

Assessing the Impact of the Closure
of the North Fork of Rose Creek

Curragh Resources has applied to close off the North Fork of Rose Creek in order to access the Vangorda deposit. This closure will occur because the access path to the new deposit will be constructed of waste rock dumped from the original mine site, across the creek. In a preliminary study, conducted by Leverton and Associates (see reference number 2), it was identified that the bog-like lakes in the headwaters of the North Fork of Rose Creek do, in fact, contain a sizeable Arctic grayling population. As grayling migrate from large lakes and rivers into smaller streams for spawning purposes, Fisheries have indicated that it would not allow Curragh Resources to block a navigable waterway used in the spawning run. This will occur if Curragh goes ahead with its plans.

Two important questions must be answered in order to develop a professional plan for the use of the Vangorda deposit. One, it must be determined whether the grayling population in the headwater lakes is a full-time resident of the area. Secondly, in order to satisfy Fisheries requirements, it must be determined whether the North Fork is actually a navigable fishway, used as a route to access spawning habitats in the headwater lakes.

Determining Residency of Grayling in the Headwater Lakes

Program:

Sampling of the headwater lakes must be carried out over the winter of 1986/1987. Preliminary work must include mapping of the headwater lakes and their marking, so that during the winter months, under the cover of snow and ice, the deep areas of the lakes can be found. Once the lakes freeze over, testing may begin in order to determine the suitability of these sites as over-wintering habitats.

1. Chemical:

Holes in the ice will facilitate the monitoring of temperature, oxygen and hydrogen sulphide (H_2S).

2. Physical:

Ice depth and amount of available water space should be determined.

3. Fish Presence:

Electroshocking should be done through the holes, in order to determine the presence or absence of fish.

The monitoring program should be implemented immediately, so that the mapping sessions could be carried out prior to snowfall. From that point on, the chemical, physical and biological testing should be done during freeze-up (late October), mid-winter (late January), and before break-up (late April). Information on population numbers and changes over the season, water temperature measurements and ice depth will be collected over an 8 month period. The termination of this program should coincide with the beginning of the program to answer Question 2.

Determining Whether the North Fork is Navigable

From our fly-over of the headwaters of Rose Creek, it would appear that there is a very steep grade which may prohibit fish passage to the upper lakes. For this reason, it can be assumed that the grayling in the headwaters are a resident, non-migratory population. However, it must be shown that this is accurate assumption. In order to do this sampling of the spawning runs should be done. The grayling begin their run to the small streams and lakes as soon as ice breakup occurs.

Program:

A migration trap should be placed at the mouth of the North Fork as soon as the ice leaves the creek. Daily observations of the traps should be made, both in the morning and the evening. When heavy migration is noted, observers should be present at all times in order to insure no loss of fish

life. If possible, this net system could be constructed and installed this fall, prior to freeze-up. Thus any fish leaving the headwaters, over winter, in Rose Creek could be observed.

References:

1. Background Information on the Spillover from the Pumphouse Reservoir, for Curragh Resources Ltd., July 30, 1986.
2. Preliminary Investigation of Fisheries Resources in the North Fork of Rose Creek, for Curragh Resources Ltd., July 30, 1986.

CURRAGH RESOURCES LTD.

**ASSESSING THE IMPACT OF THE CLOSURE
OF THE NORTH FORK OF ROSE CREEK**

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FISH MONITORING PROGRAM

Introduction

Curragh Resources has applied to close off the North Fork of Rose Creek in order to access the Yangorda deposit. This closure will occur because the access path to the new deposit will be constructed of waste rock dumped from the original mine site, across the creek. In a preliminary study, conducted by Leverton and Associates (see reference number 2), it was identified that the bog-like lakes in the headwaters of the North Fork of Rose Creek do, in fact, contain a sizeable Arctic grayling population. As grayling migrate from large lakes and rivers into smaller streams for spawning purposes, Fisheries have indicated that it would not allow Curragh Resources to block a navigable waterway used in the spawning run. This will occur if Curragh goes ahead with its plans.

Study Objectives

Task One

To determine whether the grayling population in the headwater lakes is a fulltime resident of the area.

Task Two

To establish whether the North Fork of Rose Creek is a navigable fishway, used as a route to access spawning habitats in the headwater lakes region.

Study Duration

The entire study will commence on November 1, 1986 and will conclude in late June, 1987. The proposed start-up and completion dates are as follows:

Approximate sampling starting date:	November 1, 1986
Approximate sampling termination date:	Open
Final Report:	July 31, 1987.