Wildlife CEA Thresholds:
Phase II Workshop Summary

Prepared for:
DIAND, Environmental Directorate, Whitehorse, Yukon

Prepared by:
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Calgary, Alberta

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CP625

Executive Summary

The Environmental Directorate of DIAND in Whitehorse sponsored a workshop in Whitehorse during two-days in November, 2000. The purpose of the workshop was to identify and refine wildlife thresholds for cumulative effects in the Yukon, and identify means of implementing those thresholds. The workshop was attended by 30 participants, mostly federal and territorial government, and was facilitated by AXYS Environmental Consulting Ltd.

This workshop is part of a four-phased approach to implementing thresholds. The first phase involves the completion of a background report on types of thresholds. The second phase, of which this workshop is a part, develops and refines the thresholds for practical application in the Yukon by resource managers and project application reviewers.

This report describes the workshop and summarizes the results of discussions. Background information on thresholds was presented and discussed. Participants were queried on what they considered as the most important attributes of thresholds and the most practical and implementable thresholds. A case study application of thresholds, based on a caribou herd, was used to promote discussion on these issues within the context of actual ecological and land use conditions.

Measurable, practical and realistic were identified as the most desirable attributes of thresholds. Maximum road access densities and minimum core security habitat were identified as the most practical types of thresholds. Generally, thresholds based on land use/activity controls were considered the most feasible for implementation, followed by habitat based controls.

Some participants strongly recommended that a pilot program be immediately established in which thresholds would be incorporated into the land use administrative and regulatory process. Such a program would test the feasibility of implementing thresholds as a resource management tool. This initiative would reflect the objectives of Phases III and IV in the proposed threshold implementation process. A suitable geographic area for such a pilot would include various land use pressures and a key natural resource of management concern. Caribou in the southeast Yukon was proposed as the most suitable candidate. Stakeholder involvement in establishing this program was recognized as vital.

Participants expressed hope that thresholds would be seriously considered and treated as a major component of land use decision making in the Yukon, and expressed a commitment to furthering such initiatives. Mechanisms for accomplishing this could be pursued both at the project approval and regional land use planning levels of land use administration.

The figure on the next page summarizes the above and illustrates their linkages that collectively form a framework for the implementation of thresholds.

The Thresholds Implementation Framework

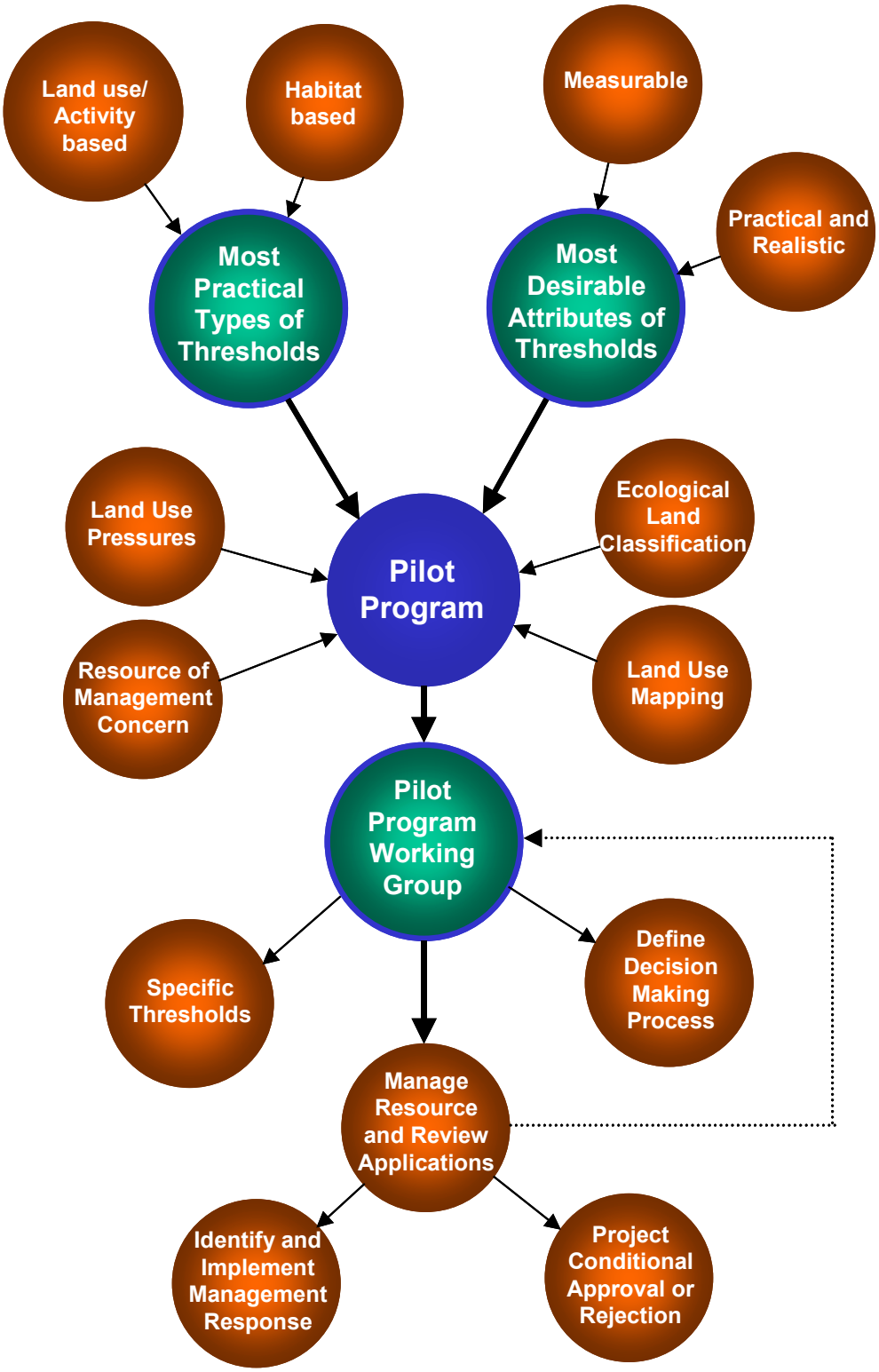

Table of Contents

List of Tables

List of Figures

1 Introduction

1.1 Background

In 1999, DIAND contracted AXYS to prepare a report on the identification and implementation of thresholds for selected wildlife species in the Yukon. These thresholds could be used to assist the assessment of cumulative effects on those species, and the management of those species, due to various types of human activity in the Yukon. The resulting report *Thresholds for Addressing Cumulative Effects on Terrestrial and Avian Wildlife in the Yukon,* completed as a Draft in January, 2000, examined thresholds for three terrestrial species (grizzly bear, caribou and moose) and two classifications of avian species (landbirds and waterbirds).

The report recommended an approach to implement thresholds in the Yukon that proposed a four-step process, or four "Phases", by which DIAND could progressively and adaptively continue the work begun by the first completed Phase (the aforementioned report) and eventually move towards incorporating the thresholds into the routine decision making responsibilities of DIAND (e.g., land use permitting, Level 1 screening). A major component of each of these subsequent Phases (Figure 1) is the use of a workshop within each phase to solicit advice and information from participants of various backgrounds.

With Phase I largely completed, Phase II begins the process of identifying thresholds for specific geographic regions in the Yukon (the Phase I report provided generic thresholds from which specific thresholds would be determined; see Table 1 for a summary) and of identifying means to practically implement such thresholds within various administrative processes.

Figure 1: Proposed Phased Approach to Threshold Implementation

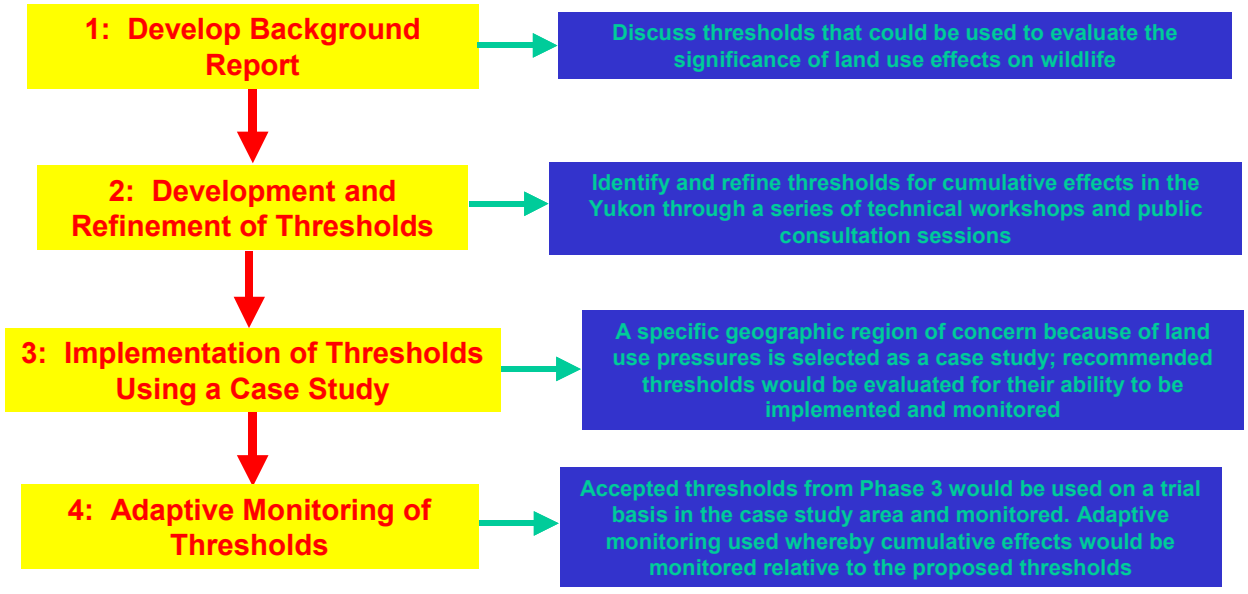

Table 1: Summary of Thresholds Identified in Phase 1 Report

Type	Thresholds
Ecological	
Habitat Availability	• minimum patch size • minimum corridor width • maximum gap distance between patches • core security areas • carrying capacity • maximum tolerable energy expenditure • maximum disturbance factors and zones of influence • maximum surface water level drawdown
Populations	• minimum desired population size • minimum viable population size (MVP) • optimum calf/cow ratio • optimum natural mortality/natality rates
Land and Resource Use	
Physical Works and Associated Activities	• maximum road density for specific traffic levels • maximum zone-of-influence for specific disturbances • exposure rate
Human Activity	• maximum level of visitation • maximum hunting mortality rate • maximum defense-of-life-and-property (DLP) mortality rate • maximum acceptable extent of development that cause sensory disturbances (e.g., to light, dust, sound, smell and vibration)
Social	
Aesthetic	• maximum tolerable extent of perceived visual change
Perceived Acceptable Limits	• maximum perceived acceptable changes to habitat, species distribution or level of human disturbance

1.2 Description of Workshop

The workshop occurred during two days on November 20 and 21, 2000 at the Alpine Bakery in Whitehorse (see Appendix A for agenda). The event was sponsored by the DIAND Environmental Directorate through the initiative of Fritz Mueller of DIAND. AXYS Environmental Consulting Ltd. was contracted to facilitate the workshop.

The workshop was attended by 30 participants (see Appendix B), including 14 from DIAND, eight from YTG, three from private consultants, two from the Yukon Land Use Planning Commission (YLUPC), two from other federal departments (DOE and CWS) and one from an ENGO.

1.2.1 Purpose and Objectives of Workshop

The purpose of the workshop was to identify and refine wildlife thresholds for cumulative effects in the Yukon, and to identify means of implementing those thresholds.

The objectives of the workshop were to:

- provide an overview of cumulative effects and threshold applications

- provide a forum for participants to collectively present and discuss their views
- discuss constraints and opportunities in the identification and implementation of thresholds
- identify action items for moving ahead

Facilitation and agenda of the workshop was viewed as adaptive, in which especially the agenda of the second day would be modified based on the interests and views of participants during the first day. This modification did occur, resulting in discussions remaining plenary and based largely within the context of a case study on the second day.

1.2.2 Format of Workshop

The workshop was organized into four basic parts:

1. Providing background information to participants on cumulative effects and thresholds through a series of presentations.
2. Plenary discussions to solicit views of participants on fundamental issues associated with two principal issues: appropriate thresholds and desirable attributes of thresholds.
3. Plenary discussion of the topics raised in the context of a case study (the Little Rancheria Caribou herd near Watson Lake).
4. Plenary discussion of future options towards implementing thresholds.

Presentations were made by George Hegmann and Ross Eccles of AXYS Environmental Consulting Ltd. on the following (Appendix C):

1. Introduction to Workshop
2. Overview of Phase 1 Report
3. Cumulative Effects and Land Use Issues
4. Use of Thresholds to Manage Cumulative Effects
5. Effects Management Options
6. Summary of Day 1 and Introduction to Day 2

Presentations were also made by some participants as invited speakers. Rick Farnell and Ron Floriewicz of YTG Renewable Resources presented on the Rancheria Caribou Herd, and by Ron Cruikshank of the Yukon Land Use Planning Council presented on recent land use planning initiatives.

2 Summary of Key Discussion Topics

2.1 Interests of Participants

Participants were first asked what were their issues, concerns and questions. The following summarizes the responses.

Methodological Issues

- How to we address different spatial scales?
- How do we set boundaries?
- How do we use population attributes?
- What is a definition of thresholds?
- What are attributes in establishing thresholds?

Administrative Process Issues

- How do we avoid passing critical states (thresholds)?
- How do we balance socio-economic with environmental concerns?
- How do we create a coordinated approach within government?
- How do we incorporate thresholds into sustainability and renewability?
- How do we integrate science into day-to-day decision making?
- How do we integrate threshold indicators into current decision making processes?
- How do we obtain "buy-in" from YTG and DIAND senior management?
- How do we use thresholds as a tool for regional land use planning (LUP) vs. project-specific reviews?
- How do we use thresholds in forestry?
- How do we use thresholds to evaluate significance?
- On what basis can we turn down projects or modify them due to threshold exceedances?
- What are implications of DAP and CEAA to implementation of thresholds?
- What are long-term implications of use of thresholds?
- What are practical and realistic thresholds?
- What process does Regional LUP require to incorporate cumulative effects?

2.2 Desirable Attributes of Thresholds

Participants were asked to suggest what they considered as attributes of good thresholds and indicators. The results of this exercise are provided in Table 2 with an indication of

the number of times each were suggested (i.e., "measurable" was suggested most often – 10 times – while "acceptability" and all below it were suggested only once).

The most desirable attributes include: measurable, enforceable, supported by political will, promotes sustainability, and involvement and agreement from stakeholders.

Table 2: Attributes Identified by Participants

Attribute	Responses
Measurable	
Enforceable	
Supported by political will	
Promotes sustainability	
Agreed to by stakeholders	
Buy-in by senior management	
Part of a higher level plan	
Sensitive to change	
Sensitive to development and insensitive to other variables	
Practical and feasible	
Reflects precautionary principle	
Has predictive value	
Relatively cheap to implement ("Econo" threshold)	
Scientifically based	
Simple	
Acceptability	
Addresses cumulative effects	
Applicable	
Can be integrated into existing legislation	
Defensible, supportable evidence	
Recognizes established guidelines (other jurisdictions?)	
Uses existing data sets	
Flexible	
Makes for good regulation	
Known maximums and minimums	
Politically supported	
Reasonable	
Relevant across Yukon	
Reproducible	
Results oriented	
Rule based	
Short response time	
Understandable and resonates with public	
Uses common and obtainable data sources	

2.3 Possible Types of Thresholds

Participants were asked to suggest examples of thresholds already in use in the Yukon, already identified for possible use in the Yukon, and any others they would propose for future consideration. The results of this exercise are provided in Table 3. Some thresholds were suggested by more than one person (the shaded rows); these are sorted in order of decreasing response (i.e., the most "popular" threshold was the first, "Km of road/unit area"). Some thresholds were identified as already in use or already suggested for use (the checked "√" thresholds), and some were identified as most or only appropriate at a landscape level (the **bolded** thresholds).

All the responses in Table 3 were then categorized into the following seven groups, each reflecting certain general types of thresholds: activity/land use controls, habitat based, socio-economic, populations, resource management concepts, contaminant threshold, and regulatory triggers. The thresholds of most interest related to activity and land use controls, a view largely substantiated by the relative availability of data describing the measurable parameters involved combined with the perceived advantage of readily incorporating such thresholds as a management tool within a land use decision making process. Figure 4 illustrates the percentage of responses for each group (e.g., almost 50% of the suggestions by participants were related to activity/land use controls).

Table 4 provides examples of measurable parameters for some of these categories, based on thresholds presented and on input from participants.

Table 3: Thresholds Identified by Participants

Threshold	Used?
Km of road/unit area	√
Minimum habitat area	
No Net loss (e.g., aquatics)	√
Linear Disturbance Densities	
Species at Risk Act (SARA) (i.e., zero tolerance)	
Social "Public Concern"	
Economic Viability	
Population Size/Measures	√
Interior Habitat Conditions (e.g., min. distance from edge, min. patch size)	√
Habitat Connectivity Measures	
# of ATVs/km^2	
Activity Densities	
Seral Stage Distribution	
Access Restrictions	√
# of activities at the same time (e.g., YPA)	√
No entry	√
Seasonal restrictions	√
Level of contaminants	√
Home Ranges	

Table 3: Thresholds Identified by Participants (cont'd)

Threshold	Used?
Proven reserves of resources	
Red and Blue listing	
Free entry (i.e., no restrictions on access)	
Buffers	√
Timelines	√
Timing windows	√
# of times of entry	√
Line of Site (hunting)	√
Moose Population #s	√
Buffer width (e.g., riparian)	√
Hunting Limits	
CCME Guidelines	
Timber Supply Analysis (TSA) (e.g., max. AAC)	
Placer Authorization	
Level of Activity (e.g., Mining Land Use Regulations)	
"Acceptable" Markets	
Distance between Projects	
Aquatic Invertebrate Indicators	
Species Richness	
Equivalent Clearcut Area (ECA) (i.e., % in cleared state)	
Mortality and birth rates	
Land Claim Settlements (private vs. public lands)	
# of fishers/stream	
Territorial Land Use Regulations (e.g., access width, exemptions)	
Assessment Level Triggers (e.g., operating conditions)	
# oil wells/km^2	
Responsible Multiple Use	
Adjacency	
Environmental considerations over $	
Priority of multiple use thresholds	

Notes:
Shaded: more than one response
√: already in use or available for use in the Yukon
Bolded: applicable at a landscape level (as opposed to only a project-specific level)

Figure 2: Participant Response to Threshold Types

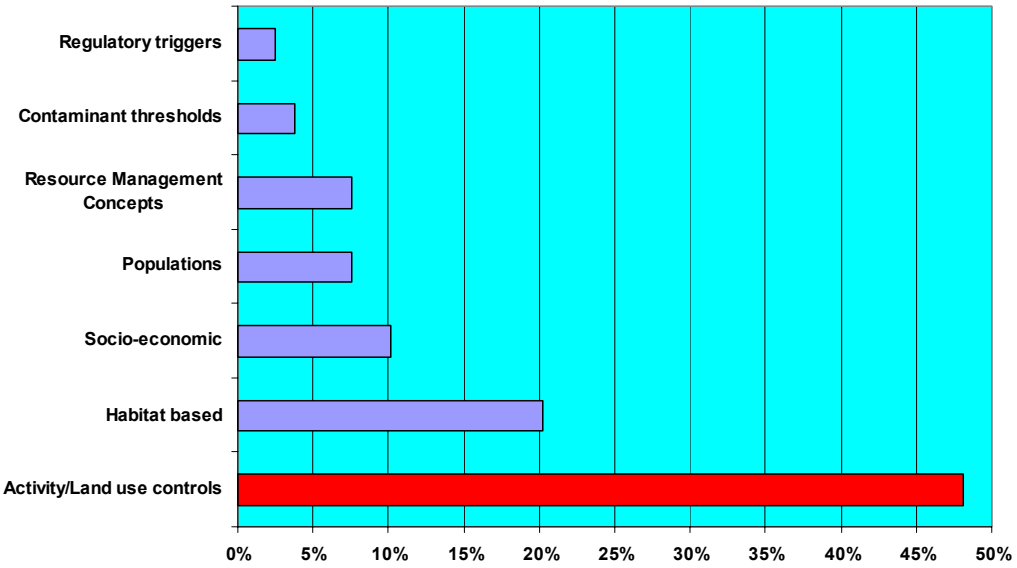

Table 4: Examples of Measurable Parameters

Threshold Type	Examples
Activity/Land use Controls	
Land Use Controls	• controls on linear corridor densities and distributions • cooperative access controls • maximum simultaneous activity levels • timing restrictions
Resource Management Concepts	• no net change in productive capacity (no net habitat loss) • no net access gain • no net negative impact
Habitat based controls	
Habitat	• habitat availability • habitat effectiveness • habitat connectivity • buffers/habitat protection area
Population	• population parameters (numbers, calf/cow ratio) • energetic stress thresholds • body condition thresholds

2.4 Caribou Herd Case Study

The Little Rancheria Caribou Herd was used as a case study to provide a context for discussion of threshold related issues. This herd of an estimated 900 to 1000 individuals has a winter range west of Watson Lake that extends south into British Columbia, of which some of the Yukon portion is core winter range (see Figures 3 and 4, provided by YTG). This area is currently subject to various land use pressures, particularly timber harvesting leading to habitat loss, and vehicular access leading to habitat alienation and hunting.

The combination of management concern, available data (e.g., herd population, range movements and distribution) and anthropogenic effects made this a useful case study for discussions during this workshop. These conditions also make this herd and surrounding region a potential candidate for a future case study towards the implementation of a pilot application of thresholds in a land use administration process.

Discussions were guided by asking participants to consider the following actions and questions based on selecting and implementing thresholds:

Selecting Thresholds

1. Select one habitat-based and one land use control based measurable parameter to use to develop a threshold.
2. Identify main data requirements needed to develop thresholds based on the selected measurable parameters.
3. Identify which data are available, and which need to be developed.
4. Identify process that would be used to select the actual threshold.

Implementing Thresholds

1. Who has the responsibility (mandate) to track and enforce the measurable parameter threshold?
2. What policy or legislative changes would be needed to accommodate the use of the thresholds?
3. What land use planning/referral framework would incorporate the threshold?

The identification and application of both habitat based controls and activity/land use controls were discussed. Suggestions for habitat based controls included creation of activity exclusion zones delineated by core winter range or by pine-lichen community. Core winter range was suggested as a minimum suitable management planning area. Although the larger home range may be suitable as a maximum area, trans-boundary movements suggest administrative challenges involved in managing the herd across jurisdictions.

As a compromise due to exclusion of some areas to industrial activity, areas surrounding core range could be opened up to activity but remain subject to land use controls. This led to a discussion of implementing a graduated degree of protection; for example, a Zone A with the highest protection is designated for movement corridors or core winter home range, and a Zone B for the larger winter range. The challenges of identifying the boundaries of such zones were also discussed, including the adequacy of the size (referred to as "spatial discrimination") of these areas to effectively manage caribou, raising the fundamental question "how big a patch is big enough, and whatever the size, how do we defend that decision?".

Suggestions for activity/land use based controls included access related indices (e.g., maximum access density, maximum cleared area per year). Uncertainties associated with the derivation of these thresholds included the degree to which they could be scientifically justified, and the extent to which it is necessary to consider numerous and complex ecological linkages involved (e.g., predation, forage and cover, and connectivity). The resolution of these issues was recognized as either relying on current knowledge and professional judgment, thereby allowing the opportunity for implementation without excessive delay; or, waiting to interpret results of further multi-year and expensive studies.

Population based thresholds were not favorably viewed. For example, a minimum desired population size was not considered as reflecting natural variation, and calf/cow ratios were considered to make use of data that reflected only past conditions leading to an established trend for which a later management response would likely be too late to be effective.

The final conclusion was that first priority should be given to protection of core habitat, with the second priority given to maintenance of habitat connectivity.

2.5 Next Steps

The final workshop session provided an opportunity for participants to suggest what would be the appropriate next steps for moving towards the practical implementation of thresholds for the management of wildlife in the Yukon.

In summary, the most commonly expressed view was that a pilot program be immediately established in which the application of thresholds would be tested within a key geographic area of management concern for a key resource. It was generally agreed that scientific uncertainty associated with the identification of such thresholds should not be cause for a delay in such a program, and that thresholds would never be implemented for wildlife if only an absolute degree of certainty was a prerequisite to implementation. This agreement led to the view that such a program is doable, defensible and implementable, especially given the availability of field research for some species (largely grizzly bear and caribou) indicating typical responses to vehicular traffic that are correlated to an access density threshold.

The Little Rancheria caribou herd was cited as an appropriate focus of such a program, or at least as a good example of conditions suitable for such a program. Other candidates included the Southern Lakes caribou herd and the region affected by the Kaska Forest Resources Timber Harvest Agreement (which includes the potential area of interest for the Little Rancheria caribou herd), currently under a DIAND Level II review. Generally, due to the combined and increasing land use pressures from timber harvesting, mining and oil and gas exploration and development, the southeast portion of the Yukon is viewed as the most likely region of interest.

The need for involvement by stakeholders was also recognized as necessary to arrive at a mutually acceptable approach, to be facilitated through a series of workshops attended by government, First Nations, industry and the public. A Rancheria Working Group was suggested. Recognition was made of the limited capacity of smaller industry proponents to support data gathering and assessments, and the implications of such thresholds on their commercial viability. Obtaining acceptance of a proposed program was viewed as a challenge for both industry and senior government representatives. The first step in accomplishing this program would be to draft a Terms of Reference.

Figure 3: Rancheria Caribou Herd Home Range

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Figure 4: Rancheria Caribou Herd Winter Range

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Any implementation of a thresholds program would require the completion of an ecological land classification (ELC) and mapping of the region of interest to support the identification and evaluation of habitat features.

Thresholds could be implemented within both the existing project approval process and through regional land use planning. Approaches based on the latter however may not be forthcoming until various issues related to land claims and jurisdictional responsibility are resolved throughout the Yukon.

Finally, a program would equally have to address both the identification of thresholds and the implementation of those thresholds within a regulatory review process. The administrative level at which this would occur was recognized as existing both at a project specific level and at a regional level (Figure 5). Any process implemented would have to be adaptive by re-assessing any decisions earlier made as part of a formal review process, thereby refining the thresholds and their implementation over time. Such an approach was preferred in comparison to the potential implications of the status quo in which there would be even greater uncertainty regarding effects and the possibility that any management responses may be too late in effectively addressing cumulative effects on wildlife in the Yukon.

A framework that combines these various aspects of threshold implementation is provided in Figure 6. This framework identifies the fundamental information that must be obtained and products that result from such a process.

Figure 5: Implementation Options for Thresholds

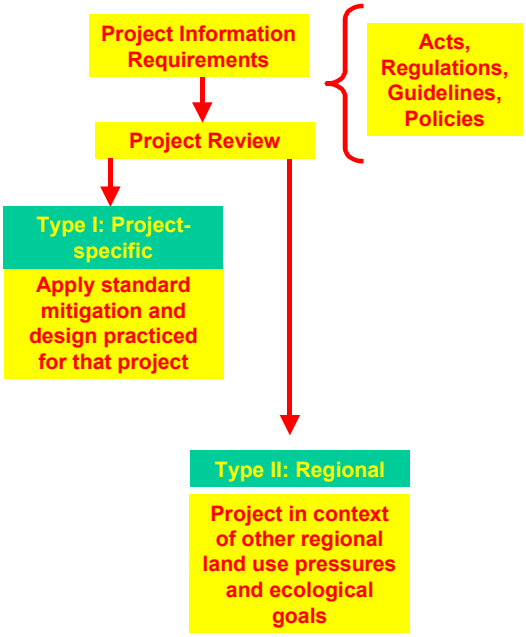
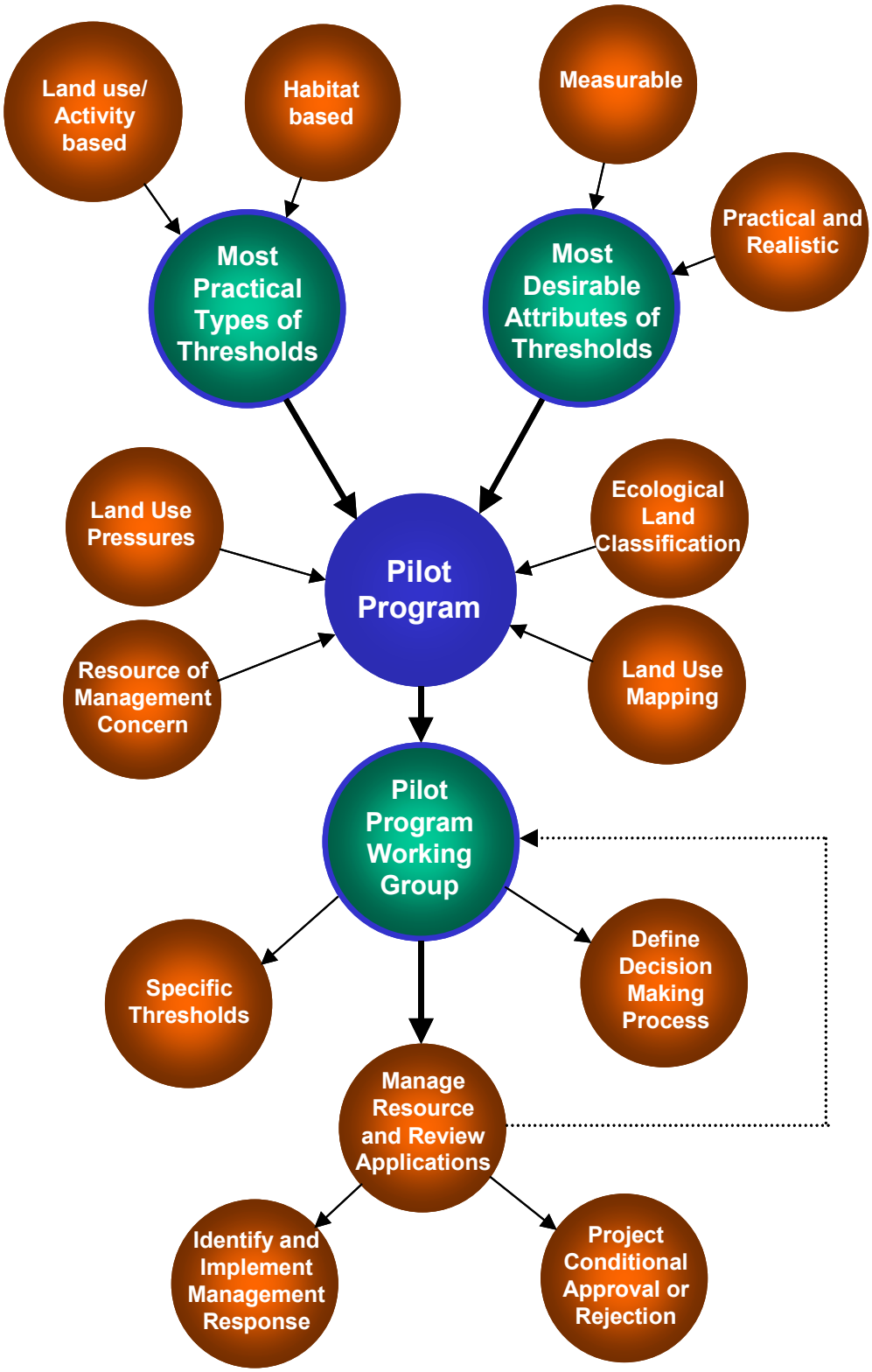


Figure 6: A Threshold Implementation Framework



3 Appendices

Appendix A: Agenda


AGENDA

Cumulative Effect's Thresholds for Wildlife in Yukon

A Workshop

November 20-21, 2000, Whitehorse, Yukon

Facilitated by AXYS Environmental Consulting Ltd. in association with Department of Indian and Northern Affairs and Environment Canada


#	Time	hr/min	Topic(s)	Lead Facilitator[1]
			Day 1 (Monday)	
1	9:00 AM	45	**Welcome and Introductions**	I. Church
			Overview of DIAND/DOE Initiative	I. Church
			Purpose and Objectives of Workshop	G. Hegmann
			Overview of Agenda	G. Hegmann
			Identification of Audience Interests	G. Hegmann
2	9:45 AM	15	**Overview of Thresholds Report**	G. Hegmann
3	10:00 AM	30	**Cumulative Effects and Land Use Issues**	R. Eccles
			Introduction to Cumulative Effects	
			Case Studies of Land Use Problems	
	10:30 AM	15	**Break**	
4	10:45 AM	1 h 15 m	**Thresholds in the Management of Cumulative Effects**	R. Eccles
			Overview of Types of Thresholds	
			Ecological Thresholds	
			Land and Resource Use Thresholds	
			Social Thresholds	
			Case Studies of Application of Thresholds	
	Noon	1 h	**Lunch**	
5	1:00 PM	30	**Effects Management Options**	G. Hegmann
			Regional Land Use Planning	
			Frameworks	
			Examples of Other Management Options	
6	1:30 PM	45	**Yukon Thresholds: Summary Views of Participants**	R. Walker
			What thresholds are you aware of that are or could be implemented?	
			Synthesis of results	
	2:15 PM	15	**Break**	
7	2:30 PM	45	**Yukon Thresholds: Detailed Views of Decision Makers**	G. Hegmann
			What role do you see for thresholds in your decision making processes?	
			What thresholds are being used?	
			What thresholds could be used?	
8	3:15 PM	45	**Yukon Thresholds: Detailed Views of Scientists**	R. Eccles
			What constraints and opportunities do you see in developing wildlife thresholds?	
9	4:00 PM	30	**Identification of Day 2 Focus and Priorities**	R. Eccles
	4:30 PM		**Adjourn**	

			Day 2 (Tuesday)	
1	9:00 AM	30	**Summary of Day 1 Results and Explanation of Day 2 Agenda**	G. Hegmann
2	9:30 AM	30	**Overview of Case Study: Little Rancheria Woodland Caribou Herd** Geographic Region Land Use Issues Herd Characteristics	R. Farnell & R. Florkowicz
3	10:00 AM	30	**Selecting Thresholds (Break-out Groups)** Examples of Focus Topics: Available and Candidate Thresholds Data Requirements (Land Use and Environmental) Habitat Mapping Types and Effects of Disturbances Identification of Other Candidate Case Study Regions Opportunities and Challenges in Other Case Study Regions	R. Eccles & G. Hegmann
	10:30 AM	15	**Break**	
	10:45 AM	45	**Selecting Thresholds (Break-out Groups) (cont'd)**	
4	11:30 AM	30	**Selecting Thresholds (Plenary)** Summary reports from Rapporteurs and Discussion	R. Eccles
	Noon	1 h	**Lunch**	
5	1:00 PM	15	**Yukon Land Use Planning Update**	R. Cruikshank
6	1:15 PM	1 h 15 m	**Implementing Thresholds (Break-out Groups)** Examples of Focus Topics: Available Management Options Existing and Future Administrative Process Jurisdictional/Statutory Requirements and Mandate	R. Eccles & G. Hegmann
	2:30 PM	15	**Break**	
7	2:45 PM	45	**Implementing Thresholds (Plenary)** Summary reports from Rapporteurs and Discussion	G. Hegmann
8	3:30 PM	30	**Identification of Next Steps**	F. Mueller & R. Walker
	4:00 PM		**Adjourn**	

NOTES

1 Names of Facilitators
DIAND: Fritz Mueller, Ian Church, Rob Walker
AXYS: Ross Eccles, George Hegmann

Appendix B: List of Participants

Name	Position	Affiliation	Business Phone
Burgess, Carl	Forest Ecologist	Forest Resources, DIAND	393-7914
Church, Ian	Director	Environment Directorate, DIAND	667-3860
Cleghorn, Christine	Executive Director	Yukon Conservation Society	668-5678
Cruikshank, Ron	Land Use Planner	Land Use Planning Council	667-7397
Duffy, Pat	Consultant	P Duffy and Assoc.	604-921-6119
Farnell, Rick	Caribou Biologist	Renewable Resources, YTG	667-5465
Floriewicz, Rob	Southern Lakes Regional Biologist	Renewable Resources, YTG	667-8640
Francis, Shawn	Forest Ecologist	Applied Ecosystem Management	393-2247
Fraser, Derek	Environmental Assessment Analyst	Environment Directorate, DIAND	667-3320
George, Morris	Environmental Assessment Analyst	Renewable Resources, YTG	667-8848
Gill, Mike	Biologist	Canadian Wildlife Service	393-6760
Godin, Benoit	Environmental Contaminants	Environment Canada	667-3402
Hough, John	Environmental Land Specialist	Land Resources, DIAND	667-3105
Kennedy, Terry	Head Policy and Industry	Forest Resources, DIAND	667-3106
Kiemele, Ken	Environmental Assessment Analyst	Renewable Resources, YTG	667-5093
Klassen, Delwyn	Consultant	W.J. Klassen and Associates	633-2443
Koh, Glenda	Land Use Planner	Land Use Planning Council	667-7397
Lamb, Randy	Environmental Assessment Analyst	Renewable Resources, YTG	667-8129
Lowen, Val	Habitat Inventory Coordinator	Renewable Resources, YTG	667-5281
McDonnell, Kevin	Manager, Project Assessment	Environment, DIAND	667-3864
Mueller, Fritz	Environmental Assessment Analyst	Environment, DIAND	667-3159
Mychasiw, Len	A/Chief, Habitat Management	Renewable Resources, YTG	667-5798
Slater, Bill	Head, Environmental Assessment	Water Resources, DIAND	667-3147
Smith, Sheila	Lands Administrator	Land Resources, DIAND	667-3174
Sucz, Julia	Policy and Planning Analyst	Environment Directorate, DIAND	667-3255
Thomson, Rob	Mining Inspector	Mining Inspections, DIAND	667-3212
Van Randen, Ed	Forest Policy	Forest Resources, DIAND	393-7911
Walker, Rob	Manager, Project Assessment	Environment Directorate, DIAND	667-3857
White, Marg	Head Land Use	Land Resources, DIAND	667-3173
Wright, Skeeter	DAP Unit	ECO, YTG	393-6428
Facilitators			
Hegmann, George	Impact Assessment Specialist	AXYS Environmental	403-750-7668
Eccles, Ross	Vice-president	AXYS Environmental	403-750-7668

Appendix C: Presentations

insert PPT 6-per-page handouts for:

- *Introduction*
- *Report Overview*
- *CEEs and Land Uses*
- *Thresholds in Management*
- *Effects Management Options*
- *Day 2 Overview*