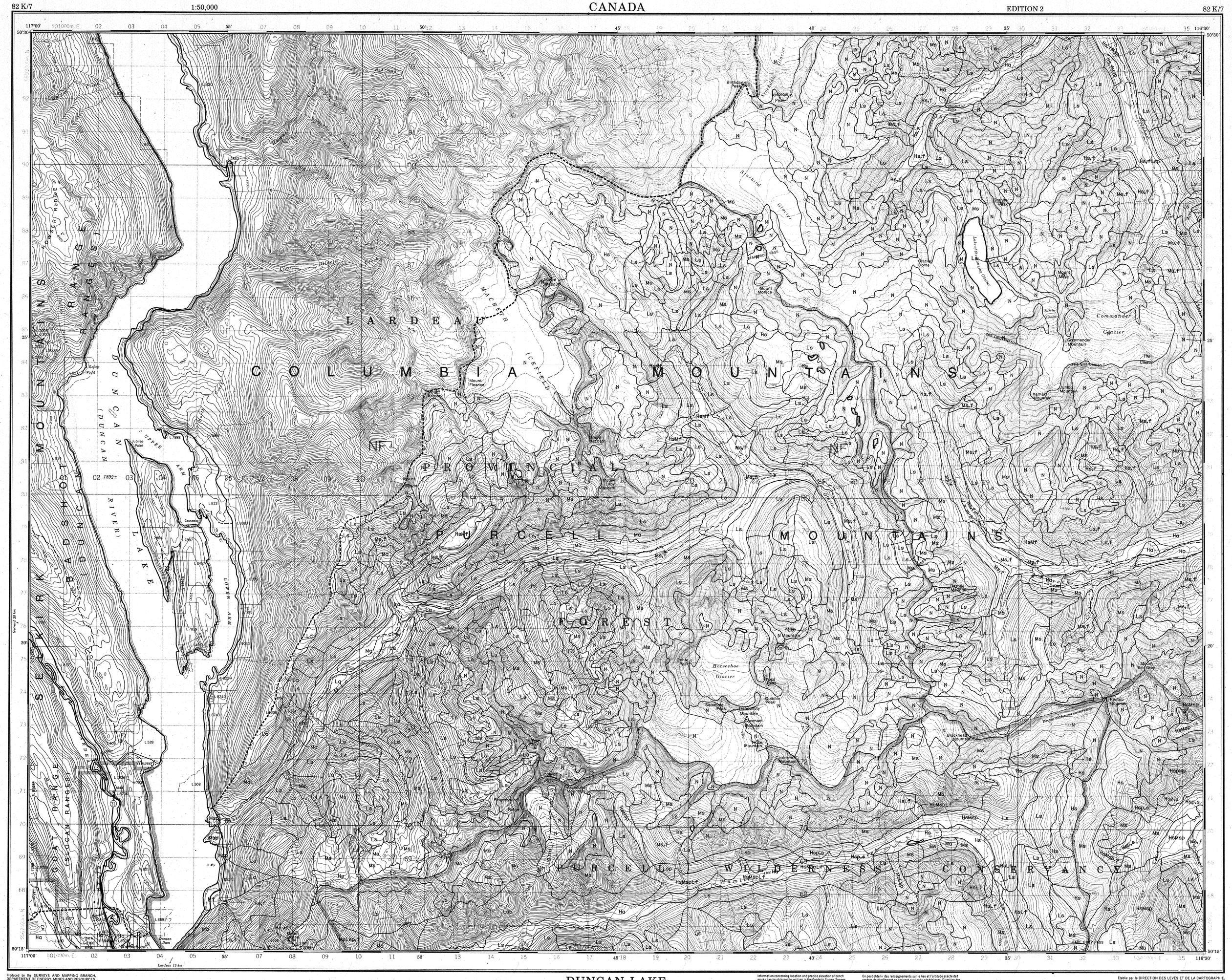


Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES. Updated from aerial photographs taken in 1976. Culture check 1977. Information current as of 1977.

Copies may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, or your nearest map dealer.

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| Roads: | Routes: | Dual highway | more than 2 lanes |
|---|---|---|---|
| hard surface, all weather | pavée, toute saison | 2 chaussées séparées | plus de 2 voies |
| hard surface, all weather | pavée, toute saison | 2 lanes | less than 2 lanes |
| | | 2 voies | moins de 2 voies |
| loose or stabilized surface, all weather | gravier, aggloméré, toute saison | 2 lanes or more | less than 2 lanes |
| | | 2 voies ou plus | moins de 2 voies |
| loose surface, dry weather | de gravier, temps sec | | |
| unclassified streets | rues hors classe | | |
| cart track | de terre | | |
| trail, cut line or portage | sentier, percée ou portage | | |

FOR COMPLETE REFERENCE SEE REVERSE SIDE POUR UNE LISTE COMPLÈTE DES SIGNES, VOIR AU VERSO

# DUNCAN LAKE

KOOTENAY LAND DISTRICT

BRITISH COLUMBIA

Scale 1:50,000 Échelle

Miles 1 0 1 2 3 Milles

Metres 1000 0 1000 2000 3000 4000 Mètres

Yards 1000 0 1000 2000 3000 4000 Verges

Information concerning location and precise elevation of bench marks can be obtained by writing to the Geodetic Survey, Surveys and Mapping Branch, Ottawa.

On peut obtenir des renseignements sur le lieu et l'altitude exacte des repères de nivellement en écrivant aux Levés géodésiques, Direction des levés et de la cartographie, Ottawa.

CONVERSION SCALE FOR ELEVATIONS

Metres 30 20 10 0 50 100 150 200 250 300 Mètres

Feet 100 50 0 100 200 300 400 500 600 700 800 900 1000 Pieds

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

ÉQUIDISTANCE DES COURBES 100 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

Établie par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES. Mise à jour à l'aide de photographies aériennes prises en 1976. Vérification des ouvrages en 1977. Renseignements à jour en 1977.

82K7,GRZ

# GRIZZLY BEAR BIOPHYSICAL CAPABILITY CLASSIFICATION

## For the Purcell Wilderness Conservancy and Adjacent Area (82F/15 and 16, 82K/1, 2, 7 and 8)

### 1. Explanatory Notes

**Introduction**

This project was initiated in 1985 as a reconnaissance-level inventory of the big game and their habitats for the map sheets that include the Purcell Wilderness Conservancy. This project was part of a continuing biophysical inventory of the East Kootenay (see Demarchi 1986 a and b; Lea 1984). In 1988 portions of three map sheets to north and northeast of the wilderness conservancy that had been mapped in 1984 were resurveyed. This project includes identification and mapping of surficial materials, biogeoclimatic zones, biophysical habitat units and grizzly bear and wild ungulate capability ratings. Each theme has been coded, digitized and stored using a main-frame, intergraph system (CAPAMP).

**Seasonal Ranges and Their Use**

In the Kootenays, grizzly bear habitat use can be divided into four seasons (Fuhr and Demarchi 1990). Spring ranges are used immediately after hibernation, high quality, succulent vegetation growing on snow-free areas are required. Summer ranges vary in habitat quality, but are most typically moisture-rich sites, such as, floodplains, wetlands, avalanche tracts (especially the run-out zone), and alpine meadows. Sites that also provide abundant rodent prey are also heavily used. Fall ranges are those sites which provide an abundance of high energy foods, such as berries or spawning fish, these are usually found in the moisture-rich sites that occur in the Montane Spruce and the moist, southern interior Cedar-Hemlock forests. Denning sites are usually in deeper soils on cool aspects where the snow cover is persistent throughout the winter.

**Fieldwork**

This project encorporates fieldwork from three wildlife biophysical projects. In June and July, 1981 fieldwork was conducted by Dennis Demarchi (Wildlife Biologist) and Ted Lea (Plant Ecologist), from a four-wheel drive truck, in Toby, Brewer, Lower Findlay and Doctor Creeks. In August 1985, fieldwork was conducted by Dennis Demarchi, Bob Maxwell (Pedologist); and Chris Clement (Plant Ecologist), from a helicopter, in the major valleys in map areas 82F/15 and 16 and 82K/2 and the Purcell Wilderness Conservancy portion of map area 82K/1, 7 and 8. In August 1988 fieldwork was conducted by Dennis Demarchi and Bob Maxwell, from a four-wheel drive truck, in Glacier, Toby, Brewer, Doctor and Lower Findlay and Dutch Creeks. As well, in November 1985 fieldwork was conducted by Dennis Demarchi and Brian Fuhr (Wildlife Biologist), from a two-wheel drive truck, in the St. Mary River watershed.

**Grizzly Bear Capability Classification**

This map presents a capability classification for grizzly bears using a biophysical mapping methodology (Demarchi and Lea 1987; Fuhr *et al.* 1988; Fuhr and Demarchi 1990). The biophysical mapping approach used here is a step-wise process beginning with the two most fundamental needs of wildlife : food and cover. Areas of land judged to have differences that are significant to grizzly bear management are designated as map units. Mapping for this project is considered as general in nature and as such is presented at a scale of 1:50 000. The biophysical units on this map are based on bedrock geology, landforms, surficial materials and soil parameters that were defined by B. Maxwell and J. Ryder (see Maxwell and Demarchi 1987); and climate and vegetation parameters that were defined by C. Clement (see Clement 1986), that were used to define units of ecological significance to the wildlife of this area.

The capability of the land to support grizzly bears is based on the long term ability of that land to meet all of their habitat needs (Fuhr and Demarchi 1990). In terms of food and cover requirements, the ratings are based on the optimum vegetational (successional) stage that can be maintained for the good of the species. Management prescriptions are limited to: prescribed burning or grazing; prescribed logging or slashing; or, protection from any land use practice that is detrimental to grizzly bears.

The grizzly bear carrying capacity estimates used in this project are provincial-level values (Fuhr and Demarchi 1990). Carrying capacity estimates are density estimates and are expressed as the number of square kilometres of habitat required to support one grizzly bear. As the number of square miles of habitat require to support one bear increases the value of that habitat decreases. Carrying capacity values are represented on the map by a capability class rating of from high to nil (see Boxes 4 and 5).

This capability classification reflects on the biological and physical parameters of the environment and does not take into account social and economic factors. Also, the classification does not reflect present land use (except where the inherent capability has been permanently altered), ownership, degree of access, current wildlife management practices nor hunting pressure.

### 2. Example of a Map Symbol

Importance Rating

Hsp, f Ms

Season of Use

This example would be interpreted as follows:

A unit which has a high capability as spring and fall use and moderate capability for summer use by grizzly bears.

### 3. Seasons of Use

| | | |
|---|---|---|
| sp | spring | Areas used immediately after hibernation during green-up. |
| s | summer | Areas used during the period from full leaf flush to berry ripening. |
| f | fall | Areas used during the period from berry ripening until denning occurs. |
| a | annual | Areas used through the active season (from spring to fall) excluding the denning period. |
| d | denning | Areas used for denning (this category was not identified for this project). |

### 4. Capability Classes

| Symbol | Class | Description |
|---|---|---|
| H | High | Lands in this class have high to very high capability to support grizzly bears during assigned seasons. |
| M | Moderate | Lands in this class have moderate capability to support grizzly bears during the assigned seasons. |
| L | Low | Lands in this class have low capability to support grizzly bears during the assigned seasons. |
| N | Nil | Lands in this class have no capability to support grizzly bears. |

### 5. Biophysical Grizzly Bear Capability Class Carrying Capacity Estimates

The value of habitat is expressed as amount of land that is required to support one grizzly bear (Square Kilometres/Grizzly Bear) (after Fuhr and Demarchi 1990).

| Symbol | Class | Density |
|---|---|---|
| H | High | 5 Square Kilometres / Grizzly Bear |
| M | Moderate | 15 Square Kilometres / Grizzly Bear |
| L | Low | 45 Square Kilometres / Grizzly Bear |
| N | Nil | Habitat is unsuited for Grizzly Bear use. |

### 6. References


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### 7. Credits

Mapped by: D.A. Demarchi Date Mapped: 1988

Field Work: 1981, 1985, 1988

Date and Scale of Photography: 1981, 1980; 1:40, 000

Date of Base Mapping: Surficial Geology - 1988 Soils - Vegetation - 1988 Habitat - 1988

Drafted by: Surveys & Resource Mapping Branch (CAPAMP)

Date Draft: 1990

Date Revised:

Base Map provided by: Surveys & Resource Mapping Branch B.C. Ministry of Environment, Victoria, B.C.

1990 Edition

82K/07 Biophysical Capability Classification GRIZZLY BEAR

J.S.H.