

NEPA: Analyzing Impacts

(#1620-10)

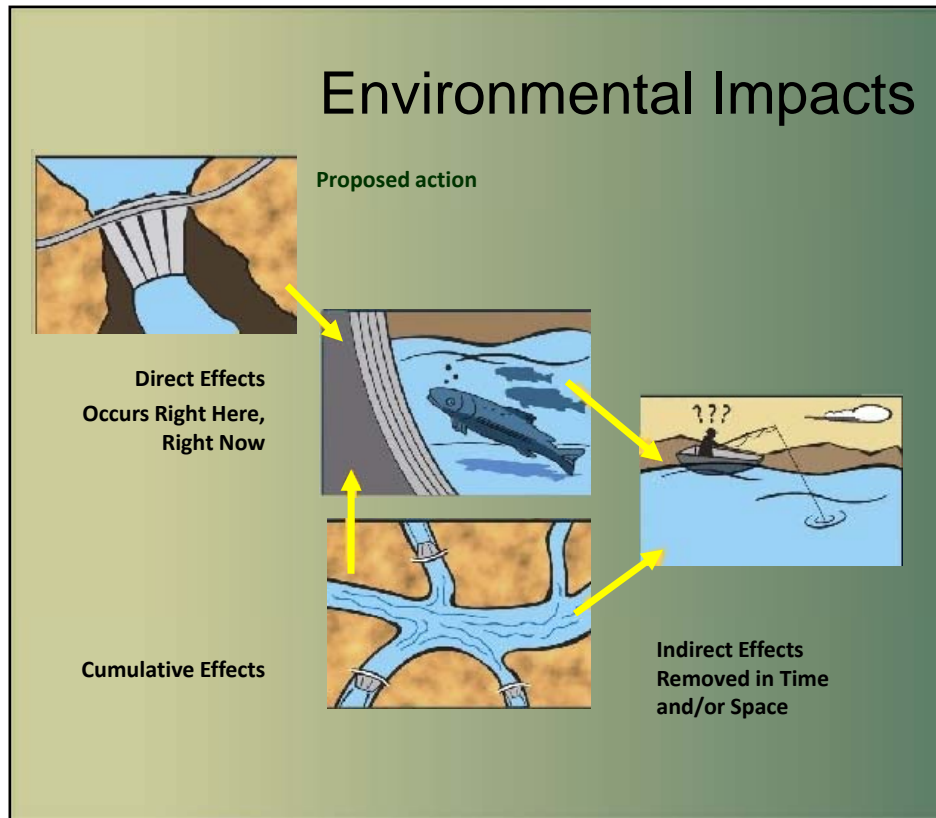


Lesson 2 Impact Analysis

Impact Analysis

Objectives:

- Identify potential impacts, linking it to the element causing the impact.
- Describe the context and severity of the impact.
- Compare the effects of the action alternatives with the No Action alternative.
- Describe the analysis assumptions.
- Provide rationale for the conclusions.



Impact Analysis

Principles:

1. Match the scope and detail of the Affected Environment and Environmental Consequences chapters.
2. Use resource analysis indicators to quantify affected environment descriptions and environmental consequences assessments.

Remember! Environmental consequences = **impacts** = effects.
They are all the same!

Impact Analysis

Principles (cont.):

3. Make reasonable assumptions for your analysis.
4. Provide a solid rationale for your assumptions and methodology.
5. Document your assumptions and rationale for the affected environment and environmental consequences.

Impact Analysis

Key Elements (Sequential Steps to Analyze Impacts)

1. Summarize factors/elements that would cause the impact.
 - (“This alternative would close 2,500 acres to OHV use”);
2. Describe the impact qualitatively, including appropriate linkages and consequences of the action.
 - (“Closing land to OHVs typically improves vegetation condition by eliminating vegetation crushing caused by vehicles”).

Impact Analysis

Key Elements (cont.):

3. Quantify the level of impact (severity) using the appropriate indicator.
 - (“This would protect 1,000 acres of sagebrush steppe and 1,500 acres of salt desert shrub habitat.”);
4. Describe the context of the impact in relation to the existing condition described in the Affected Environment, using the appropriate indicator.
 - (“This 2,500 acres represents 30% of the available sagebrush steppe and salt desert shrub in the study area.”);

Impact Analysis

Key Elements (cont.):

5. Compare impacts in the action alternatives to the impacts in the No Action alternative.
 - (“This would protect 500 more acres of sagebrush steppe and 1,000 more acres of salt desert shrub than the No Action alternative”).

Note: Don't forget the “so what” . . . that is, provide the analytical conclusion interpreting the results.

- (*“Therefore under Alternative X, this would maintain the connectivity between two large patches of habitat for shrub dependent species”*).

Impact Analysis

Things to Ponder...

- Don't forget to compare your impacts to the *baseline* provided by the No Action alternative, not to the existing conditions established for the affected environment—that's the *context* you established under Step 4.
- If you complete all five steps, then you'll be on your way to having a defensible analysis.
- If the public disagrees with your conclusion, then it's hard to prove who's right. If they disagree with your assumptions, rationale, or numbers, then they have to provide why and provide something better.

Impact Analysis

Example:

"The proposed project would impact gray wolf because it would destroy habitat and cause disturbance. This would be bad for the wolf population."

- No rationale to support the conclusion.
- Not quantified (How much habitat is destroyed? What kind of disturbance? Where? How much? What's "bad"?)
- You can't win if someone disagrees with your conclusion and your conclusion isn't supported with rationale.

Impact Analysis

Example:

The proposed project would affect 26 acres of the existing 256 acres of gray wolf habitat found in the project area. This represents 10 percent of the available gray wolf habitat in the project area and 1 percent of the 2,560 acres of gray wolf habitat found within the state.

Currently, there are an estimated 100 wolves using this regional habitat; therefore, assuming the current wolf population represents carrying capacity of this habitat, the loss of 256 acres of habitat would essentially represent the amount of habitat necessary to support approximately 1 percent of that population, or 1 wolf.

Given the reproductive and mortality rates, loss of 1 wolf would not alter the populating dynamics and therefore wouldn't affect the population as a whole.

Impact Analysis

Example:

Construction of oil wells associated with the proposed project would cause vegetation removal with subsequent visual impacts on the project viewshed.

These impacts include bare areas, crushed vegetation, and views of motorized equipment in an area that is often used by recreationists.

This would result in a significant adverse impact to visual resources in the project area.

Impact Analysis

Example:

The proposed project would remove approximately 100 acres of vegetation throughout Coyote Basin over the next 10 years. As described in Chapter 3, this area is managed as VRM Class II.

The removal of vegetation and placement of oil wells would result in bare ground, creating visual contrasts with surrounding vegetation.

Additionally, the wells are non-natural structures that would be in the foreground of two key observation points which are often used by recreationists.

These impacts would be inconsistent with the current management objectives for VRM Class II, consequently resulting in a significant adverse impact to visual resources in the project area.

Impact Analysis

Fatal Flaws to Avoid:

Mistake: Reiterate the alternatives and call it analysis.

Solution: Describe effects using indicators.

Mistake: Make unsupported conclusory statements.

Solution: Include rationale for all conclusions.

Mistake: Don't identify indirect impacts.

Solution: Identify indicators for both direct and indirect impacts, disclose all impacts.

Impact Analysis

More Fatal Flaws to Avoid:

Mistake: Don't include impact linkages.

Solution: Discuss impact linkages when preparing for and conducting impact analysis.

Mistake: Include indefensible rationale.

Solution: Use scientific, robust, and/or reasonable rationale.

Impact Analysis

More Fatal Flaws to Avoid:

Mistake: Use different indicators in Chapters 3 & 4.

Solution: Use identical resource indicators in Chapters 3 & 4.

Mistake: Use different resource indicators among alternatives.

Solution: Use identical indicators among alternatives to ensure same level of analysis.

Mistake: Don't disclose analysis assumptions or data limitations.

Solution: Disclose assumptions and data limitations at start of each resource section.

Exercise 4A: Effective Impact Analysis Determination

You are going to be presented with three short impact analyses.

Read each scenario then select either the *effective* or *ineffective* box.

Don't forget to provide the rationale for your conclusion in the text box.



Continue

Exercise 4A: Effective Impact Analysis Determination

Scenario 1 – Gray Wolf

Step 1. Read the following impact analysis:

The proposed project would impact the Gray Wolf because it would destroy habitat and cause disturbance which would be bad for the wolf population.

Step 2. Select the correct answer.

- This was an Effective Analysis.
- This was an Ineffective Analysis.

Step 3. Write the rationale for your answer in the box below.

Continue

Exercise 4A: Effective Impact Analysis Determination

Scenario 2 – Oil Wells

Step 1. Read the following impact analysis.

Construction of oil wells associated with the proposed project would cause vegetation removal with subsequent visual impacts on the project viewshed. These impacts include bare areas, crushed vegetation, and views of motorized equipment in an area that is often used by recreationists. This would result in a significant adverse impact to visual resources in the project area.

Step 2. Select the correct answer.

- a. This was an Effective Analysis.
- b. This was an Ineffective Analysis.

Step 3. Write the rationale for your answer in the box below.

Continue

Exercise 4A: Effective Impact Analysis Determination

Scenario 3 – Big Horn Sheep

Step 1. Read the impact analysis for Big Horn sheep, then answer the question.

Project: Reroute Happy Valley Trail

Proposed Action: The BLM proposes to reroute 2 miles of the Happy Valley Trail in the Sugar Mountains. At the trailhead, it would be rerouted along the southwestern edge of the flood control levee, then west along Big Rock Canyon, where it would connect with the existing Canyon Trail. Construction of the 4' wide trail would be accomplished using hand tools.

Purpose and Need: The need for realigning the Happy Valley Trail is to enhance conditions for the re-colonization of big horn sheep. The purpose is to reduce disturbances from non-motorized recreationalist (hikers, equestrians, mountain bikers) who use the Happy Valley Trail to traverse the Sugar Mountains between Highway 60 and the Cheery Lane Subdivision.

Continue

Exercise 4A: Effective Impact Analysis Determination

Scenario 3 – Big Horn Sheep (cont.)

Affected Environment: Based on data collected between 2005 and 2008, approximately 2,000 people use the Happy Valley Trail annually, with the heaviest use during the spring calving season and fall. The desert bighorn sheep is endangered, the Big Valley population in this areas is a distinct population that is isolated from adjacent population by urbanization. And highways. It has declined 69% in the past 20 years from an increase in use of the area, road and trail building, and harassment by humans. Prior to 2000, desert bighorn sheep were not known to inhabit Sugar Mountains; however, there to five ewes have been observe annually in the area from 2000 to 2006, and six ewes in 2007. A university study is underway on the Big Valley population of the desert Bighorn sheep; preliminary results are showing that harassment by humans during calving season can have measurable impact on sheep populations.

Environmental Consequences: Although the effects of recreational activities on bighorn sheep are not currently well understood, preliminary results of the university study indicate that the Big Valley population would increase 10% annually under the proposed action, primarily in the Sugar Mountain area.

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Exercise 4A: Effective Impact Analysis Determination

Scenario 3 – Big Horn Sheep (cont.)

Environmental Consequences (cont.): This would result from the rerouting the trail, which would decrease use of the area by at least 1,000 people (and the associated human-sheep interactions) during the spring calving season. Almost 1 acre of vegetation would be permanently removed (4' X 2 miles) . The amount of non-motorized recreation would decrease by 2,000 users days/year along the existing trail and would increase by 2,400 days in the area of the new trail. The 20% increase results from the trail being moved to a more accessible area.

Step 2. Select the correct answer.

- This was an Effective Analysis.
- This was an Ineffective Analysis.

Step 3. Write the rationale for your answer in the box below.

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Exercise 4B: Writing an Impact Analysis

Read the following information. Using your answers from Exercise 2 in Lesson 1, write an impact analysis in the box on the following page.

Proposed Action: Designate a Special Recreation Management Area (SRMA) for high density winter recreation as part of a programmatic land use plan. Part of the SRMA overlaps with habitat for the Bicknell's Thrush, an endangered species.

Assumptions: High density winter recreation activities may adversely affect thrush habitat.

Key Elements: Include the following when you write an impact analysis:

- Qualitatively describe impacts.
- Use indicators to quantify level of impacts.
- Compare to affected environment to get context of impacts
- Compare to baseline impacts (from No Action Alternative, which would be to **not** designate the SRMA)

Continue

Exercise 4B: Writing an Impact Analysis

Bicknell's Thrush Habitat Analysis (cont.)

Write your impact analysis in the box below. Don't forget to document your assumptions and methodology! Then compare your answer with the instructor's answer.

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Exercise 4B Review: Writing an Impact Analysis

Listen while Matt discusses the answer to the exercise.

Compare Matt's answer with yours.

What did he have that you did not?

What did you have that he did not?

Summary

- Course Goal: To improve the analysis and documentation of environmental impacts.



Summary

- Identify impact indicators up front.
- Quantify impacts.
- Use the same indicators for Chapters 3 and 4.
- Document data needs and methodology.
- Include assumptions and rationale.

Remember to focus the analysis by concentrating on the issues that are truly significant to the action in question, rather than amassing needless detail by analyzing everything (“kitchen sink” approach).