

**From:** [Will Nicolson](#)  
**To:** [Natasha Pritchard](#)  
**Cc:** [Tony Jack](#); [Tim Muller](#)  
**Subject:** RE: Amendment to application and limited notification  
**Date:** Monday, 21 June 2021 2:03:17 p.m.  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.jpg](#)  
[20210513 Onslow Monitoring Proposal FINAL.pdf](#)  
[20210618 17367 proposed conditions for notification.pdf](#)  
[File note - Lake Onslow tributary fish passage.docx](#)

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Good afternoon Natasha,

We have now finalised the proposed consent conditions and Lake Onslow Monitoring Proposal (LOMP) that will form part of the amended application for RM18.004. These documents are attached. I have also attached a file note prepared by Ross Dungey regarding fish passage in response to some questions raised by Nigel Paragreen – we think it would make sense for this to be appended to the application as well, as it provides useful information in determining potential effects (or lack thereof) on fish values due to the proposal.

I assume these amendments are well within scope of the original variation application, as the only major alteration to what was originally proposed is a reduction in the increased drawdown sought from 0.5 m/week to 0.4 m/week. This embodies a reduction in the potential effects from the activity, when compared to the original application. The rest of the changes are largely administrative.

As discussed with Tim, can you please begin preparing the notification recommendation, and send this through for our review prior to making a notification decision.

Finally, just a quick FYI that I'll be doing most of the work on this application from here on in, so can you please make sure that any correspondence that would have gone to Tim now goes to me? Tim will still be involved to a lesser extent, so feel free to copy him in on future correspondence!

Thanks,

Will

**Will Nicolson**  
Scientist/Resource Management Planner

Landpro

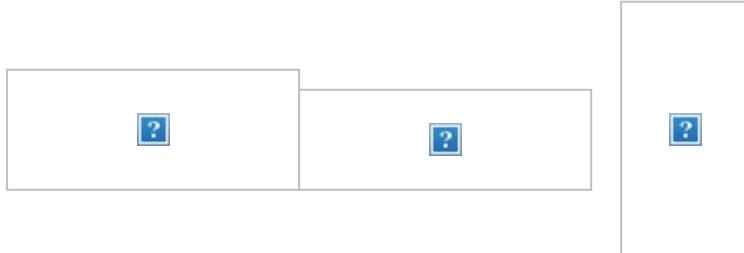


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**From:** Natasha Pritchard <[natasha.pritchard@orc.govt.nz](mailto:natasha.pritchard@orc.govt.nz)>

**Sent:** Monday, 14 June 2021 10:25 AM

**To:** Tim Muller <[tim@landpro.co.nz](mailto:tim@landpro.co.nz)>

**Subject:** RE: Amendment to application and limited notification

Mōrena Tim,

Apologies for any confusion. Yes, I will be unable to look at any amendments until next Monday at the earliest so it will be in your client's best interests to use the next week for feedback from the affected parties.

Hope that assists.

Ngā mihi  
Natasha

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**From:** Tim Muller <[tim@landpro.co.nz](mailto:tim@landpro.co.nz)>

**Sent:** Friday, 11 June 2021 4:09 p.m.

**To:** Natasha Pritchard <[natasha.pritchard@orc.govt.nz](mailto:natasha.pritchard@orc.govt.nz)>

**Cc:** Will Nicolson <[will@landpro.co.nz](mailto:will@landpro.co.nz)>

**Subject:** RE: Amendment to application and limited notification

Thanks Natasha,

Just a quick clarification on this: we could have the revised conditions etc ready for a notification decision to be made early next week. I understood from our conversation that

you're already fully committed next week, so from our perspective we may as well use that time to get some feedback on the updated conditions from the affected parties. I wanted to double check that I'd understood that correctly as the applicant is keen to progress this now the decision to notify has been made. If I've misunderstood and you're effectively waiting on us, please let me know and we can make the information available sooner.

Aside from that point (and pending confirmation from the applicant), we're generally happy with the process you've outlined. I'll let you know early next week if I have any further questions but thought it would be good to confirm we were on the same page re the timing first.

Thanks again, and have a great weekend!

Tim

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**From:** Natasha Pritchard <[natasha.pritchard@orc.govt.nz](mailto:natasha.pritchard@orc.govt.nz)>

**Sent:** Wednesday, 9 June 2021 3:31 PM

**To:** Tim Muller <[tim@landpro.co.nz](mailto:tim@landpro.co.nz)>

**Subject:** Amendment to application and limited notification

Hi Tim,

As per our phone call today, I understand that Pioneer (RM18.004) will be amending their application and will then seek limited notification of the application if there are any parties considered affected by the amended proposal. You have indicated that this amendment is likely to be lodged on or about 21 June but that you will confirm this after discussions with your client. I will then commence preparation of a draft s95 notification recommendation and will send this through to you and your client for comment before a notification decision is made (this will provide an opportunity for any further amendments). I anticipate that I will have this draft with you for consideration by Friday 9 July. The notification recommendation will be based on the amended application.

Below is some general advice on what needs to be considered for an amendment:

#### **Amendments to Applications and Scope**

*An amendment to an application is able to be made any time up until an application has been determined. However, to make an amendment it must be within the scope of Council's jurisdiction otherwise a new consent application is required. The scope is defined by the original application and any documents incorporated by reference to it (e.g. technical reports). We will be giving consideration to the following when determining whether an amendment is within scope:*

- *Whether the application is significantly different from what was originally applied for.*
- *Whether the amendment results in a change in the scale and intensity of the proposed activity.*
- *Whether the amendment results in altered character or effects from the original proposal.*

*We note that whether an amendment of the application is within scope will have to be determined on a case by case basis.*

As noted, I have received correspondence from the Teviot Angling Club seeking a copy of the notification decision. I will outline to them the next steps in the process and that Council will provide them with a copy of the notification decision once this has been made.

Please let me know if I have misrepresented anything from our phone call.

Kind regards,  
Natasha



**Natasha Pritchard**

**Principal Consents Officer,  
Alexandra**

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## Lake Onslow Monitoring Proposal.

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Interested parties, Pioneer Energy, Fish & Game Otago, Otago Regional Council, Teviot Angling Club, Dept of Conservation, Aukaha. This schedule contains sampling regimes as required by ORC.

### Background.

After extensive discussions with affected parties the following monitoring plan was devised. It will be conducted in accordance with consent conditions drafted for the variation in drawdown rate. No other aspects of the current consent have been changed.

### Reason.

To check if an increase in Lake Onslow draw down rate has any adverse effects on lake ecology. The current consent allows for a maximum draw down rate of 200mm/week. The variation sought is to increase this to 400mm/week. A baseline survey is to be conducted and future surveys will be triggered by the use of the increased drawdown rate.

### Methods.

Parameters to be assessed were established after consultation with affected parties. Methods were fine-tuned after site inspections to determine what survey techniques were suitable.

1. Monitor the species composition, extent and density of key weed beds.
2. Collect invertebrate kick samples, from weed beds and from a rocky shoreline.

3. Collect invertebrate sediment core samples, from the boat ramp and two weed bed sample sites, (3 sites).
4. Collect “bag” invertebrate samples from weed bed sites.
5. Sample the bully population on a rocky shoreline.
6. Monitor fish lengths of angler caught Onslow Trout.
7. Visually inspect fish passage to 2 spawning streams (Nth and Sth Branches of the Teviot River) to ensure fish passage is not compromised by the increase in drawdown rate.
8. All survey sites are recorded by photographs

### **Detail.**

The detail of the monitoring has been established after initial investigation of sites to assess their suitability.

#### **Weed bed monitor**

There are 3 sites selected for weed bed monitoring, The Boat Ramp site, a bay NW about 1 km from the boat ramp, another to the North past the pylons. These have been selected to assess weed-bed extent and areal cover. It will be necessary to select calm weather for surveys to ensure weed beds can be viewed and therefore assessed.

Transects are GPS recorded to determine weed bed margins and ensure repeatability of surveys. Density of the weed-beds could be determined by recording presence along transects at 5m intervals. Two sets of parallel lines at right angles to each other (~#) would provide four transects per site and the means to record macrophyte cover and extent.

The aquatic plant communities in general are also to be noted at the survey sites in association with the macrophytes present, other than the rocky shore where they are absent.

#### **Invertebrate samples**

Kick samples provide presence /absence information on species present and compliment assessing the extent and density of the weed beds. Previous Onslow surveys have included kick samples and these have recorded small fish (bullies), lobster, and invertebrates.

Quantitative “bag” samples over weed beds are required to supplement kick samples at the same sites (3 samples).

In addition invertebrate sediment core samples are required at 3 sites, the boat ramp, and the two weed beds. This sampling and analysis is to follow the original Cawthron sampling (Stark & Hayes 1997) protocol that involved sampling at 4 depths with 3 samples per site giving an additional 36 invertebrate samples for quantitative analysis.

#### **Bully Population.**

While some bullies can be collected in the kick samples electric fishing along rocky shoreline can provide a larger sample to help define population demographics and provide another avenue to check for effects of the draw down rate change.

## Water Quality

Lawa water quality data will be referred to in the reporting of the monitoring results.

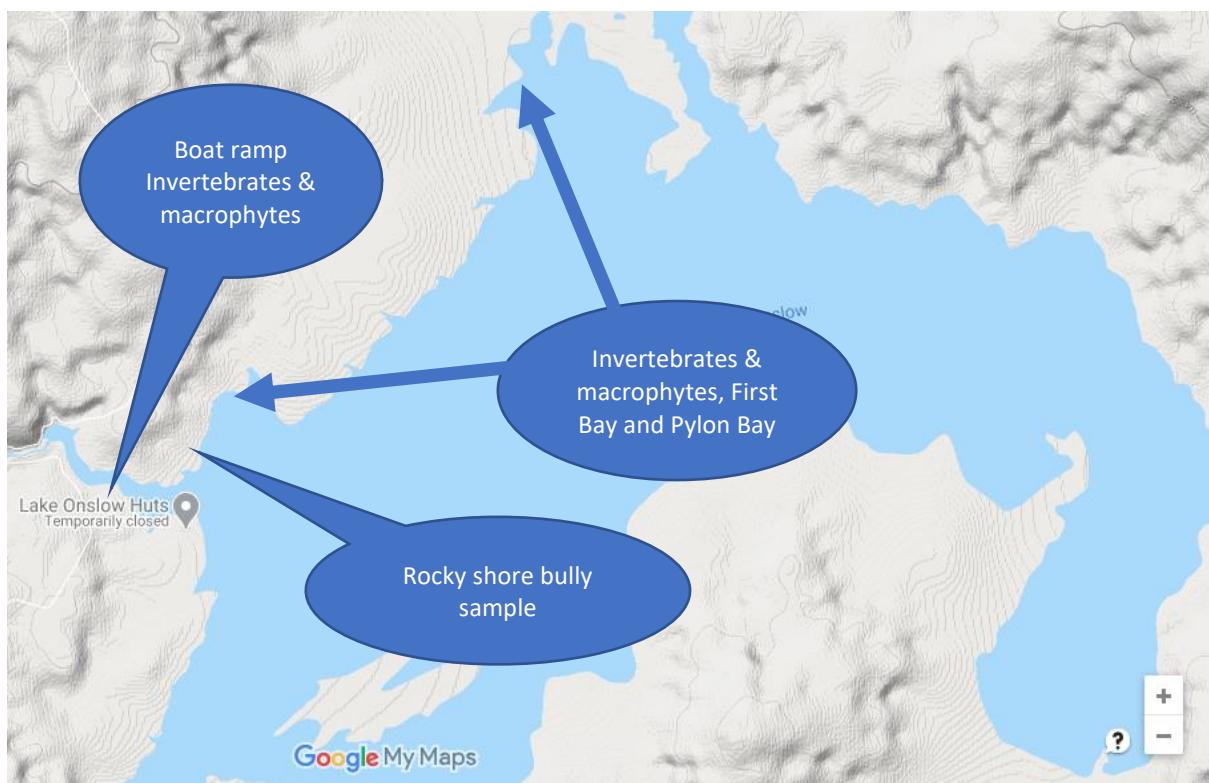


Figure 1, location of sampling sites.

## Monitoring

Monitoring is to be triggered by the draft condition A1 (b) in that the trigger will be a draw down rate of greater than 200mm/week and a lake level that equates to 2.5m or more below the weir crest. Monitoring is be scheduled for the same period each year to ensure sampling at the same stage in seasonal growth pattern of the weed-beds. The next major consideration is to sample at a time when lake levels are sufficiently low to allow the weed beds to be observed. Mid to late summer seems to be an ideal time to survey. Setting a sample time for January to March allows some flexibility to manage weather and water level issues.

Establishing some baseline against which to assess change is essential. The extent of baseline survey will be determined by the point at which the variation in draw down rate is initiated. One additional baseline survey in 2022 is scheduled. This gives an extensive baseline of 5 surveys from 1998-2022.

However it is likely the increase in draw rate will be initiated sooner so that 1 or 2 seasons may be the only baseline recorded. After the baseline the next survey would be as triggered by a draw down event. If the ecological response to a draw-down event is immediate one subsequent survey would be adequate but if the response is delayed then it may not be evident until the following season, two annual surveys post the first draw down event would therefore be advisable.

## Supplementary monitoring

### Onslow Trout

#### Existing information.

There is some limited information from angling club records and Fish and Game Creel surveys. Additional information on the fish population is required and collaboration with angling clubs can be a worthwhile approach to monitoring fish size and age class demographics. Teviot River Fishing Competition 22 year record provides a model to monitor the lake for potential effects on the trout population from the increased draw-down rate.

### Expert Anglers

The use of expert anglers to record catch and effort data is an established method to gather information on a fish population. I have spoken to Laurie Crossan of Teviot Anglers. He has identified 4 reliable anglers of better than average skill who fish Lake Onslow on a regular basis. Providing these anglers with support and information to record fish and catch data is a very cost effective way of gathering this data and establishing a reliable monitoring methodology. Replacement expert anglers will be done in association with Teviot Angling Club. A standard data sheet/angling diary and measuring board has been provided.

Teviot Angling Club competition records could be reviewed and a request to record fish lengths in future competitions be made. This approach can be supported with data sheets, advice on recording, and provision of measuring boards.

The aim is for Expert angler and Teviot Angling Club catch records to be maintained at levels required to gather a sample of fish lengths for at least 100 angler caught Lake Onslow trout per year. Teviot Angling Club members play a critical role in gathering this information.

Anglers have provided a sample of fish in the Teviot River Fishing Competition for 22 years and this has proved valuable in monitoring the river for potential effects from the hydro-scheme. It has shown no adverse effect or significant change, other than a slight increase in mean length, since 1998.

### Access to spawning streams at very low lake levels.

A potential effect of unusually low lake levels is an impediment to spawning habitat although the variation of consent conditions relates only to the rate of drawdown. A check for access to spawning streams at first “low level” (perhaps defined as 1m below the usual operating range) is advisable to ensure access is still available.

## Summary of monitoring.

1. Two sites for weed-bed monitoring.
2. Three sites for invertebrate kick samples
3. A rocky shoreline site for bully sampling.
4. Collaboration with Teviot Anglers to record Onslow fish lengths at competitions.

5. Establish “expert angler” diaries for 4 expert Lake Onslow anglers.

## Analysis.

Analysis will be based on comparing baseline levels of assessed criteria against post an “increased draw down rate event” levels with particular reference to the hydrographic record. The additional sediment core invertebrate samples are to be analysed broadly following the Cawthron analysis in the 1997 report, Stark & Hayes 1997.

In particular;

1. Species composition, density, and extent of weed beds at two locations.
2. Species list and relative abundance of invertebrates.
3. Size range and size class distribution for bully populations.
4. Angler caught Onslow trout analysis based on the Teviot angling competition.
5. Fish passage to spawning streams, Sth Branch Teviot River and Fortification Creek, based on visual inspection and measurement of pinch points.

## Baseline survey and sample site setup.

Initial investigations have identified survey sites and refined survey methods. The invertebrate surveys have followed the Cawthron sites of previous surveys and the Pioneer Energy 2017 Lake bed profile and invertebrate survey. This essentially provides a baseline dataset for the invertebrates established over 4 surveys from 1997, 2016, 2017, and 2021.

The weed beds have changed their extent since the 2017 survey and the revised locations that cover a range of weed bed/aquatic plant scenarios from

1. limited cover, Pylon Site
2. variable cover, First Bay and
3. total cover, Boat Ramp

Survey sites and the initial survey were completed within the allowed time frame except for the “bag” macrophyte invertebrate sampling which has been delayed due to material shortages associated with Covid restricted supply lines.

Spawning stream fish passage access issues have been checked.

## References.

Dungey R G 2017. Lake Onslow Lake bed profile and invertebrate survey. Report to Pioneer Energy Ltd, Ross Dungey Consulting Ltd.

Stark & Hayes 1997, Cawthron report 389, Freshwater biological assessment of environmental effects for the proposed Central Electric Ltd, Horseshoe Bend hydro scheme on the Teviot River.

Ross Dungey  
May 2021.

[Appendix 1](#), Angling diary.

## Angling Diary

**Location:**

**Date:**

**Water:**

**Time; start**

**Barometer:**

**finish**

**Total:**

**Weather:**

**Team:**

<b>Method.</b>	<b>Fish Caught</b>		
No.	Length mm	Weight gm	Species    Sex    Kept

**Observations**

## **Definitions**

In these conditions,

- **Year**, or any reference to a specific year, means a calendar year (unless otherwise stated).
- A **trigger year** is a **year** in which:
  - the minimum lake level over the **year** is 682.5 metres above mean sea level or lower, and
  - the rate of drawdown of the lake level exceeds 200 mm/week for 4 or more calendar weeks.
- A **monitoring year** is a **year** in which monitoring in accordance with the *Lake Onslow Monitoring Proposal* (LOMP) is required under condition A1.
- A **monitoring round** is two consecutive **monitoring years**, following a **trigger year**.

## **Draft condition A1**

The consent holder must monitor Lake Onslow in accordance with the *Lake Onslow Monitoring Proposal* (LOMP) dated May 2021 and prepared by Ross Dungey. Monitoring must be carried out by a suitably qualified aquatic ecologist (except for Condition (c) below). Monitoring must include, but is not necessarily limited to:

- a) One baseline monitoring event in 2022 (unless 2021 is a **trigger year**, in which case 2022 would form part of the first post-baseline **monitoring round**);
- b) A minimum of two **monitoring rounds**, one following each of the first two **trigger years**, with the provisos that:
  - i. If a second **trigger year** occurs in the first **monitoring year** of a **monitoring round**, this will not trigger a new **monitoring round** (with the next **trigger year** after this then triggering the second **monitoring round**).
  - ii. If a **trigger year** occurs in the second **monitoring year** of the first **monitoring round**, this would trigger the second **monitoring round** to begin in the following **year** (in this case there would be four consecutive years of monitoring).
  - iii. In each **monitoring year**, the fieldwork shall be carried out once only between January and March (inclusive), and preferably in February.
- c) Facilitating monitoring of the Lake Onslow trout population as described in the LOMP using anglers to collect samples. This shall take place annually from 2021 until the completion of the second post-baseline **monitoring round**.

Within two months from the completion of the baseline monitoring event and each **monitoring round**, a report prepared by a suitably qualified ecologist detailing the results must be prepared and submitted to the Consent Authority, the Otago Fish and Game Council, DOC and Aukaha.

## **Draft condition A2**

After the second **monitoring round** required under condition A1 is completed, the consent holder must engage a suitably qualified aquatic ecologist to review the monitoring data collected under Condition A1 and any other relevant data available and prepare an *Ecological Review Report* (ERR). The ERR shall be submitted to the Consent Authority for certification that it adequately addresses the matters required under Condition A1 and achieves the key objective of the ERR, which is to evaluate the extent of any ecological effects

associated with the increased drawdown provided for by Condition B1. The consent holder must meet the costs of certification of the ERR by the Consent Authority. The ERR must include, but is not limited to, the following matters:

- a) Describes, discusses and evaluates the monitoring results (baseline and post-baseline) in accordance with the LOMP;
- b) Describes, discusses and evaluates the degree to which the lake has been drawn down at greater than 0.2 m/week between 2021 and the date when the ERR is prepared and compares this with typical drawdown rates in the previous years when drawdown was limited to no more than 0.2 m/week;
- c) Based on (a) and (b), provides and justifies a professional opinion regarding whether any more than minor adverse ecological effects have occurred since the baseline monitoring;
- d) If there have been any more than minor adverse ecological effects, provides and justifies a professional opinion as to whether the effect(s) is/are likely to be occurring as a result of the increased rate of drawdown.

The ERR must be provided to the Consent Authority, the Otago Fish and Game Council, DOC and Aukaha within 60 working days after the second **monitoring round** required under condition A1 is completed.

#### **Draft condition A3**

Should the Otago Fish and Game Council, DOC or Aukaha choose to provide comments on the ERR, the consent holder and/or their ecologist must respond to these comments, provided that such comments are received within 20 working days of the ERR being provided to those parties. The consent holder must respond to all such comments within a further 20 working days (i.e. within 40 working days from the ERR being released), and must provide a copy of both the comments received and the response given to the Consent Authority.

*Note: The consent authority may consider any comments offered by Fish and Game, DOC or Aukaha, as well as the consent holder's response to any such comments, when making a decision regarding certification of the ERR under condition A2.*

#### **Draft condition B1**

The rate at which the lake shall be drawn down over any period of seven days must not exceed 0.4 metres.

#### **Draft condition B2**

For the period commencing 1 October in the **year** in which the second **monitoring round** required under condition A1 is completed and ending with the expiry of the consent, the rate at which the lake shall be drawn down over any period of seven days must not exceed 0.2 metres unless:

- a) the ERR prepared under condition A2 is certified in accordance with that condition; and
- b) the report concludes that no more than minor adverse ecological effects have occurred, or

- c) if there is such an effect, the report concludes that this effect is not caused by the increased drawdown rate.

*Notes: 1<sup>st</sup> October was chosen as this allows 3 months for preparation of the ERR under condition A2, one month for affected parties to consider it and comment if they wish, one month for the consent holder to respond to any comments, plus one month for peer review/certification of that report by the Consent Authority and any discussion following on from that.*

#### **Draft condition C**

The consent holder shall maintain and operate a lake level monitoring site at or near the dam, with lake levels recorded at least hourly to a minimum accuracy of 0.025 metres.

## **File Note, Onslow tributaries and fish passage.**

On March 29<sup>th</sup> with a lake level of 1.98m below the weir crest I walked the stream bank of the south branch of the Teviot river for a distance of approximately 500m out into the lake for the purpose of inspecting the stream channel. The purpose of the inspection was to check for any pinch points along the stream that could have resulted in creating an impediment to fish passage to spawning grounds at low lake levels.

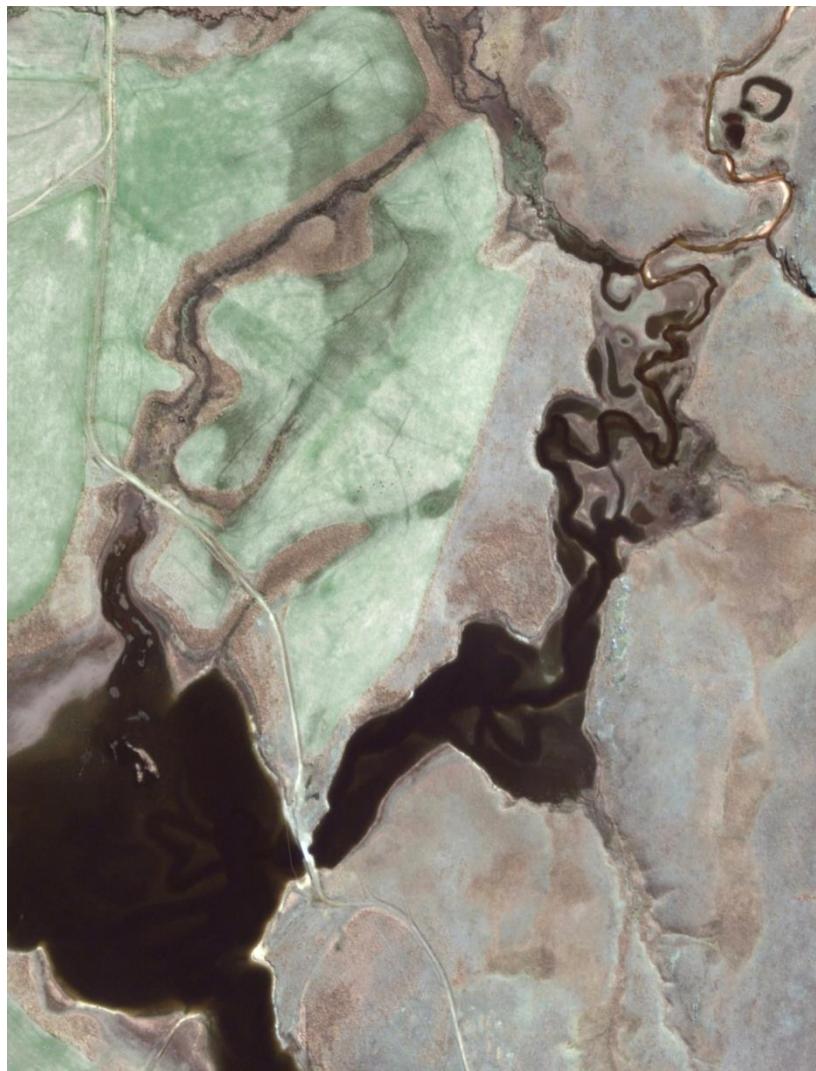
No restrictions to fish passage were located and indeed the further out into the lake one went the deeper and wider the stream channel became. Reference to the satellite images shows an extensive classic scroll flood plain where over the millennia the stream channels have migrated about the floodplain. The stream channel varies in width but is generally 3-5m wide and estimated to be in excess of 1-2m deep. The dark tannin stained waters severely restrict visibility and the meandering channel is difficult to follow by boat as stranding regularly occurs as attempts to navigate the channel are made. The shallowest sections of the tributary streams are at higher altitude than normal lake levels, in other words above the weir crest.

A check on the north branch of the Teviot reveals a similar situation with very good access from the lake through drowned historic stream channels.

Any restrictions to fish passage are likely to be upstream of the lake confluence in the stream proper and a consequence of low rainfall and therefore low stream flow. This will be a perennial issue unrelated to lake level.

Photo, South branch of the Teviot River, the dark channel is the current one. The inspection path was from bottom left to the centre of the picture.





Nth Branch of Teviot River, there is a similar pattern of meandering channel through the connection with the lake with no likelihood of impediments to fish passage.

Ross Dungey  
May 2021.