

Set out below are the recommended actions that should be taken within the Upper Clutha catchment, in order to protect and improve the health of the waterways and achieve the above objectives. These include consideration of rural land, urban areas, local businesses, riparian margins, wetlands, invasive organisms, fish passage, habitat, and community engagement.

As this action table is a living document, an up to date list of actions, responsible agency, progress, timeframes and method of implementation is available on the WAI Wānaka website. An understanding of progress, timeframes and mechanism for implementation against each action have been workshopped with ORC and QLDC representatives to reach agreement of responsibility for each of the actions.

**Table 1: Recommended actions for the Upper Clutha**

| Actions   | Lead Agency <sup>4</sup> | Collaborative Agencies <sup>4</sup>      | Timeframes <sup>5</sup> |
|---|--------------------------|--|-------------------------|
| <b>Rural Landowners</b>   |                          |  |                         |
| 1. ORC and rural industry develop a farm-scale Farm Environment Plans programme to reflect the upcoming government's NES and NPS for Freshwater which: <ul style="list-style-type: none"> <li>a) Sets out clear expectations for farmers on Plans' content and quality assurance</li> <li>b) Explicitly states roles of industry bodies, catchment groups, and ORC, in supporting the development of Farm Environment Plans</li> <li>c) Identifies regional priorities in promoting farm environment plans.</li> </ul> Such a programme would: <ul style="list-style-type: none"> <li>• Provide for the diversity of farming operations and receiving environments in the Upper Clutha (&amp; Otago)</li> <li>• Implement new legislative requirements as required (NES and NPS for Freshwater)</li> <li>• Be based on the work currently being undertaken at a national level</li> </ul> | ORC, Freshwater NPS      | WAI Wānaka, Industry bodies, Landowners  | Short to Medium         |
| 2. Advocate for good management practices by all landowners. This will assist with minimising sediment, pathogen, nutrient and pollutant discharges from properties.  | ORC                      | WAI Wānaka , Industry bodies, Landowners | Medium                  |
| 3. Assist with development of landowner environment groups (e.g Wānaka Catchment Group, Hāwea, Hāwea Flat, Luggate & Cardrona) so that landowners can work together and support each other in development of LEPs and implementing water quality mitigation measures collectively where appropriate. Obtaining funding or providing a resource to assist with this may be appropriate, particularly where baseline research is  | WAI Wānaka               | Industry bodies, Landowners              | Short to Medium         |

<sup>4</sup> Lead Agency/Agencies is the key body/bodies responsible for this action who may also have current or budgeted work for it. Collaborative Agencies may provide support and assistance in delivery of this action.

<sup>5</sup> Timeframes - Short term: 0-3years, Medium term: 4-10 years, Long term: 10+ years. Note that many of these actions, especially those identified as short-term, will also have ongoing components associated with them.

| Actions   | Lead Agency <sup>4</sup>                    | Collaborative Agencies <sup>4</sup>                     | Timeframes <sup>5</sup> |
|---|---|---|-------------------------|
| absent. These groups will also further develop integrated initiatives such as biodiversity protection and carbon zero along with engagement and collaboration with the wider community.   |   |   |                         |
| 4. Advocate for a project to identify high risk areas of catchment in terms of landslide, erosion and sediment loss. Look at using local knowledge, satellite and/or LIDAR technology to do this.   | WAI Wānaka                                  | Landowners, ORC   | Medium                  |
| 5. Facilitate the engagement, communication and education of landowners on how to minimise sediment runoff from high risk areas.  | ORC (pending notification of Plan Change 8) | Industry bodies, Landowners<br>WAI Wānaka Advocacy role | Short to Medium         |
| 6. Collaborative engagement and communication with the wider community on farm system change and environmental initiatives.   | ORC (pending notification of Plan Change 8) | Industry bodies, Landowners<br>WAI Wānaka Advocacy role | Short to Medium         |
| 7. Advocate for flexible resource consent conditions that allow for compliance to still be achieved while supporting the trialling of alternative or adaptive management approaches or innovation, while also recognising the need to mitigate risk.  | Industry bodies                             | WAI Wānaka, Landowners, ORC                             | Short to Medium         |
| <b>Urban Areas</b>  |   |   |                         |
| 8. Encourage and support development of Business Environmental Plans (for all businesses and industries) that identify risk areas in terms of effects on environment e.g. water use, discharges (including those into Council wastewater and stormwater networks), sustainability measures, on and off-site practices (e.g. sediment management on constructions sites, storage of hazardous substances).<br><i>Note: directions on what to include still to be developed</i> | QLDC  | WAI Wānaka, Business Owners                             | Short term              |
| 9. Encourage and support an increase of awareness and behaviour change by residents and visitors to meet the environmental goals.   | WAI Wānaka, One NZ, LWT                     |   | Short term              |
| 10. Collaborative engagement and communication with the wider community on business system change and environmental initiatives.  | WAI Wānaka, One NZ, LWT                     | Business owners   | Short to Medium         |
| 11. Advocate for the treatment of first flush stormwater for all new developments discharging into waterways or the Council's network using best management practices and water sensitive urban design approaches. Ensure monitoring of treatment's and practices' effectiveness is undertaken.   | QLDC, WAI Wānaka                            | ORC, Guardians of Lake Wānaka and Lake Hāwea            | Short term              |

| Actions  | Lead Agency <sup>4</sup> | Collaborative Agencies <sup>4</sup>                                  | Timeframes <sup>5</sup> |
|--|--------------------------|--|-------------------------|
| 12. Recommend development of stormwater design guidelines for QLDC district which are specific to the issues here – e.g. soil types, rainfall patterns and volumes, receiving water quality standards).  | QLDC                     |  | Short term              |
| 13. Support further research into current stormwater quality and impacts on receiving water quality to help guide what treatment is appropriate in Upper Clutha, with a particular focus on the behaviours of contaminants in the Roys Bay area of Lake Wānaka which receives a high proportion of Wānaka’s stormwater discharges. | QLDC                     | WAI Wānaka, ORC, Guardians of Lake Wānaka and Lake Hāwea             | Short term              |
| 14. Investigate and adopt best options for retrofitting treatment systems to existing stormwater discharges and to creating wetland solutions.   | QLDC                     |  | Short to Medium         |
| 15. Encourage the preparation and implementation of Erosion & Sediment Control (E&SC) Plans for all developments   | QLDC                     | ORC  | Short term              |
| 16. Create education program for developers, builders and earthworks contractors on sediment management, in coordination with ORC – include workshops, E&SC plan development guidance, monitoring/maintenance recommendations.   | QLDC                     | WAI Wānaka, ONE New Zealand  | Short term              |
| 17. Advocate for all wastewater discharges to be treated and discharged to land so that freshwater objectives are achieved, with no overflows to land where it may enter water. Also advocate for wastewater treatment sites to be compliant with ORC consent conditions.  | QLDC                     | WAI Wānaka, Guardians of Lake Wānaka and Lake Hāwea                  | Short term              |
| 18. Advocate for urban development to be managed so that there is no adverse impact on water quality or aquatic ecosystems. This includes no increase in pre-development flows so waterways don’t receive serious erosion as a result of higher flows in rainfall events.  | QLDC                     | ORC, WAI Wānaka, Guardians of Lake Wānaka and Lake Hāwea             | Medium                  |
| 19. Advocate for there to be no urban development where it may affect water quality, water quantity or biodiversity of the wetland.  | Freshwater NPS           | WAI Wānaka, QLDC, ORC, Guardians of Lake Wānaka and Lake Hāwea       | Medium                  |
| 20. Advocate for wetland creation as sites for enhancing quality of urban run-off.   | Freshwater NPS           | WAI Wānaka, QLDC, ORC, Guardians of Lake Wānaka and Lake Hāwea       | Medium                  |
| 21. Encourage the installation of rainwater tanks in all urban buildings or structures.  | QLDC, WAI Wānaka         |  | Medium                  |
| <b>Ecosystem focused</b>   |                          |  |                         |
| 22. Support and extend education campaigns for public to prevent any further introduction and/or spread of invasive species identified in the ORC Pest Management Plan, namely Lagorosphon, and other specified terrestrial and aquatic weeds.   | ORC                      | WAI Wānaka, MPI, Biosecurity NZ, LINZ, DOC, Otago Conservation Board | Short to Medium         |

| Actions   | Lead Agency <sup>4</sup>                                 | Collaborative Agencies <sup>4</sup>   | Timeframes <sup>5</sup> |
|---|--|---|-------------------------|
| 23. Support and extend education campaigns for public to prevent any further introduction and/or spread of invasive species not included in the ORC Pest Management Plan, namely Lake Snow and Didymo, and any other pest species not yet identified as a risk or concern.  | Biosecurity NZ<br>Freshwater<br>Partnership<br>Programme | ORC, MPI, Biosecurity NZ,<br>WAI Wānaka, LINZ, DOC,<br>Otago Conservation Board   | Short to Medium         |
| 24. Complete current research on Lake Snow and how it can be reduced or eradicated  | ORC  | Research entities, Funders  | Short to Long           |
| 25. Advocate for additional research on how Didymo can be reduced or eradicated   | Biosecurity NZ<br>Freshwater<br>Partnership<br>Programme | WAI Wānaka, Guardians of<br>Lake Wānaka and Lake<br>Hāwea   | Medium term             |
| 26. Continue management of Lagarosiphon as prescribed in the ORC pest management plan and LINZ Lagarosiphon management plan.  | ORC, LINZ  |   | Short to Long           |
| 27. Advocate for changes to Lagarosiphon management if perceived deficient, with focus on non-chemical management.  | LINZ   | WAI Wānaka , Guardians of<br>Lake Wānaka and Lake<br>Hāwea  | Medium to Long<br>term  |
| 28. Advocate for further research into appropriate chemical spray setbacks from waterways for weed control and fertiliser applications.   | LINZ   | WAI Wānaka , Guardians of<br>Lake Wānaka and Lake<br>Hāwea  | Medium                  |
| 29. Educate landowners and contractors on relevant rules and standards for weed control and fertiliser applications. Educate landowners and contractors on best practice and guidelines for weed control and fertiliser applications.   | ORC  | Industry bodies, WAI Wānaka   | Short to Medium         |
| 30. Advocate for necessary controls and programmes to ensure all future instream structures provide for appropriate fish passage (e.g. trout/salmon or indigenous fish depending on the waterway).<br><br>Understand whether existing fish passage programmes are meeting community expectations and existing conditions of consents. | Freshwater NPS   | ORC, WAI Wānaka, RCE<br>Otago, Contact Energy, DOC<br>NZ Fish Passage Advisory<br>Group, Guardians of Lake<br>Wānaka and Lake Hāwea | Medium                  |
| 31. Continue to oversee the implementation of the Clutha dams' consent conditions including those addressing fish migration.  | Contact Energy   | Kāi Tahu, ORC, RCE Otago  | Short term              |
| 32. Address fish passage as part of the FMU process for the Clutha/Mata-au main stem  | Freshwater NPS   | WAI Wānaka, Kāi Tahu  | Short to Medium         |
| 33. Discuss possible additional opportunities for improving eel and lamprey passage at the Roxburgh, Clyde and Hawea dams, as part of the FMU process for the Clutha/Mata-au main stem  | Freshwater NPS   | Contact Energy, DOC, Kāi<br>Tahu, RCE Otago, other<br>relevant stakeholders   | Medium                  |

| Actions   | Lead Agency <sup>4</sup> | Collaborative Agencies <sup>4</sup>                            | Timeframes <sup>5</sup> |
|---|--------------------------|--|-------------------------|
| 34. If required by the NPS for freshwater management, establish a work programme to improve the extent to which existing structures achieve the Council's aquatic life objectives for fish. This includes identifying existing instream structures and prioritising structures for remediation                    | ORC                      | Kāi Tahu   | Medium                  |
| 35. Advocate for rules and policies to prevent further development by projects which diminish any wetland. Encourage wetland creation/re-instatement; and advocate for ORC and QLDC to assist with, or develop, wetland restoration programs.   | Freshwater NPS           | QLDC, ORC, WAI Wānaka, Guardians of Lake Wānaka and Lake Hāwea | Short to Medium         |
| 36. Promote re-vegetation of existing wetlands through riparian planting projects and the expansion of existing wetlands, in collaboration with, or with the assistance of, ORC and QLDC.   | WAI Wānaka               | QLDC, ORC, DoC   | Short term              |
| 37. Support ORC to locate monitoring buoy on Lake Wānaka and to undertake research to improve understanding of lake hydrology.  | ORC                      | WAI Wānaka   | Short term              |
| 38. Advocate for a monitoring buoy on Lake Hāwea and to undertake research to improve understanding of lake hydrology.  | WAI Wānaka               | ORC<br>Funders   | Short term              |
| 39. Advocate for increased monitoring and research to fill in knowledge gaps identified in Tables 2 and 3 of Section 12 of this CCP. This includes, for example, increased representative samples taken across lake-wide sites to measure the key attributes in the draft NPS-FM.                                 | WAI Wānaka               | ORC, Research entities,<br>Funders                             | Short to Medium         |
| <b>Supporting collaboration, behaviour change and partnerships</b>  |                          |  |                         |
| 40. Develop an engagement strategy with MfE, ORC, QLDC and community to break down barriers between various parties and encourage collaboration. Need to set out critical areas and how to overcome them, how to influence community actions through the use of social science, timeframes and agreement of KPIs. | WAI Wānaka               | QLDC, ORC, MfE   | Short term              |
| 41. Utilise systemic design approaches to identify and plan likely changes required at each of multiple levels (institutional, group/sector, and individual) across the catchment system  | WAI Wānaka               |  | Short term              |
| 42. Develop tailored planning and assessment tools to guide the use of collaborative and multi-sector partnerships.   | WAI Wānaka               |  | Short term              |
| 43. Support behaviour change interventions by using a mix of approaches and measures drawn from across the 4Es - enable, encourage, exemplify, engage - to address the core motivations and barriers of the full range of stakeholders involved – including agencies themselves (Dolan et al. 2010).              | WAI Wānaka               |  | Short to Medium         |

| Actions  | Lead Agency <sup>4</sup>    | Collaborative Agencies <sup>4</sup>                          | Timeframes <sup>5</sup> |
|--|-----------------------------|--|-------------------------|
| 44. Balance the development of technical information with social and cultural processes to ensure that such information is effectively shared, understood and used to change environmental practice at all appropriate decision-making levels.   | WAI Wānaka                  |  | Short to Medium         |
| 45. Build institutional capacity for integrated environmental initiatives that includes personnel with complementary skills in the management of participation, two-way engagement and conflict and the integration of social and biophysical elements required for collaborative adaptive management.   | WAI Wānaka                  |  | Short term              |
| 46. Arrange an annual meeting of regulatory bodies and WAI Wānaka to reach agreement on what research, monitoring or actions need to happen in the upcoming year. If an item is not able to be undertaken by a regulatory body, and CCP has supported it as a priority, then need to determine best way for this to occur (e.g. WAI Wānaka progress, follow processes to submit on plan/policy and get action adopted) | WAI Wānaka                  | QLDC, ORC, Kāi Tahu, Guardians of Lake Wānaka and Lake Hāwea | Short term              |
| 47. Create a forum for environment groups (landowners, urban and entities such as DOC) to meet and create an integrated process for more structured engagement and awareness of challenges, solutions and plans  | WAI Wānaka, ONE New Zealand | DOC, Otago Conservation Board                                | Short term              |
| 48. Establish the Alpine Lakes Research and Education Centre (ALREC) in Wānaka to foster research, technology, innovation and knowledge sharing. Support ALREC as a base for projects addressing science, education and behaviour change.  | WAI Wānaka                  | Researchers, Funders   | Short term              |
| 49. Educate on littering/use of toilets – especially freedom camping/tourists who are visiting the area . Align with education undertaken by QLDC linked to enforcement of the Freedom Camping Bylaw 2019 in the District.   | QLDC                        | WAI Wānaka   | Short term              |
| 50. Create education material on water sensitive options for individuals (e.g. rainwater capture, greywater recycling, impacts of detergents (“down the drain”) etc)   | QLDC                        | WAI Wānaka   | Short term              |
| 51. Build on current education programmes for primary and high school children, e.g. Touchstone, Sustainable Coastlines, EnviroSchools,  | WAI Wānaka                  |  | Short to Medium         |
| 52. Continue to expand engagement on water quality and its importance in region, along with everyday things we can all do to help.   | WAI Wānaka                  | ORC, QLDC, Guardians of Lake Wānaka and Lake Hāwea           | Short term              |
| <b>Mātauranga māori</b>  |                             |  |                         |
| 53. Identify cultural values within the catchment using a Cultural Health Index assessment with local runaka.  | Aukaha, Te Ao Marama        | ORC  | Short term              |
| 54. Work with local runaka to identify spiritual sites if not already identified through wahi tupuna process or District or Regional plans.  | Aukaha, Te Ao Marama        | QLDC, ORC  | Short term              |

| Actions   | Lead Agency <sup>4</sup> | Collaborative Agencies <sup>4</sup>                                | Timeframes <sup>5</sup> |
|---|--------------------------|--|-------------------------|
| 55. Advocate for rules and policies preventing any further development (unless expressly permitted by the runaka) on spiritual sites, or at locations that may result in adverse effects on these sites.  | Aukaha, Te Ao Marama     | ORC, QLDC, Heritage NZ, WAI Wānaka                                 | Short to Medium         |
| <b>Other</b>  |                          |  |                         |
| 56. Establish an allocation limit for water abstractions from Lakes Wānaka and Hāwea, as well as other rivers within the catchment.<br>Guardians to assist ORC with interpretation of “protected” status of Lake Wānaka from the Act in respect of these allocation limits. | ORC                      | WAI Wānaka, Guardians of Lake Wānaka and Lake Hāwea                | Short to Medium         |
| 57. Advocate for baseflow to be maintained at all times where possible (exceptions where rivers naturally run subsurface in summer e.g. Cardrona River).  | Freshwater NPS           | ORC  | Short to Medium         |
| 58. As part of the FMU process for the Clutha/Mata-Au, assess issues and options to maintain or improve ecosystem health in the Clutha/Mata-Au.   | ORC                      |  | Short to Medium         |
| 59. Advocate for further investigation of groundwater levels and the inter-relationship between groundwater and lake levels, along with impacts of lake level changes on ecosystems/habitats and on flows and migration patterns.   | WAI Wānaka               | ORC, Guardians of Lake Wānaka and Lake Hāwea, Funders, Researchers | Short to Medium         |
| 60. Advocate for access to lake and river shorelines being maintained or expanded and any further modification or development (urban or rural) of lake or river shorelines within a defined margin being prevented.   | WAI Wānaka               | LINZ, QLDC, ORC, Guardians of Lake Wānaka and Lake Hāwea           | Short to Medium         |