

**The National Environmental Policy Act  
Powerful Cumulative Impact Analyses**

**Midwest Natural Resources Group  
Environmental Protection Agency R-5**



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## Workshop Overview and Objectives

**Welcome to this workshop on the National Environmental Policy Act (NEPA): Powerful NEPA Document Preparation and Review under Section 309 of the Clean Air Act, presented by Environmental Planning Strategies, Inc. and your consultant, Judith Lee.**

NEPA has recently passed its 30<sup>th</sup> birthday, and undergone an extensive review by the Council on Environmental Quality (*The National Environmental Policy Act: A Study of its Effectiveness after 25 Years, January 1997*). Overall, the study found NEPA to be effective and dynamic, living up to its reputation as one of the most significant pieces of environmental legislation enacted in the United States.

NEPA has had a substantial impact on how Federal agencies (and even a majority of states, with their own state-level “little NEPAs”) conduct their planning and decisionmaking processes. It has helped agencies make more informed decisions regarding environmental, technical, economic, and even political factors on which the success of meeting mission-related objectives depends.

The procedures required by NEPA incorporate the fundamental planning, problem solving, and decisionmaking principles and processes inherent in any quality decisionmaking process, and, if applied in an open and systematic manner, greatly increase the quality and timeliness of agency decisions.

If not applied correctly, it can become the “l’enfant terrible” of the environmental world - too costly, too messy, too time consuming, too useless, and the participants too prone to temper tantrums” (*J. Lee, NEPA is a Powerful Collaborative Planning Process, Fed. Fac. Env. J., Spring 1997, pp. 85-99*).

### **Documents Referenced Throughout this Manual**

In addition to the National Environmental Policy Act and its implementing regulations at 40 CFR 1500-1508, this manual references two landmark cumulative impact analysis guidance documents:

- *Considering Cumulative Effects Under the National Environmental Policy Act*, Council on Environmental Quality (CEQ), January 1997. This document will be referenced as “*CEQ*” whenever it is quoted in this manual, with page numbers.
- *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, U.S. Environmental Protection Agency, (EPA 315-R-99-002), May 1999. This document will be referenced as “*EPA*” whenever it is quoted in this manual, with page numbers.

This workshop manual also references specific court cases pertinent to the discussion of scope of analysis and cumulative impact analyses. Most of the specific wording from judicial decisions are compiled by the U.S. Department of Justice, Environment and Natural Resources Division, Washington, D.C., U.S. Navy Naval Sea Systems Command, USDA Forest Service General Counsel, Natural Resources Division, Washington, D.C., and Dr. Daniel R. Mandelkar, *NEPA Law and Litigation*, 2<sup>nd</sup> ed., Third Release, Thomson-West Publishers, July 2005. Environmental Planning Strategies, Inc. does not in any way intend for these to be comprehensive or for use for legal purposes - please contact your agency counsel.

Throughout the manual, references to NEPA and its implementing regulations (40 CFR 1500-1508) are clearly cited by section.





## NEPA is an Integral Part of Excellent Planning

“One principle of conservation has always been to find new uses for old things. One such old thing, in mint condition, is NEPA, signed on January 1, 1970. Like an unexpected legacy from a forgotten relative, it is about to come in handy...NEPA is an intelligent law. It uses a model of thinking about nature, the economy, individual rights, and decisionmaking that we are only now beginning to understand.”

*Rediscovering the National Environmental Policy Act: Back to the Future*, ©Environmental Law Institute, Sep. 1995 (used by permission).

### The National Environmental Policy Act of 1969 declares:

“a national policy which will encourage productive and enjoyable harmony between man and his environment.” (Section 101)

NEPA is substantially different from other environmental laws in that it does not manage, regulate, or protect a particular resource or hazardous material, like the Endangered Species Act (ESA), the Clean Water Act (CWA), or the Resource Conservation and Recovery Act (RCRA) does.

### The two primary objectives of NEPA are:

- Agencies must have available and fully consider detailed information regarding environmental effects at the time a decision is made.
- Agencies must make this same information available to interested and/or affected persons, agencies and organizations before decisions are made and before actions are taken.

### The NEPA planning and analysis process:

- Uses sound planning principles
- Is systematic, interdisciplinary, and analytic
- Involves all interested or affected persons, agencies, and organizations parties
- Provides the foundation for informed decisionmaking

### A few of the benefits of quality interdisciplinary planning using NEPA:

- The action is well thought out and thoroughly investigated
- The correct people and expertise are incorporated into the planning process
- Potential problems and show-stoppers are identified and evaluated early
- All practical alternatives are objectively explored with their benefits and disadvantages displayed
- The final decision meets the need for action
- Future unforeseen problems and delays are avoided
- Environmental protection measures (mitigation) are integrated into design, contracts, and permits

**The result is** informed, and hopefully, wise decisions that meet the need, support agency mission, and protect the environment.

“The harm consists of added risk to the environment that takes place when governmental decisionmakers make up their minds without having before them an analysis (with public comment) of the likely effects of their decision upon the environment. NEPA's objective is to minimize that risk, the risk of uninformed choice.” (*Sierra Club v. Marsh*. 872 F.2d 487, 500 (1<sup>st</sup> Cir. 1989))

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## The NEPA Planning Process Requires Systematic Procedures

NEPA requires that Federal agencies, to the fullest extent possible:

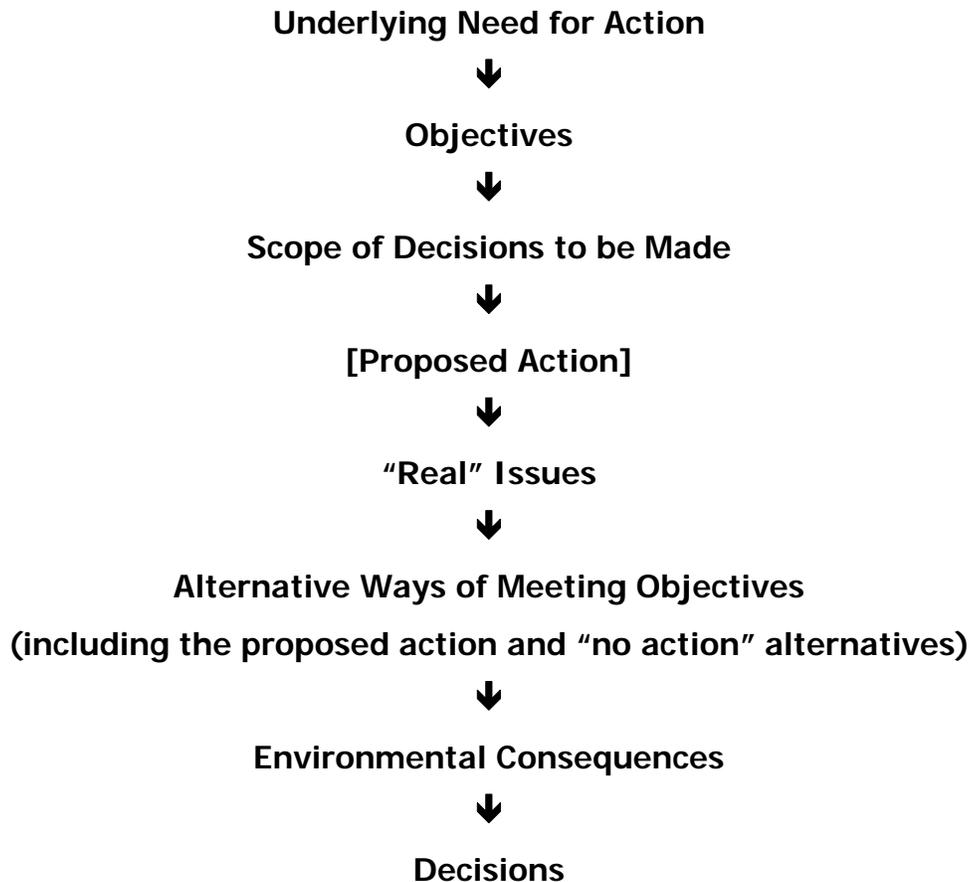
“(b) Implement procedures to make the NEPA process more useful to decisionmakers and the public; to reduce paperwork and the accumulation of extraneous background data; and to emphasize real environmental issues and alternatives.

“(c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.”  (§1500.2)

**NEPA uses effective planning principles and procedures**, which ensure that environmental considerations are integrated into agency planning processes. All agency planning is initiated with the articulation of the need for action, objectives, and scope of decisions to be made. If the planning effort indicates that components of the environment might be adversely affected (issues), then NEPA becomes part of the agency planning process.

The regulations provide for agencies to integrate NEPA directly into agency planning through **“combining documents”** (also §1500.4(o), §1500.5(i)):

“Any environmental document in compliance with NEPA may be combined with any other agency document to reduce duplication and paperwork.”  (§1506.4)



## The Role of Cumulative Effects Analyses in Planning

### Both CEQ and U.S. EPA state that cumulative effects analyses play a crucial role:

The purpose of cumulative effects analysis...is to ensure that federal decisions consider the full range of consequences of actions. Without incorporating cumulative effects into environmental planning and management, it will be impossible to move towards sustainable development, i.e., development that meets the needs of the present without compromising the ability of future generations to meet their own needs...To a large extent, the goal of cumulative effects analysis, like that of NEPA itself, is to inject environmental considerations into the planning process as early as needed to improve decisions. (*CEQ* p.3)

### The CEQ Regulations define cumulative effects:

“[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (§1508.7)

### CEQ and EPA provide guidance for cumulative impact analyses:

- **The combined incremental effects of human activity pose a serious threat to the environment.** While they may be insignificant by themselves, cumulative impacts accumulate over time, from one or more sources, and can result in the degradation of important resources...It is the combination of these effects, and any resulting environmental degradation, that should be the focus of cumulative impact analysis. (*EPA*, pg. 1)
- By mandating the consideration of cumulative impacts, the regulations ensure that **the range of actions** that is considered in NEPA documents includes not only the project proposal but also **all actions that could contribute to cumulative impacts.** (*EPA*, pg. 2)
- Ultimately, cumulative effects analysis under NEPA should be incorporated into the agency’s overall environmental planning and the regional planning of other federal agencies and stakeholders. (*CEQ*, pg. 7)
- **Cumulative effects analysis** should be the tool for federal agencies to evaluate the implications of even **project-level environmental assessments (EAs)** on regional resources. (*CEQ*, pg. 4)
- In simplest terms, **cumulative effects may arise from single or multiple actions, and may result in additive or interactive effects.** Interactive effects may be either countervailing – where the net adverse cumulative effect is less than the sum of the individual effects – or synergistic – where the net adverse cumulative effect is greater than the sum of individual effects. (*CEQ*, pg. 9)
- **Identifying the major cumulative effects issues of a project involves defining:**
  - The direct and indirect effects of the proposed action
  - Which resources, ecosystems, and human communities are affected, and
  - Which effects on these resources are important from a cumulative effects perspective. (*CEQ*, pg. 11)

Therefore, cumulative impacts are a combination of multiple direct and/or indirect impacts on a resource, caused by not only the agency's proposed action, but also any past, present, and/or reasonably foreseeable future actions taken by any entity, or even by acts of nature. It is only through cumulative impact analyses that impacts caused by other entities on the same resource are considered during planning and decisionmaking.

## **Incorporating Principles of Cumulative Effects Analysis into Environmental Impact Assessment**

**The courts have affirmed CEQ's requirement to assess cumulative effects of projects but have added little in the way of guidance and direction (CEQ, pg. 4).**

A cumulative effects analysis must use a problem-solving process that can be applied intensively to a wide range of situations and that utilizes adaptively the most appropriate methods and techniques. To be effective, a cumulative impact analysis must use both a problem-solving process and scientific cause-and-effect. (Williamson, S.C. 1993. *Cumulative impact assessment and management planning: Lessons learned to date*. In: *Environmental Analysis The NEPA Experience*, eds. S.G. Hildebrand and J.B. Cannon, 391-407. Boca Raton, FL: Lewis Publishers)

### **CEQ identifies the components and context of a quality cumulative effects analysis:**

- NEPA and CEQ's regulations define the cumulative problem in the context of the action, alternatives, and effects.
- Cumulative effects must be evaluated along with direct and indirect effects (those that occur later in time or farther away in distance) of each alternative.
- The range of alternatives considered must include the no-action alternative as a baseline against which to evaluate cumulative effects.
- The range of actions that must be considered includes not only the project proposal but all connected and similar actions that could contribute to cumulative effects.
- Specifically, NEPA requires that all related actions be addressed in the same analysis. (CEQ, pg. 1)

### **Principles of cumulative impact analyses include:**

- Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions.
- Cumulative effects are the total effect, including both direct and indirect effects, on a given resources, ecosystem, and human community of all actions taken, no matter who (federal, nonfederal, and private) has taken the actions.
- Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.
- It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.
- Cumulative effects on a given resource are rarely aligned with political or administrative boundaries.
- Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.
- Cumulative effects may last for many years beyond the life of the action that caused the effects.
- Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource. (CEQ, pg. 8)

An individual cumulative impact analysis is conducted on a particular resource, not a combination of resources within a particular area. Each cumulative impact analysis will have a geographic and temporal boundary unique to that resource.

## When Does NEPA Apply and How Much Documentation is Required?

**The purpose of NEPA is to ensure that environmental considerations are incorporated into Federal decisionmaking:**

“so that the [environmental document] can serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made.”  
(§1502.5)

“[Environmental documents] shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.”  
(§1502.1)

**NEPA applies to decisions in which Federal authority is involved:**

“Actions include new or continuing activities, including projects or programs entirely or partly financed, assisted, conducted, regulated, or approved by Federal agencies; new or revised agency rules, regulations, plans, policies or procedures; and legislative proposals...Actions include the circumstance where the responsible officials fail to act, and that failure is reviewable by courts under the Administrative Procedures Act or other applicable law as agency action.”  
(§1508.18)

**Two criteria are necessary for NEPA to be "triggered":** 1) the requirements in Section 1508.18 and 2) the potential for environmental effects.

**NEPA provides a systematic process** to determine when an environmental impact statement (EIS) or an environmental assessment (EA) is appropriate, or when the action is categorically excluded from documentation and public scrutiny altogether:

“(a) Determine under its procedures supplementing these regulations (described in §1507.3) whether the proposal is one which: (1) normally requires an environmental impact statement, or (2) normally does not require either an environmental impact statement or an environmental assessment (categorical exclusion).

“(b) If the proposed action is not covered by paragraph (a) of this section, prepare an environmental assessment...The agency shall involve environmental agencies, applicants, and the public, to the extent practicable, in preparing assessments...

“(c) Based on the environmental assessment make its determination whether to prepare an environmental impact statement.

“(d) Commence the scoping process (§1501.7), if the agency will prepare an environmental impact statement.

“(e) Prepare a finding of no significant impact (§1508.3)[FONSI], if the agency determines not to prepare a statement...The agency shall make the finding of no significant impact available to the affected public as specified in §1506.6.”  
(§1501.4)

**The appropriate level of documentation for any proposed action is often a subjective judgment call,** and the decision must be made considering agency precedent and policy, legal requirements and repercussions, public expectations and desires, politics, administrative risk assessments, and planning

strategies, deadlines, and costs. Planning for other than environmental issues and for compliance with other laws, including environmental laws, must continue even if the action can be categorically excluded.

## Determining Significance of Environmental Impacts

NEPA's implementing regulations consider the significance of impacts in terms of:

- **context of impacts:** whether the resource is rare; is of great interest; is legally protected; or some other circumstance that would increase the importance of a particular impact.
- **the severity or intensity of impacts:** the degree of magnitude of an adverse impact. (§1508.27(a))

The regulations identify the following **tend considerations** as components of 'intensity'; however, some of the considerations are actually contextual:

- "(1) **Impacts may be both beneficial and adverse.** A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
- "(2) The degree to which the proposed action **affects public health or safety.**
- "(3) **Unique characteristics of the geographic area** such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- "(4) The degree to which the **effects** on the quality of the human environment are likely to be **highly controversial.**
- "(5) The degree to which the possible **effects** on the human environment are **highly uncertain or involve unique or unknown risks.**
- "(6) The degree to which the action may **establish a precedent for future actions** with significant effects or represents a decision in principle about a future consideration.
- "(7) Whether the action is related to other actions with individually insignificant but **cumulatively significant impacts.** Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- "(8) The degree to which the action may adversely affect districts, sites, highways, structures or objects listed in or eligible for listing on the **National Register of Historic Places** or may cause loss or destruction of **significant scientific, cultural, or historic resources.**
- "(9) The degree to which the action may adversely affect an **endangered or threatened species** or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
- "(10) Whether the action threatens a **violation of Federal, State, or local law or requirements imposed for the protection of the environment.**"  (§1508.27(b))

**Significance is clearly a subjective determination,** under the authority of the decisionmaker, with opportunity for scrutiny by other interested parties and argument in the courts.

The task of the interdisciplinary team is to analyze the effects on resources in such a way that decisionmakers and other interested parties may evaluate significance of impacts using their own subjective determinations based on the considerations identified in the regulations.

**Visualize the determination of significance using the following analogy.**

The temperature of a large meeting room has reached approximately 74 degrees, over the period of the day. If you were to survey the people seated in the room, you might find that 25% of the people were comfortable at 68 degrees, 50% of the people were comfortable at 70 degrees, 20% of the people were comfortable at 72 degrees, and 5% of the people are comfortable at the current temperature of 74 degrees. As the temperature increased, those who were comfortable at a certain temperature became uncomfortable at any other temperature.

The decisionmaker must determine at what temperature s/he should call in Maintenance to stabilize the room temperature. Some proportion of the people in the room is going to be uncomfortable at whatever temperature is maintained. The threshold of significance (the temperature at which an unacceptable number of people are uncomfortable) may change, depending on who is determining the comfort threshold.

The context of the impact would incorporate the consideration of the comfort level of the most important person or group in the room; a Senator, an elderly group, or the decisionmaker's mother, perhaps.

**Each resource must undergo the same level of analysis, so that the decisionmaker may determine significance of impacts for each alternative, including the "no action" alternative.** The decisionmaker may set whatever thresholds, based on the analysis, seem appropriate within both context and intensity, at which the impacts would be "significant". Since the CEQ regulations do not set thresholds for significance, the determination of significance must be based on a high quality, detailed impact analysis, and left to the discretion of the decisionmaker.

**Developing thresholds** for impact significance for each affected resource during the analysis, rather than at the decision point, may be helpful for the interdisciplinary team as they develop alternatives and mitigation measures. However, it is ultimately the responsibility and authority of the decisionmaker to set the point for each resource at which a particular predicted impact might be a "significant" impact. By identifying thresholds during the analysis and within the document, the decisionmaker is locked into a particular threshold that may not be acceptable or prudent. This approach also inappropriately places authority for decisionmaking in the FONSI with staff rather than the responsible official.

**Thresholds set by other environmental laws**, such as the Clean Water Act or the Clean Air Act, are not necessarily appropriate as NEPA thresholds. An unacceptable adverse impact may occur to a resource prior to the point at which emissions to the environment reach thresholds set by law. For example, a chemical below regulated levels emitted into a stream may adversely affect aquatic organisms used as a food source for freshwater trout, adversely affecting the trout.

**The Finding of No Significant Impact (FONSI) documents** the reasons, as determined by the responsible official, why the adverse impacts predicted to occur on the affected resources as documented in the EA are not "significant" impacts, and why the agency is not preparing an EIS.

Many agencies add additional significance criteria, or may further clarify the criteria identified in 40 CFR 1508.27(b).

## Significance and Thresholds: Cumulative Impact Analyses

**Both the CEQ and EPA have identified relationships between “significance” of impacts as defined by the CEQ regulations and the use of thresholds as defined by other regulatory Federal, state, and local laws, plans, and goals:**

- The analyst’s primary goal is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and future actions. To accomplish this, the analyst must use a conceptual model of the important resources, actions, and their cause-and-effect relationships. The critical element in this conceptual model is defining an appropriate baseline or threshold condition of the resource, ecosystem and human community beyond which adverse or beneficial change would cause significant degradation or enhancement of the resource respectively. (*CEQ*, pg. 41)
- Thresholds and criteria (i.e., levels of acceptable change) used to determine the significance of effects will vary depending on the type of resource being analyzed, the condition of the resource, and the importance of the resource as an issue (as identified through scoping). Criteria can be quantitative units of measure such as those used to determine threshold values in economic impact modeling, or qualitative units of measure such as the perceptions of visitors to a recreational area. (*CEQ*, pg. 45)
- Qualitative and quantitative thresholds can be used to indicate whether a resource(s) of concern has been degraded and whether the combination of the action’s impacts with other impacts will result in a serious deterioration of environmental functions. In the context of EPA reviews, thresholds can be used to determine if the cumulative impacts of an action will be significant and if the resource will be degraded to unacceptable levels...The thresholds should be practical, scientifically defensible, and fit the scale of the analysis...Determining a threshold beyond which cumulative effects significantly degrade a resource, ecosystem, or human community is sometimes very difficult because of a lack of data. Without a definitive threshold, the NEPA practitioner should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant. (*EPA*, pg. 17)
- The NEPA analysis should establish the magnitude and significance of cumulative impacts by comparing the environment in its naturally occurring state with the expected impacts of the proposed action when combined with the impacts of other actions (*EPA*, pg. 13)

**The courts provide conflicting guidance for when cumulative impacts can be analyzed in the same or separate documents:**

**Cumulatively significant actions are evaluated in an EIS, not several EAs:**

“The court agrees that an EIS must be prepared when a number of related actions cumulatively may have a significant environmental impact, even if the separate actions, standing alone, do not...Conversely, once the cumulative impact of a number of mining claims crosses the threshold of “significant effect on the environment,” a discussion of those cumulative effects in individual EAs no longer complies with NEPA.” (*Northern Alaska Environmental Center v. Lujan*, 15 ELR 21048 (D. Alaska, 1985))

"The determination of when cumulative impacts should be considered in a separate document requires the weighing of several factors, including the degree of interrelationship between the proposed actions and practical feasibility (see *Kleppe*, 427 U.S. at 412). As noted by the Supreme Court, "[r]esolving these issues requires a high level of technical expertise and is properly left to the informed discretion of the responsible federal agencies."...[T]he visual resources impacted are listed in each EA, and, upon review, each appears to impact distinct resources. There is no indication that they overlap to produce substantial cumulative impacts to the Appalachian Trail or the Blue Ridge Parkway." *Shenandoah Ecosystems Defense Group v. U.S. Forest Service*, 194 F.3d 1305 (Table) Unpublished Disposition, 1999 WL 760226 (4<sup>th</sup> Cir. 1999).

"[W]here reasonably similar projects in a geographical region have a cumulative impact, they should be evaluated in a single EIS." *City of Tenakee Springs v. Clough* 915 F.2d 1308 (9<sup>th</sup> Cir. 1990)

## Differences in Cumulative Effects Analyses for EAs and EISs

**The purpose of an EA is to determine if impacts might be significant, and whether an EIS should be prepared.** The determination of whether to prepare an EIS is what the courts call the “threshold stage.” Since the burden of proof for “no significant impacts” lies with the agency, the analysis of cumulative effects in an EA may be more extensive than that required for an EIS.

### **A key 5<sup>th</sup> Circuit Court decision outlined the differences in cumulative effects analyses for EAs and EISs** (*Fritiofson v. Alexander*, 772 F.2d 1225, 1243, 1245-6, (5<sup>th</sup> Cir. 1985)):

- “When deciding the potential significance of a single proposed action (i.e., whether to prepare an EIS at all), a broader analysis of cumulative impacts is required [than in an EIS]”
- EAs “should consider (1) past and present actions without regard to whether they themselves triggered NEPA responsibilities and (2) future actions that are reasonably foreseeable, even if they are not yet proposals and may never trigger NEPA-review requirements”
- “As noted, the Supreme Court made clear that, although cumulative impacts may sometimes demand the preparation of a comprehensive EIS, only the impacts of proposed, as distinguished from contemplated, actions need be considered in scoping an EIS. In a case like this one, on the other hand, where an EA constitutes the only environmental review undertaken thus far, the cumulative impacts analysis plays a different role...Sections 1508.7 and 1508.27 require an analysis, when making the NEPA-threshold decision, as opposed to the EIS-scoping decision, whether it is “reasonable to anticipate cumulatively significant impacts” from the specific impacts of the proposed project when added to the impacts from “past, present, and reasonably foreseeable future actions,” which are “related” to the proposed project. The regulation does not limit the inquiry to the cumulative impacts that can be expected from proposed projects, rather, the inquiry also extends to the effects that can be anticipated from “reasonably foreseeable future actions”...In other words, when deciding the potential significance of a single proposed action (i.e., whether to prepare an EIS at all), a broader analysis of cumulative impacts is required. The regulations clearly mandate consideration of the impacts from actions that are not yet proposals and from actions – past, present, or future – that are not themselves subject to the requirements of NEPA.”
- We certainly do not mean to suggest that the consideration of cumulative impacts at the threshold stage will necessarily involve extensive study or analysis of the impacts of other actions...The inquiry at this point is properly limited to whether the specific proposal under consideration may have a significant impact. The EA must, however, at a minimum, show that the Corps considered impacts from these actions listed in the regulations: “past, present, and reasonably foreseeable future actions regardless of what agency, (Federal or non-Federal), or person undertakes such other actions.” The extent of the analysis will necessarily depend on the scope of the area in which the impacts from the proposed action will be felt and the extent of other activity in that area.

## Initiating Planning with a Clear Statement of Purpose and Need

The regulations emphasize the importance of defining the proposal:

“(a) Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined.” (§1502.4(a))

Both EAs and EISs require a discussion of the purpose and need:

“The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” (§1502.13)

“Environmental assessment...(b) shall include brief discussions of the need for the proposal...” (§1508.9)

A “proposal” and the “proposed action” are different:

“ “Proposal” exists at that stage in the development of an action when the agency subject to [NEPA] has a goal, and is actively working toward making a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated...A proposal may exist in fact as well as by agency declaration that one exists.” (§1508.23)

The “proposal” therefore consists of four components:

1. The goal (the need for action and its associated objectives; the purpose and need);
2. The decision to be made, which determines the scope of the analysis;
3. One or more alternative means (including the proposed action) of accomplishing the purpose and need;
4. The issues, in a form in which they can be meaningfully evaluated, such as cause-and-effect relationships.

The need for action identifies and describes:

- The underlying problem or deficiency (not the proposed action)
- Facts and analyses supporting the problem or deficiency in the particular location at the particular time
- The context or perspective of the agency mission in relation to the need for action.

Even the most skeptical of readers should understand, if not support, the stated need based on the descriptive analysis. Statements of underlying need may require several paragraphs, and sometimes a page or two, to fully describe and assess the situation within the appropriate context and agency mission requirements. **Most conflict occurs over differing values and desires regarding the need for action and objectives rather than the quality of the analytic science.**

To determine the need for action, ask three questions (*Lee, J. The Power of Purpose and Need in Quality NEPA Planning, Fed. Fac. Env. J., Autumn 1997, pp. 77-92*):

- **Why?** What is the basic problem or deficiency with the existing situation and why is this a problem? How does it relate to the agency mission? What facts support the need?

- **Why here?** Why is this problem or deficiency occurring here and why is it important? Why not somewhere else? If it is occurring elsewhere, too, why are we addressing it only here? Where does “here” end, and why?
- **Why now?** Why does the problem need to be addressed now (urgency)? Why not earlier or later? What could happen if the problem were not addressed now? What has happened since the problem was not addressed earlier, and what will happen if the situation is allowed to continue?

**Each need for action must have an associated measurable objective or specification (“purpose”)** with which the effectiveness of the proposed action and each alternative in fulfilling the need for action can be evaluated. Objectives must not be set so narrowly that they exclude reasonable alternatives from consideration.

**Measurable objectives must specify an outcome or result** to be accomplished, with a date by which it is to be accomplished, must be framed in terms of “what I need,” not “what I do not need,” and must not include “why” and “how.”

Measurable objectives may be defined in different ways for the same need for action, so the optimal way to measure success must be identified. Criteria for selecting the optimal measurement include the ability to monitor certain components, their associated costs, and how directly and effectively the measurement evaluates success in fulfilling the need.

**To determine objectives (purposes), ask three questions:**

- What are your requirements?
- How will you know when you are successful?
- How do you best measure success in fulfilling the need for action?

For example, assume that cattle are adversely impacting a riparian area on public land. The agency has identified the need to improve the ecological condition of the riparian area to slow soil erosion, improve vegetative diversity, and create trout habitat. The associated objective could be phrased in any of the following ways:

- Establish willows and cottonwoods at least four feet all within three years on at least 50% of the length of the streambanks.
- Establish at least 65% ground cover on at least 75% of the length of the streambanks within three years.
- Establish an overhang supporting vegetation on at least 50% of the length of the streambanks within eight years.
- Establish a coldwater trout population in identified stream reaches that increase 5% a year after the first five years, to the stream’s carrying capacity.
- Maximize forage utilization by cattle at an average of 35% per year within 50 feet of each streambank over the rotation period.

The first three objectives directly measure the condition of the riparian ecosystem and are relatively easy to measure. The last two are indirect measurements, implying that lower forage utilization or improved trout populations reflect improved ecological conditions.

### Scoping Focuses Cumulative Impact Analyses

#### The purpose of scoping for cumulative effects is to determine:

- Whether the resources, ecosystems, and human communities of concern have already been affected by past or present activities, and
- Whether other agencies or the public have plans that may affect the resources in the future. *(CEQ, pg. 11)*

#### Effective cumulative effects analysis requires close coordination among agencies to ensure that even all present actions, much less past or future actions, are considered. *(CEQ, pg. 19)*

By working together to discuss issues early on, agencies can come to agreement on:

- the important issue that are most likely affected by indirect and cumulative impacts
- the appropriate and reasonable temporal and spatial boundaries for analysis, and
- the appropriate forecasting methodology for the study.

#### During the scoping process, the analyst should:

- Consult with agencies and other interested persons concerning cumulative effects issues
- Evaluate the agency's planning as well as the proposed action and reasonable alternatives (including the no-action alternative) to identify potential cumulative effects
- Evaluate the importance of the cumulative effects issues associated with a proposed action to identify additional resources, ecosystems, and human communities that should be included in the EA or EIS
- Identify the geographic boundaries for analysis of the cumulative effects on each resource, ecosystem, and human community
- Identify a time frame for the analysis of the cumulative effects on each resource, ecosystem, and human community, and
- Determine which other actions should be included in the analysis and agree among interested parties on the scope of the data to be gathered, the methods to be used, the way the process will be documented, and how the results will be reviewed. *(CEQ, pg. 21)*

#### EPA review of cumulative impact analysis is most effective if done early in the process:

- In reviewing the analysis, the EPA reviewer should determine if the information presented is commensurate with the impacts of the project, i.e., a greater degree of detail is needed for more potentially serious impacts...
- EPA comments should identify significant cumulative impacts that may affect resources of concern and suggest mitigation measures that will avoid or minimize adverse effects to the environment...
- EPA suggestions for mitigation are not necessarily constrained by whether the action agency has jurisdiction to implement the measures but the measures should be realistic and technically feasible. *(EPA, pg. 2-3)*

## Scoping - Determining Scope of Analysis and Decisions

**Determining the scope of decisions to be made by the responsible official drives the scope of the analysis (issues, alternatives, and impacts).** The scope determines the “framework” within which the analysis will be conducted, and, when combined with the need for action and objectives, is critical for initiating the NEPA planning and analysis efficiently.

The analyst must also determine the scope of the issues to be considered in detail and the geographic and temporal scope of the cause and effect relationship for each issue:

- The connected and similar actions, and the no action and action alternatives, including mitigation alternatives, are related to the scope of decisions to be made.
- Cumulative actions, and direct, indirect, and cumulative impacts are related to the scope of the issues to be considered in detail and each issue's geographic and temporal scope.

**The scope of the decisions to be made, and therefore, of the analysis involves the following components:**

**“Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement.** The scope of an individual statement may depend on its relationships to other statements (§1502.20 and §1508.28 [programmatic documents and tiering]). To determine the scope of environmental impact statements, agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include:

**(a) Actions** (other than unconnected single actions) which may be:

**(1) Connected actions**, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:

- (i) Automatically trigger other actions which may require environmental impact statements.
- (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
- (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

**(2) Cumulative actions**, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

**(3) Similar actions**, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement.

**(b) Alternatives**, which include: (1) **No action alternative.** (2) **Other reasonable courses of actions.** (3) **Mitigation measures** (not in the proposed action).

**(c) Impacts**, which may be: (1) **Direct;** (2) **Indirect;** (3) **Cumulative.** (§1508.25)

## Scoping - Three Types of Actions Define the Scope

The “scope” of the analysis is determined by the range of actions, impacts and alternatives to be considered in the planning effort (§1508.25).

**Three types of actions** (other than unconnected single actions) **determine the scope** of the decision(s) to be made:

“(1) **Connected Actions**, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

“(2) **Cumulative actions**, which when viewed with other proposed actions, have cumulatively significant impacts and should therefore be discussed in the same impact statement.

“(3) **Similar actions**, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single environmental impact statement.” (§1508.25)

**Connected actions** are all the activities proposed by the action agency(ies) necessary to fully completely fulfill the need for action. Omitting a connected activity may result in an incomplete and unfeasible decision, one that either will not meet the objectives or will not even work technically. Considering impacts associated with all the connected actions involved with a particular program or project may result in cumulative impacts on one or more resources. All connected actions must be included within the scope of a NEPA analysis. Evaluating connected actions is often critical for a cumulative impact analysis.

**Cumulative impacts** are impacts on a resource caused by past, present and reasonably foreseeable future actions, regardless of who takes those actions (§1508.7). Therefore, **cumulative actions** are those past, present, and reasonably foreseeable actions which, when evaluated together with the action agency's proposed action/alternatives, would cause a cumulative impact on a resource. All cumulative actions must be included within the scope of a NEPA analysis, although it is often very difficult to determine which actions to include within the scope of cumulative impact analysis, especially past actions and reasonably foreseeable future actions. The courts often confuse cumulative actions and cumulative impacts and have provided little consistent guidance on how to determine what past and future actions to include within the scope of a particular cumulative impact analysis. A cumulative impact on a resource is a set of direct and/or indirect impacts on a resource added together (with possible synergistic impacts as well). **Therefore, a cumulative impact on a resource cannot be analyzed independently from direct and/or indirect impacts on that resource – the direct and/or indirect impacts make up the resulting cumulative impact.**

**Similar actions** are agency proposed actions which the agency may choose to consider together within the scope of a NEPA analysis. Considering more than one similar action may result in the agency choosing to prepare a programmatic NEPA document (§1502.4(b)), then subsequently preparing a site-specific document. Considering more than one similar action may also identify cumulative impacts on one or more resources. Under these circumstances, the agency *should* consider the similar actions together.

**Remember, connected and similar actions define the scope of decisions to be made. Cumulative actions are related to the geographical and temporal scope of a cumulative impact analysis.**

## Scoping - Three Types of Impacts Define the Scope

**Issues are problems to identified receptors that could occur should the proposed action or alternatives be implemented.** These impacts to identified receptors must be considered by the planning team for appropriate resolution during the planning process (mitigation) and the advantages and disadvantages of the various alternatives (the degree to which each issue is resolved by the alternatives as defined by the impact analyses) presented to the decisionmakers. The decisionmakers (and other interested parties) can then evaluate and balance the predicted impacts, along with the effectiveness of each alternative in meeting the need for action as measured by the objectives, as the basis for informed decisionmaking.

**Issues are cause-and-effect relationships that define the specific receptors, in time and space, to be analyzed for adverse impacts (synonymous with effects) and can include:**

"ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetics, historic, cultural, economic, social or health, whether direct, indirect, or cumulative."  
(§1508.8)

**The CEQ Regulations identify three types of impacts:**

**“(a) Direct effects**, which are caused by the action and occur at the same time and place.

**“(b) Indirect effects**, which are caused by the action and are later in time and farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems...Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.” (§1508.8)

**“Cumulative impact**, is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (§1508.7)

The analysis geographic area for an impact on a particular resource will usually be different than that for another resource. Some resources may be affected by several cumulative actions (causing a cumulative effect), either later in time and/or removed from the causative action in distance or at the same time/place. In other words, a set of direct and indirect impacts added together may add up incrementally to a cumulative impact on a resource.

**NEPA implementing regulations repeatedly emphasize that NEPA processes and documents must focus on the issues that are truly “significant,” (important) to the decisions** (§1501.7(a)(2-3), §1500.1(b), §1500.2(b), §1500.4(c), §1501.1(d), §1501.2(b), §1502.1, §1502.2(b), §1502.15). The term “significant issues” is different from the criteria for significance of impacts (§1508.27), and refers to those issues that make a major contribution to environmental impacts associated and are therefore important to the decision to be made.

Analyzing issues in terms of cause-and-effect relationships, a process which breaks an issue down into its component parts in time and space, helps identify and create effective alternatives and mitigation measures that meet the objectives and address the problems.

**In other words, the best way to define an issue, including its associated analysis area and its relationship to environmental effects is to describe the action(s) that would cause a specific**

**impact on a specific receptor, including the pathway of the impact. If more than one action is involved or the impact would be additive over time, then the resultant impact is a cumulative impact.** An economic analysis may also be appropriate for NEPA decisionmaking (§1502.23).

**Using cause-and-effect relationships for issue analysis has the following benefits:**

- Changing a causative action occurring in a specific location at a specific time to a less damaging action reduces the resultant impacts:
- **“Cause” → Alternatives (§1502.14) and Mitigation Measures (§1508.20).**
- Focusing on the specific aspect of the resource being affected focuses field data collection and impact analysis: **“Effect” → Environmental Consequences**
- Effectively resolving specific problem actions saves time and money, and avoids unforeseen environmental impacts. Using the “Pareto Principle,” often a few actions or sensitive areas often account for a large proportion of the impacts and focusing mitigation efforts on those actions or actions in sensitive areas may make the most difference in overall impacts at the most economical cost.
- To determine if you have an issue (receptor), ask the question, “So what would happen?” if some action should occur.

**Objectives and issues are fundamentally different:**

- **Objectives** fulfill the need for action, and every alternative in the array (except often the “no action” alternative) must meet all the objectives to a large degree.
- **Issues** state the problems that might occur should the objectives be met, and each alternative addresses the issues differently, to a different degree.

**Incomplete or unavailable information (formerly the “worst case analysis”)  
provides procedures for dealing with uncertainty:**

**“When an agency is evaluating reasonably foreseeable significant adverse impacts...and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.**

“(a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

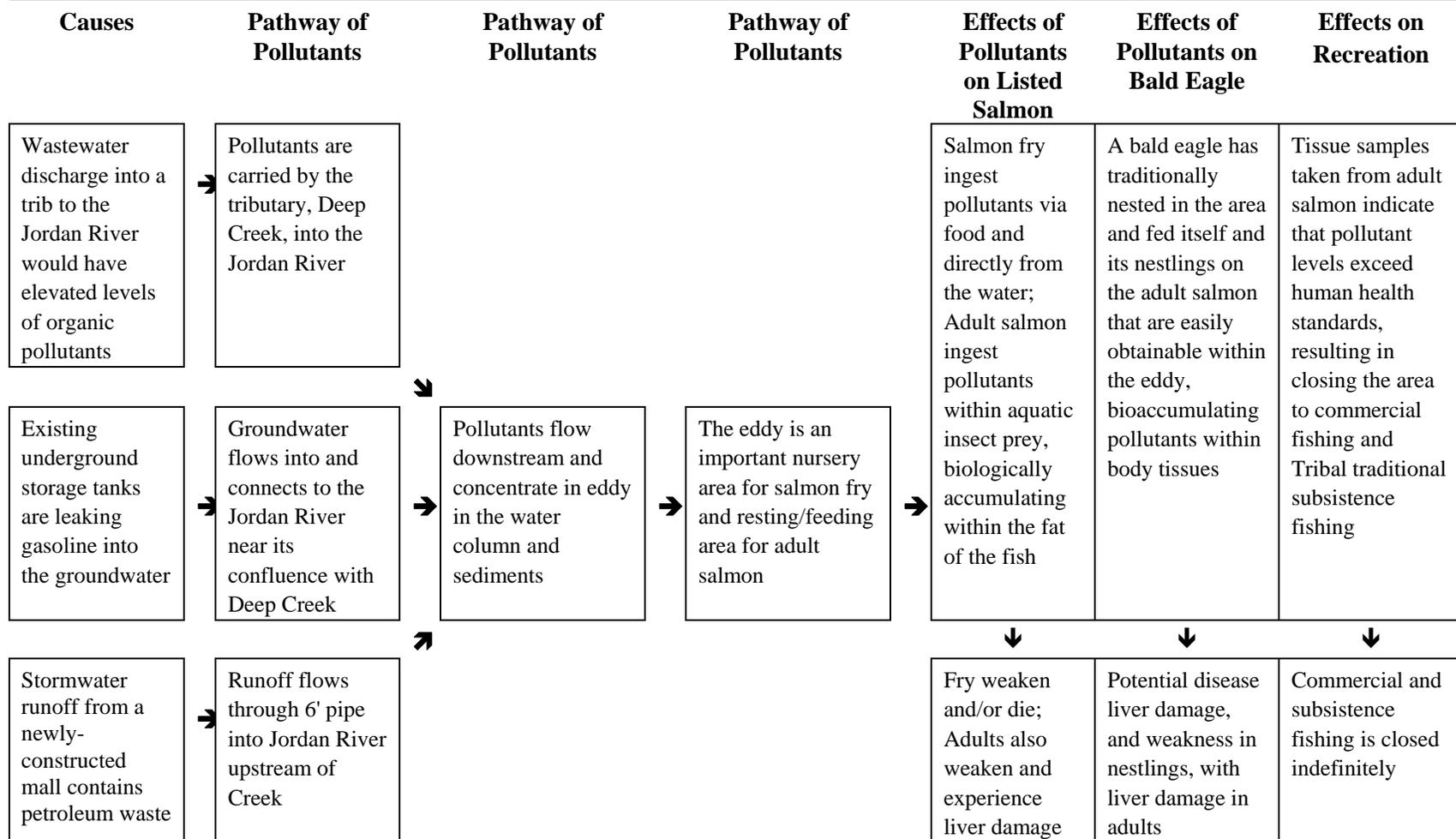
“(b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the [EIS]:

(1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of the existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts...,and (4) the agency’s evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, “reasonably foreseeable” includes impacts which have catastrophic consequences, even if their probability is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.”

(§1502.22)

### A Cause and Effect Analysis

**Proposed action:** Develop a Habitat Conservation Plan for construction and operation of a County-wide wastewater treatment plant. Currently, the county has no wastewater treatment plant; wastewater is transferred via an outdated piping system to a plant in an adjacent county, which discharges into an adjacent watershed.



## **Cause-And-Effect Relationships Provide the Basis for Cumulative Effect Analyses**

**Environmental impact assessment is an attempt to characterize the relationship between human activities and the resultant environmental and social effects.**

**In preparing any assessment, the analyst should gather information about the cause-and-effect relationships between stresses and resources...** Once all the important cause-and-effect pathways are identified, the analyst should determine how the resource responds to environmental change (i.e., what the effect is). The cause-and-effect relationships for each resource are used to determine the magnitude of the cumulative effect resulting from all actions included in the analysis...Non-linear cause-and-effect relationships among several environmental changes pose an additional challenge for the analyst. *(CEQ, pg.38)*

**Cause-and-effect relationships help identify incremental impacts:**

**Initially, the analyst will usually determine the separate effects of past actions, present actions, the proposed action (and reasonable alternatives), and other future actions.** Once each group of effects is determined, cumulative effects can be calculated. The cumulative effects on a specific resource, however, will not necessarily be the sum of all actions. Knowing how a particular resource responds to environmental change (i.e., the cause-and-effect relationship) is essential for determining the cumulative effect of multiple actions...The separation of effects into those attributable to the proposed action or a reasonable alternative versus those attributable to past and future actions also allows the analyst to determine the incremental contribution of each alternative. Situations can arise where an incremental effect that exceeds the threshold of concern for cumulative effects results, not from the proposed action, but from reasonably foreseeable future action. *(CEQ, pg. 42)*

**EPA provides guidance on determining which resources should be considered for cause-and-effect relationships:**

...While a broad consideration of resources is necessary for the adequate assessment of cumulative impacts, **the analysis should be expanded for only those resources that are significantly impacted.** In similar fashion, ecosystem components should be considered when they are significantly affected by cumulative impacts. The measure of cumulative effects is any change to the function of these ecosystem components...As an example, federal assessment and mitigation for the loss of wetlands often focus primarily on the acreage affected rather than the function of the wetland within the broader ecosystem. *(EPA, pg. 5)*

**To ensure the inclusion of the resources that may be most susceptible, cumulative impacts can be anticipated by considering where cumulative effects are likely to occur and what actions would most likely produce cumulative effects...** Resources of concern may also be identified by considering actions that alter ecological processes and therefore can be expected to produce cumulative effects...The NEPA document should identify which resources or ecosystem components of concern might be affected by the proposed action or its alternatives within the project area. Once these resources have been identified, consideration should be given to the ecological requirements needed to sustain the resources. It is important that the NEPA document consider these broader ecological requirements when assessing how the project and other actions may cumulatively affect the resources of concern. Often these ecological requirements may extend beyond the boundaries of the project area, but reasonable limits should be made to the scope of the analysis. *(EPA, pg. 5-6)*

## Determining the Scope of a Cause-And-Effect Relationship

**Cumulative effects result from spatial (geographic) and temporal (time) crowding of environmental perturbations.** (*CEQ, pg. 7*)

- **Geographic boundaries and time periods used in cumulative impact analysis should be based on all resources of concern and all of the actions that may contribute, along with the project effects, to cumulative impacts.** Generally, the scope of analysis will be broader than the scope of analysis used in assessing direct or indirect effects.
  - To avoid extending data and analytic requirements beyond those relevant to decision making, a practical delineation of the spatial and temporal scales is needed. The selection of geographic boundaries and time periods should be, whenever possible, based on the natural boundaries of resources of concern and the period of time that the proposed action's impacts will persist, even beyond the project life...
  - Agencies tend to limit the scope of their analyses to those areas over which they have direct authority or to the boundary of the relevant management area or project area. This is often inadequate because it may not cover the extent of the effects to the area or resources of concern.
  - The most common temporal scope is the life of the project. This may not be appropriate if the effects last longer than the project's useful life. (*EPA, pg. 7-8*)
- **EPA reviewers should recommend that the proper spatial scope of the analysis should include geographic areas that sustain the resources of concern.** Importantly, the geographical boundaries should not be extended to the point that the analysis becomes unwieldy and useless for decisionmaking. (*EPA, pg. 9*)
- **Determining the temporal scope requires estimating the length of time the effects of the proposed action will last.** More specifically, this length of time extends as long as the effects may singly, or in combination with other anticipated effects, be significant to the resources of concern. At the point where the contribution of effects of the action, or combination of all actions, to the cumulative impact is not significant the analysis should stop. Because the important factor in determining cumulative impact is the condition of the resource (i.e., to what extent it is degraded), analysis should extend until the resources has recovered from the impact of the proposed action. (*EPA, pg. 9*)
- **For a [cumulative impact analysis for a] proposed action or reasonable alternative, the analysts should:**
  - Determine the area that will be affected by that action. That area is the project impact zone.
  - Make a list of the resources within that zone that could be affected by the proposed action.
  - Determine the geographic areas occupied by those resources outside of the project impact zone. In most cases, the largest of these areas will be the appropriate area for the analysis of cumulative effects.
  - Determine the affected institutional jurisdictions, both for the proposing agency and other agencies or groups. (*CEQ, pg. 15*)

### **Even unrelated actions conducted on adjacent private lands, if they contribute to cumulative effects on a resources, should be incorporated into the analysis:**

“Ninth Circuit has interpreted [40 CFR 1508.7], and we agree, to require analysis of the impacts activities on private land have on the Forest.” The EA did not make elaborate findings but nothing in the record suggests a need for more extensive analysis. The Sierra Club asserts an EA must address the impacts from such events on private lands as the owners deciding to clear cut all 1,511 acres of their land, but we find no statutory or regulatory mandate that an EA do so. What is required is that the EA recognize the impacts of activities reasonably expected to occur on private lands.” (*Sierra Club v. Forest Service*, 46 F.3d 835, 839 (8th Cir. 1995))

“[O]ne does not need control over private land to be able to assess the impact that activities on private land may have in the Forest... We do not require consideration of non-Federal cumulative impacts in this programmatic EIS, on the condition that the Forest Service must analyze such impacts, including possible synergistic effects from implementation of the Plan as a whole, before specific sales.” (*Resources Limited, Inc. v. Robertson*, 35 F.3d 1300, 1306 (9th Cir. 1994))

### **Because connected actions, cumulative actions, cumulative impacts, and indirect impacts are often closely related, a court may conclude that the adequacy of a particular NEPA analysis is insufficient using any one or more than one of these components of “scope,” and often could have used any other of the components as effectively.**

The courts are not consistent on whether the scope of a cumulative effects analysis must include only future actions which are proposed by the agency, future actions which are reasonably foreseeable and proposed by anyone, only those actions which do not have independent utility (connected actions), only those action under the jurisdiction of the agency to implement, and actions which have independent utility but have the potential for cumulative impacts, including those on adjacent private land.

Some courts have held that an EIS need not address the cumulative actions of actions “unconnected” to the action subject to an EIS, particularly where cumulative impacts were not highlighted as an issue during EIS scoping (*Allison v. Department of Transportation*, 908 F.2d 1024, 1031 (D.C. Cir. 1990), (*Citizens for Environmental Quality v. United States*, 731 F.Supp. 970, 995, (D.Colo. 1989)). Other courts have held that NEPA documents must address cumulative impacts of other actions in depth (*Save the Yaak Committee v. block*, 840 F.2d 714, 720-721 (9th Cir. 1988)).

### **However, some more recent cases have tried to clarify the definition of "reasonably foreseeable future actions:**

- The First Circuit Court created a three-part test to determine whether a particular set of impacts were too speculative to be considered: 1) With what confidence can one say that the impacts are likely to occur? 2) Can one describe them "now" with sufficient specificity to make their consideration useful? 3) If the decisionmaker does not take them into account "now," will the decisionmaker be able to take account of them before the agency is so firmly committed to the project that further environmental knowledge, as a practice matter, will prove irrelevant to the government's decision? (*Sierra Club v. Marsh*, 729 F.2d 868 (1<sup>st</sup> Cir. 1985))
- The FHWA was not required to consider the cumulative impacts of another highway project because that project was not "reasonably foreseeable" because: 1) there was no evidence that the project had been federally approved; 2) there was no funding pending before any agency for the project; and 3) there was no evidence of active preparation to make a decision on alternatives to the project. Therefore, the agency could not know what form the other transportation project would take. (*Clairton Sportsmen's Club v. Pennsylvania Turnpike Commission*, 882 F.Supp. 455 (W.D. Pa. 1995))

## Incorporating Connected Actions into a Cumulative Impacts Analysis

### Connected actions must be considered within the scope of a cumulative impact analysis:

- The court concluded that the plaintiffs had raised substantial questions whether the nine timber sales may have significant cumulative effects. It is important to recognize that these cases involved the use of EAs where the court found that the Forest Service's Finding of No Significant Impact was unreasonable because EAs did not adequately address connected actions and the cumulative effects of proposed and contemplated actions...[T]he scope of activities to be analyzed in an EA is broader than that which must be reviewed in an EIS. (*Sierra Club v. U.S. Forest Service, amended opinion No. 87-2749, (9th Cir. June 24, 1988)*)
- [The] “test for whether particular actions could be considered cumulative impacts of the proposed action [is] whether the actions were ‘so interdependent that it would be unwise or irrational to complete one without the others...’ [The] “record suggests that the FAA and the City would upgrade Runway 3-21 even if the other components of the Master Plan never get off the ground” (*Airports Neighbors Alliance, Inc. v. U.S., 90 F.3d 426-430-1 (10th Cir. 1996)*)
- The EA did not evaluate the cumulative effects of the connected actions [reconstruction of 17 miles of a 70 mile road, other segments of the road reconstruction project, and timber sales which justified the project] and unrelated, but reasonably foreseeable future actions. “Both connected actions and unrelated, but reasonably foreseeable, future actions may result in cumulative impacts. As discussed, there is an inextricable nexus between the road construction and the logging operations. Yet, the EA did not evaluate the ongoing and future environmental impacts of either the [road] reconstruction or the ongoing and future accelerated timber harvest. The cumulative impact of these actions raises material issues of fact concerning the project’s effect upon the human environment...” (*Save the Yaak Committee v. Block, 840 F.2d 714 (9th Cir. 1988)*)

### The most influential court case regarding connected actions, that of Forest Service proposed timber sales in the Jersey Jack area of Idaho, states the case clearly:

- “While it is true that administrative agencies must be given considerable discretion in defining the scope of environmental impact statements there are situations in which an agency is required to consider several related actions in a single EIS. Not to require this would permit dividing a project into multiple “actions,” each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.”
- “The construction of the road and the sale of the timber in the Jersey Jack area meet the second and third, as well as perhaps the first of [the CEQ] criteria [for connected actions]. It is clear that the timber sales cannot proceed without the road, and the road would not be built but for the contemplated timber sales...[T]he road construction and the timber sales are inextricably intertwined and [are] connected actions within the meaning of the CEQ regulations.”
- “[T]he Fish and Wildlife Service has written ‘Separate documentation of related and cumulative potential impacts may be leading to aquatic habitat degradation unaccounted for in individual EAs (i.e., undocumented cumulative effects)...Lack of an overall effort to document cumulative impacts could be having present and future detrimental effects on wolf recovery potential.’ These comments are sufficient to raise “substantial questions” as to whether the road and the timber sales will have significant cumulative environmental effects. Therefore, on this basis also, the Forest Service is required to prepare an EIS analyzing such effects.”
- “We believe that consideration of cumulative impacts after the road has already been approved is insufficient to fulfill the mandate of NEPA. A central purpose of an EIS is to force the

consideration of environmental impacts in the decisionmaking process. That purpose requires that the NEPA process be integrated with agency planning ‘at the earliest possible time,’ (40 CFR 1501.2), and the purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step has already been taken...The location, the timing, or other aspects of the timber sales, or even the decision whether to sell any timber at all affects the location, routing, construction techniques, and other aspects of the road, or even the need for its construction. But the consideration of cumulative impacts will serve little purpose if the road has already been built. Building the road swings the balance decidedly in favor of timber sales even if such sales would have been disfavored had road and sales been considered together before the road was built. Only by selling timber can the bulk of expense of building the road be recovered. Not to sell timber after building the road constitutes the “irrational” result that *Trout Unlimited’s* standard is intended to avoid. Therefore, the cumulative environmental impacts of the road and the timber sales must be assessed before the road is approved...

- [W]e believe that if the sales are sufficiently certain to justify construction of the road, then they are sufficiently certain for their environmental impacts to be analyzed along with those of the road...
- Where agency actions are sufficiently related so as to be “connected” within the meaning of CEQ regulations, the agency may not escape compliance with the regulations by proceeding with one action while characterizing the others as remote or speculative.” (*Thomas v. Peterson*, 753 F.2d 754 (9th Cir. 1985))

## CEQ Guidance on Incorporating Past Actions into Cumulative Effects Analyses

The Council on Environmental Quality recently issued guidance on the consideration of past actions in cumulative impacts analyses (June 24, 2005):

- CEQ interprets NEPA and CEQ's NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable **present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive and significant relationship to those effects.**
- **Based on scoping, agencies have discretion** to determine whether, and to what extent, information about the specific nature, design, or present effects of a past action is useful for the agency's analysis of the effects of a proposal for agency action and its reasonable alternatives.
- The analysis of cumulative effects **begins with consideration of the direct and indirect effects** on the environment that are expected or likely to result from the alternative proposals for agency action. Agencies then look for present effects of past actions that are, in the judgment of the agency, relevant and useful because they have a significant cause-and-effect relationship with the direct and indirect effects of the proposal for agency action and its alternatives.
- CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Once the agency has identified those present effects of past actions that warrant consideration, the agency assesses the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects. **The final analysis documents an agency assessment of the cumulative effects of the actions considered (including past, present, and reasonably foreseeable future actions) on the affected environment.**
- With respect to past actions, during the scoping process and subsequent preparation of the analysis, **the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects.** Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful to predict the cumulative effects of the proposal. The CEQ regulations, however, do not require agencies to catalogue or exhaustively list and analysis all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to informed decisionmaking.
- **Analysts must narrow the focus of the cumulative effects analysis to effects of significance to the proposal for agency action and its alternatives, based on thorough scoping.** The scope of the cumulative impact analysis is related to the magnitude of the environmental impacts of the proposed action.
- In geographic settings where several Federal actions are likely to have effects on the same environmental resources **it may be advisable for the lead Federal agencies to cooperate** to provide historical or other baseline information relating to the resources. This can be done either through a programmatic NEPA analysis, or can be done separately.
- Information about the effects of past actions that were similar to the proposed action may be useful in describing the possible effects of the proposed action. Agencies should clearly distinguish their use of past experience in direct and indirect effects analysis from their cumulative effects analysis.

## The Purpose and Definition of the “No Action” Alternative

CEQ’s “40 Questions” (questions 2 and 3) interpret the “no action” alternative in two ways:

- For a continuing action, such as a long-term plan or program of action, the “no action” is defined as “no change” from current management direction or level of management intensity.”
- For a project, “no action” is defined as “the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative to go forward.”

**These “two distinct interpretations” are actually fundamentally the same:** the “no action” alternative provides the baseline activities and their associated impacts, so that the impacts associated with proposed changes (the proposed action, alternatives, and/or mitigation measures) can be predicted as “change from baseline”. In other words, we need to know how noisy the current aircraft are over residential areas, in order to understand and predict the effects of additional or different aircraft on residents.

**Many NEPA documents incorrectly eliminate the “no action” alternative without detailed analysis** because it does not meet the purpose and need. Although this may often be true, the analysis associated with the “no action” alternative fulfills two essential planning needs:

- 1) It provides the description of past, present, and reasonably foreseeable future activities, and evaluates their environmental impacts, providing a baseline against which impacts of proposed actions can be evaluated and contrasted.
- 2) It may indicate that the underlying need was a perceived, rather than a real need, and current conditions meet objectives sufficiently, and/or the environmental, political, or economic costs may not be worth the risk.

**For analysis of a continuing action, such as a program of management, the “no action” alternative may actually be the proposed action!** The agency may desire to continue the current management activity with no substantial changes, and therefore no changes in impacts. Generally, however, the agency is proposing a change from current management or the current situation because of a need for change (the underlying need for action). For example, tests conducted at a range may be proposed to continue as they have in the past. Changing the tests or the way in which they have been conducted would be an action alternative.

Think of the alternatives as drawn on acetate overlays. Without the base map (no action alternative), the alternatives could only be compared to each other - they could not be understood within the context of existing conditions and activities: How noisy is it now? How clean is the water? What fish and shellfish species currently live in the port area and how are they impacted by current operations?

**The “affected environment” and the “no action” serve similar roles:**

“The [EIS] shall succinctly describe the area(s) to be affected or created by the alternatives under consideration...Verbose descriptions of the affected environment are themselves no measure of the adequacy of an [EIS].”  
(§1502.15)

## Selecting the Appropriate Baseline for a Cumulative Impact Analysis

- **The identification of the effects of past actions is critical to understanding the environmental condition of the area...** The NEPA document should consider how past activities have historically affected and will continue to affect the resources of concern. How far back in time to consider depends on how long the resources of concern have been affected... Other present actions that may be detrimentally affecting the resources of concern need to be considered at the same time impacts of the proposed action are considered. NEPA documents should consider information on all other relevant actions of other federal agencies, actions of state and local governments, and private actions... (*EPA, pg. 12*)
- **The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.** The no-action alternative is an effective construct for this purpose, but its characterization is often inadequate for analyzing cumulative effects. Much of the environment has been greatly modified by human activities, and most resources, ecosystems, and human communities are in the process of change as a result of cumulative effects. The analyst must determine the realistic potential for each resource to sustain itself in the future and whether the proposed action will affect this potential; therefore, the baseline condition of the resource of concern should include a description of how conditions have changed over time and how they are likely to change in the future without the proposed action. (*CEQ, pg. 41*)
- **Cumulative effects occur through the accumulation of effects over varying periods of time.** For this reason, an understanding of the historical context of effects is critical to assessing the direct, indirect, and cumulative effects of proposed actions. (*CEQ, pg. 31*)
- **Two practical methods for depicting the environmental condition** include use of the no-action alternative and an environmental reference point. Historically, the no-action alternative (as reflecting existing conditions) has usually been used as a benchmark for comparing the proposed action and alternatives to existing conditions. The no-action alternative can be an effective benchmark if it incorporates the cumulative effects of past activities and accurately depicts the condition of the environment.
- **Another approach for describing the environmental condition is to use an environmental reference point** that would be incorporated into the environmental consequences and affected environment section of the document. The natural condition of the ecosystem, or some modified but sustainable ecosystem, can be described as the environmental reference point. In analyzing environmental impacts, this environmental reference point would not necessarily be an alternative. Instead, it would serve as a benchmark in assessing environmental impacts associated with each of the alternatives. Specifically, the analysis would evaluate the degree of degradation from the environmental reference point (i.e., natural ecosystem condition) that has resulted from past actions. Then the relative difference among alternatives would be determined for not only changes compared to the existing condition but also changes critical to maintaining or restoring the desired, sustainable condition. (*EPA, pg. 15*)
- **Determining what environmental condition to use in the assessment may not be immediately clear.** Choosing and describing a condition should be based on the specific characteristics of the area. In addition, the choice of condition that can be constrained by limited resources and information. For these reasons, the environmental condition described by the environmental reference point or no-action alternative should be constructed on a case-

by-case basis so that it represents an ecosystem able to sustain itself in the larger context of activities in the region...Since most ecosystems can be delineated and have distinct characteristics, determination of the environmental condition does not need to be a subjective process leading to speculation about the condition of the environment before it was degraded. (EPA, pg. 15)

- **Selecting the best environmental condition for comparative purposes** can be based on the following:
  - Consider what the environment would look like or how it would behave without serious human alteration
  - Factor in the dynamic nature of the environment
  - Define the distinct characteristics and attributes of the environment that best represent that particular type of environment (focus on characteristics and attributes that have to do with the function), and
  - Use available or reasonably obtainable information. (EPA, pg. 16)
- **Describing the affected environment when considering cumulative effects** does not differ greatly from describing the affected environment as part of project-specific analyses; however, analyses and supporting data should be extended in terms of geography, time, and the potential for resource or system interactions. (CEQ, pg. 23)
- **To address cumulative effects adequately, the descriptions of the affected environment should contain four types of information:**
  - Data on the status of important natural, cultural, social, or economic resources and systems
  - Data that characterize important environmental or social stress factors
  - A description of pertinent regulations, administrative standards, and development plans
  - Data on environmental and socioeconomic trends. (CEQ, pg. 24)

“HUD’s obligation was to determine not whether the earlier action together with the proposed action constituted a major federal action significantly affecting the human environment, but whether in light of the earlier action the proposed action constituted such an action.” (Aertsen v. Landrieu, 637 F.2d 12, 19 (1st Cir. 1980))

“[P]roposal for projects and approved projects that are pending at the time of another proposal should be considered as part of the environmental background against which a decision should be made. However, NEPA does not require an agency to restate all of the environmental effects of projects presently under consideration. Where the underlying data base includes approved projects and pending proposals, the ‘statutory minima’ of NEPA has been met.” (Piedmont Heights Civic Club v. Moreland, 637 F.2d 430, 441-2 (5th Cir. 1981))

## Guidance and Court Precedents Regarding Scope of Cumulative Impact Analyses

**The 9<sup>th</sup> Circuit Court earlier defined how cumulative impacts can contribute to significant impacts and there fore should be considered within the scope of the same EIS:**

Although [NEPA]...relates only to “federal” actions, analysis of the cumulative impact of any federal action has a broader scope (40 CFR 1508.7). If, when these cumulative or synergistic effects are analyzed, there are “substantial questions” as to whether the impacts may be collectively significant, an Environmental Impact Statement (EIS) must be prepared...This is so even if the actions are “individually minor.”...[I]f ever there was a paradigm instance of “cumulative” or “synergistic” impacts, it is this case. Dozens of small [mining] operations of a single type incrementally contribute to deterioration of water quality in a common drainage stream. (*Sierra Club v. Penfold*, 664 F.Supp. 1299 (D. Alaska), *aff’d*, 857 F.2d 1307 (9th Cir. 1988))

**The 9<sup>th</sup> Circuit Court recently reinforced the agency's authority in determining scope of a cumulative impact analysis:**

**The Court stated that a larger geographic scope for the cumulative impact analysis would make the total impacts of the project seem smaller because they would be spread out over a larger area:** "The selection of scope of an EIS is a delicate choice and one that should be entrusted to the expertise of the deciding agency. NEPA does not impose a requirement that the Forest Service analyze impacts for any particular length of time... A ten-year study may have been preferable in this case. Or even a five-year study. But the three-year study chosen by the Forest Service was not unreasonable. Although the Forest Service had *some* information for ten years, and *some more* information for five years, it had the *most* information for the next three years." (*Selkirk Conservation Alliance v. Forsgren*, 336 F.3d, 9<sup>th</sup> Cir. 2003).

**Determining the scope of a particular cumulative impact analysis requires the consideration of temporal boundaries for past, present, and reasonably foreseeable future actions and geographical boundaries for connected, cumulative, and similar actions.**

- Considering the past, present, and reasonably foreseeable future actions provides a needed context for assessing cumulative impacts. The inclusion of other actions occurring in proximity to the proposed action is a necessary part of evaluating cumulative effects. Agencies should identify activities occurring outside their jurisdiction that are affecting the same resources being affected by their actions...NEPA documents should only consider those past, present, and future actions that incrementally contribute to the cumulative effects on resources affected by the proposed action. Actions affecting other resources, or with cumulatively insignificantly effects on the target resources, do not add to the value of the analysis. (*EPA*, pg. 10-11)
- To successfully assess cumulative impacts, NEPA documents should consider a broad range of activities and patterns of environmental degradation that are occurring in the vicinity of the project:
  - The proximity of the projects to each other either geographically or temporally
  - The probability of actions affecting the same environmental system, especially systems that are susceptible to development pressures
  - The likelihood that the project will lead to a wide range of effects or lead to a number of associated projects
  - Whether the effects of other projects are similar to those of the project under review
  - The likelihood that the project will occur – final approval is the best indicator but long range planning of government agencies and private organizations and trends information should also be used

- Temporal aspects, such as the project being imminent. (*CEQ, pg. 11*)
- When the agency evaluated cumulative impacts of the incremental additional of aircraft noise from a planned airport expansion in the vicinity of the Grand Canyon, the court did not uphold the FONSI because the agency did not consider the incremental impact of other man-made noises that affected the park, including 250 daily aircraft flights near or over the part that did not use the airport in question, impacts of air tours over and near the park, and the impact of other regional planned airport expansions. (*Grand Canyon Trust v. Federal Aviation Admin., 290 F.3d 339 (D.C. Cir 2002)*).
- The 9<sup>th</sup> Circuit Court recently reinforced that the geographic scope selected by the agency must be based on reasonable rationale. The US Forest Service arbitrarily limited the analysis of cumulative impacts of proposed timber sales to the "home range" despite its own findings that there would be significant depletion of habitat at the larger "landscape scale." Since the EIS did not explain why the home range scale was selected despite hard scientific evidence in the possession of the Forest Service that the landscape scale analysis was appropriate, the court ruled that the agency acted arbitrarily in selecting the home range geographic scale for the cumulative impact analysis. (*Idaho Sporting Congress v. Rittenhouse, 305 F.3d 957 (9<sup>th</sup> Cir. 2002)*)

### **The courts have generally agreed on the components of an adequate cumulative impact analysis:**

- **“Cumulative effects study must identify:**
  - (1) The area in which effects of the proposed project will be felt;
  - (2) The impacts that are expected in that area from the proposed project;
  - (3) Other actions – past, proposed, and reasonably foreseeable – that have had or are expected to have impacts in the same area;
  - (4) The impact or expected impacts from these other actions; and
  - (5) The overall impact that can be expected if the individual impacts are allowed to accumulate.” (*Fritiofson v. Alexander, 772 F.2d 1225, 1243, 1245-6 (5th Cir 1985)*)
- “To minimize the risk of unnecessary delay and waste of resources on remand, we offer some general guides on what would appear to satisfy NEPA here. The Secretary could, first of all, examine cumulative impacts of simultaneous inter-regional OCS development in a single, coherent section rather than fragment his analysis by area. This comprehensive section could then, as the EPA suggested in its comments on the DEIS,...identify the various migratory species and the full range of their routes of migration, describe the OCS and non-OCS activities along those routes, and state the synergistic effect of those activities on the migratory species. The Secretary could support such a presentation with references to scientific studies and other material so that a decisionmaker would have ready access to the information underlying the Secretary’s findings and conclusions. Finally, the Secretary could, consistent with NEPA’s requirement, examine alternatives to simultaneous development that would mitigate any synergistic impacts on migratory species, such as staggering development. The Secretary could set out the pros and cons of various alternatives and explain his reasons for adopting whatever course of action he decides upon.” (*Natural Resources Defense Council v. Hodel, 865 F.2d 288, 298-9 (D.C. Cir. 1988)*)
- Forest Service has considered effects of the sale in the context of past and reasonably foreseeable logging...The agency has constructed mathematical models...It conducted extensive field investigations to calibrate and verify its models. It sought public comment...” (*Inland Empire Public Lands Council v. Schultz, 992 F.2d 977, 982 (9th Cir 1993)*)

## Court and CEQ Guidance and Precedence Regarding the Scope of Actions and Impacts

- Because connected actions, cumulative actions, cumulative impacts and indirect effects are often closely related, a court may conclude that the adequacy of the NEPA analysis is insufficient using any of these approaches, and often could have used any other of the three concepts as effectively.
- A cumulative impact analysis must identify: (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other past, present, and reasonably foreseeable future actions that have or are expected to have impacts in the area, (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate (*Fritiofson v. Alexander*, 772 F.2d 1225 (5th Cir. 1985))
- Proposed timber sales and roads accessing the timber sales are both connected and cumulative actions resulting in potential indirect and cumulative effects, and must be considered within the scope of the same NEPA document. “Although agencies must be given considerable discretion in defining the scope of an EIS, there are situations in which an agency is required to consider several related actions in a single EIS. Not to require this would permit dividing a project into multiple “actions,” each of which individually has an insignificant environmental impact but which collectively have a substantial impact... We believe that if the sales are sufficiently certain to justify construction of the road, then they are sufficiently certain for their environmental impacts to be analyzed along with the road... The road construction and contemplated timber sales are inextricably intertwined and are connected actions within the meaning of the CEQ regulations... Building the road swings the balance decidedly in favor of timber sales even if such sales would have been disfavored had road and sales been considered together before the road was built.” The decision also required that cumulative effects on the recovery of wolves must be assessed before the road is approved (*Thomas v. Peterson*, 753 F.2d 754 (9th Cir. 1985))
- Connected and cumulative actions must also be evaluated in environmental assessments (*Save the Yaak Committee v. J. R. Block*, 840 F.2d 714 (9th Cir. 1988).
- An EA/FONSI analyzing constructing a causeway to an island with various land ownerships for the purpose of building a seaport did not evaluate the potential indirect effects of the causeway on future development on private lands, especially light and heavy industries. The Court required an EIS analyzing the actions and associated indirect effects on future development (*Sierra Club v. Marsh*, 769 F.2d 868 (1st Cir. 1985).
- "More difficult problems remain concerning an agency's duty to discuss cumulative impacts when they are caused by actions still in the planning stage. The extents of this duty is unsettled, although an expansive interpretation is most compatible with NEPA's far-reaching mandate to consider the impact of agency actions on the environment. Courts can also characterize a case that raises a cumulative impact problem in a number of different ways, so that problems remain in deciding how to relate the cumulative impact problem to the segmentation problem and the duty to prepare program impact statements." (D. Mandelker, NEPA Law and Litigation, Thomson/West, 8/2004)

## Mitigation Measures Lessen Impacts to Some Predictable Degree

Mitigation measures are activities that change the causative actions identified in cause-and-effect relationships to “soften” environmental impacts to some degree.

The NEPA implementing regulations identify five levels of mitigation:

- “(a) **Avoiding the impact** altogether by not taking a certain action or parts of an action.
  - “(b) **Minimizing impacts** by limiting the degree or magnitude of the action and its implementation.
  - “(c) **Rectifying the impact** by repairing, rehabilitating, or restoring the affected environment.
  - “(d) **Reducing or eliminating the impact over time** by preservation and maintenance operations during the life of the action.
  - “(e) **Compensating for the impact** by replacing or providing substitute resources or environments.”
- (§1508.20)

A problem activity may be changed several different ways by taking advantage of the different levels of mitigation, resulting in different levels of impacts on a particular resource. This approach provides the process for developing alternatives that meet the objectives but differ in impacts.

**The interdisciplinary approach (people with pertinent expertise working together to solve problems) is essential to ensure that a mitigation measure for a particular resource does not cause a different problem for another resource.** For example, adjusting the flight path of military aircraft to account for residents complaining of noise may result in noise-sensitive big game populations changing their habitat use.

**Mitigation can and is often used to decrease the severity of impacts to such a degree that a Finding of No Significant Impact (FONSI) can be determined.**

A legal mitigation measure must describe the specific activity to be undertaken, including in what location, by what time, and who is accountable for ensuring that it is implemented and effective. The impact analysis predicts how the impact would be decreased in magnitude and/or duration on the specific resource. (*Louisiana v. Lee*, 758 F.2d (5<sup>th</sup> Cir. 1985), *The Steamboats v. Federal Energy Regulatory Commission*, 759 F.2d 1382 (9<sup>th</sup> Cir 1985), *Northwest Indian Cemetery Protective Association v. Peterson*, 795 F288 (9<sup>th</sup> Cir 1986)).

The CEQ “40 Questions” state:

“The mitigation measures discussed in an EIS must cover the range of impacts of the proposal. The measures must include such things as design alternatives that would decrease pollution emissions, construction impacts, esthetic intrusion, as well as relocation assistance, possible land use controls that could be enacted, and other possible efforts...All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or cooperating agencies, and thus would not be committed as part of the RODs of those agencies. ...This will serve to alert agencies or officials who can implement these extra measures, and will encourage them to do so...However, to ensure that environmental effects of a proposed action are fairly assessed, the probability of the mitigation measures being implemented must also be discussed...If there is a history of nonenforcement or opposition to such measures, the EIS and Record of Decision should acknowledge such opposition or nonenforcement...”

(q. 19a-b, 40 Questions)

**Agencies are not responsible for impacts over which they have no authority:**

“We hold that where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant 'cause' of the effect.” (*Department of Transportation v. Public Citizen*, 124 S. Ct. 2204 (2004))

## Monitoring Ensures that Planning Has Been Effective

Agencies should ensure that decisions are carried out as described in the decision document, including all mitigation measures:

“Agencies may provide for monitoring to assure their decisions are carried out and should do so in important cases. Mitigation...and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate agency. The lead agency shall:

“(a) Include appropriate conditions in grants, permits or other approvals.

“(b) Condition funding of action on mitigation.”  (§1505.3)

**The selected alternative with associated mitigation measures, as committed to in the Record of Decision (ROD) or Finding of No Significant Impact (FONSI), is the basis for the conditions of contracts, permits, and the final project design:**

“(c) State [in the Record of Decision] whether all practical means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation.”  (§1505.2)

“The appropriate mitigation measures can be imposed as enforceable permit conditions, or adopted as part of the agency final decision [FONSI] in the same manner mitigation measures are adopted in the formal Record of Decision that is required in EIS cases.”  (questions 39, 40)

**Although NEPA emphasizes implementation monitoring , three types are monitoring are important for excellent planning:**

- 1) Implementation monitoring** checks to ensure that the decision has been implemented completely and correctly.
- 2) Effectiveness monitoring** checks to ensure that the implemented action is meeting the objectives and mitigating impacts as predicted.
- 3) Validation monitoring** checks to ensure that the predictions of impacts are based on appropriate models that are consistent with actual circumstances.

### Monitoring:

- Assures interested and/or affected persons, agencies and organizations, as well as the decisionmaking agency, that planning has been effective and decisions have been fully implemented.
- Evaluates that the need for action has been fulfilled and objectives met to the predicted degree.
- Analyzes that environmental impacts are within the range predicted and validates models and methodologies used.

## Environmental Consequences

### NEPA implementing regulations insist that agencies:

“ensure the professional integrity, including scientific integrity, of the discussions and analyses in [EISs]. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in the appendix.” (§1502.24)

### The Act requires that agencies:

“(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.

“(B) Identify and develop methods and procedures...which will ensure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations.

“(C) Include in every recommendation and 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 impacts 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 environmental 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.” (NEPA Section 102(2))

### The regulations require that EAs include “discussions...of the environmental impacts of the proposed action and alternatives” (§1508.9(b)).

**Agencies must use the interdisciplinary approach** and have the capability to either conduct analyses themselves or understand analyses conducted for it by others:

“[EISs] shall be prepared using an interdisciplinary approach...The disciplines of the preparers shall be appropriate to the scope and issues identified in the scoping process.” (§1502.6)

“Each agency shall be capable (in terms of personnel and other resources) of complying with the requirements [of section 102(2) of the Act]. Such compliance may include use of other’s resources, but the using agency itself shall have sufficient capability to evaluate what others do for it.” (§1507.2)

The Courts support the discretion of agencies to have the expertise to conduct their own environmental and technical analyses and make informed, even if unwise, decisions. The Courts also recognize the inherently difficult process of forecasting impacts: “Reasonable forecasting and speculation is implicit in NEPA, because the basic thrust of an agency’s responsibilities under NEPA is to predict the environmental effects of a proposed action before the action is taken and the effects fully known.” (*Fritiofson v. Alexander*, 772 F.2d 1225 (5th Cir. 1985).

## “Outputs” Are Not “Impacts”

The Courts recognize that uncertainty and risk are inherent in environmental, human health, and ecological impact analyses; further, (see: *Lee, J. Fed. Fac. Env. J., Spring 1997, pp. 85-99*):

NEPA requires Federal decisionmakers to make decisions based on little data, limited and often conflicting research, no statistics, and analytic models and methods that seldom fit existing or proposed environmental conditions.

The environmental decisionmaking paradigm assumes that all decisions can be made using a rational, science-based analytic process. Yet it is seldom obvious how extensive any analysis must be or when enough information has been obtained with which to make a decision.

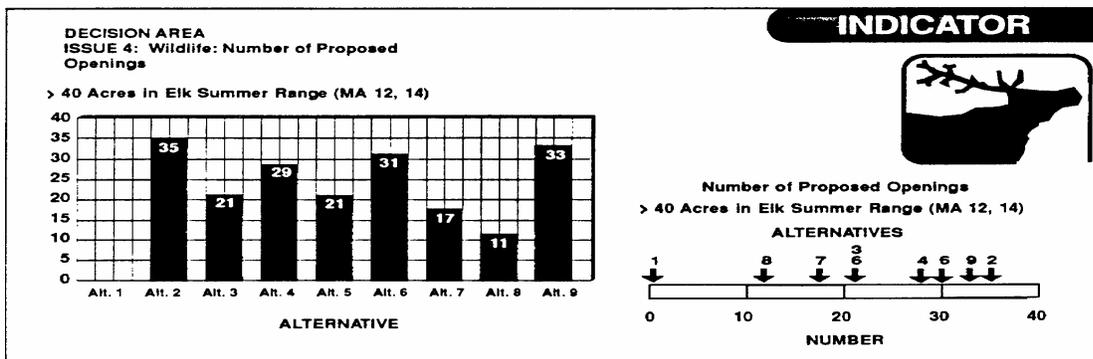
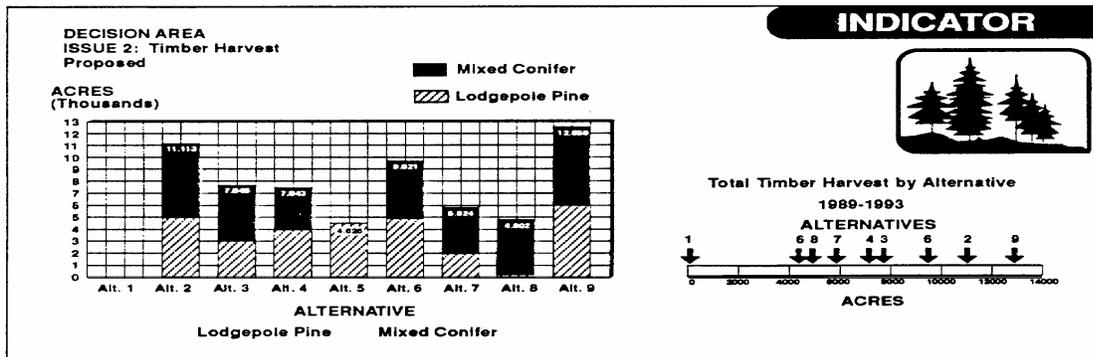
Most land/resource management laws leave decisionmaking up to the subjective judgment of the responsible Federal official, while giving judicial and legislative standing to non-commodity groups championing unquantifiable values.

Value judgments inherent to any environmental/land use decision often are hidden in technical analyses or are dismissed as outside the scope of the analysis.

Recognizing that no one optimal decision exists, responsible officials become resigned to the inevitable potential for judicial review of their decisions.

Because forecasting environmental impacts is inherently difficult, most NEPA analyses attempt to define environmental consequences in terms of measurable activity outputs (for example, ppm of contamination, acres of habitat change, decibels of noise) rather than in terms of the forecasted impacts caused by those outputs on a specific resource.

Which graphic is a comparative graphic of “outputs” and which is a comparative graphic of “impacts”?



**Is this table, with its narrative guidance, a matrix comparing “outputs” or “impacts”**

*(Considering Cumulative Effects Under the National Environmental Policy Act, Council on Environmental Quality, January 1997, pg. 43)?*

“If cause-and-effect relationships cannot be quantified, or if quantification is not needed to adequately characterize the consequences of each alternative, qualitative evaluation procedures can be used. The analyst may categorize the magnitude of effects into a set number of classes( e.g., high, medium, or low) or provide a descriptive narrative of the types of effects that may occur. Often, the analyst will be limited to qualitative evaluations of effects because cause-and-effect relationships are poorly understood or because few site-specific data are available. Even when the analyst cannot quantify cumulative effects, a useful comparison of relative effects can enable a decisionmaker to choose among alternatives.”

**Table 4-1. Example table using quantitative description of effects (within a given level of uncertainty) on various resources**

<b>Resource</b>	<b>Past Actions</b>	<b>Present Actions</b>	<b>Proposed Action</b>	<b>Future Actions</b>	<b>Cumulative Effect</b>
<b>Air Quality</b>	No effect on SO <sub>2</sub>	20% increase on SO <sub>2</sub>	10% increase in SO <sub>2</sub>	5% increase in SO <sub>2</sub>	35% increase in SO <sub>2</sub>
<b>Fish</b>	50% of 1950 population lost	2% of fish population lost	5% increase in fish population	1% of fish population lost	48% of 1950 fish population lost
<b>Wetlands</b>	78% of presettlement lost	1% of existing wetlands lost annually for 5 years	0.5% of existing wetlands lost	1.5% of existing wetlands lost annually for 10 years	95% of presettlement wetlands lost in 10 years.

**Process for Systematic Analysis of Environmental Consequences**

You have "front loaded" your effects analysis by writing clear issue statements

Set reasonable priorities for staff efforts and funding

Predict effects in terms of:

- Direction (increase/decrease)
- Magnitude (degree of change)
- Duration
  - Timing
- Qualitative factors

Depend on your staff's knowledge, education, expertise, and other expert sources of information to predict what the probable changes mean to the affected resources.

Document the group's thinking process by briefly describing issues and alternatives not considered in detail and reason for elimination

**Define Issues**

- Identify All Cause and Effect Relationships



**Qualitative or Quantitative Methods**

- Determine the Amount of Detail and Degree of Analysis for Each Affected Resource

**Based on:**

- Relative contribution to overall project effects
- Sensitivity of each resource to proposed actions
- Ability to accurately describe the relationships and make predictions
- Availability and completeness of necessary information and data



**Effects of No Action Alternative**

- Identify, Predict, and Describe the Reasonable Foreseeable Adverse Changes From the Existing Condition Should No Action Be Taken



**Effects of Action Alternatives Including the Proposed Action**

- Identify, Predict, and Describe the Reasonably Foreseeable Adverse Changes From the Existing Condition Should Action Be Taken



**Document the Effects Analyses**

- NEPA Document: Technical Analysis Summarized in Plain Language
- Appendix: Technical Analysis Written in Technical Terms

## Fundamental Principles for Forecasting Impacts

- **Ensure that the cause-and-effect relationships** developed earlier in the analysis focus on the specific potential impact on the specific resource. Ensure that the alternatives and mitigation measures developed earlier in the analysis process are specifically described in detail in terms of actions to be taken in time and space.
- **Select an appropriate analysis methodology** for the resource and the circumstances, which may be either quantitative or qualitative.
- **Always interpret the outputs in terms of impacts to the affected resource** in such a way that the analyses provide “a clear basis for choice among options by the decisionmaker and the public” (§1502.14). Do not evaluate impacts in subjective terms or value judgments, such as “acceptable,” “moderate,” “significant,” “unacceptable,” “minimal,” “+/-,” smiley faces, or other non-defined, meaningless, and relative terms. **Never** rank the impacts using weighting or other systems - the NEPA document should communicate the impacts appropriately so that the reader can apply any importance factors if desired or necessary.
- **For quantitative approaches**, select a tool, model, or methodology that best models the cause-and-effect relationship for the resource in terms of assumptions, limitations, accuracy, and data availability, quality and validity. Use predictive tools as an aid in understanding and communicating impacts, and fully explain any relative number output (including percentages and indices) in terms of effect on the resource.
- **For qualitative approaches**, compile and summarize information from appropriate sources (using citations), highlighting contradictory viewpoints, data, and conclusions. Using professional judgment, integrate the compiled information, the existing condition of the resource, and knowledge of proposed actions to prepare a narrative description of the condition of the resource now (no action alternative) and how that description would change with each proposed alternative. Include assumptions, rationale, limitations, appropriate descriptors, and conceptual diagrams and pictures to communicate the predicted impact.
- **Always predict the impact on each resource of the “no action” alternative first**, to provide the analysis baseline. The impact of the “no action” alternative should be described in terms of “What adverse environmental impact on the resource is currently occurring, might continue to occur, or begin to occur should the need for action and objectives not be met?”
- **Use the same methods to predict the impacts of the action alternatives** as those used to predict the impacts of the “no action” alternative, consistently using the same factors in the same order.
- **Determine the relative amount of detail and intensity of analysis** for each affected resource based on: (1) the relative contribution of the resource impact to overall project effects; (2) sensitivity of each resource to proposed actions; (3) ability to accurately describe the relationships and make predictions; and (4) the availability and completeness of necessary information and data.
- **Predict effects** in terms of direction (the increase or decrease of the impact); the magnitude (degree of increase or decrease of impact); the duration of the impact; and critical timing of the impact in relation to the resource.

## NEPA Decisionmaking

### The purpose of NEPA is clearly stated:

“Ultimately, of course, it is not better documents but better decisions that count. NEPA’s purpose is not to generate paperwork -- even excellent paperwork -- but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.” (§1500.1)

### Agencies shall prepare a public record of decision for an EIS which shall:

“(a) State what the decision was.

“(b) Identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable. An agency may discuss preferences among alternatives based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors including any essential considerations of national policy which were balanced by the agency in making its decision and state how those considerations entered into its decision.

“(c) State whether all practical means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why not. A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation.” (§1505.2)

The FONSI documents the decision and rationale **why the proposal is not a major Federal action** and why agency is not preparing an EIS, based on the criteria for significance:

“Finding of no significant impact” means a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (§1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (§1501.7(a)(5)). If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference.” (§1508.13)

### NEPA makes a practical contribution to decisionmaking by incorporating:

- Objective and complete information on potential problems (issues)
- Reasonable solutions (alternatives and mitigation measures) that meet the objectives and address the issues
- The benefits and disadvantages of each solution (environmental consequences).

The decisionmaker uses whatever criteria are appropriate for consideration of the options, including:

- How well alternatives meet objectives
- Economic factors
- Administrative risk
- Deadlines
- Legal considerations
- Efficiency of technical design
- Environmental costs
- Political dynamics
- Public needs and desires
- Precedent

