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# Actions to improve water quality and biodiversity

## Background

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- AIC proposed to deliver ASM and FEPs across irrigators
- ZC recommended ECan delay consent reviews
- ECan adopted ZC recommendation
- Minimum flow increases have an economic impact
- Storage comes at a significant cost
- Storage will take the focus and resources of AIC
- Better outcomes can be achieved by further delaying consent reviews...

## Fish Screen Review

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- Engineering review of fish screens
- Scope limited to maximising effectiveness of existing screens
- Focus on approach/sweep velocity
- Preventing fish passage up fish return channel
- Waiau intake review in 2018
- Waiau upgrades implemented in 2019
- Hurunui review depends on HWP

## Waiau Fish Screen

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## Hapua monitoring

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- Review current Hapua monitoring
- Identify any gaps
- Deliverable target of March 2018

## Mid-river jetboat access


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- AIC is working towards a mid-river access point for jetboat access
- Engagement with landowner has commenced




## Riverbed Bird Habitat

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- Scope of work being prepared for capable providers
  - Review existing information available and site visit
  - Surveys not considered necessary at this stage
  - Identify most effective mitigation options for AIC to fund
  - Consider ZC biodiversity proposal
  - Deliverable in February 2018
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## Mahinga kai

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- Iwi engagement has commenced
  - AIC would like to understand how improved mahinga kai can be delivered on-farm
  - May require some investigations into history of mahinga kai in Hurunui and Waiau catchments
  - AIC will work with iwi to deliver improved mahinga kai outcomes
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## Dry Stream Catchment

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## Braided Rivers

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- Most properties fronting braided rivers under collective
- AIC is able to work with these farmers
- AIC wishes to better understand what farmers can do on their land to improve braided river outcomes
- Some limits to what AIC can deliver
- AIC can engage with appropriate parties to understand whether farming practices can deliver improved braided river outcomes

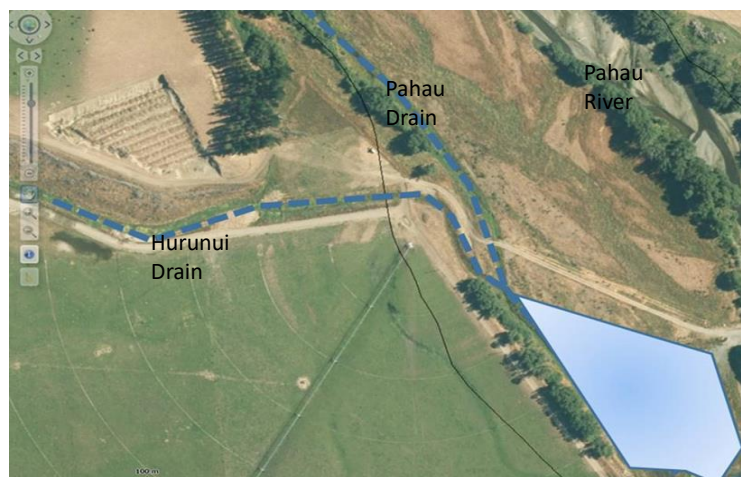
## Periphyton

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- Continue current WQ monitoring
- WQ delimiting survey
- Investigate tributary pumping feasibility
- Investigate dilution via hydropower generation
- Investigate Pahau wetland feasibility


## Potential wetland site

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## Managed aquifer recharge

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- NO3-N GW concentrations may increase with improved efficiency
  - Managed Aquifer Recharge has been trialled in Mid-Canterbury
  - A trial site has been identified – Lowry Drain catchment
  - Piped water available adjacent to an existing shingle pit
  - When offtake not in use for irrigation can be diverted into pit
  - Consents and land access required
  - Landowner engagement commenced
  - Hydrogeologist scope of work being prepared
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## Project management

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- AIC not resourced to deliver these outcome focused projects
  - AIC will engage someone to manage deliver these outcomes
  - Suitable person is available
  - Project management would also benefit ZC biodiversity project
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# Storage

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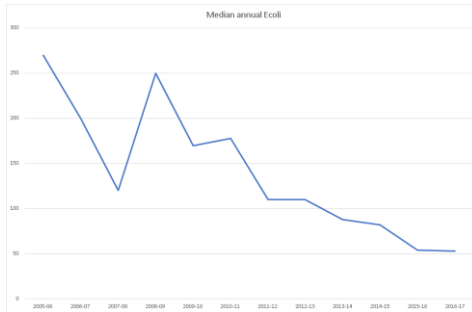
- AIC is working to find storage solutions that work for environment & community
- Storage will reduce the social and economic impacts of HWRRP minimum flows
- AIC is exploring the on plains and in river storage options
- AIC looking at a number of storage options to see if they are feasible, environmentally and economically
- AIC is likely to take up the ECan offer of drafting a storage related plan change
- The plan change could propose that 3-4 Zone B catchments are re-classified as Zone C
- The plan change would seek a policy framework that is balanced, and gives effect to the Canterbury Regional Policy Statement and other higher order planning instruments.
- In summary, the plan changes would enable a full and balanced assessment of a storage proposals positive and negative effects, so that the best outcome for the environment can be achieved
- We will report back to the zone committee on our progress

Impact of delayed review of consents	ECan Assessment	AIC mitigation
Salmon passage	Potentially significantly negative	Fish screen performance review
Mouth closure	Slightly negative	Hapua monitoring
Jetboat passage	Slightly negative	Waiau mid-reach jetboat access
Bird nesting and feeding in the Hurunui	Slightly negative	Investigations and funding of pest/weed control
Bird nesting and feeding in the Waiau	Negligible	Investigations and funding of pest/weed control
Periphyton	Negligible	WQ sampling
		Investigate tributary pumping feasibility
		Investigate dilution via hydropower generation
Sediment transport	Nil	-
Geomorphology	Nil	-
Groundwater quality	Nil	Managed Aquifer Recharge investigations
Integrated storage	-	Plan Change
Mahinga Kai	-	AIC to engage further with iwi to consider what can be delivered
Braided Rivers	-	AIC to evaluate and consider what can be delivered
Dryland farming flexibility	-	AIC to continue to work with dryland farmers on permitted activity



## AIC farmers have delivered...

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- AIC farmers have improved Pahau River water quality
- AIC has met the FEP and audit targets previously agreed

## Next steps

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- Zone Committee Feedback
- AIC appoints project manager
- AIC consults with interested parties
- Proposal developed further
- AIC internal approval process
- Formal Proposal submitted to Zone Committee