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## **ENVIRONMENTAL SCREENING GUIDELINES**

**Environmental Assessment no. 1.**

**ENVIRONMENTAL CONSERVATION SERVICE  
Canadian Wildlife Service  
Inland Waters Directorate  
Lands Directorate**

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## 1. BACKGROUND

The federal Environmental Assessment and Review Process (EARP) was established by Cabinet decision in December 1973 and subsequently amended by Cabinet in February 1977 (1). The process embodies Canada's policy on environmental assessment as it relates to the activities of the federal government and provides a means of determining the potential environmental impact of all federal projects, programs, and activities.

More recently, in June 1984, a federal Order in Council (2) was approved for annexed guidelines on this process in respect of the associated implementation, requirements, and procedures. Replacing the 1973 and 1977 Cabinet decisions, the 1984 Order in Council takes the form of a guideline under the Government Organization Act 1979 and is thereby recognized as federal government policy. The new guidelines Order describes EARP as a self-assessment process, under which an initiating department shall, as early in the planning stages as possible and before irrevocable decisions are taken, ensure that the environmental implications of all proposals for which it is the decision-making authority are fully considered.

There are three sequential components of EARP:

- 1) Environmental Screening;
- 2) Initial Environmental Evaluation;
- 3) Environmental Impact Statement.

While most departmental proposals are subjected to an Environmental Screening, fewer are required to be carried through to the subsequent two stages of EARP. The requirement to proceed beyond an Environmental Screening is determined by the significance of anticipated environmental effects and the amount of information on them. A more elaborate schematic diagram of the components of EARP is presented in Appendix 1.

To satisfy the requirements of EARP, Environment Canada in 1980 approved a departmental policy statement, outlining its role in EARP (3). In accordance with the original Cabinet decisions on EARP and with this DOE policy, Department-level screening guidelines were developed in 1982 to address the manner in which the Environmental Screening component of EARP would be dealt with by Environment Canada (4). These guidelines further provided a generic framework from which the four central Services of Environment Canada could develop their own screening guides, as also called for in the 1980 departmental policy statement.

## **2. INTRODUCTION**

Some of the earliest and most comprehensive Service-level environmental screening guidelines within Environment Canada have been developed by Parks Canada (5). These guidelines provide the basic framework for assessing, in a systematic and documented manner, management decisions concerning lands and waters under its administration. More recently, the Canadian Forestry Service (formerly an Environment Canada Service) prepared its own set of screening guidelines (6).

In 1982, the Environmental Conservation Service (ECS), consisting of the Canadian Wildlife Service, Inland Waters Directorate, and Lands Directorate, adopted, as an interim provision, a slightly modified version of the Inland Waters Directorate screening guidelines (7). The interim guidelines aimed to provide a consistent approach for staff to screen all projects, programs, and activities undertaken, sponsored, funded, or supported otherwise by ECS. This approach has, in turn, been followed in the preparation of more regionally specific and operational screening guidelines by some of the regional offices from amongst the individual directorates of ECS (8,9,10,11).

A hierarchy of environmental screening activities and guidelines is apparent. The Service-level guidelines are intended to provide

continuity between the departmental guidelines and regional guidelines. Regional guidelines should be more responsive to specific methodology and technical concerns; and ECS guidelines should present a more procedural and policy-oriented focus.

The document herein represents an updated and amended version of the 1982 ECS screening guidelines (7). Modifications were based on consultations with staff of the three ECS directorates. Further revisions will be initiated in the future as required: to reflect significant changes resulting from use or policy directives, and to further promote the Service's environmental responsibilities.

### **3. DEFINITIONS**

Environmental assessment is a subject which has greatly expanded over the last decade. The semantics associated with this field have grown proportionately. The following terms are defined in Appendix 2:

- preliminary screening
- formal screening
- initial environmental evaluation
- environmental impact statement
- Regional Screening and Coordinating Committees
- initiator
- mitigation
- monitoring
- proponent

To ensure continuity with the Department-level and EARP screening guidelines, an attempt has been made to consistently apply the terms in these guidelines, and to specify the reference sources of such definitions.

### **4. RESPONSIBILITIES OF ENVIRONMENTAL SCREENING**

Environmental screening is the cornerstone of the broader EARP. It represents the first of the three components in this process and, as such, is the primary pivot in determining whether environmental effects are imminent and to what degree. Screening should be carried

out at the earliest stages of planning ECS projects, programs, and activities, which are subsequently referred to as 'activities'. Whereas 'activities' is commonly used in existing ECS screening documents, the current Order in Council (2) employs the term 'proposals'.

Screening provides the initial identification and evaluation of anticipated environmental effects associated with the proposed activity. It is based on existing published and unpublished information, site reconnaissance, and consultation with scientific and technical experts as necessary.

The initiator may request assistance from other agencies to account for all plausible environmental effects, project-related concerns, and applicable federal, provincial, and territorial legislative requirements.

Activities requiring screening are commonly identified from annual work plans. Individual screening exercises are initiated by responsibility centre managers -- usually branch directors or division chiefs who have financial signing authority. The initiator determines the significance of environmental effects identified in the screening and decides on further requirements under EARP.

## **5. APPLICATION OF SCREENING**

When screening is to be applied, there are commonly two important considerations. Firstly, the scope or types of activities must be reviewed to see if they are candidates for screening. Secondly, in cases of joint activities with other agencies, there is often the question of whose screening guidelines will take precedence in establishing the screening framework.

### **5.1 SCOPE OF APPLICATION**

All activities proposed by ECS, or using ECS funds, or occurring on

land or water under the jurisdiction of ECS, must be screened to determine potential adverse environmental effects. Included are joint activities such as federal/provincial or federal/territorial agreements. The initiating agencies shall consider the environmental implications of activities in two respects:

- 1) Potential environmental effects of a proposal and the social effects directly related to those environmental effects, including any effects that may be external to Canadian territory; and
- 2) Public concerns regarding a proposal and its potential environmental effects.

Activities with potential environmental effects are those which involve a specific in situ physical action that could result in some biological, physical, or chemical alteration to the natural environment. Examples of activities for which screening should be applied include:

- capital construction projects, such as the construction and upgrading of hydrometric stations, bank protection works, channel dredging or straightening, or construction of river and lake water intakes;
- flood damage reduction projects;
- other water management projects involving dams, dykes, diversions, or related activities, such as sewage disposal;
- field trials for testing substances or equipment, such as dispersants, pesticides, etc;
- wildlife management projects, such as control of species number or alteration of habitat for the benefit of selected species;



- shore processes research where field experimentation may aggravate shoreline erosion or sedimentation;
- vegetation clearing or prescribed burning for wildlife habitat alteration;
- construction of field research facilities or access routes.

Screening is mandatory for all of the above types of activities, except where action is urgently required to alleviate conditions which threaten resources, public health, or safety. In such cases, post facto examination of the action is required to provide a detailed description of the activity and need for urgency, a listing of adverse environmental effects expected or observed, mitigating measures employed or anticipated, and monitoring necessary.

## 5.2 PROTOCOL

When an ECS Directorate is the principal federal party in joint agreements involving activities associated with ECS-administered legislation, such as the Canada Water Act or Canada Wildlife Act, respective jurisdictional mandates should be considered so as to decide upon implementation of EARP or its equivalent process.

Some provinces, such as Saskatchewan, Ontario, and Newfoundland, have enacted environmental assessment by statute. The initiation and conduct of environmental assessment by other provinces, however, can be more discretionary, being required only through more multi-purpose environmental or resource legislation (12). In cases of the latter, EARP should be given precedence; but it should, however, be deferred where equivalent or more stringent provincial processes are implemented.

The Yukon and Northwest Territories fall primarily within the federal jurisdiction of Indian and Northern Affairs. For this reason, EARP will be fully implemented in joint activities between Indian and

Northern Affairs and ECS, which may extend from legislation such as the Territorial Lands Act.

## 6. IMPLEMENTATION OF SCREENING

Implementing screening is a fairly standard process. It involves the use of relatively universal decision criteria within a multi-staged screening procedure.

### 6.1 DECISION CRITERIA

Screening involves a systematic, documented assessment of the environmental implications of a proposed activity. Environmental values are weighed and the significance, if any, of the perceived environmental effects is identified. As a guide (13) for this procedure, the Federal Environmental Assessment Review Office has prepared a list of general criteria (see Appendix 3 for definitions), which include:

- magnitude
- prevalence
- duration and frequency
- risks
- importance
- mitigation

The significance of environmental effects has also been described according to basic concepts of statistical significance, ecological concerns, social importance, and project implications. From these additional criteria, a definition for a significant environmental effect is offered (11).

'The potential to produce an irreversible shift in the environment which may cause concern and/or controversy in the public/professional community.'

## 6.2 SCREENING PROCEDURE

Organized in two main stages (Figure 1), screening begins when planning for an activity is initiated. In the first stage, preliminary screening, the initiator decides on the potential for and significance of environmental effects of the proposed activity. If no adverse effects are perceived, further screening is not required and the activity may be undertaken. Where potential adverse effects are identified, the proposal must be submitted to the second stage, formal screening.

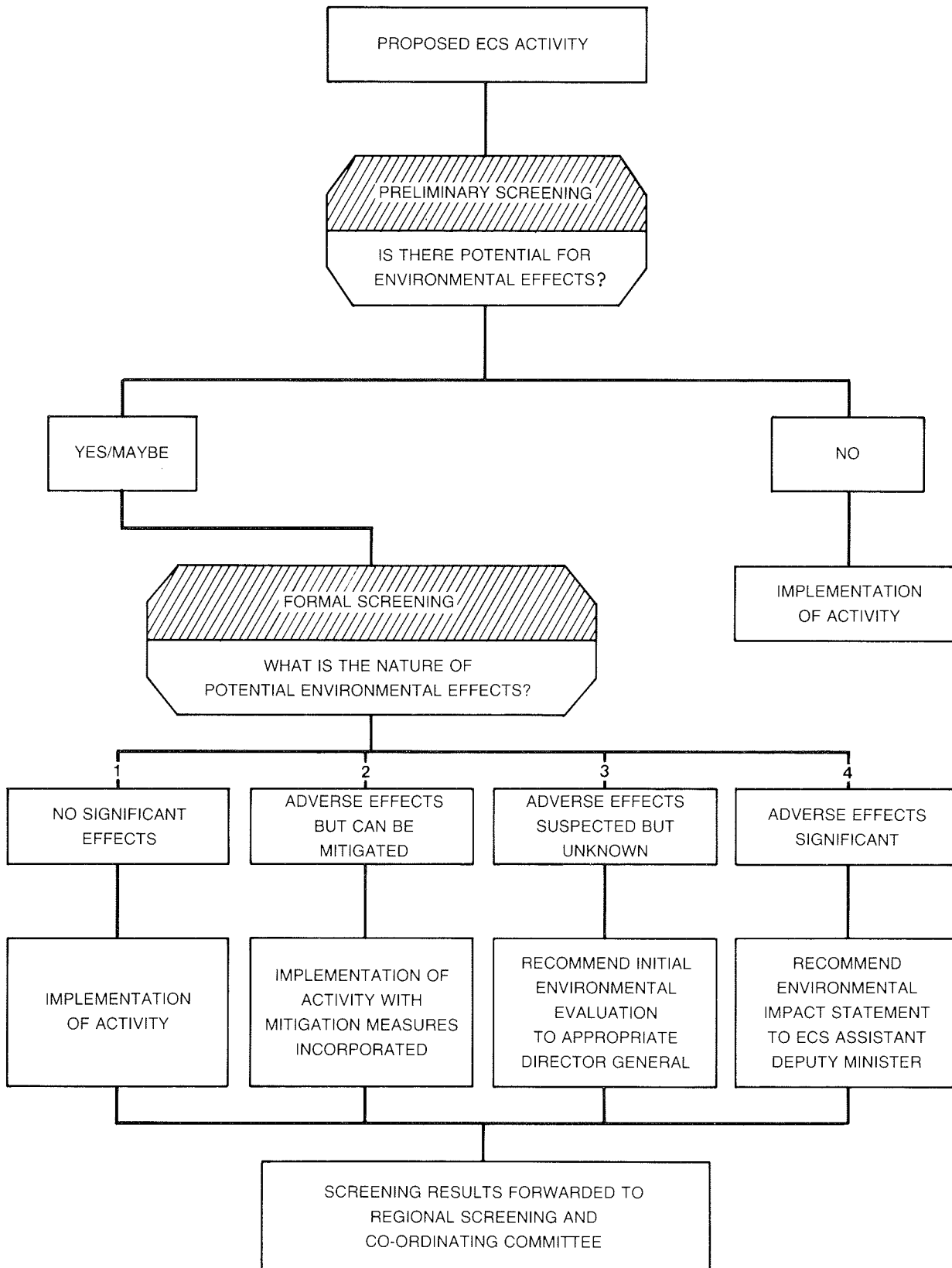
### 6.2.1 Preliminary Screening

Preliminary screening aims to quickly eliminate activities that do not require further environmental examination. The preliminary screening results in a decision by the initiator as to whether there is a need to proceed with formal screening, based on whether the activity has the potential to cause significant environmental effects.

Preliminary screening is similar to a scoping exercise (14) in that the intent is to identify the key issues, while eliminating the less important ones. The significance of environmental effects on the identified issues is determined by the initiator's detailed knowledge of the proposed activity and site of application. In addition, one of several screening matrixes (Appendix 4) can assist the initiator in determining whether an activity is likely to result in any significant biological, physical, or chemical alteration of the natural environment.

While detailed documentation behind the preliminary screening results are not required, the material should be recorded within regional directorate registries for public review or for reference if required by such bodies as the Regional Screening and Coordinating Committee.

Figure 1. ENVIRONMENTAL CONSERVATION SERVICE SCREENING



Preliminary screening can be expected to identify a high proportion of activities which will not require formal screening. Examples of such activities include:

- field research, such as ecological land surveys, wildlife population inventories, streamflow and water level surveys, and water quality surveys and monitoring;
- scientific feasibility studies and analytical, field laboratory work and experiments;
- research undertaken to determine environmental effects;
- normal maintenance of physical structures, such as hydrometric stations;
- administrative and support services; and
- public information activities.

#### 6.2.2 Formal Screening

Formal screening, the first documented assessment of the potential effects, is applied where the preliminary screening indicates that there is potential for environmental damage. In this second stage of screening, both the significance of environmental effects and the opportunities for mitigation are identified.

The initiator is responsible for undertaking formal screening and for completing a screening register and report form (Appendix 5). This form provides a record of the activity details, a description of the types of environmental effects expected, along with their significance, and mitigation measures recommended. It also serves to inform the appropriate Regional Screening and Coordinating Committee

of the results, which commonly have to be registered within 30 days of the screening. These committees provide an advisory, consultation, and coordination role for all screenings undertaken within the Environment and Fisheries and Oceans departments.

A screening matrix, such as illustrated in Appendix 4, can be adopted. The matrix selected, however, should be rigorous enough for auditing purposes, and for preparing the screening register and report form. A range of possible actions associated with an activity is assessed against the different components and individual features of the natural environment, to identify the extent and nature of possible cause-and-effect relationships. Other aids include checklists, networks, modelling, computer analysis, and ecological evaluations (13,15,16,17).

Formal screening results in one of the four following statements, as shown in lower half of Figure 1. These are to be described on the screening register and report form.

- 1) No significant effects. No further action related to the procedure is necessary. The activity may proceed.
- 2) Adverse environmental effects identified. These can be mitigated or avoided. The action may proceed, incorporating mitigating measures and monitoring provisions.
- 3) Adverse environmental effects are suspected. The information is inadequate to make a decision. In this case, the activity should be forwarded to the appropriate ECS Director General for confirmation and recommendation of an Initial Environmental Evaluation.

- 4) Adverse environmental effects are significant. The activity will be referred to the Assistant Deputy Minister of ECS, who will decide whether the activity will be forwarded to the ADM, EPS for action by the Federal Environmental Assessment Review Office (13,15,17).

The formal screening process is, in part, an iterative exercise which is basically aimed at encouraging 'sound' environmental management and planning. As such, if within the overall process adverse or unacceptable elements of a proposed activity emerge, modifications should be sought and those elements reassessed. Where modifications are not possible, or where environmental effects remain unacceptable, statement #4 should be acted upon.

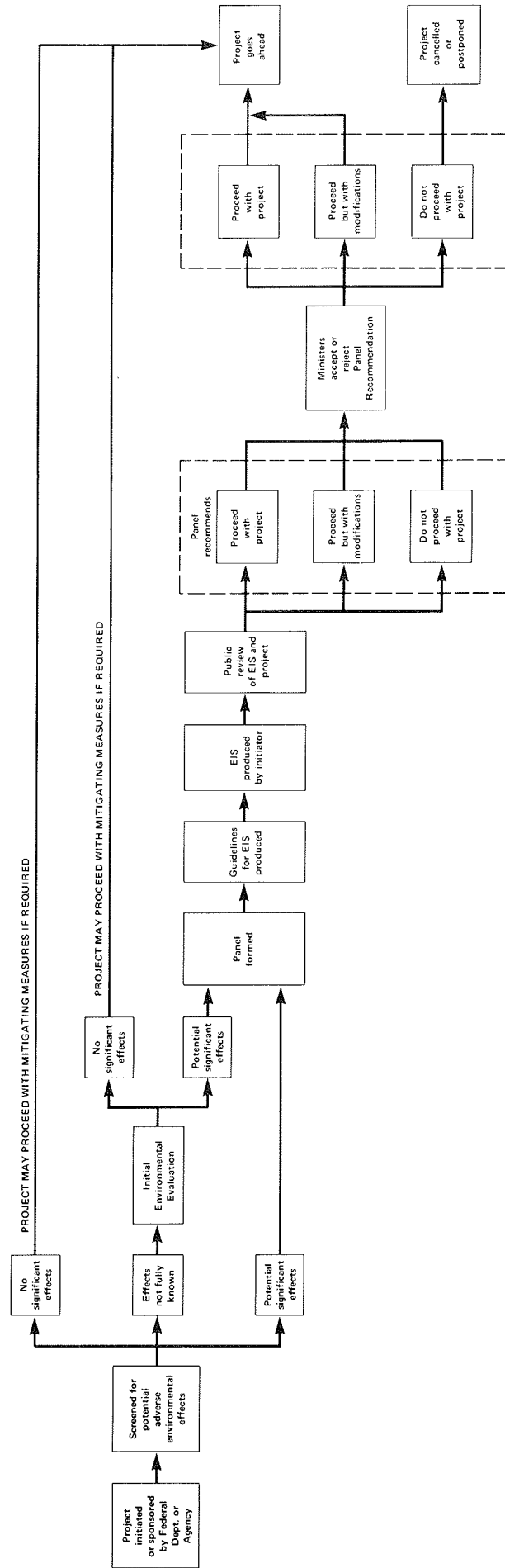
In the case of capital and construction activities, there should be provision for evaluation throughout construction, operation, maintenance, and decommissioning phases. In this follow-up to formal screening, the initiator is responsible for ensuring that mitigative measures and monitoring requirements, which are identified as necessary during the screening, are subsequently incorporated into and reviewed during the implementation of the activity.

## APPENDICES





**APPENDIX 1.  
SCHEMATIC DIAGRAM OF THE FEDERAL ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS**



Source: Federal Environmental Assessment and Review Office, 1982.  
 Environmental Assessment in Canada: Summary of Current Practices. Hull, Quebec.



## **APPENDIX 2. DEFINITIONS**

### PRELIMINARY SCREENING

This is the first step in screening, which results in an undocumented value judgement as to whether a proposed activity has potential for environmental effects. Initiators are responsible for undertaking preliminary screening prior to the request for funding or the use of lands administered by the Service. If a preliminary screening indicates potential for adverse environmental effects, the initiator is responsible for undertaking a formal screening (4,13,16).

### FORMAL SCREENING

This is the second stage of screening, which results in the first documented assessment of an activity's potential for environmental effects. Formal screening also represents an initial step in determining the significance and need to mitigate adverse environmental effects, with modifications to activity plans. The assessment is based upon published and unpublished information, and site reconnaissance as necessary. The results also indicate any need to proceed with an Initial Environmental Evaluation or Environmental Impact Statement (4,13,16).

### INITIAL ENVIRONMENTAL EVALUATION

A documented assessment of the nature and extent of potential environmental consequences of any intended activity, having potential environmental effects. This evaluation is prepared or procured as early in the planning stages of development as possible.

### ENVIRONMENTAL IMPACT STATEMENT

A detailed documented assessment of the potential environmental effects of an activity expected to have significant environmental effects. The statement is prepared in accordance with guidelines established by an Environmental Assessment Panel (1,13,15,16,17).

INITIATOR

Any department that is the decision-making authority for a proposal (activity), on behalf of the Government of Canada (2).

In the context of the ECS, a manager, at the level of the financial responsibility centre, who intends to undertake or sponsor an activity, and who is thus subject to obligations under EARP.

MITIGATION

Measures taken to reduce the seriousness or consequences of adverse environmental effects. Opportunities for mitigation should be identified in the formal screening (13,16).

MONITORING

Data collection and evaluation during the implementation and operation of an activity to identify actual environmental change, determine the effectiveness of mitigation measures, and introduce further mitigation action as required (13,14,15).

REGIONAL SCREENING AND COORDINATING COMMITTEES

Regional groups, comprised of representatives from Environment Canada's service-level regional directors, and from Department of Fisheries and Oceans. They act to ensure that non-panel projects whose environmental implications are of concern to the regions of Environment Canada and Fisheries and Oceans Canada are appropriately reviewed (4,18).

PROPONENT

A federal department or service, provincial government department or agency, or a private individual or organization intending to undertake an activity under the sponsorship of ECS (6,13).

### **APPENDIX 3. DEFINITIONS OF DECISION CRITERIA**

#### MAGNITUDE

The probable severity of each potential adverse environmental effect. Will the effect be reversible? If reversible, what will be the rate of recovery or adaptability? Will the activity preclude other uses in the area (13)?

#### PREVALENCE

The extent to which the impact may eventually extend, as in the cumulative effects of a number of stream crossings. Each one taken separately might represent a localized effect of small importance and magnitude, but a number of such crossings could result in a widespread effect. Coupled with cumulative effects is the remoteness of an effect from the activity causing it. For example, the deterioration of fish production resulting from access roads could affect sport fishing in an area many miles away and for months or years (13).

#### DURATION AND FREQUENCY

Will the activity be long-term or short-term? If the activity is intermittent, is recovery likely during inactive periods (13)?

#### RISKS

The probability of serious adverse environmental effects. The accuracy of assessing risk depends upon the knowledge and understanding of the activities and the areas (13).

#### IMPORTANCE

The value that is attached to a specific area in its present state. For example, a local community may value a short stretch of beach for bathing or a small marsh for hunting. Alternatively, the impact area may be of a regional, provincial, or national importance (13).

MITIGATION

Are solutions to problems available? Existing technology may provide a solution to a silting problem expected during construction of an access road or of bank erosion resulting from a new stream configuration (13).

### APPENDIX 4. SCREENING MATRIX EXAMPLE

ACTIVITIES IN VARIOUS STAGES OF PROJECT DEVELOPMENT	
SITE INVESTIGATION AND PREPARATION	CONSTRUCTION
ACCESS ROADS SITE SURVEYING SOIL TESTING HYDROLOGICAL SURVEY ENVIRONMENTAL SURVEY SITE CLEARING BURNING EXCAVATION DRAINAGE ALTERNATION STREAM CROSSING EQUIPMENT PEST CONTROL UTILITIES WASTE DISPOSAL AND RECOVERY PRODUCT STORAGE	ACCESS ROADS SITE CLEARING EXCAVATION BLASTING AND DRILLING DEWATERING BUILDINGS RELOCATION CUT AND FILL TUNNELS UNDERGROUND STRUCTURES EROSION CONTROL DAMAGE ALTERNATION STREAM CROSSING CHANNEL DREDGING AND STABILIZING DAMS AND IMPONDMENTS PIERS SEAWALLS OFFSHORE STRUCTURES EQUIPMENT PEST CONTROL UTILITIES LABOUR FORCE WASTE DISPOSAL AND RECOVERY PRODUCT STORAGE ABANDONMENT RECLAMATION REFORESTATION FERTILIZATION ANCHORING TRANSMISSION LINES AND PIPELINES FOREST CLEARING EXCAVATION SPOIL AND OVERBURDEN BLASTING AND DRILLING DRESSING EQUIPMENT OPERATION OPERATIONAL FAILURES ENERGY REQUIREMENTS AUTOMOBILE AIRCRAFT VESSEL MOVEMENT UTILITIES WASTE DISPOSAL AND RECOVERY PRODUCT STORAGE SPILLS AND LEAKS EXPLOSIONS DESIGNING SNOW REMOVAL AND DISPOSAL PEST CONTROL DUST CONTROL ASSESSMENT URBANIZATION INDUSTRIAL DEVELOPMENT TRANSPORTATION ENERGY REQUIREMENTS
ACCESS ROADS SITE SURVEYING SOIL TESTING HYDROLOGICAL SURVEY ENVIRONMENTAL SURVEY SITE CLEARING BURNING EXCAVATION DRAINAGE ALTERNATION STREAM CROSSING EQUIPMENT PEST CONTROL UTILITIES WASTE DISPOSAL AND RECOVERY PRODUCT STORAGE	ACCESS ROADS SITE CLEARING EXCAVATION BLASTING AND DRILLING DEWATERING BUILDINGS RELOCATION CUT AND FILL TUNNELS UNDERGROUND STRUCTURES EROSION CONTROL DAMAGE ALTERNATION STREAM CROSSING CHANNEL DREDGING AND STABILIZING DAMS AND IMPONDMENTS PIERS SEAWALLS OFFSHORE STRUCTURES EQUIPMENT PEST CONTROL UTILITIES LABOUR FORCE WASTE DISPOSAL AND RECOVERY PRODUCT STORAGE ABANDONMENT RECLAMATION REFORESTATION FERTILIZATION ANCHORING TRANSMISSION LINES AND PIPELINES FOREST CLEARING EXCAVATION SPOIL AND OVERBURDEN BLASTING AND DRILLING DRESSING EQUIPMENT OPERATION OPERATIONAL FAILURES ENERGY REQUIREMENTS AUTOMOBILE AIRCRAFT VESSEL MOVEMENT UTILITIES WASTE DISPOSAL AND RECOVERY PRODUCT STORAGE SPILLS AND LEAKS EXPLOSIONS DESIGNING SNOW REMOVAL AND DISPOSAL PEST CONTROL DUST CONTROL ASSESSMENT URBANIZATION INDUSTRIAL DEVELOPMENT TRANSPORTATION ENERGY REQUIREMENTS

Source: Adapted from - Federal Environmental Assessment and Review Office. 1978. Guide for Environmental Screening. Hull, Quebec.





**APPENDIX 5.  
SCREENING REGISTER AND REPORT FORM**

**I SCREENING REGISTRATION**

PROJECT/ACTIVITY IDENTIFICATION	
Registration #	Date
Project/Activity	Location
Initiator Division/Branch	Cost Estimate

PROJECT/ACTIVITY DESCRIPTION	
Purpose	Parties Involved
Implementation	Area (ha) Involved
	Scheduling

SITE DESCRIPTION	
Tenure	Resource Values
Present Use	Sensitivity

SCREENING PROCEDURE	
Literature Review	Site Reconnaissance
Scientific Consultation	Screening Matrix

SCREENING RESULTS	
Decision	Recommendation



## APPENDIX 6. REFERENCES

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