Old Man Lake

An Inventory of Old Man Lake and its Inlet and Outlet Streams

by

Ron Saimoto

Field Work by

Ron Saimoto
Regina Saimoto

B.C. Fish and Wildlife Branch
Smithers, B.C.

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Summary

Old Man Lake was surveyed on October 18th, 1993. Inlet streams had suitable habitats for spawning and rearing of rainbow trout. The outlet stream ranges from 20 to 40 meters wide and connects to an unnamed lake approximately 1.5 km downstream. The water level at the unnamed lake is controlled by a Ducks Unlimited dam which also affects Old Man Lake. Observations and minnow trapping indicated that fish communities in Old Man Lake's inlets and outlets are presently depauperate. However, there are no vital recommendations given for immediate habitat enhancement at this lake.

1.0 Introduction

Old Man Lake was surveyed as a part of the Burns Lake-Houston small lakes project in which a total of 10 lakes were examined: Sunset, Gilmore, Swans, Lars, Old Man, McBrierie, Elwin, Watson, Day, and Bulkley lakes. Recent reports of serious declines of the rainbow trout sport fishery in this region have created a need for more information on the annual recruitment and relative species composition of these lakes. The intent of this project was to survey fish communities when possible, and to report existing conditions at the inlet and outlet streams for each of these ten lakes. The most recent concern has been an outburst of beaver activities which affect annual recruitment of rainbow trout by blocking many or all of a lake's streams with impassable dams. The primary focus of this work was on the descriptions of inlets and outlet streams as assessments for possible habitat enhancements at these small lakes. Old Man Lake was not accessable by 4WD so a survey by boat and gill net setting were not possible at this lake. However, the shorelines, inlets, and outlets were surveyed on foot and minnow traps were used to sample for smaller fish.

2.0 Materials and Methods

2.1 Study Site

Old Man Lake (lat: 54° 23′, long: 126° 24′) is located approximately 18 km east of Houston. Road access is limited to 4WD vehicles, and an additional 20 - 30 minute hike is necessary

to actually reach the lake (Appendix 1). Boat launch may be possible at the recently installed Aitken Creek dam (Ducks Unlimited) approximately 2 km downstream from the Old Man Lake outlet. The marsh area surrounding this lake makes it impossible to reach the actual shoreline of the lake by foot. Deer and moose trails make it possible to hike around this lake, but views of the actual shoreline are restricted.

Old Man Lake has three inlets and one outlet stream (Figure 1). The largest inlet stream is at the east end of the lake, draining Swans and Lars lakes. The other two inlets are on the south side and the outlet is on the west end of the lake. The outlet drains into an un-named lake controlled by the Aitken Creek dam.

2.2 Lake evaluation

Photographs of the lake and its immediate area were taken to show its general characteristics. Brief descriptions were made of the shoreline where viewing was possible. A gill net and minnow traps were not set in the lake since the shoreline could not be reached.

2.3 Evaluation of inlets and outlet

The inlet and outlet streams were surveyed by hiking along the streams for as far as seemed necessary to assess available spawning and rearing habitat for rainbow trout. Photographs were taken to represent the general characteristics of each stream and to illustrate any obstructions to fish migration.

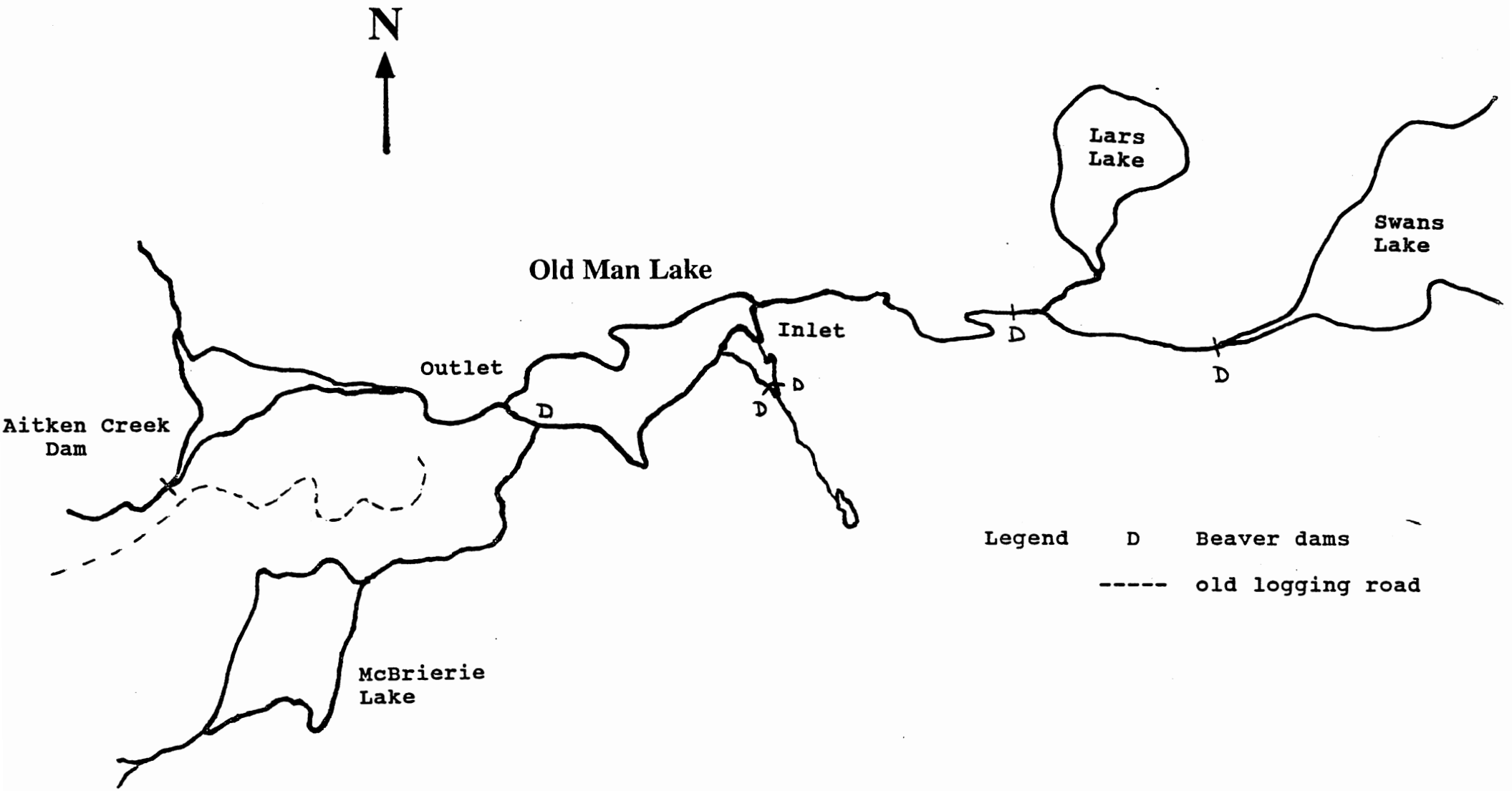

Figure 1. Map of Old Man Lake and its inlet and outlet streams.

Figure 2. View of Old Man Lake, looking northeast.

The streams were also sampled for the presence of any small fish (25 - 100 mm) with minnow traps (baited with processed cheese). Fish captured were identified, measured to the nearest mm, and released.

3.0 Results

3.1 Old Man Lake

The shoreline of Old Man Lake is lined with a 30 - 50 m wide band of marsh, surrounded by a primarily spruce forest (Figure 2). The marsh encircling this lake is known for supporting nesting swans (A. Edie, *pers. comm. on file*). There is some birch forest near the east end of the lake where the majority of beaver activity was evident. In general, the lake

Figure 3. Looking downstream into Old Man Lake from the inlet stream that drains both Swans and Lars lakes.

is known to be shallow, extremely eutrophic, and not suitable for shoreline or boat fishing. However, wildlife appears to be abundant in this area, with well used deer and moose trails, a moose and a deer skeleton, and wolf calls being encountered during our short visit.

3.2 Inlet stream from Swans Lake outlet

The inlet stream that originates at Swans Lake and includes drainage from Lars Lake has accessible and suitable spawning and rearing habitats for rainbow trout from Old Man Lake. The lower 80 m of this inlet stream, where it meets Old Man Lake, is 5 - 10 m wide, 30 - 40 cm deep, and has no identifiable flow; substrate is muddy (Figure 3). However, 80 m above the lake, the stream narrows to 2 - 4 m wide and the gradient increases

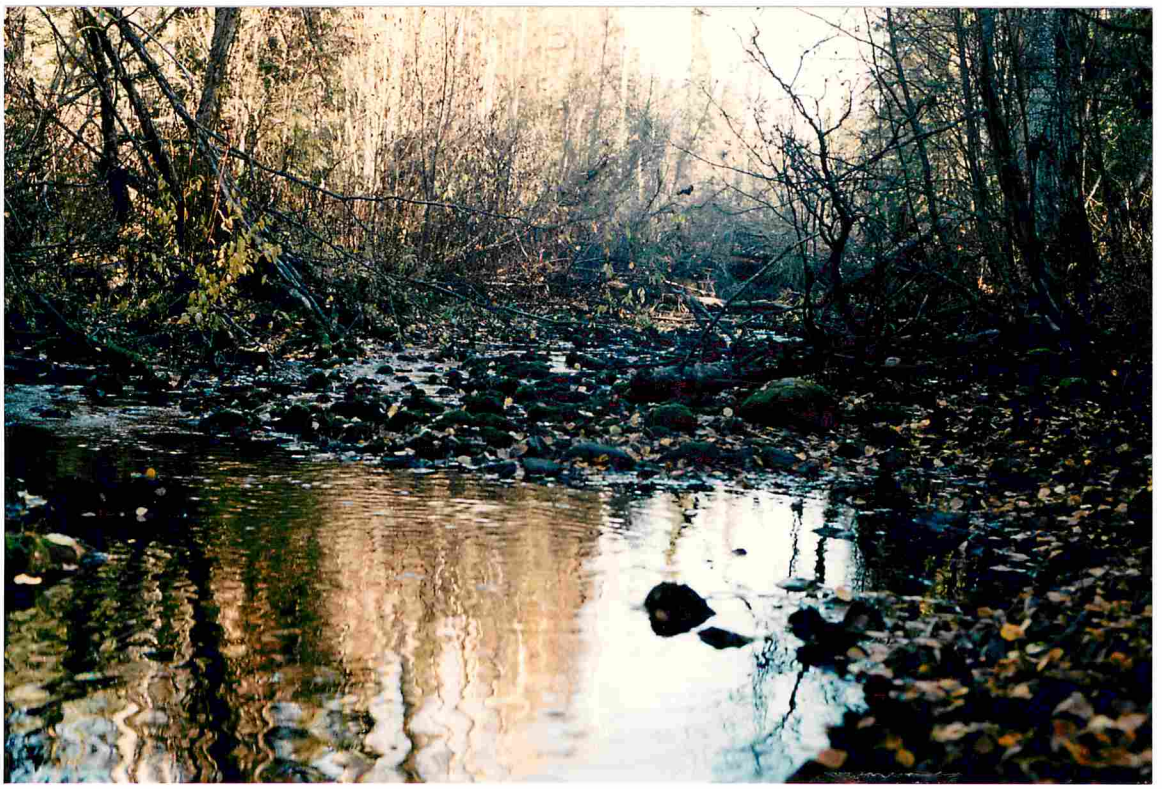

Figure 4. Photograph looking upstream at Old Man Lake's main inlet stream where gradient increases.

Figure 5. Photograph ~~of deep~~ pool of Old Man Lake's main inlet stream that drains Swans and Lars lakes.

creating good stream flow; substrate varies with different combinations of rock, gravel, and sand (Figure 4). This inlet stream was surveyed for an additional 250 m above the transition of gradient where several sequences of pools, riffles and runs were present (Figure 5).

Minnow traps were not set in this inlet stream. However, good observation of the lower 350 m of this stream found suitable spawning and rearing habitat for rainbow trout. In this Old Man Lake inlet stream, no large scale suckers (*Catastomus macrocheilus*) were seen in comparison to the huge schools of suckers (thousands of fish) that were sighted in inlet and outlet streams at nearby McBrierie Lake.

3.3 Inlet stream from McBrierie Lake

The inlet stream that originates at McBrierie Lake flows north to the inlet at Old Man Lake where a beaver dam blocks its flow (Figure 6). The beaver dam holds the upstream water level 15 cm higher than the lake and fish migrations were not possible at the time of this survey. The dam backs water up for approximately 60 m before the flow of the inlet stream is identifiable. Above the dam's pool, the stream has good flow and several sequences of pools to runs. The stream ranges in width from 1 - 4 m, and depths range from 30 - 60 cm in pools and 5 - 30 cm in riffles and runs; substrate is gravel, sand, mud, and some rock. This stream appeared to have some suitable habitat for spawning and rearing rainbow trout, but is presently inaccessible.

Figure 6. Looking downstream at dam that blocks the inlet stream from McBrierie Lake.

Two minnow traps were set in this inlet stream 100 m up from the lake for approximately 3 hours. No fish were captured, and observation of the 40 m stretch of stream where the traps were set, found no large scale suckers that were seen in large schools further upstream at the McBrierie Lake outlet; it is possible that another dam exists further upstream between these two lakes.

In addition, two traps were set above and two below the dam of this inlet. Traps were collected after 3.5 hours and caught no fish.

3.4 Other inlet stream

A third inlet stream drains into the south side of Old Man Lake. Approximately 150 m above the lake, this stream forks

Figure 7. Fork of the inlet stream on south side of lake where beaver dams block both sides 150 m upstream from Old Man Lake.

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into two smaller streams which are both blocked by beaver dams (Figure 7). Both dams are presently impassable by fish. The streams below these dams are similar (1 m wide, 20 - 40 cm deep, mud/sand substrate) as they wind down to the lake. Above the dams, the stream is 2 - 4 m wide but remains slow moving with a mud and sand bottom for the 100 m that was viewed. Willows and wood debris add excellent cover and make most of this stream suitable for rearing juvenile rainbow trout if spawning sites were available further upstream.

Two minnow traps were set below the dams in this inlet stream for 2.5 hours. No fish were caught at this location.

3.5 Old Man Lake outlet stream

The outlet of Old Man Lake is at the west end of the lake

Figure 8. Looking east, up the Old Man Lake's outlet stream toward the lake.

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and is now a wide channel between Old Man Lake and the unnamed lake that is controlled by the Ducks Unlimited Dam on Aitkens Creek. This outlet stream varies from 20 - 40 m wide as it winds for approximately 1.5 km into the unnamed lake above the dam (Figure 8). This outlet stream/channel is greater than 1 m deep with a sand and mud substrate. There is no downstream flow, as a slight wind was easily drifting debris upstream. The existing Aitkens Creek dam is impassable by fish.

Two minnow traps were set in the outlet stream approximately 500 m downstream from the lake for 6 hours. No fish were caught at this location.

4.0 Discussion

The difficult access to Old Man Lake restricted the assessment of it's fish community. The short times that minnow traps were set decreased the reliability of what their capture suggests. Although there were no fish caught in any of the eight minnow traps, it is not certain that there are no fish in this lake. However, it has been suggested in the past that this lake is eutrophic, and vulnerable to winter kill due to its shallowness and extremely abundant growth of aquatic weeds (A. Edie, *pers. comm. on file*).

The presence of beavers do not seriously threaten the recruitment of rainbow trout at this lake. Although one of the inlet streams with suitable spawning and juvenile rearing habitat is blocked by a beaver dam, the largest inlet stream offers similar habitat and easy access for fish. This inlet stream without obstruction is also connected to both Swans Lake and Lars Lake which contain rainbow trout stocks. It is possible that Old Man Lake also relies on the rainbow trout stocks from these other two lakes for its own annual recruitment.

The Ducks Unlimited's Aitken Creek dam could be investigated for vehicle access to a location suitable for boat launch. Increased water levels at the Old Man Lake outlet stream presently allows boat travel from the dam to the lake. With boat access, it will be easier to include gill net sampling in a future survey to contribute toward better management of

this lake's fish stocks. However, Old Man Lake does not presently require immediate attention with respect to rainbow trout enhancement projects due to its difficult access and unsuitable lake habitat.

5.0 Recommendations

5.1 It is recommended that Old Man Lake continue to be managed for its wetland habitat and wildlife. Presently, stock or habitat enhancement for rainbow trout in this lake is not warranted.

Appendix 1. Directions to Old Man Lake

Turn south off highway 16 at the Knockholt turnoff. Follow this gravel road across the Bulkley River. Just past the bridge, stay left at the fork and you should pass the Houston Garbage Dump on the left. Approximately 10 km from the highway, turn left off the main road. Follow this road 2.5 km to the Aitken Creek dam which is on the ~~south~~ north side. For the shortest hikes into Old Man Lake ~~Road~~, follow the logging road to the hill above McBrierie and Old Man Lakes and use the moose and deer trails.