Environmental Evaluation Manual

Manual de Evaluación Ambiental

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Introducción
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ENVIRONMENTAL EVALUATION MANUAL

Prepared for the
PANAMA CANAL COMMISSION

By the
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Mobile District

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INTRODUCTION

This Manual was prepared to identify criteria and methodologies that can be used by the Panama Canal Commission/Panama Canal Authority (PCC/PCA) to evaluate the environmental effects resulting from the myriad of activities pursued in connection with the Panama Canal. The information generated from the application of the methodologies presented in this Manual can be used to document the existing environmental conditions and the anticipated environmental effects that should be considered in the project decision-making process.

The methodologies presented in the following chapters are believed to be adequate for application in the wide variety of environmental analyses that may be required in the conduct of the Canal's traditional operation and maintenance program, as well as endeavors to expand its operational capacity. While most of the methodologies are widely accepted and have been applied in a variety of planning situations, some relatively new methodologies are also included in the Manual's appendices because of the environmental evaluation capabilities they offer.

The Manual is prepared in a loose-leaf notebook fashion to allow the Manual to be augmented with additional environmental methodologies that may be identified in the future.

BASIC PLANNING PROCESS CONCEPTS AND THEIR RELATIONSHIP TO ENVIRONMENTAL EVALUATIONS

INTRODUCTION

The purpose of this chapter is to present an overview of the basic concepts of the conceptual planning process. This discussion establishes the context within which the various Environmental Evaluation Methodologies described in the subsequent chapters should be applied. Tables 1-9 illustrate how the environmental impact evaluations can be applied in the planning process.

Planning is a discovery process which must be pursued in a flexible manner so that changes/discoveries can be accommodated. The planning process is iterative, with several of the steps being repeated as needed in light of what has been learned in previous steps. Planning can be best accomplished using a team comprised of many disciplines, (engineers, economists, biologists, environmental engineers, social scientists, etc.) drawing on the knowledge and skills of each other to make better decisions.

Planning is primarily concerned with the future. A six-step conceptual process is described in this chapter through which project plans can be developed to address specific needs. The Environmental Evaluation Methodologies should be applied at specific points within this conceptual planning process at the appropriate level of detail for the particular phase of study. A more thorough discussion of this planning process may be found in *Planning Manual*, November 1996, IWR Report 96-R-21.

THE SIX-STEP PLANNING PROCESS AND THE PCC/PCA THREE-PHASED STUDY APPROACH

The conceptual planning process used by the U.S. Army Corps of Engineers and recommended for use consists of six steps. These steps provide an orderly and systematic approach to making determinations and decisions at each step so that others (the public, governmental agencies, etc.) can be made fully aware of the following:

- Assumptions employed
- Data and information analyzed
- Areas of risk and uncertainty
- Reasons and rationale used
- Significant implications of each alternative plan

The six-step planning process fits well within the three-phased approach that will be employed by the PCC/PCA to evaluate and assess project actions for the Panama Canal. The three phases are termed the Reconnaissance, Feasibility and Conceptual, with increasing levels of detailed investigation being performed on an ever-decreasing array of alternative projects as one moves through the three phases of study. As described below, while each of the three steps is repeated to some degree in each phase of study, the amount of effort related to each step will depend upon the particular phase of study. The Environmental Evaluation Methodologies presented in this Manual can be used at the appropriate level of detail within the applicable planning step at each phase of study as summarized in the following paragraphs and as described in more detailed at the conclusion of each of the subsequent chapters.

Step 1 - Specify Problems and Opportunities. This is the fundamental step of the process and answers the question "Why are we undertaking this study?" The desire to address a specific need (i.e. problem or opportunity) is usually the stimulus for undertaking a water resources study. Problems tend to be negative and descriptive of existing conditions -- something is broken or missing. Opportunities tend to focus on positive, future conditions.

Once specific needs have been identified, planning objectives can be developed. Planning objectives are statements of the intended purpose of the planning process – they describe what a project alternative should try to achieve.

Step 2 - Inventory and Forecast. The second step of the planning process involves information gathering. The planning process requires the comparison of two conditions: the "without project condition" and the "with project condition". The "without project condition" describes the study area's future if no action is taken to solve any of the problems at hand. The "with project condition" describes the condition that is expected in the study area if a particular project alternative is implemented. Information gathering at this step will focus on historical and existing conditions as a basis for estimating the most probable future condition without a project. Application of the Environmental Evaluation Methodologies will assist in developing both the "without" and "with" project conditions. Particular attention should be focused on identifying the existing conditions and the projected fate of the significant environmental resources occurring within the study area.

In general information is gathered to: (1) identify and adequately describe the needs of the study area (this information provides the supporting basis for conducting the study); (2) estimate of project costs; and (3) describe significant project effects. The product of this step is a comprehensive, rational, and honest description of the future of the study area if no action is taken to solve the area's identified needs (i.e. problems and opportunities). All "with" project

effects should be compared to the "without project condition". Information developed by application of the Environmental Evaluation Methodologies will provide the setting and impact information to satisfy this requirement.

Step 3 - Formulation of Alternatives. Plan formulation is the process of building plans that meet the planning objectives established in Step 1 above. Plans are composed of measures, where a measure is defined as a feature or activity that can be implemented at a specific place to address one or more planning objectives. Measures are the building blocks of plans that eventually are considered as project alternatives.

A plan is a set of one or more measures functioning together to address one or more planning objectives. Steps 3, 4, and 5 (which are described in the following paragraphs) of the planning process may be repeated as needed to reconsider alternatives previously formulated which have been changed in some way. This iterative process is called reformulation.

Step 4 - Evaluation of the Effects of Alternative Plans. In this step of the planning process, forecasts are developed for the future "with" conditions for each project alternative. The "with" and "without" project conditions are then compared to identify differences between the two conditions. These differences, called the effects of the plan, are then described in terms of duration, location, and magnitude using quantitative or subjective measurements. The value and significance of the differences between the "with" and "without" project conditions are appraised. This appraisal establishes whether an effect is adverse, beneficial, or neutral and "how good or bad is the effect?" The Environmental Evaluation Methodologies presented in the following chapters should be applied in this step to appraise the environmental effects attributed to each project alternative. As discussed in Chapter 5, particular attention should be devoted to identifying the significant adverse environmental effects. As appropriate, mitigation approaches should be considered to ameliorate or eliminate the identified significant impacts.

Based on these efforts, a decision is made as to whether a plan should continue to be considered as a viable alternative. A potential plan has to meet some minimum standards in order to merit further consideration and four criteria are typically used to determine those minimum standards.

- **Completeness** refers to the extent to which a given alternative plan provides and accounts for all necessary investments or other actions to insure the realization of the planned effects.

- **Effectiveness** is the extent to which an alternative alleviates the specified problems and achieves the specified opportunities.

- **Efficiency** refers to the extent to which an alternative plan is the most cost-effective means of alleviating the specified problems and achieving the specified opportunities.

- **Acceptability** is the workability or viability of the alternative plan with respect to acceptance by Federal and local governments and compatibility with existing laws and regulations.

Step 5 – Comparing Effects of Alternative Projects. In this step, the effects of the alternative projects are compared with each other to determine the best plan or plans. This comparison should be performed in an impartial, objective manner. The most significant effects should considered based on criteria established for this purpose considering laws, policies, agency and public reactions, etc. This step focuses on the differences between the alternative projects and relies on both quantitative and qualitative comparisons. The product of this step is a ranking of the project alternatives in terms of satisfying the planning objectives.

Step 6 – Selection of Alternative Projects. After consideration of the various alternative projects, their effects, agency and public comments, etc., a selection is made. This is the decision-making stage of the planning process. The selection process is made at the conclusion of each phase of study (i.e. Reconnaissance, Feasibility, and Conceptual). At the Reconnaissance Phase, the wide array of alternatives initially considered is reduced through screening. The remaining project alternatives are then subjected to additional study in the Feasibility Phase, from which the proposed project is selected for further study. The proposed project is investigated in considerable detail at the Conceptual Phase, resulting in very specific information on its technical scope, projected benefits, implementation costs, and anticipated environmental effects. From this information, a final decision is reached as to whether proposed project is to be recommend the project for construction. In general, the recommended project should maximize net benefits, be engineeringly feasible, and minimize significant adverse effects to the environment.

ENVIRONMENTAL PLANNING AND EVALUATION CONSIDERATIONS

The Evaluation Step (Step 4) is critical phase of the planning process where the identified project effects are assessed and appraised. It is in this step where the Evaluation Methodologies contained in the Manual are of most value to the planning process. The level of effort devoted to applying the methodologies will vary depending upon which of the three planning phases the environmental evaluations are being performed. The varying levels of effort are described at the end of each of chapter.

The evaluation efforts include the necessary inventorying of environmental resources and the evaluation of impacts attributed to each project alternative.

Inventory efforts are preparatory to the actual assessments that are performed in the environmental evaluations. To conduct an effective evaluation of the environmental effects it is important that the following interrelated actions be performed: (1) define resources, (2) inventory resources conditions, (3) assess effects, and (4) appraise effects. The following paragraphs discussed how these actions are performed. A hypothetical Plan "A" is referenced in selected tables to illustrate the application of the evaluation techniques discussed.

Define Resources. In Step 2 of the planning process, environmental resources and attributes occurring within the study area that are to be evaluated must be identified and a determination made as to how they will be measured or otherwise described in the evaluation process (*i.e*., develop evaluation framework).

The environmental resources to be evaluated are identified on the basis of their significance and their likelihood of being affected by one or more of the alternatives being considered. The significance of many resources may be recognized on more than one basis (See Chapter 5 for a discussion of determining significance.). A determination of whether or not a resource would likely be affected by a project alternative is based on preliminary judgements about causes and effects. A sample documentation format for recording the resources occurring in a study area that are likely to be affected by an action is contained in Table 1.

An Evaluation Framework is developed by specifying ways in which changes in environmental resources will be measured or otherwise described. A technique should also be specified for measuring or otherwise describing current and future conditions of the resources of concern. This involves identifying the guidelines (standards or criteria) that will be used to judge whether an effect is beneficial or adverse and selecting the technique that will be used for measuring or describing current and future conditions of environmental resources. Guidelines to determine significant resources should be based on institutional, public, or technical recognition. Each of the Evaluation Methodologies presented in the following chapters present criteria that can be considered in determining whether a resource may be affected and assessing the significance of the effects. A sample documentation format for recording the results of this activity is contained in Table 2.

Table 1
Sample Identification of Environmental Resources Likely to be Affected by Plan "A"

	EQ Attributes			Significance					
Resources	**Ecological**	**Cultural**	**Aesthetic**	**Institutional Recognition**	**Public Recognition**	**Technical Recognition**	**Likely to Be Affected (yes/no)**	**Resources To Be Evaluated (yes/no)**	**Notes**
R1 Pine Valley Meadow	**Deer Fawning Area**	---	---	---	---	**Major Fawning Area For Pine Mt. deer Herd**	**Yes**	**Yes**	
	---	**Indian Winter Camp (site)**	---	**Included In State List of Historic Sites**	---	---	**Yes**	**Yes**	
	---	---	**View of Meadow & Winter Camp**	---	**Public Acknowledged Desirability of Meadow & Winter Camp**	---	**Yes**	**Yes**	
R2 Pine Creek (river miles 169-171)	**Trout Spawning Habitat**	---	---	---	---	**40% of Suitable Spawning Gravels Located in This Reach of Pine Creek**	**Yes**	**Yes**	
R3 Pine Valley Overlook Area	---	---	**View Site For Pine Valley**	---	---	---	**No**	**No**	
	---	---	---	---	**Acknowledged As A Problem that Needs Resolution**	---	**Yes**	**No**	**To Be Evaluated In NED**

Inventory Resources. Also in Step 2 of the planning process, information should be collected to describe and measure the existing condition of study area resources and anticipated trends influencing the quality of these resources. Information should be collected in accordance with the evaluation framework developed in the previous activity (see Table 2). A sample documentation format for recording the results of this activity is contained in Table 3.

Next, the "without" project conditions should be forecast. This activity develops information that predicts or describes the future conditions of the environmental resources within the study area in the absence of any of the project alternatives. The "without" project condition should be based on a consideration of the following: trends and existing conditions information; available forecasts of future conditions of the environmental resources; established institutional objectives and constraints and customs and traditions related to the resources; direct, indirect, and cumulative effects of reasonably foreseeable actions of people expected to occur in the absence of any of the project alternatives; and, direct, indirect, and cumulative effects of natural occurrences, such as natural succession or the passage of time. Forecasting approaches should be compatible with the measurement and description techniques specified in the evaluation framework (see Table 2). This work establishes the baseline against which the effects of the project alternatives are considered. The "without" project future condition should be expressed for several forecast timeframes (i.e. 2010, 2020, 2030, etc.) A sample documentation format for recording the results of this activity is contained in Table 4.

A forecast is then developed for the "with" project conditions that describes the anticipated future conditions of environmental resources within the study area that would exist under each of the alternatives considered. The "with" project forecasts are based on the same considerations used in for the "without" project forecasts, plus information extrapolated from the known effects of comparable

Table 2
Sample Format for Documentating Evaluation Framework

				Techniques			
Resources	**EQ Attributes**	**Indicators**	**Units**	**Guidelines**	**Names**	**Documentation Reference**	**Notes**
R1 Pine Valley Meadow	Ecological	Terrestrial Habitat (quality & quantity aspects)	Habitat Units	Not Less Than 19 Habitat Units	HEP	Habitat Evaluation Procedures (FWS-ESM 103)	
		Deer Fawns	No. of Fawns	75 or more Fawns per Yr	State Annual Deer Census (Pine V. Herd)	See Bibliography #1	
		Area of Site	Acres	Preservation of Entire Site	Map Planimeter	See Bibliography #2	
	Cultural	Representativeness	Importance Ranking	Preservation (High Ranking)	Importance Ranking Techniques	See Bibliography #3	
		Research Value	Importance Ranking	Preservation (High Ranking)	Importance Ranking Techniques	See Bibliography #4	
	Aesthetic	Landscape Priority	Landscape Priority Ranking	H9 Ranking	PEPLA	Procedures to Establish Priorities in Landscape Architecture (SCS TR #6F)	
R2 Pine Creek							
(etc)							

Table 3
Sample Documentation of Existing Conditions and Trends of Environmental Resources

Resources	EQ Attributes	Indicators	Trend Conditions Trend (Units/Date)	Trend (Units/Date)	Trend (Units/Date)	Existing Conditon (Units/Date)	Notes
R1 Pine Valley Meadow	Ecological	Habitat	22 (1950)	20 (1970)	19 (1978)	19 (1980)	Trend Conditions Estimat-ed From 1950, 1970 &1978 Surveys (Photos)
		Fawns	50 (1950)	58 (1970)	60 (1975)	65 (1980)	Information from Annual Census (Pine Mt. Deer Herd)
		Area of Site	6 ac. (1942)	6 ac. (1950)	6 ac. (1970)	6 ac. (1979)	Indian Winter Camp Discovered in 1942
	Cultural	Representativeness	Unknown	Unknown	Unknown	High	
		Research Value	Unknown	Unknown	High	High	
	Aesthetic	Landscape Priority	Unknown	Unknown	H8 Ranking (1978)	H8 Ranking (1980	
R2 Pine Creek							

Table 4
Sample Documentation Format for Recording Forecast "Without" Project Conditions

Resources	EQ Attributes	Indicators	Without-Plans Conditions						Forecast Techniques		Notes
			Start Implem-entation Date (1990)	End Implem-entation Date (1995)	Forecast Date 1 (2005)	Forecast Date 2 (2025)	Forecast Date 3 (2045)	Locational Changes	Names	Documentation References	
R1 Pine Valley Meadow	Ecological	Habitat	22	24	27	29	80	None	Extrapola-tion	See Bibliography #5	Local Wildlife group is very active in Wildlife Managment Program
		Deer Fawns	68	69	75	78	80	None	Extrapola-tion	See Bibliography #6	
		Area of Site	5.9 ac	5.6 ac	5.2 ac	3.0 ac	2.9 ac	Less along Eastern side of Winter Camps due to Erosion	Extrapola-tion	See Bibliography #7	
	Cultural	Representa-tiveness	High	High	High	High	High		Scenarios	See Bibliography #8	
		Research Value	High	High	Moder-ate	Low	Low	Lack of some Artifacts and part of site	Extrapola-tion	See Bibliography #9	
	Aesthetic	Land-scape Priority	H8	H8	H7	H6	M7	None	Scenarios	Pine County Planning Dept. Report - Future Landscapes for Pine Valley 1978-2025, Vol II	
R2 Pine Creek											

past actions. The "with" project future condition should be estimated and expressed for the same forecast timeframes as the "without" plan condition. A sample documentation format for recording the results of this activity is contained in Table 5.

Assess Effects. The Evaluation Step (Step 6) of the planning process includes an assessment of the effects of the project alternatives. This effort is performed to identify and describe the effects of project plans on environmental resources. Identification of the effects involves assessing the differences between the "without" and "with" project conditions for the various environmental resources. Differences may be positive or negative, beneficial or adverse. A sample documentation format for recording the results of this activity (*i.e.*, the effects attributed to a specific project alternative) is shown in Table 6.

Each identified effect is then described in terms of the duration, location, and magnitude of the impact.

- Duration is the time at which, or over which, an effect is expected to occur (e.g. short-term, long-term continuous, intermittent). It should be described for the forecast timeframes considered for the same period of analysis selected for planning purposes.

- Location is the place (specific geographic location) at which an effect is expected to occur. Precise locations of sensitive resources such as archeological sites or endangered species habitat should not be widely publicized.

- Magnitude is the size of the difference in the quality and quantity of the environmental resources between the "with" and "without" project conditions for the forecast dates.

Other impact characteristics (i.e. reversibility, retrievability, and the relationship to long-term productivity) should also be described. A sample documentation format for recording the results of this activity is contained in Table 7.

Once the effects of an alternative have been identified and described, the significance of the effects should be determined. This activity is performed to identify which of the described effects is significant (See Chapter 5). A sample documentation format for recording the results of this activity is contained in Table 8.

Appraise Effects. The acceptability of significant effects on environmental resources, individually and collectively, for each alternative project must be appraised as a feature of Step 4 of the planning process. The appraisal establishes whether an effect is adverse, beneficial, or neutral, and "how good or bad is the effect?"

Table 5
Sample Documentation Format for Recording Forecast "With" Project Conditions Attributed to Plan "A"

Resources	EQ Attributes	Indicators	Start Implemen-tation Date (1990)	End Implemen-tation Date (1995)	With-Plan Conditions Forecast Date 1 (2005)	Forecast Date 2 (2025)	Forecast Date 3 (2045)	Locational Changes	Forecast Techniques Names	Documentation References	Notes
R1 Pine Valley Meadows	Ecological	Habitat	19	8	10	14	19	None	Model	See Bibliography#10	Riparan Vegetation slowly returned After construction
		Deer Fawns	65	20	32	47	65	None	Model	See Bibliography#11	
		Area of Site	5.9 ac	5.9 ac	5.9 ac	5.9 ac	5.9 ac	0.1 ac of Camp Site and Artifacts lost due to Erosion	Model	See Bibliography#12	
	Cultural	Representa-tiveness	High	High	High	High	High	None	Scenario	See Bibliography#13	
		Research Value	High	High	High	High	High	None	Scenario	See Bibliography#14	
	Aethestic	Landscape Priority	H8	L4	L4	M5	M6	None	Scenario	See Bibliography#15	
R2 Pine Creek											

Table 6
Sample Documentation Format to Identify Effects Attributed to Plan "A"

Resources	EQ Attributes	Indicators	Difference Between Without-Plans and With-Plan Conditions (yes/no)					Effect (yes/no)	Notes
			Start Implementation Date (1990)	End Implementation Date (1995)	Forecast Date 1 (2005)	Forecast Date 2 (2025)	Forecast Date 3 (2045)		
R1 Pine Valley Meadow	Ecological	Habitat	Yes	Yes	Yes	Yes	Yes	Yes	
		Deer Fawns	Yes	Yes	Yes	Yes	Yes	Yes	
		Area of Site	No	Yes	Yes	Yes	Yes	Yes	
	Cultural	Representa-tiveness	No	No	No	No	No	No	
		Research Value	No	No	No	Yes	Yes	Yes	
	Aesthetic	Landscape	No	Yes	Yes	Yes	Yes	Yes	
R2 Pine Creek									

Table 7
Sample Documentation Format to Describe Effects Attributed to Plan "A"

Resources	EQ Attributes	Indicators	Effect Characteristics Magnitude Start Implementation Date (1990)	End Implementation Date (1995)	Forecast Date 1 (2005)	Forecast Date 2 (2025)	Forecast Date 3 (2045)	Duration	Location	Other Effects Characteristics	Notes
R1 Pine Valley Meadow	Ecological	Habitat	-3	-16	-17	-15	-11	55 yrs + long term (starting 1990)	---	---	
		Deer Fawns	-3	-49	-43	-31	-15	" "	---	---	
		Area of Site	0	+0.3	+0.6	+1.4	+2.9	" "	---	---	
	Cultural	Representa-tiveness	No change	No change	No change	No change	No change	---	---	---	
		Research Value	No change	No change	No change	Slight Increase	Great Increase	20 yrs + long term (starting 2025)	---	---	
	Aesthetic	Landscape Priority	No change	Great Decrease	Moderate Decrease	Slight Decrease	Slight Decrease	45 yrs + long term (starting 1995)	---	The levee would detract from the "na-tural" look of the meadow even after revegetation	

Table 8
Sample Documentation Format to Determine the Significance of Effects Attributed to Plan "A"

Resources	EQ Attributes	Indicators	Significant			Significant Effect (yes/no)	Notes
			Institutional Recognition	Public Recognition	Technical Recognition		
R1 Pine Valley Meadows	Ecological	Habitat			State and Federal Wildlife Biologies recognize that the project will decrease Habitat below threshold levels	Yes	
		Deer Fawns	40 CFR 1508.27(b)(2) (Ecologically Critical Areas)	Pine Creek Wild-life Club states the Deer Population will decrease		Yes	
		Area of Site				Yes	
	Cultural	Representa-tiveness	40 CFR 1508.27(b)(2) & (10) (loss of Historic Resource and loss of Historic Site)	State Historic Preservation Officer Supports protecting the site	Site and Associated characteristics saved	No	
		Research Value				Yes	
	Aesthetic	Landscape Priority	None	Community groups support saving the area from erosion, but want plantings made on the levee to compensate for loss of aesthetic values	None	Yes	
R2 Pine Creek							

An effect is beneficial if the “with” project condition more closely approaches the preferred condition of the environmental resource in question than its “without” project condition. Conversely, an effect is considered to be adverse if the “without” project condition of the environmental resource more closely approaches the preferred condition than the “with” plan condition. A sample documentation format for recording the results of this activity is contained in Table 9.

The net overall environmental effects of each project alternative project are judged as being beneficial, adverse, or no net effect. A net beneficial environmental effect occurs when a project’s combined beneficial effects on environmental resources outweighs the adverse effects on environmental resources. A net adverse effect occurs when a project’s combined adverse effects on environmental resources outweighs the beneficial effects. No net effect occurs when a project’s adverse effects equal the project’s beneficial effects. The judgement should be based on a thorough consideration of the significant effects on significant resources.

The above described environmental evaluation concepts should be considered in reaching decisions to apply each of the Environmental Evaluation Methodologies presented in the following chapters at the appropriate level of detail for a given phase of study (i.e. Reconnaissance, Feasibility, or Conceptual). This will allow the information developed from these evaluations to be effectively considered at the appropriate juncture in the project planning process.

Table 9
Sample Documentation Format to Appraise Effects Attributed to Plan "A"

Resources	EQ Attributes	Appraisal Considerations: Description (magnitude, duration, location; see Table 7)	Appraisal (Beneficial/Adverse; see Table 9)	Quantity/ Quality Factors	Institutional Factors (see Table 8)	Public Factors (see Table 8)	Technical Factors (see Table 8)	Other Factors	Appraisal Judgement (also enter in significant EQ Effects table	Notes
R1 Pine Valley Meadow	Ecological	Major loss of Fawning Area	Adverse for all Indicators	Quantity& Quality of Habitat& Deer popula-tion decreased	Destruction of critical Ecological areas	Opposed by Pine Creek Wildlife Club	Habitat & population will drop below thresholds levels	---	Adverse-Major loss of deer fawning area	Mitigation Recommended
	Cultural	Site saved from loss due to erosion which would have been irretrievable	Beneficial because long term losses from erosion are prevented	The quantity of the site (ac) is saved therefore the quality is saved	State Historic site saved	State Historic Preservation Officer supports Plan A	Area, Repre-sentativeness and Research value saved	---	Beneficial-Site saved from potential loss due to erosion	
	Aesthetic	Sited marred by Construction levee, but major erosion is curtailed	A long term adverse effect on aesthetics occurs, but decreases and vegetation covers levee	Views are degraded	None	Community groups want reservations placed on the project	None	---	Adverse-because view of meadow as a whole is marred	
R2 Pine Creek										