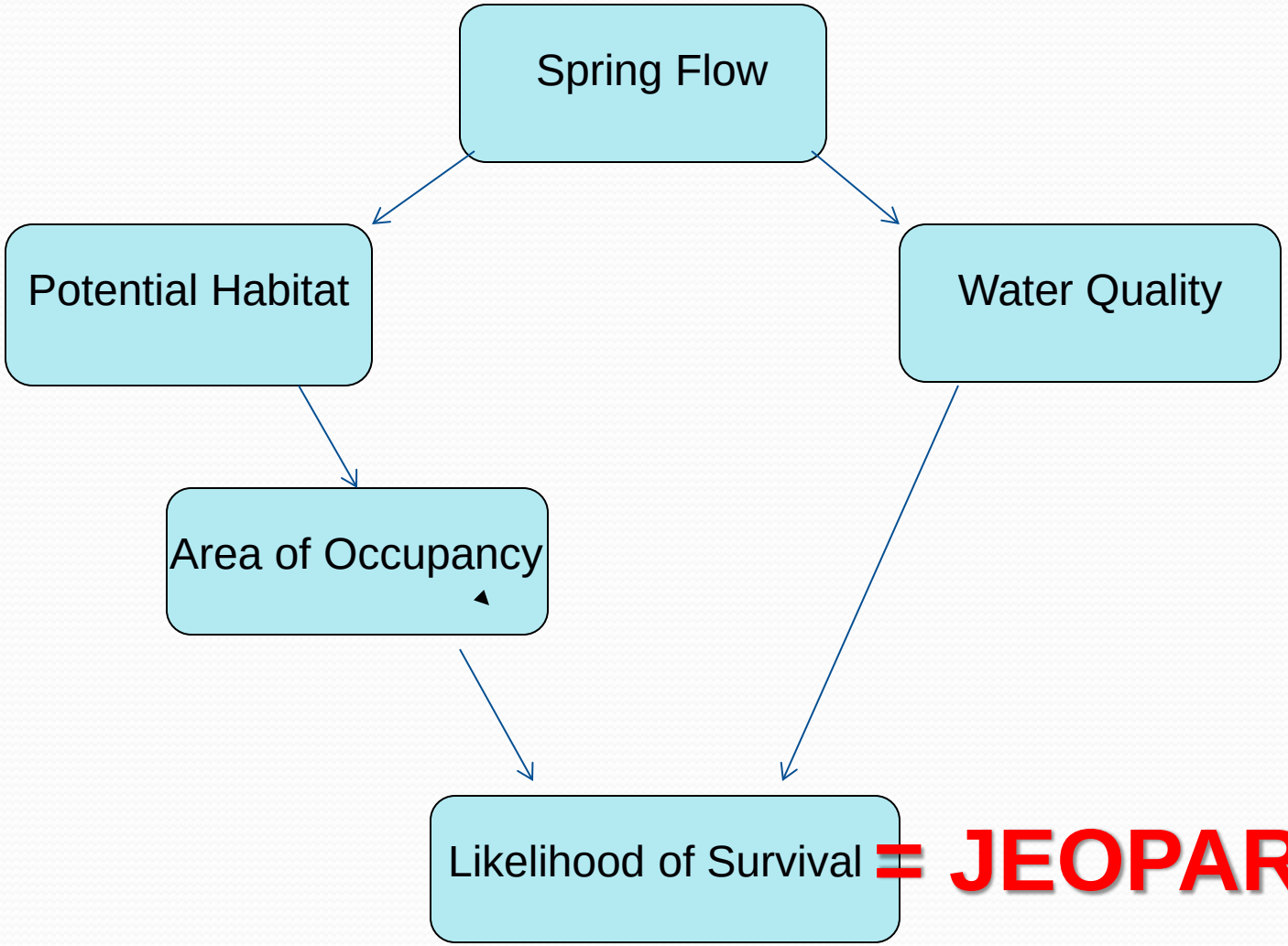


These influence diagrams provided a clear way to assess the impacts of the EARIP's proposed suite of actions.

Conceptual Texas Wild-Rice Influence Diagram



Conceptual Texas Wild-Rice Influence Diagram



What is “Recovery”?

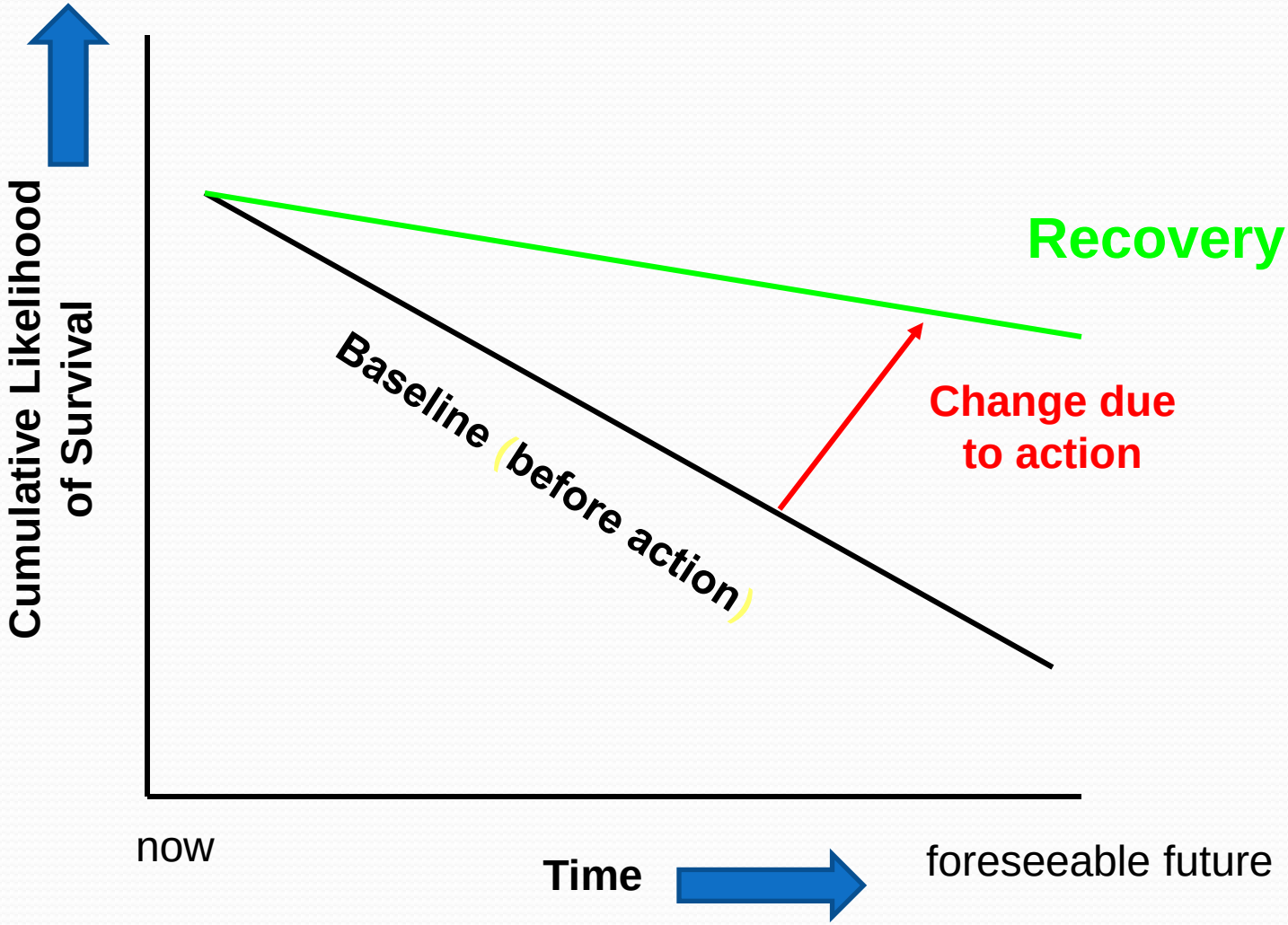
Recovery is the point at which a species no longer warrants listing under the ESA

This means the species is no longer “likely to become in danger of extinction in all or a significant portion of its range in the foreseeable future.” (e.g, no longer a threatened or endangered species)

Recovery, therefore, is when the likelihood (or probability) of extinction over some future (time) is low enough to no longer be a danger

Contribution to Recovery

"Increased Likelihood of Survival and Recovery"



Determining Take

ESA Section 10 Habitat Conservation Planning

Determining Take

- How will incidental take occur?
- How will incidental take be calculated?
- What is the level of incidental take expected from proposed activities?
- What will the impacts of that take be?
- How can these impacts be mitigated?

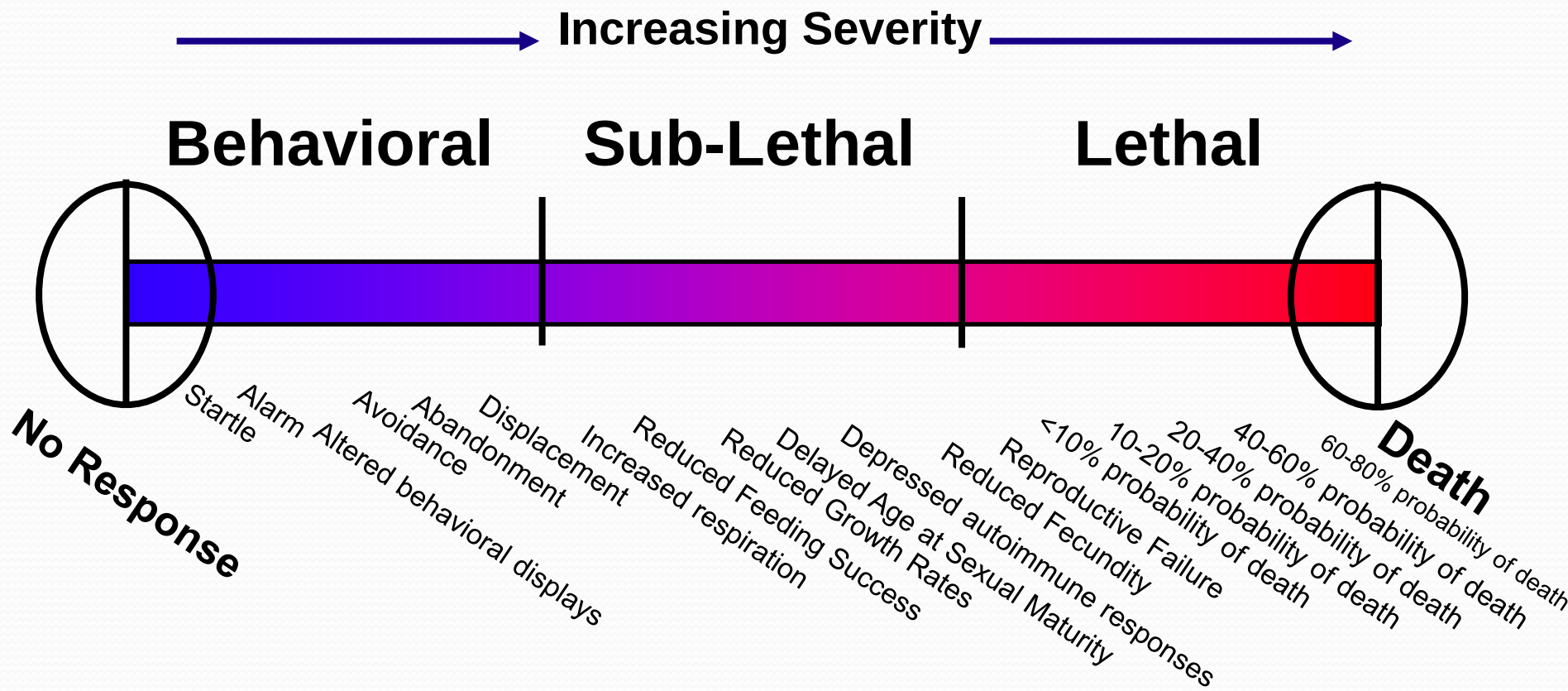
How Will Take Occur?

Injury/death – e.g., crushing by heavy equipment, entrapment in trenches / ditches, exposure to chemicals

Harm – e.g., removal, fragmentation, degradation of habitat; downstream sedimentation; reduction in cover; removal of food source; removal of breeding site

Harassment – e.g., noise disturbance, human activity

Spectrum of Animal Responses



How will Take be Measured?

Number of individuals affected?

- How will numbers of individuals be determined?
- Will applicant conduct surveys once and use that number for life of the permit?
- Will surveys be conducted prior to each proposed activity?

How will Take be Calculated?

Number of acres of occupied habitat or acre-feet of water affected?

- Is occupancy based on surveys?
- Is occupancy assumed based on modeled habitat?
- Is occupancy assumed based on vegetation type?

Analyzing *Impact of the Taking*

"Take" occurs to individuals

"Impact of the taking" occurs to the listed entity (species, subspecies, distinct population segment)

If the impact of the taking exceeds issuance criteria, additional avoidance, minimization and/or mitigation must be developed

If Jeopardy cannot be avoided, then the Service cannot issue a permit

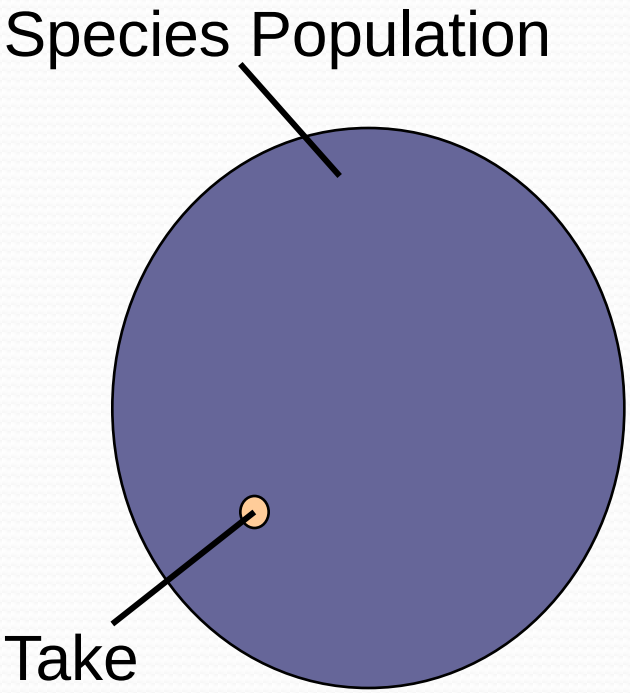
Analyzing *Impact of the Taking*

Are the anticipated impacts of the taking consistent with issuance criteria?

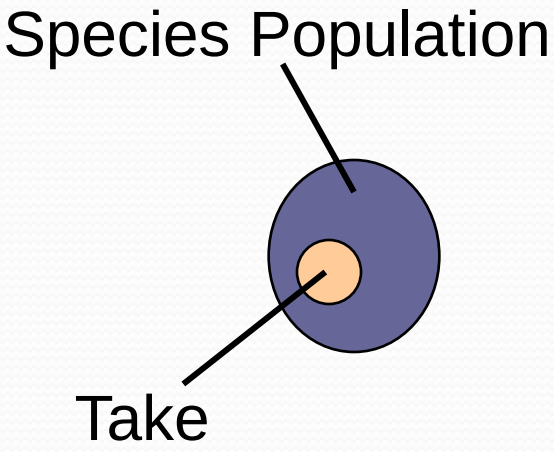
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild (jeopardy standard)

- The applicant will, to the maximum extent practicable, minimize and mitigate the *impacts of such taking*

Analyzing *Impact of the Taking*



Low Impact



High Impact

Analyzing *Impact of the Taking*

How will loss of individuals affect species' reproduction, numbers, and distribution?

- population numbers?
- structure and dynamics?
- reproductive rates and success?
- viability of offspring?
- genetic health?

Analyzing *Impact of the Taking*

How will disturbance or modification to the species' habitat affect overall habitat quality, quantity, and locations necessary for recovery of the species?

- Will the loss of the habitat disrupt a key element of the species' life history (e.g., areas required for breeding, feeding, or sheltering)?
- Will the loss of the habitat affect the ability to recover the species in the wild?

Minimization and Mitigation

ESA Section 10 Habitat Conservation Planning

Avoid, or Minimize *and* Mitigate

Projects are required first to attempt to avoid adverse impacts to listed species.

This is why §10 requires the HCP to describe actions the applicant considered that would avoid the taking.

Projects that cannot avoid impacts must minimize adverse impacts and then mitigate for those that could not be avoided.

Legal Requirements

ESA Section 10(a)(2)(A)

HCP will specify steps to minimize ***and*** mitigate the impact of the taking… (50 CFR 17.22, 17.32(b)(1)(iii))

ESA Section 10(a)(2)(B)

If the Secretary finds that impacts of the taking will be minimized ***and*** mitigated to the maximum extent practicable… (50 CFR 17.22,17.32 (b)(2)(i))

Minimization

An applicant may be able to minimize impacts by:

- reducing project footprint
- avoiding breeding season
- avoiding active time of day or night
- reducing water withdrawals
- reducing light, noise, dust, etc…

Mitigation

- HCPs must mitigate impacts of the taking for all covered species
- Mitigation should be permanent if effects of the covered activities are permanent
- Mitigation may be temporary if effects are temporary

Mitigation

- “to alleviate, mollify, extenuate; to cause to become less harsh or hostile; to make less severe or painful” (Merriam-Webster's)
- “to moderate, reduce or alleviate the impacts of a proposed activity” (NEPA regulations – 40 CFR 1508.20)

Mitigation Approaches

- **Rectify**

  the impact by repairing, rehabilitating or restoring the affected environment

- **Compensate**

  by replacing or providing substitute resources or environments

Mitigation

Projects might **rectify** impacts by:

- revegetating/restoring impacted habitat
- reestablishing populations of species
- removing invasive, non-native species
- setting back succession, etc.

Mitigation

Projects might **compensate** for impacts by:

- protecting habitat on or off-site
- purchasing credits in an approved conservation bank
- establishing conservation easements that will manage habitat for the impacted species
- purchasing land in fee title to be managed for the benefit of the impacted species
- establishing or expanding reserves, etc.

Tips for designing Minimization & Mitigation Strategies

Review known threats and proposed actions found in:

- Conservation frameworks
- Recovery plans
- Conservation strategies
- 5-year reviews
- Listing & critical habitat rules
- Other HCPs
- Programmatic resource plans

Monitoring and HCPs

ESA Section 10

Habitat Conservation Planning

Types of Monitoring in HCPs

Compliance monitoring

Verifies that the Permittee is carrying out the terms of the HCP and permit

Effectiveness monitoring

Evaluates whether the HCP is achieving the biological goals and objectives

Validation monitoring

Are our assumptions, understanding, or models correct?

Informs adaptive management processes

Compliance Monitoring

Is the Permittee complying with permit terms and conditions?

May include annual reporting, site visits, third party verification, etc.

This is the most straightforward (but often overlooked) monitoring involved in any HCP

Set expectations with the Permittee and document requirements in permit terms and conditions

Consider establishing a Monitoring Plan

Effectiveness Monitoring

Focused on determining if the biological goals and objectives spelled out in the HCP are being achieved

Should be hypothesis-driven

Should identify thresholds that trigger adaptive management actions

Consider establishing a Monitoring Plan

“Rule #1: Not everything that can be [monitored] should be.”

Krebs (1999); *Ecological Methodology*

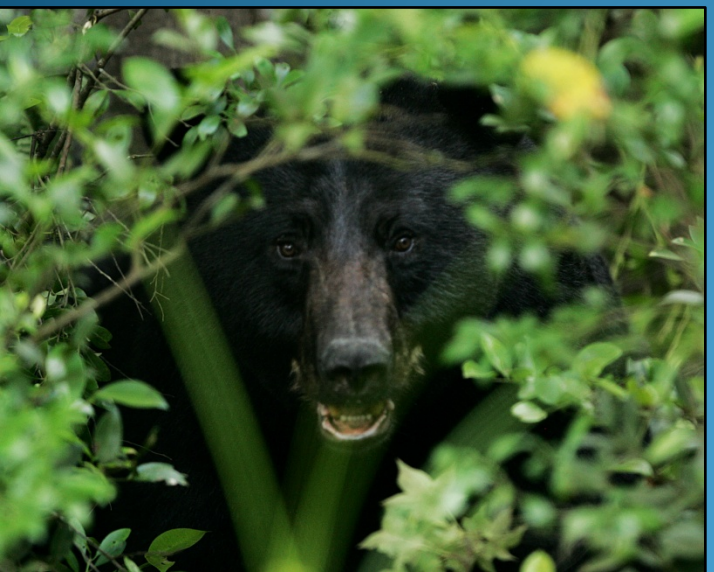
Summary

Link monitoring back to biological goals and objectives

Be able to justify decisions you make on what, how, and where to monitor

Variation and detectability are critical considerations

No Surprises Assurances



ESA Section 10 Habitat Conservation Planning

No Surprises Assurances

The Service(s) will not require additional commitment of land, water, or financial compensation, or restrictions on the use of land, water, or other natural resources otherwise available for development or use under the HCP if changed or unforeseen circumstances occur.

With some conditions…

No Surprises Assurances

Assurances apply:

To permits in which the conservation plan is being properly implemented, and

To species adequately covered by the conservation plan

Properly Implemented Conservation Plan

An HCP and permit whose commitments and provisions have been or are being fully implemented by the permittee

Adequately covered species

Species addressed in an HCP for which permit issuance criteria have been satisfied; species is listed on permit

Includes all listed and unlisted species addressed in the HCP

Changed Circumstances

Future changes that can be reasonably anticipated and planned for:

Flood, drought, fire, oil spill, invasive species, project modifications, increased land values, etc.

Anticipate event size, intensity, frequency

Look to past events to help predict future possibilities

Consider how events may change (increase, decrease) over duration of permit

Changed Circumstances

Must be identified & described in the HCP

HCP must describe responses and contingencies

HCP must include assured funding for responses and contingencies

HCP should include mitigation for impacts from changed circumstances

Unforeseen Circumstances

Changes that could not have been reasonably anticipated and which result in substantial and adverse changes in a species' status

Fire, drought, flood event, etc. larger or more frequent than could have been predicted

Earthquake?

Volcanic eruption?

Others?

Unforeseen Circumstances

The Services have the burden of demonstrating that unforeseen circumstances exist

Federal government responsible for funding responses and remedies

Permittee can always voluntarily respond

Services may require modifications that don’t consist of additional land, water, or financial compensation

Unforeseen Circumstances

Service can negotiate remedies with the Permittee

The Services can seek opportunities to make adjustments that do not require additional land, water, or financial costs

If additional land, water, or financial commitments still needed, Services may negotiate with Permittee to seek voluntarily agreement

Changes and Amendments

ESA Section 10

Habitat Conservation Planning

Implementation Plan

Not required (but a really good idea…hint, hint…)

Establishes a clear schedule of requirements and deliverables

Should incorporate all avoidance, minimization and mitigation measures:

- Habitat acquisition, management, or restoration milestones
- Clarifies timelines for annual reports and other deliverables
- Other obligations (fee collection schedules, purchase of mitigation credits, establishment of endowment funds, etc…)

Amendments

Permittee responsible for request and documentation

Services responsible for processing

Minor amendments

- Modifications that do not change effects analyses

Major amendments

- Modifications that result in effects not previously analyzed (e.g., new species, expanded area, new impacts)

Permit Suspension/Revocation

Services may suspend or revoke all or part of privileges authorized by a permit, if the permittee does not:

Comply with conditions of the permit or with applicable laws and regulations governing the permitted activity; or

Pay any fees, penalties, or costs owed to the government

(50 CFR 13.27, 13.28)

Permit Suspension/Revocation

A change occurs in the statute or regulation authorizing the permit that prohibits the continuation of a permit

Population(s) of the species declines to the extent that continuation of the permitted activity would be detrimental to maintenance or recovery of the affected population (i.e., jeopardy)

If permit is suspended or revoked, incidental take must cease

Permit Renewals

Service will determine if the permit will be renewable when issued

Permittee must file renewal request at least 30 days prior to permit expiration; permit remains valid until renewal is processed

Technical corrections can be made in the renewed permit

Substantive changes require an amendment or new permit

(50 CFR 13.22 or 50 CFR 220.24)

Assured Funding

ESA Section 10 Habitat Conservation Planning

Funding — Why Is It Required?

Funding assurances are required in the statute and regulations:

Issuance criteria – § 10(a)(2)(B)

(iii) the applicant will ensure that adequate funding for the plan will be provided

50 CFR 17.22 & 17.32

Measures Requiring Funding

Examples include:

Implementation throughout the duration of the permit

Public outreach activities

Daily operations

HCP Administration (annual reporting, meetings, salaries, etc.)

Minimization measures

Mitigation actions

Changed circumstance responses

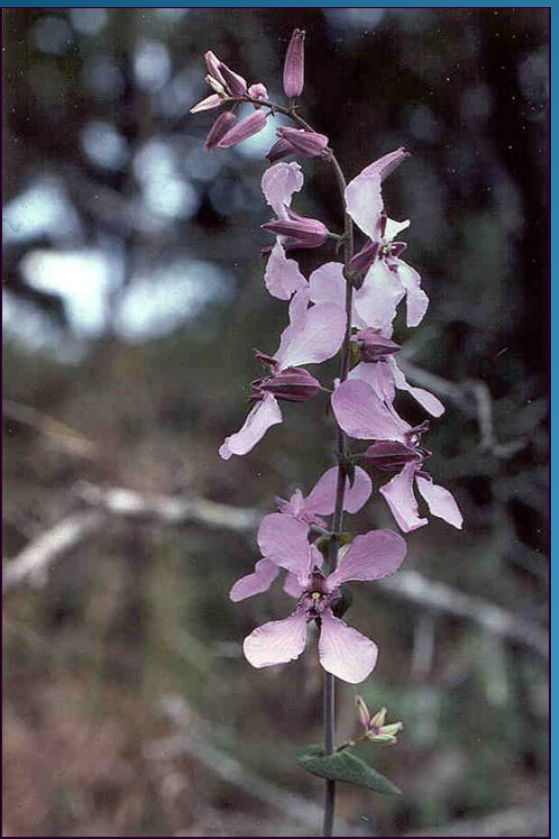
Writing the Funding Chapter

Describe and quantify costs

Discuss how those expenses will be met

Describe funding assurances (legal instrument to guarantee availability of sufficient funds, state code that authorizes collection of fees, funding agreement between involved parties, etc.)

Permit Issuance



ESA Section 10

Habitat Conservation Planning

Permit

- Contains standard terms and conditions
- May contain additional terms and conditions, including:
  - Clarifications
  - Specifies allowed take levels
  - Added specificity for reporting, etc.
  - Measures to further mitigate, minimize, or monitor
- Rosters of listed and unlisted species
- Signed in RO
- Issued directly to Permittee(s)

Permit Denial

A civil penalty or conviction of any criminal provision, statute, or regulation, relating to the activity of the application

Failure to disclose material information required, or false statements in connection with the application

Failure to demonstrate a valid justification or responsibility for the permit

Threatens the continued existence of a wildlife or plant population

The applicant is found not qualified or authorized to conduct the proposed activities

50 CFR 13.21(b)

Reconsideration

Applicant may request after written notice of denial issued by Deputy Regional Director

Appeal

Applicant may appeal to Regional Director; then DOI

50 CFR 13.29

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