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INITIAL ENVIRONMENTAL EXAMINATIONS

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SINAI DEVELOPMENT STUDY - PHASE I

PERFORMED FOR THE ADVISORY COMMITTEE FOR RECONSTRUCTION  
OF THE MINISTRY OF DEVELOPMENT

BY DAMES & MOORE  
(IN ASSOCIATION WITH INDUSTRIAL DEVELOPMENT PROGRAMMES SA)

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## EXECUTIVE SUMMARY

This working paper, Initial Environmental Examinations (IEE), is presented in conjunction with Working Paper No. 5, A Plan for the Preservation, Enhancement, and Management of the Sensitive Natural Resources of Sinai.

It is the purpose of the IEE's to describe the nature, scope, and magnitude of the reasonably foreseeable effects of all projects suggested as part of the Sinai Development Study, Phase I.

Of the first 46 projects, two require an environmental impact statement (EIS) because of their complexity and sensitive location--tourism facilities at St. Catherine's (project no. 9) and the inlet design for Lake Bardawil (no. 40). It is suggested that an analysis of the impacts from several other projects in these two areas be incorporated into the two EIS's.

Environmental assessments (EA) are recommended for seven projects--integrated rural development (no. 3), fruit and vegetable production (no. 4), ferromanganese mining and processing (no. 5), vegetable production (no. 21), Maghara coal (no. 26), Kaolin mine (no. 27), and integrated rural development (no. 37). Additional EA's may be necessary, depending on the specifics of certain projects--for example, if it is found that the livestock improvement project (no. 13) will affect the bustard, an EA is strongly recommended. Similarly, an EA is recommended for the salt production project (no. 45) if it is found to affect the Lake Bardawil area.

# INITIAL ENVIRONMENTAL EXAMINATIONS

## 1.0 INTRODUCTION

This working paper presents the initial environmental examinations (IEE) compiled for the first 46 project summaries submitted to the Ministry of Development in February 1981. The initial project summaries are a requirement of Task 1.2, Project Identification, and the IEE's are a deliverable under Task 13.1, Initial Environmental Examination, of the Sinai Development Study, Phase I.

In three sections, this paper explains the appraisal process required in the development of the IEE. The IEE's describe the nature, scope, and magnitude of the reasonably foreseeable environmental effects of the proposed projects.

Subsequent IEE's will be submitted along with new project summaries.

## 2.0 ENVIRONMENTAL APPRAISAL PROCESS

To minimize potential adverse effects to the Sinai environment, an environmental appraisal process was used to identify any significant environmental concerns and to describe the nature, scope, and magnitude of these effects on the human environment and on organisms (including man) in the biosphere. The environmental appraisal process has the provision for evaluating projects at three progressively more rigorous levels, as follows:

- Initial environmental examination (IEE): The first level of environmental appraisal is the IEE. The purpose of the IEE is to screen the projects and determine if an environmental assessment (EA) or environmental impact statement (EIS) is necessary. The IEE screening process generally consists of the following steps:
  - Identification of major environmental concerns
  - Suggestion of mitigative and alternative actions
  - Determination by means of a threshold analysis if the overall effects would significantly affect the human environment
  - Recommendation of more detailed analysis (EA or EIS), if necessary.

A discussion of the issues of concern and the methods used to screen the projects is presented in Sections 3.0 and 4.0.

- Environmental assessment (EA): An EA will be performed if it is determined from the IEE that one is needed. The purpose of an EA is to provide decisionmakers with a comprehensive understanding of the reasonably foreseeable environmental effects of the proposed action and the probable mitigative and alternative actions available. The EA thus provides the basis for weighing the expected benefits of development against any adverse short- or long-term impacts on the human environment or any irreversible commitment of resources. The scope and depth of the EA will be consistent with that required by AID for similar technical analyses.
- Environmental impact statement (EIS): If necessary, a comprehensive EIS will be prepared for projects where the expected impacts will be significant. The content and form of the EIS will follow Section 1500.8 of the Council on Environmental Quality (CEQ) Guidelines and take into account the special concerns as detailed in the AID Handbook, Section 216.5.

### 3.0 ISSUES OF CONCERN

Thirteen issues of concern were selected to facilitate identification of the major environmental problems that may be expected to result from development in Sinai. The issues were developed through discussions with professionals who have a technical familiarity with the Sinai environment and the problems associated with its development, through reconnaissance of representative portions of Sinai, and through past experience with the environmental aspects of other arid region development projects.

A question-answer format was selected as the most direct way to present the issues of concern. A discussion of the philosophy and rationale for each of the issues is presented below.

#### 3.1 CONTAMINATION OF SURFACE WATER OR GROUNDWATER

- Are domestic or industrial wastes from the project likely to result in the contamination of surface water or groundwater?

In an arid land such as Sinai, water is precious and in short supply. Not only must every drop of water be used as wisely as possible, but also every effort must be made to prevent the contamination of both surface water and groundwater sources.

Rainfall is an infrequent and welcome event in Sinai. The rugged and sparsely vegetated terrain reflects the years of erosion that have resulted in numerous deeply carved and barren geomorphic forms. Whenever surface runoff occurs, it flows along the wadies--the dry riverbeds that flow together in the valley floors, forming a geologically significant drainage pattern that usually leads to the sea.

Water contamination can result from a number of causes. Among the most common sources of contamination are improper disposal of industrial, agricultural, and domestic chemicals and waste materials. For example, wastes from a mining operation could be disposed of in a wadi where periodic drainage would wash heavy metals or other toxic substances into agricultural fields, thereby affecting the soil, plants, and food chain, or the waste material could seep into the groundwater and be pumped to the surface for agricultural or domestic use.

Another way groundwater can be contaminated is through the over-pumping of groundwater aquifers to the extent that the water table is lowered. If this happens, saline water can be induced to flow into a freshwater aquifer--increasing its salt content and often making it unfit for agricultural or domestic use.

With the limited supply of known water resources in Sinai, every effort needs to be made to minimize the contamination of surface water and groundwater supplies. If contamination occurs, it will either necessitate costly mitigative measures or reduce the overall development potential of Sinai.

### 3.2 LOWERING OF THE GROUNDWATER TABLE AND EFFECTS ON DOWNSTREAM USERS

- Is the project likely to result in the lowering of the groundwater table or to affect downstream users?

If Sinai developments are to be maintained over a long period of time, it will be very important to ensure that groundwater use does not exceed a "safe yield." It will be tempting to encourage rapid development and to overuse groundwater to meet short-term goals, but this would result in lowering of the water table to a level insufficient to meet basic needs during a typical year or during years when less than normal amounts of rainfall occur. An increase in water consumption or the contamination of a water source can also have potential effects on downstream users.

Other consequences can result from the "mining" of groundwater. These include the potential of increased salt content in an aquifer, increased electrical costs brought about from pumping the water from a greater depth, and the drying up of native wells. Native wells are shallow and hand-dug--they may dry up if deep wells are overused and the water table is lowered. A safe yield must be reached so that wells in Sinai will continue to provide water for years to come.

### 3.3 EFFECTS OF FLOODING AND SHIFTING SANDS

- Is the project likely to be affected by flooding or by shifting sands?

There is an irony in the fact that much of the freshwater that falls on Sinai escapes through surface runoff; although this runoff is a potential resource that may be diverted and used, it also is a potential hazard to development. During heavy precipitation in the winter and autumn, flash floods can inundate a wadi with several feet or more of water, resulting in the destruction of roads and bridges and causing severe soil erosion. It is thus important to be aware of the flooding potential in certain areas and to recognize that flooding in Sinai can be severe.

Like flooding, the concern about shifting sands is not so much that the project will cause dune instability as that unstable dunes may encroach upon or bury a project. It is not uncommon to see the dunes covering part of Route 6 between El Qantara and El Arish, and dunes can literally blanket an agricultural area--rendering it unfit for use. Areas with the potential for unstable dunes and shifting sands should be avoided if possible.

### 3.4 AIR QUALITY EFFECTS

- Are significant quantities of  $\text{SO}_2$ , TSP,  $\text{NO}_x$ , or other pollutants to be emitted, and is it likely that the plume would impinge on the surrounding terrain?

Air quality is an important concern at both the local and regional level. If significant quantities of sulfur dioxide ( $\text{SO}_2$ ), total suspended particulates (TSP), nitrogen oxides ( $\text{NO}_x$ ), or other pollutants such as carbon monoxide, hydrocarbons, and lead are emitted, they can

affect public health locally and potentially affect the growth of vegetation over large areas. Where toxic substances such as heavy metals are emitted into the atmosphere, they can have potentially serious effects if they enter the food chain of either the native wildlife or man. Additionally, emissions can severely degrade the visual aesthetics of an area. Emissions of greater than 100 tons per year are considered to be significant.

Appropriate project location and design can alleviate the severity of air pollution. Proper stack height may help to lessen impingement of the plume and disperse the emissions, and careful site selection should ensure that the project is located in suitable terrain.

### 3.5 THREATENED AND ENDANGERED SPECIES

- Is the project near or likely to affect the known breeding, feeding, or resting areas of threatened, endangered, or other valuable species?

Sinai has a number of vegetative and wildlife resources that need to be protected or conserved because of their importance to the people of Sinai, Egypt, and the rest of the world. These resources include a number of rare endemic plant species and a wealth of residential and migratory birds, many unusual and beautiful mammals, several rare (actually endangered) reptiles, interesting and colorful fishes, and some of the most spectacular coral reefs in the world. These species are important because they are adapted to life in Sinai. In this sense, they are a renewable natural resource which can bring much to life in Sinai and would be irreplaceable if lost.

A number of the species in Sinai are threatened or endangered, or have commercial or recreational value. These species, of course, should be preserved and protected by preventing direct physical harm to the young (including eggs) and adults and by preventing the disturbance or destruction of their feeding, breeding, and resting areas. A public awareness campaign should focus on the value and uniqueness of these species to the people of Sinai.

### 3.6 WETLANDS AND UNIQUE WILDLIFE HABITATS

- Is the project likely to result in the loss of wetlands or unique wildlife habitats?

Wetlands have historically been viewed as of little value and, as a result, there has been a tremendous loss of wetlands worldwide. Only recently has their value been recognized. One of their most important functions is that they provide feeding, breeding, and resting areas for a great number and variety of wildlife. Wetlands are some of the most productive ecosystems in the world. There are few wetlands in Sinai, yet some species are totally dependent on them.

Habitat destruction is one certain way of destroying wildlife. The preservation of rare and unique habitats will ensure the maintenance of wildlife stock.

### 3.7 CULTURAL RESOURCES

- Is the project likely to impact any known historical, archaeological, or religious sites of significance?

Egypt has a long, rich past, and the preservation of historical, archaeological, and religious sites of significance is obviously very important. These cultural resources are not only important for their intrinsic and educational value, but also as a tourist attraction.

### 3.8 EFFECTS OF SOUND, ODOR, OR DUST

- Is the project likely to produce significant levels of sound, odor, or dust?

Sound pollution (noise), in the form of loud or irritating audible sound, can have a significant effect on the environment. Usually the greatest impact of noise is on man, since most wildlife species readily adapt to loud sounds or leave the area, particularly if the sound is persistent. Man, too, can adjust to noise. Loud sounds, however, can be especially annoying to people not accustomed to them and--if continuous--can affect human health.

Offensive odors can be a problem--particularly to those who experience infrequent exposure. A concerted effort should be made to ensure that generally offensive odors are not produced.

Dust in the desert is a perennial problem. One common source of dust is from vehicular traffic. Although a number of mitigative measures can be employed to reduce dust, it is important to identify significant sources of dust before they become a problem.

### 3.9 SCENIC AREAS AND NATURAL RESOURCES

- Is the project likely to significantly affect high aesthetic values?

One of Sinai's greatest attributes is its magnificent scenery. Sinai is a land of contrasting landscapes, ranging from broad coastal plains to rugged mountains that extend to an altitude of more than 2,500 meters. The broad and beautiful vistas are made up of an array of textures which include fine clays and sands as well as huge Precambrian formations. The ever-present plains, plateaus, and mountains are interesting and beautiful mixtures of white, yellow, red, black, and many shades of brown.

Sinai offers many spectacular vistas, some of which are attractive to tourists and constitute a natural resource of great potential value and importance. By identifying the most sensitive of these highly scenic areas and proposing projects that are compatible with them, these valuable resources can be enjoyed by many for years to come.

### 3.10 INFRASTRUCTURE REQUIREMENTS

- Is the project likely to require significant increases in power generation, sewage disposal, schools, or hospitals?

Any need for additional public services, such as infrastructure, power, sewage disposal, schools, and health care facilities, should be identified. New developments can put a strain on existing services, and consequently deprive the original recipients of those services.

### 3.11 SOLID WASTE DISPOSAL

- Is the project likely to necessitate the disposal of industrial or domestic solid wastes?

Proper disposal of industrial and domestic solid wastes is necessary for the prevention of water contamination and the maintenance of good public health. Improper waste management can result in the contamination of surface water and groundwater through runoff and percolation. The major consequences of water contamination can be a deterioration of public health and the destruction of wildlife habitat. Identification of the need for solid waste disposal will help to ensure that adequate measures are incorporated into the plans for good waste management.

### 3.12 HAZARDOUS SUBSTANCES

- Is the project likely to necessitate the transportation, storage, or disposal of hazardous substances such as radioactive, flammable, caustic, or carcinogenic agents?

Hazardous substances such as radioactive, flammable, caustic, and carcinogenic agents and substances can be dangerous and cause serious problems of disposal. They require special treatment and handling and must be disposed of at specially designed disposal facilities. Identification of the need for hazardous substances will facilitate planning for their proper disposal and handling.

### 3.13 DISPLACEMENT OF OTHER LAND USES

- Is the project likely to result in the displacement of other potentially more important land uses?

The development of an area for a particular purpose can result in the displacement or preemption of other uses of the land. In Sinai, agriculture is limited to land that can be irrigated or rainfed; much of the potential agricultural land is still undeveloped, but it is important to retain it for future agricultural use. Thus, it is preferable to locate nonagricultural developments on land that is unsuitable for agriculture.

#### 4.0 INITIAL ENVIRONMENTAL EXAMINATIONS

The purpose of the initial environmental examination (IEE) is to screen projects and identify any significant environmental problems so that a determination can be made about whether the project is environmentally compatible with the development of Sinai. Where appropriate concerns were identified and using specific criteria, a determination was made regarding the project's overall environmental suitability. An IEE consisting of the following parts was completed for each of the initial 46 projects:

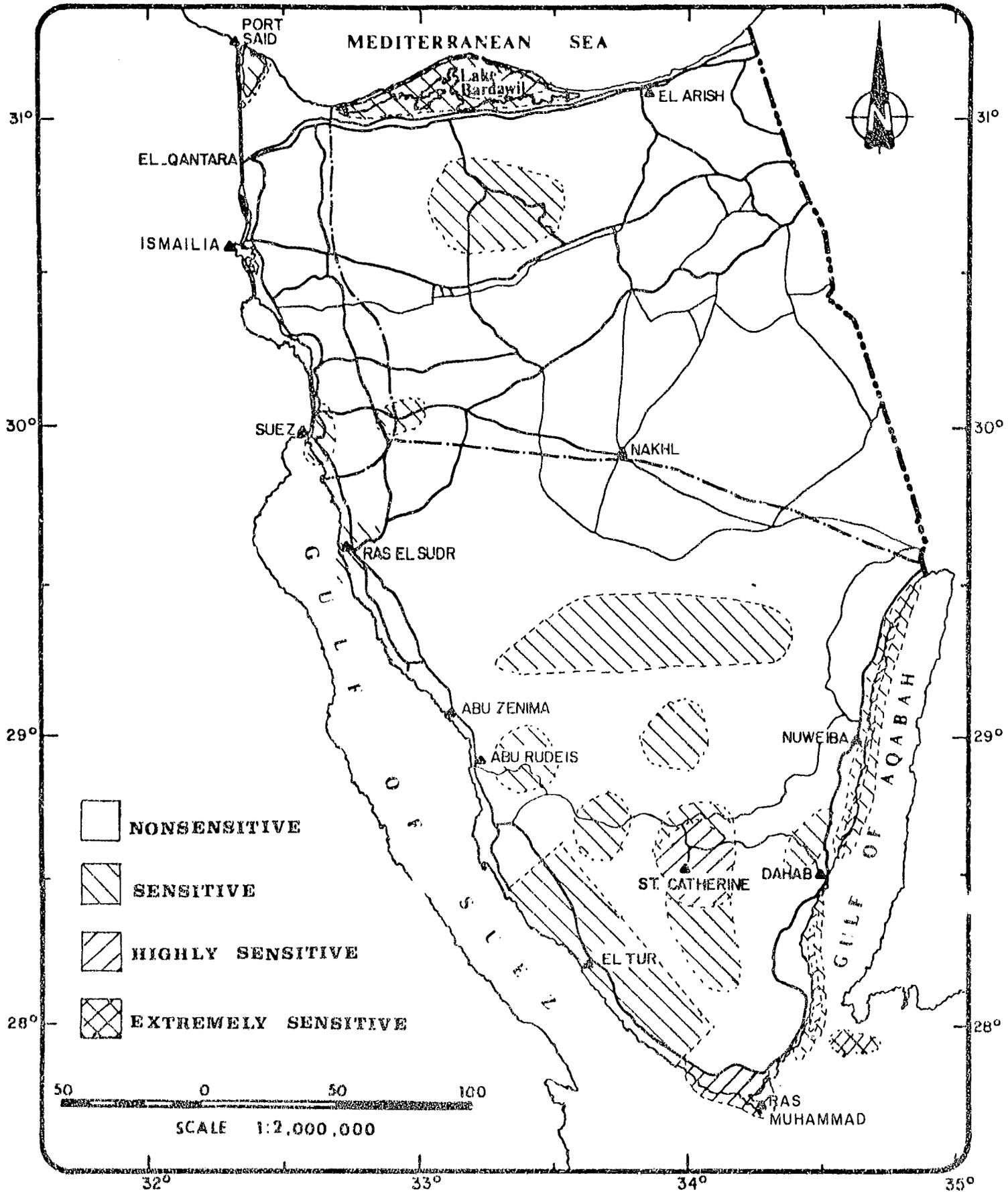
- Natural area class: The first item in the IEE is the identification as to whether a project occurs in or is likely to occur in an area worthy of partial or total protection from development.
- Environmental concerns: Any issues of concern that would be likely to result in significant environmental effects as a result of the project are identified and discussed.
- Mitigation and alternatives: If an issue has been identified as being potentially significant, technical and administrative measures for mitigative or alternative action are suggested.
- Threshold analysis: Each project is evaluated according to specific criteria to determine if its combined effects would be unacceptable. Where the threshold evaluation identifies that there will be a significant environmental effect, an EA or EIS is recommended. An EA or EIS may be required:
  - Where the impact is localized, but the human environment will be significantly affected
  - Where the impact will be irreversible or highly controversial
  - For complex projects with individually limited, but cumulatively significant effects
  - For projects that set a precedent for future actions or represent a decision in principle about future actions.
- Interaction with areas of protection and conservancy: This portion of the IEE documents the specifics of the type of encroachment to a protected area, if applicable, and identifies what species could be affected.
- Recommendation for future analysis: A recommendation is made as to whether an EA or EIS should be prepared, and specific recommendations as to the scope of the analysis and its anticipated costs are included if appropriate.
- Project priority: A judgement is made as to the priority of the project with respect to the resulting environmental impacts and benefits.

Figure 4-1 shows the environmentally sensitive areas in Sinai. This designation--nonsensitive, sensitive, highly sensitive, or extremely sensitive--is shown in the first entry on the IEE, natural area class. The following criteria were used to determine the relative environmental sensitivity of an area:

- Occurrence of rare, threatened, or endangered species
- Uniqueness
- Cultural value
- Scenic quality
- Accessibility.

This screening process is explained more thoroughly in Working Paper No. 5, A Plan for the Preservation, Enhancement, and Management of the Sensitive Natural Resources of Sinai.

Table 4-1 shows a listing of those projects for which an EA or EIS is recommended. It is included as an introduction to the first 46 IEE's (pages 4-6 to 4-51).



Sinai Development Study Phase I  
Ministry of Development

Dames & Moore

**ENVIRONMENTAL SENSITIVITY  
AREAS IN SINAI**

**FIGURE 4-1**

TABLE 4-1

Summary of Initial Environmental Examinations  
for Projects Requiring an EA or EIS

<u>Serial No.</u>	<u>Project</u>	<u>Natural Area Class</u>	<u>EA/EIS*</u>	<u>Priority</u>
3	Integrated rural development	Sensitive	EA	High
4	Fruit and vegetable production	Sensitive	EA	High
5	Ferromanganese mining and processing	Nonsensitive	EA	High
9	Visitor facilities, St. Catherine's	Highly sensitive	EIS	High
11	Gypsum mining and processing	Nonsensitive	Possible EA	High
13	Livestock improvement	Nonsensitive	Possible EA (if bustard is to be affected)	High
21	Vegetable production	Nonsensitive	EA	High
22	Land reclamation	Nonsensitive	EA (with project no. 21)	High
23	Dairy and beef production	Nonsensitive	EA (with project no. 21)	High
26	Maghara coal	Sensitive	EA	Moderate
27	Kaolin mine	Nonsensitive	EA	Moderate
29	Land reclamation	Nonsensitive	EA (with project no. 21)	High
33	Tourist hotel (El Tor)	Nonsensitive	Possible EA	High
36	Peace memorial complex	Highly sensitive	EIS (with project no. 9)	High

TABLE 4-1 (cont'd)

<u>Serial No.</u>	<u>Project</u>	<u>Natural Area Class</u>	<u>EA/EIS*</u>	<u>Priority</u>
37	Integrated rural development	Nonsensitive	EA	High
39	Bream marketing	Not applicable	EIS (with project no. 40)	High
40	Lake Bardawil inlet design	Sensitive/ highly sensitive	EIS	High
41	Lake Bardawil investment company	Nonsensitive	EIS (with project no. 40)	Moderate
42	Solar-powered ice plant	Sensitive/ highly sensitive	EIS (with project no. 40)	High
43	Solar salt pond electric power	Sensitive/ highly sensitive	EIS (with project no. 40)	Low
44	Tourism planning	Sensitive/ highly sensitive	EIS (with project no. 40)	High
45	Salt production	Nonsensitive/ sensitive	EIS (if Lake Bardawil is to be affected)	Moderate
46	Telecommunications network	Unknown	EIS (with project no. 40)	High

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\*EA's or EIS's may be required for other projects, but only in special situations, as noted on the IEE's.

PROJECT: Drilling program for hydrogeological investigations

NATURAL AREA CLASS: Of the approximately 40 proposed borings, at least 20 are expected to occur within sensitive areas. The remainder are expected to be in nonsensitive areas of Sinai.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are associated with this drilling program. Drilling will be along roads and vehicular tracks, and the drilling area will be no greater than 1000 square meters. Any impacts that occur are expected to be of short duration and confined to a small area.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Interaction with the St. Catherine, Wadi Fieran, Gebel Abu Alaqa, and Maghara areas will be limited and cause no significant effect on the biota.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: Because the hydrogeological drilling program provides the basis for a number of other development projects and is not expected to cause any significant environmental impacts, it should be of high priority.

PROJECT: Lake Bardawil integrated planning

NATURAL AREA CLASS: This project is located in a sensitive area.

ENVIRONMENTAL CONCERNS: The development of an integrated plan for Lake Bardawil will not in itself produce any environmental concerns. The various projects that would be included in the integrated plan, however, may have varying impacts and a significant total impact. Each of these studies is considered separately in projects 38 through 45.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required. People on reconnaissance surveys should remember to travel slowly in boats, make minimum use of islands, and not molest the birds--especially during the nesting season.

THRESHOLD ANALYSIS: Development of the master plan should not significantly affect the environment or the people living near Lake Bardawil.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Development of the master plan for Lake Bardawil should be limited to reconnaissance-level surveys and should not affect wildlife.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: Lake Bardawil is an internationally recognized area of importance for birdlife. For this reason, an integrated plan for its potential development should receive high priority.

PROJECT: Integrated rural development

NATURAL AREA CLASS: This project would occur in a sensitive area.

ENVIRONMENTAL CONCERNS: The maintenance of adequate levels of groundwater is important to ensure that groundwater drawdown or salinization do not occur. There is also concern that conversion to agriculture will destroy valuable wildlife habitat. The salty marshes in the foreshore plain must be left intact. If wildlife species are not killed or molested, no significant impact should result. Additional potential problems are flooding in the wadi and control of grazing.

MITIGATION AND ALTERNATIVES: An ecological survey of biotic resources and an estimate of water resources are needed for this area. Impact to the salty marshes is not expected unless the water table is lowered. Flooding can be controlled by the construction of dikes.

THRESHOLD ANALYSIS: If the wildlife are not killed or molested and salty marshes and groundwater levels are maintained, there should be no significant effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: As long as wildlife are not killed or molested, no significant impact on protected areas is expected.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EA is needed to assess groundwater availability, the value of the area to wildlife, and the management of grazing. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project is considered to be of high priority because of the area's potential for development.

PROJECT: Fruit and vegetable production

NATURAL AREA CLASS: This project is located in a sensitive area.

ENVIRONMENTAL CONCERNS: Environmental concerns focus on the potential for drawdown or contamination of groundwater. Also, the collective impact of more people using the Fieran Oasis should be considered. This may translate into the need for more schools and other social services, and even the social problems of mixing Bedouin and non-Bedouin cultures. Additionally, there is concern about the development of land for agricultural use due to the large number of unusual endemic species in the area.

MITIGATION AND ALTERNATIVES: Groundwater availability in the Fieran Oasis and adjacent areas should be analyzed. Water should be tested for microorganisms, and an ecological field survey of the biota in those areas slated for agriculture is required.

THRESHOLD ANALYSIS: In combination with expanded tourism at St. Catherine's, this project could cause a significant impact at Fieran Oasis.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: The impact to wildlife is expected to be minimal; however, grazing must be controlled to reduce the potential of adverse effects on rare endemics. Aesthetic impact is important in Fieran Oasis.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Due to the potential for individually limited but cumulative impacts in the vicinity of Fieran Oasis (from development near the oasis and from expanded use of St. Catherine's), it is recommended that an EA be prepared. The EA should consider hydrologic balance, impact to ecology, aesthetics, and socio-economic effects. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project should receive high priority.

PROJECT: Ferromanganese mining and processing

NATURAL AREA CLASS: This project is in a nonsensitive area.

ENVIRONMENTAL CONCERNS: Kaiser Engineers has completed an assessment of the environmental effects of reopening the mine and processing plant at Abu Zenima. Significant impacts identified were air emissions, fugitive dust, noise, solid waste disposal, and the potential for groundwater contamination.

MITIGATION AND ALTERNATIVES: The major effects of reopening the mine and processing plant at Abu Zenima can be controlled by conventional practices. The air emissions may need to be scrubbed, and a review of the solid waste disposal practices and monitoring of groundwater quality are recommended.

THRESHOLD ANALYSIS: This project should not significantly affect man or the environment if air emissions are controlled, dust and noise are abated, and solid wastes are properly disposed of.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is anticipated.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EA should be performed to assess the effects of air emissions and solid waste disposal. Groundwater quality should be checked periodically. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project should be of high priority because of the obvious economic benefits to local inhabitants.

PROJECT: Construction material production

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: The environmental impact of developing sources of high-grade construction materials is expected to be minimal. Some dust and noise may be produced, but any possible impacts will depend on the location of the developments and their proximity to local residential areas. Another potential concern, if the pit is located in a wadi, is its adverse effect on the groundwater aquifer.

MIIIGATION AND ALTERNATIVES: If applicable, care should be taken not to disturb the aquifer, and any pit which is dug should be backfilled.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is anticipated.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS, but groundwater conditions should be assessed prior to development and production.

PROJECT PRIORITY: This project is considered to be of high priority.

PROJECT: Fishing wharf (at El Tor)

NATURAL AREA CLASS: This project would be located within a sensitive area.

ENVIRONMENTAL CONCERNS: Environmental concerns focus on the size and location of the wharf and the potential need for dredging and disposal of dredge material. Sanitation facilities may also be inadequate.

MITIGATION AND ALTERNATIVES: A review of the design and location of the new wharf should be made prior to installation.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment if the wharf is properly sited and dredge material is properly disposed of.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Although El Tor is within a sensitive area, no direct effects on wildlife are expected.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS if the wharf is properly sited and the spoils are properly disposed of.

PROJECT PRIORITY: This project is considered to be of high priority because it will bring more jobs and expand the food supply in the El Tor area.

PROJECT: Traffic surveys

NATURAL AREA CLASS: Traffic studies would be conducted in nonsensitive areas.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are associated with the traffic survey program.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: The project should not have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is anticipated.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: Since the information gathered through these surveys will facilitate a more complete understanding of travel in Sinai, but in itself will provide no direct benefit, this project is considered to be of moderate priority.

PROJECT: Improvement of visitor facilities at  
St. Catherine's

NATURAL AREA CLASS: This project is located in a highly sensitive area.

ENVIRONMENTAL CONCERNS: There are numerous resource-related concerns, such as the effect on water resources and contamination/sanitation, but the greatest concern is that of aesthetics. St. Catherine's is attractive because of the aesthetic appearance of the entire area, and development of any facilities will almost certainly affect the monastery as a tourist attraction.

MITIGATION AND ALTERNATIVES: A comprehensive plan for waste disposal is needed. The key to maintaining the aesthetics of the St. Catherine's area is the siting and design of new facilities.

THRESHOLD ANALYSIS: Any development at St. Catherine's could have a significant impact and thus be highly controversial if not carefully and appropriately carried out.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Little direct impact should be felt in the vicinity of St. Catherine's because of the established use of the area. There should be minimal effect on the wildlife and vegetation.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EIS is recommended for the St. Catherine's area. It should focus on the socioeconomic, aesthetic, hydrologic, and waste disposal aspects of development. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project should receive high priority because St. Catherine's is an important tourist attraction, and the facilities are needed.

PROJECT: Groundwater survey and monitoring program  
(El Arish)

NATURAL AREA CLASS: The proposed survey and monitoring program is situated  
in nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are associated  
with this project.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental  
effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: This groundwater  
monitoring program is not expected to interfere with any areas to be  
protected or conserved.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an  
EA or EIS.

PROJECT PRIORITY: This project should be given very high priority because  
of the other developments proposed for the El Arish area.

PROJECT: Gypsum mining and processing

NATURAL AREA CLASS: This project would be in a nonsensitive area.

ENVIRONMENTAL CONCERNS: The environmental effects are expected to consist of local dust and possible impact to the hot springs about 12 kilometers to the west. Large trucks crossing highways may have difficulty when foggy or rainy conditions prevail. A number of conditions are undefined, including power source, solid waste disposal, housing, and social services.

MITIGATION AND ALTERNATIVES: The development plans should be reviewed to ensure that adequate planning has been completed, and the potential for affecting the hot springs should be assessed.

THRESHOLD ANALYSIS: This project is not expected to have a significant detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is anticipated.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: It is recommended that the Consultant review the plans for siting the mine and processing plant and other information about operation. At that time, an EA may be warranted.

PROJECT PRIORITY: This project will bring jobs and related benefits to Sinai and therefore should be of high priority.

PROJECT: Gas turbine power generation

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental impacts are expected to result from rehabilitation of the gas turbine at Abu Zenima. Minor impacts may result from relaying the pipeline from Belayin, but these impacts are not considered to be significant if the same route is used. Air quality and noise impacts are expected to be minor.

MITIGATION AND ALTERNATIVES: Emission stacks should be tall enough to disperse gases.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is considered to be of high priority because it will determine the feasibility of other projects.

PROJECT: Livestock improvement

NATURAL AREA CLASS: This project would be located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: Wherever livestock will be concentrated, there is the potential for odor and for contamination of groundwater by feedlot runoff. In this case, there appears also to be a potential for overgrazing of the rangeland. There is also concern for the remaining populations of the bustard. Flooding could be an additional problem in Ras Sudr.

MITIGATION AND ALTERNATIVES: Feedlot wastes should be contained in properly lined feed pens and be adequately disposed of. An ecological survey should be conducted to determine the bustards' use of the areas to be developed. Central flooding could be controlled by construction of dikes.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment, as long as proper range management practices are adhered to and the bustard is not killed or molested.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: There is concern for potential impact on the bustard.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: It is recommended that an ecological survey be conducted to identify if the bustard uses these areas. If it does, an EA should be written to address the project's effect on this species.

PROJECT PRIORITY: This project is considered to be of high priority because it will improve food resources and provide employment.

PROJECT: Fabrication of solar-powered equipment

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are associated with this project.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is anticipated.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is of moderate priority.

PROJECT: Cement plant

NATURAL AREA CLASS: The project location has not yet been determined.

ENVIRONMENTAL CONCERNS: Potential environmental impacts include local dust and noise problems. Other impacts need to be investigated when the sites are identified. There may also be impacts associated with the transport of the cement, especially if the roads are not paved.

MITIGATION AND ALTERNATIVES: Fugitive dust can be minimized by paving surfaces frequently used and by containing dust generated inside buildings. Noise levels can be moderated by using conventional technology.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment, but this may change according to the site selected.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Interaction with protected areas cannot be evaluated until sites have been identified.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: No EA or EIS appears to be warranted, but this may be site dependent.

PROJECT PRIORITY: This project is of moderate priority.

PROJECT: Acceleration of repairs/improvements to  
Suez Canal coastal highway between Ras  
Sudr and Abu Zenima

NATURAL AREA CLASS: This project will take place in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are associated  
with the acceleration of repairs to the Suez coastal highway.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect  
on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with  
protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an  
EA or EIS.

PROJECT PRIORITY: This project is considered to be of high priority because  
its completion will stimulate development in south Sinai.

PROJECT: Improvement of military ferry crossing  
(at Suez)

NATURAL AREA CLASS: This project will occur in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental impacts are expected as a result of this project.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: Because this project will greatly facilitate movement of vehicular traffic to Sinai and greatly aid in the implementation of other projects, it should be of high priority.

PROJECT: .North Sinai development bank

NATURAL AREA CLASS: This project would be located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental impacts are expected to be associated with the establishment of a development bank.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is considered to be of high priority because the establishment of a development bank will stimulate economic growth.

PROJECT: Airport (at El Arish)

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: The reopening of the El Arish airport to civilians and the extension of the main runway by 500 meters--from its current length of 2,500 meters--should not cause a significant effect. There will be a requirement for additional land, which happens to have agricultural potential, but this appears to be unavoidable. It is assumed that flooding of the runways has not been a significant problem in the past and that proper levees can be designed and constructed to alleviate any potential problems.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is considered to be of high priority because the reopening of the El Arish airport will promote development of other projects.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 8-B

Serial No. 20

PROJECT: Industrial complex

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No environmental impacts will result from the related survey-level investigations.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: No EA or EIS is recommended. It is suggested that the Consultant review the ecological and general environmental issues related to the development of an industrial complex.

PROJECT PRIORITY: This project should be of high priority because it will affect coordination of a great number of projects.

PROJECT: Vegetable production (320 feddans)

NATURAL AREA CLASS: This project would take place in a nonsensitive area.

ENVIRONMENTAL CONCERNS: As mentioned in the project description, water contamination/sanitation and groundwater drawdown are potential concerns. Salt build-up in the soil should not be a significant problem if the Wadi El Arish continues to experience periodic flooding. There is some concern that relatively large areas of nonagricultural land may contain plants or animals worthy of protection.

MITIGATION AND ALTERNATIVES: Drip irrigation should be used, and wells should be monitored for microorganisms. In addition, an ecological field survey of the land to be developed should be made.

THRESHOLD ANALYSIS: This project, together with project nos. 22, 23, and 29, may have significant effects on water supply and water quality in the El Arish area.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur, but if valuable species are encountered they should be protected.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Due to the number of projects dealing with land development near El Arish, an EA is recommended to assess their combined impacts. Its scope should include hydrology and land use. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project is considered to be of high priority because of its importance to the health and welfare of the inhabitants of El Arish.

PROJECT: Land reclamation (1,200 feddans)

NATURAL AREA CLASS: This project would take place in a nonsensitive area.

ENVIRONMENTAL CONCERNS: As mentioned in the project description, water contamination/sanitation and groundwater drawdown are potential concerns. Salt build-up in the soil should not be a significant problem if the Wadi El Arish continues to experience periodic flooding. There is some concern that relatively large areas of nonagricultural land may contain plants or animals worthy of protection.

MITIGATION AND ALTERNATIVES: Drip irrigation should be used, and wells should be monitored for microorganisms. In addition, an ecological field survey of the land to be developed should be made.

THRESHOLD ANALYSIS: This project, together with project nos. 21, 23, and 29, may have significant effects on water supply and water quality in the El Arish area.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Due to the number of projects dealing with land development near El Arish, an EA is recommended to assess their combined impacts (see project no. 21).

PROJECT PRIORITY: This project is considered to be of high priority because of its importance to the health and welfare of the inhabitants of El Arish.

PROJECT: Dairy and beef production

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: This project is essentially a feedlot operation which will require concentrating the animals and cropping the land. Environmental concerns relate to the potential for odor and for ground-water contamination/sanitation associated with feedstock wastes and runoff. Overgrazing of the rangeland may also be a problem, so range conditions will need to be watched and the number of animals adjusted accordingly.

MITIGATION AND ALTERNATIVES: Feedlot wastes should be contained by the proper lining of feedpens and suitable disposal/treatment. Wastes could be used as fertilizer.

THRESHOLD ANALYSIS: This project, together with project nos. 21, 22, and 29, may have significant effects on water supply and water quality in the El Arish area.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Due to the number of projects dealing with land development near El Arish, an EA is recommended to assess their combined impacts (see project no. 21).

PROJECT PRIORITY: This project is considered to be of high priority because of its importance to the health and welfare of the inhabitants of El Arish.

PROJECT: Land reclamation (30,000 feddans)

NATURAL AREA CLASS: This project would be located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: Since irrigation water will come from the Nile, there is concern that long-term use will result in salinization of the soil. Another water-related problem is that of sanitation, where diseases such as belharzia may be introduced. An additional concern in this area is that shifting sands may actually bury agriculturally productive areas. And perhaps most important, there is concern that there may be a long-term need for irrigation water from the Nile.

MITIGATION AND ALTERNATIVES: Drip irrigation is one technique that will minimize salinization and also the amount of water that is needed. Sanitation can be improved by minimizing personal contact with contaminated water, and windbrakes will help to retard the movement of shifting sand. A commitment for use of the Nile water and a survey of soil fertility are needed.

THRESHOLD ANALYSIS: The project is not expected to have a significant effect on man or the environment, assuming that the soil is at least minimally fertile and that there is a long-term commitment of water.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: This project requires a long-term, public commitment of water. The project appears to be overly ambitious. Some review of the suitability of the land for crop production and a plan for its long-term development would seem to be in order.

PROJECT PRIORITY: Because of this potential for food production near the delta--where a market currently exists--this project should be of a high priority.

PROJECT: Agricultural research

NATURAL AREA CLASS: The area near Ras Sudr is sensitive, but the El Arish and Nakh1 areas are nonsensitive.

ENVIRONMENTAL CONCERNS: No significant environmental impacts are expected to be associated with the development of an agricultural research program in El Arish or Nakh1, but in Ras Sudr there is both a potential for flooding and the need for protection of the bustard.

MITIGATION AND ALTERNATIVES: Mitigation of flooding in the Ras Sudr area may consist of building dikes to divert flood waters. Land considered for development in Ras Sudr should be surveyed by an ecologist to be sure that it is not inhabited by the bustard.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment if the bustard is protected in the Ras Sudr area.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: The only interaction with protected areas could occur in the Ras Sudr area and affect the bustard.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS if proper siting and ecological surveys are conducted.

PROJECT PRIORITY: This project will have an obvious beneficial effect on agricultural development in these areas and thus should be given a high priority.

PROJECT: Maghara coal

NATURAL AREA CLASS: This project is located in a sensitive area.

ENVIRONMENTAL CONCERNS: Two primary sources of impact are associated with Maghara coal--the mining of the coal and its transportation and use. Mining impacts will include destruction of plant species and wildlife habitat, localized dust, noise and aesthetic effects, and perhaps socio-economic effects on the labor force. Transportation of the coal could be a major source of impact. If the coal is burned at the 300-megawatt coal-fired power plant planned for the Springs of Moses area, additional impacts could result.

MITIGATION AND ALTERNATIVES: To protect the sensitive plant and animal species in the Maghara area, a field survey of species is required. The mining plans should be reviewed by a qualified, independent party to determine if conventional mining methods are being used to minimize dust, noise, and aesthetic impacts. Any pits should be backfilled. Labor-socioeconomic impacts need to be assessed, and a transportation study is also needed.

THRESHOLD ANALYSIS: This project could have a major impact on the environment; a more complete analysis should be made when more information is available.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Although this project is located in the vicinity of sensitive species of plants and animals, if a survey is conducted to identify locally sensitive or vulnerable populations and mitigative measures are employed, the interaction with these species is not expected to be serious.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EA is required; it should include all aspects of coal shipping as well as mining.  
Cost: \_\_\_\_\_

PROJECT PRIORITY: The development of Maghara coal may be important to the overall economic growth of Sinai and should be given moderate priority.

PROJECT: Kaolin mine

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: The primary environmental concerns regarding the development of a kaolin mine are the production of localized dust and noise. Other impacts are of a secondary nature if planning for power and roads is incorporated into regional development plans. The environmental impacts from a future processing plant in Abu Rudeis or Abu Zenima may be significant, depending on the site and plant design.

MITIGATION AND ALTERNATIVES: The development plans should be reviewed when a mine site has been identified.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment, but this may change depending on the site.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Once a site has been located, an EA should be performed to assess the general impact of the mine on the local environment. Its scope should focus on the ecology and the general layout of mine development. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project is considered to be of moderate priority.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 4-B

Serial No. 28

PROJECT: Glass sand (prefeasibility analysis)

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No major environmental concerns are associated with the reconnaissance and prefeasibility analysis of a glass sand mine at El Khabouba. If the mine becomes operational, transportation impacts may be significant, depending on the method of haulage and traffic conditions.

MITIGATION AND ALTERNATIVES: An assessment should be made of the various methods of transporting sand.

THRESHOLD ANALYSIS: The project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is considered to be of high priority.

PROJECT: Land reclamation (2,500 feddans)

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: Water contamination/sanitation and groundwater draw-down are of concern, especially as they might affect the drinking water supply at El Arish. There is some concern that this land may contain animals and plants worthy of protection.

MITIGATION AND ALTERNATIVES: Drip irrigation should be used, and wells should be monitored for microorganisms. In addition, an ecological field survey should be conducted to ascertain if this land contains species which should be protected.

THRESHOLD ANALYSIS: This project, together with nos. 21, 22, and 23, may have significant effects on water supply and water quality in the El Arish area.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Due to the number of projects dealing with land development near El Arish, an EA is recommended to assess their combined impact (see project no. 21).

PROJECT PRIORITY: This project is considered to be of high priority.

PROJECT: Groundwater authority

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: No significant environmental impacts are expected to be associated with the development of an authority to monitor and control the use of groundwater.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: Since this project could significantly aid in the wise use of water resources and prevent contamination and overuse of water, it is considered to be of high priority.

PROJECT: Hydrologic basin studies

NATURAL AREA CLASS: This project may be located in a number of sensitive areas.

ENVIRONMENTAL CONCERNS: No significant environmental impacts are expected to be associated with development of the weirs and diversion channels and monitoring of surface runoff.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Although this project may take place in a number of sensitive areas, it should not significantly affect the wildlife which these areas are intended to protect.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is considered to be of high priority because a more complete understanding of hydrology is important to the comprehensive and coordinated development of Sinai.

PROJECT: Network of meteorological stations

NATURAL AREA CLASS: All of the stations are expected to be located in non-sensitive areas, except at St. Catherine's--which is a highly sensitive area.

ENVIRONMENTAL CONCERNS: The establishment of meteorological stations for the collection of long-term meteorological data should not cause significant environmental impacts.

MITIGATION AND ALTERNATIVES: Wherever possible, the stations should be located where they will not be highly visible.

THRESHOLD ANALYSIS: The establishment of meteorological stations should not have a significant effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected species is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EA or EIS is not warranted as long as the meteorological towers and apparatus are sited in inconspicuous locations.

PROJECT PRIORITY: This project is considered to be of moderate priority.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 9-B

PROJECT: Tourist hotel/guest house (El Tor)

Serial No. 33

NATURAL AREA CLASS: This project is located in a nonsensitive area.

ENVIRONMENTAL CONCERNS: The environmental impact depends on the exact location of the tourist hotel/guest house. There is also concern about the impact of additional waste disposal (solid wastes and sewage).

MITIGATION AND ALTERNATIVES: Care should be taken to locate this facility where it will not interfere with waterfront developments. It is suggested that proposed sites and plans be reviewed by the Consultant.

THRESHOLD ANALYSIS: The establishment of a hotel/guest house of modest size should not have a significant effect on man or the environment if it is properly sited.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No direct interaction with wildlife species is expected, and any impact should be minimal.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS if the site is reviewed and approved by the Consultant; otherwise, an EA is recommended.

PROJECT PRIORITY: This project is considered to be of high priority because the hotel is needed by people traveling in south Sinai.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 1-F

Serial No. 34

PROJECT: Fish as desert animals

NATURAL AREA CLASS: This project is expected to be located in a non-sensitive area.

ENVIRONMENTAL CONCERNS: Few, if any, environmental impacts are expected, but further assessment depends on identification of potential locations for growing the fish.

MITIGATION AND ALTERNATIVES: Environmental control can be ensured if the fish ponds are properly sited.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is considered to be of moderate priority.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 8-A,B,D

Serial No. 35

PROJECT: Solar energy demonstration project

NATURAL AREA CLASS: This project is located in nonsensitive areas.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are related to the solar energy demonstration project.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No significant interaction with protected areas is expected.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project is of moderate priority.

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT: Peace memorial complex

NATURAL AREA CLASS: This project is located in a highly sensitive area.

ENVIRONMENTAL CONCERNS: There are numerous resource-related concerns, such as the effect on water resources and contamination/sanitation, but the greatest concern is that of aesthetics. The St. Catherine's area is attractive because of its aesthetic appearance, and development of any facilities will almost certainly affect the monastery as a tourist attraction.

MITIGATION AND ALTERNATIVES: The key to maintaining the aesthetics of the St. Catherine's area is the siting and design of new facilities.

THRESHOLD ANALYSIS: Any development at St. Catherine's could have a significant impact and thus be highly controversial if not carefully and appropriately carried out.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Little direct impact should be felt in the vicinity of St. Catherine's because of the established use of the area. There should be minimal effect on the wildlife and vegetation.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EIS is recommended for the St. Catherine's area. It should focus on the socioeconomic, aesthetic, hydrologic, and waste disposal aspects of development (see project no. 9).

PROJECT PRIORITY: This project should receive high priority because it is important and will attract tourists to the St. Catherine's area.

PROJECT: Integrated rural development

NATURAL AREA CLASS: This project is located in nonsensitive areas.

ENVIRONMENTAL CONCERNS: Environmental concerns include sufficiency of water and potential effects of drawdown of groundwater, contamination of groundwater, and salt build-up in the soils. There may also be a need for additional infrastructure and social services. More information about these rural developments is needed to make an accurate assessment of possible impacts. The project may be overly ambitious.

MITIGATION AND ALTERNATIVES: The project should be planned to match available water quantity and quality in the area.

THRESHOLD ANALYSIS: If an appraisal of the water availability is made prior to development and the project is scoped to realistic estimates of water, it is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: Due to uncertainty about the amount of water available and the possible adverse effect on the groundwater table, an EA is recommended as soon as exact locations are specified. Cost: \_\_\_\_\_

PROJECT PRIORITY: This project is considered to be of high priority.

PROJECT: Collection and analysis of water quality  
and fishery data

NATURAL AREA CLASS: This project would take place primarily in the sensitive area of Lake Bardawil and also in smaller, highly sensitive areas.

ENVIRONMENTAL CONCERNS: No significant environmental concerns are expected to result from monitoring of water quality and fish in these areas. However, there could be significant effects if nesting birds are disturbed.

MITIGATION AND ALTERNATIVES: Care should be taken not to disturb nesting birds; suggestions include moderate-to-slow boat speed, no or minimal use of islands, and avoidance of birds whenever encountered.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No significant interaction with sensitive wildlife species at Lake Bardawil is expected to occur if standard sampling methods are used.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS.

PROJECT PRIORITY: This project should be of high priority because of the usefulness of the collected information in planning for Lake Bardawil development.

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT: Marketing in Europe

NATURAL AREA CLASS: Not applicable.

ENVIRONMENTAL CONCERNS: There are no environmental concerns related to determining a market for bream in Europe.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is expected to occur.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: There is no need for an EA or EIS. This project should be included in the EIS for Lake Bardawil development.

PROJECT PRIORITY: This project is of high priority because its purpose is to generate a market for bream.

PROJECT: Inlet design

NATURAL AREA CLASS: This project is expected to take place within the sensitive area of Lake Bardawil, and could possibly be located in a highly sensitive area.

ENVIRONMENTAL CONCERNS: A number of environmental concerns are associated with this project. These are, of course, the impacts associated with the construction of an inlet and the potential changes that may affect water quality--especially salinity. Changes in water quality may affect the overall productivity of Lake Bardawil and its value to birds. There is also concern about the disposal of dredge material and what additional measures will be needed to maintain the inlet. Of equal concern is the increased use of Lake Bardawil from fishing and other man-related activities such as tourism.

MITIGATION AND ALTERNATIVES: It is recommended that baseline conditions be determined prior to construction of the inlet. This should include an inventory of the Lake Bardawil ecosystem, with emphasis on water quality, fish, and birds.

THRESHOLD ANALYSIS: This project is likely to have a significant impact on Lake Bardawil and could be controversial because of the international importance of the lake to migratory birds.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: The Lake Bardawil area could be significantly impacted through increased use by the public.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: A baseline ecological study of Lake Bardawil should be conducted, emphasizing fish, birds, and water quality. The information should then be used along with other data to analyze the effects the inlet will have on the lake. An EIS should be written when all information is available. Cost:

PROJECT PRIORITY: Because of the importance of the fishery resources to the people of the Lake Bardawil area, this project should receive high priority.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 1-A

Serial No. 41

PROJECT: Lake Bardawil investment company

NATURAL AREA CLASS: This project location will probably be a nonsensitive area (El Arish).

ENVIRONMENTAL CONCERNS: No significant environmental concerns are associated with the Lake Bardawil investment company.

MITIGATION AND ALTERNATIVES: No mitigative or alternative action is required.

THRESHOLD ANALYSIS: Although the Lake Bardawil investment company is expected to have no significant effect on the lake, a final assessment may depend on the conclusions of the EIS which is recommended for the Lake Bardawil inlet design.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: No interaction with protected areas is anticipated.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: No EA or EIS is warranted, but this project should be considered in the EIS for the Lake Bardawil inlet design.

PROJECT PRIORITY: This project is of a moderate priority pending the outcome of the Lake Bardawil EIS.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 4-A,6-A

Serial No. 42

PROJECT: Solar-powered ice plant

NATURAL AREA CLASS: This project would be located in or near sensitive and highly sensitive areas.

ENVIRONMENTAL CONCERNS: Environmental impacts should not be significant if the solar ice plant is sensibly sited.

MITIGATION AND ALTERNATIVES: Potential sites should be subject to an independent assessment as to their suitability.

THRESHOLD ANALYSIS: The solar ice plant could be controversial if not properly sited.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: Any possible interaction is site dependent.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: The impact of this facility should be included in the comprehensive plan and EIS for the Lake Bardawil inlet.

PROJECT PRIORITY: This project is of a high priority.

INITIAL ENVIRONMENTAL EXAMINATION

Code No. 6-A

Serial No. 43

PROJECT: Solar salt pond electric power demonstration facility

NATURAL AREA CLASS: This project would be located in or near sensitive and highly sensitive areas.

ENVIRONMENTAL CONCERNS: A feasibility study seems warranted, and possibly a comprehensive analysis of the environmental impacts would be needed. The location of such a facility is the single most critical factor. Because of its international importance, Lake Bardawil may be a poor site location.

MITIGATION AND ALTERNATIVES: After a site is selected, site-specific data on fisheries and water quality should be compiled.

THRESHOLD ANALYSIS: This project could be highly controversial because of its potential effect on Lake Bardawil.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: If sited improperly, the project could affect the most sensitive areas of Lake Bardawil.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: This project should be considered in the Lake Bardawil inlet EIS, or separately if warranted. Any evaluation of impacts should include a study of the effects on both water quality and the ecology of benthos and fish.

PROJECT PRIORITY: This project is of low priority.

PROJECT: Tourism planning

NATURAL AREA CLASS: This project would include the sensitive and highly sensitive areas of Lake Bardawil.

ENVIRONMENTAL CONCERNS: Environmental concerns center around the protection of nesting birds at the eastern edge of Lake Bardawil.

MITIGATION AND ALTERNATIVES: People should be restricted from going into the islands and from molesting birds at anytime, especially during the nesting season. Boating should be controlled.

THRESHOLD ANALYSIS: This project is not expected to significantly affect man or the environment if tourism promotion is planned by professionals and access is reasonably controlled, especially during the nesting season.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: If not properly controlled, tourism could affect some of the highly sensitive areas of Lake Bardawil.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: No EA or EIS is required, but the impact of tourism should be included in the EIS for the Lake Bardawil region.

PROJECT PRIORITY: Because of tourism's major role in the economic growth of Sinai, this project is of a high priority.

PROJECT: Salt production

NATURAL AREA CLASS: This project would be located in both nonsensitive and sensitive areas.

ENVIRONMENTAL CONCERNS: One of the most important questions to be asked from an environmental impact viewpoint is where the ponding basin will be constructed, and how the salt production facilities will fit in with the fishing, tourism, and bird sanctuary uses of Lake Bardawil and its immediate surroundings. Although salt production will potentially employ 50 men, it is assumed that they will not live close to the plant, but will reside in El Arish. A suitable road will be needed to the salt basin, making Lake Bardawil more accessible--the road may spawn another set of secondary impacts.

MITIGATION AND ALTERNATIVES: Conceptually, it would seem possible to locate salt production ponding basins within the large, flat coastal plain that borders Lake Bardawil to the south. The vicinity of Lake Bardawil needs to be further investigated to integrate salt ponding basins with other uses of the lake area.

THRESHOLD ANALYSIS: The production of salt, if sited in a suitable location, should not cause significant impact, but together with other projects could cumulatively have an increased impact on Lake Bardawil.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: There is a possibility of interaction with sensitive areas of Lake Bardawil.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: An EIS is recommended for any salt production projects that may affect Lake Bardawil. The scope would address fishing, wildlife preservation, and tourism.

PROJECT PRIORITY: This project has a moderate priority.

PROJECT: Telecommunications network

NATURAL AREA CLASS: The project location is unknown at this time.

ENVIRONMENTAL CONCERNS: The major environmental concern regarding the installation of a telecommunications network is aesthetics. Installation of telephone lines will detract somewhat from the open, spacious feeling of the desert. Of major concern is the aesthetic impact of the microwave towers. They will need to be located on high ground, and, depending on the location selected, may be highly visible.

MITIGATION AND ALTERNATIVES: The key to minimizing the aesthetic impact of the lines and towers is in proper siting. A siting study should be conducted to select the optimum locations and routes.

THRESHOLD ANALYSIS: This project is not expected to have a detrimental effect on man or the environment, but it could if the towers or lines are sited in sensitive areas.

INTERACTION WITH AREAS OF PROTECTION AND CONSERVANCY: There may be interaction with protected areas, but it is not expected to be significant.

RECOMMENDATION FOR FUTURE ENVIRONMENTAL ANALYSIS: No EA or EIS is needed if these facilities are properly sited. The telecommunications network could be incorporated into the EIS being recommended for the St. Catherine's area.

PROJECT PRIORITY: This project has a high priority.