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PRIMARY EVIDENCE on BEHALF of the AUCKLAND/WAIKATO & EASTERN REGION FISH AND GAME COUNCILS ("FISH & GAME")

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Hearing Block 2

Dated: 3 May 2019

SUMMARY of EVIDENCE

- Concern regarding ambiguities within Policy 1 of PC1
- Generally support Policy 2, subject to further details of FEP's
- Reference to and definitions of "low", "medium" & "high" contaminant discharge/farming intensity should be aligned with "risk" of contaminant discharge
- "Risk" can be directly related to Critical Source Areas (CSAs), as well as stocking rates and fertilizer applications
- "Critical Source Area Schedule" incl. infrastructure, activities & stock behaviour is proposed, to:
  - Define CSAs
  - Grade CSAs
  - Specify rules for management of graded CSAs

CRITCAL SOURCE AREAS

Example of proposed **Critical Source Area Schedule**: Grade A – High Risk of Contaminant Discharges

CSA Name	Description / definition	Risk Level	Grade	Management Requirements
Effluent ponds	Pond used to store effluent from a milking platform including feedlots and standoff pads	HIGH	A	Farm Environment Plan
Effluent irrigation	Effluent irrigated to land, including infrastructure	HIGH	A	Farm Environment Plan
Feed & standoff pads, sacrifice paddocks	Areas where stock regularly congregate for extended lengths of time (e.g. daily and/or >8 hrs)	HIGH	A	Farm Environment Plan
Raceways	Areas regularly used to move stock	HIGH	A	Farm Environment Plan
Fertiliser & feed storage areas, incl. in situ pits	Areas used to store fertiliser and feed within in situ pits (e.g. for silage, imported feeds)	HIGH	A	Farm Environment Plan
Winter forage crops grazed in situ	Intensive grazing management where stock are confined to a restricted area to eat crops	HIGH	A	Farm Environment Plan
Break-feeding	Intensive grazing management where stock are confined to a restricted area	HIGH	A	Farm Environment Plan
Crop cultivation	Crop cultivation involving blanket spraying, turning of soil for seasonal crops	HIGH	A	Farm Environment Plan

CRITCAL SOURCE AREAS

Example of proposed **Critical Source Area Schedule**: Grade B – Moderate to Low Risk of Contaminant Discharges

CSA Name	Description / definition	Risk Level	Grade	Management Requirements
Feed storage areas, including hay barns, wrapped silage stacks, and grain silos	Areas used to store feed where the feed is wholly contained and/or has low contaminant risk (e.g. hay/straw, dry grain)	Moderate	B	Minimum distance of 10 m from waterbodies, including artificial drains, overland flow paths, small wetlands, seeps, and intermittent streams
Holding pens or paddocks	Areas used to temporarily hold stock	Moderate	B	
Stock yards & woolsheds	Areas used infrequently for stock management (e.g. shearing, drafting, drenching etc)	Moderate	B	
Water troughs (Figure 1)	Watering areas for stock	Moderate	B	
Mobile feed wagons (Figure 2)	Mobile wagons used to distribute feed	Moderate	B	
Shade trees (Figure 3)	Trees used by stock for shade	Moderate	B	
Summer and autumn forage crops grazed in situ (Figure 4)	Intensive grazing management where stock are confined to a restricted area to eat crops	Moderate	B	

Figure 1. Troughs <5 m from an artificial drain, presenting HIGH **risk** of contaminant discharge to waterways

- Moving troughs a minimum of 10 m from watercourses would reduce the **risk** to LOW

Figure 2. Mobile feed wagon <5 m from an artificial drain, presenting HIGH **risk** of contaminant discharge to waterways

- Moving feed wagon to minimum of 10 m from watercourses would reduce the **risk** to LOW

Figure 3. Shade tree <5 m from an artificial drain, presenting HIGH **risk** of contaminant discharge to waterways

- Establishing shade trees a minimum of 10 m from watercourses would reduce the **risk** to LOW
- Fencing to exclude stock between tree and drain would facilitate improved ‘buffer’ of long grasses (at least)

Figure 4. Summer forage crops grazed *in situ* <5 m from an intermittent watercourse without stock exclusion, presents HIGH **risk** of contaminant discharge to waterbodies

- Cropping setback of minimum of 10 m from watercourse and stock exclusion would reduce the **risk** to MODERATE

SETBACKS for STOCK EXCLUSION

- Recommend minimum setback 5 m for all watercourses & waterbodies including:
  - Permanent streams
  - Intermittent/ephemeral streams (Figure 5)
  - Modified watercourses
  - Wetlands, including small headwater wetlands, seeps (Figure 5) and springs
  - Lakes
- Support minimum setback 1 m for intermittent artificial watercourses with channel width $\leq$ 1m (Figure 6)

  Intermittent artificial watercourses typically exist to facilitate drainage of agricultural land in areas that have high water tables and/or poorly drained soils which become problematic during wetter months. They do not have natural catchments and prior to drainage and cultivation for agriculture, would have existed as wetland areas

Figure 5. Severe pugging causing sediment, nutrient and faecal matter contamination of a wetland seep or intermittent natural watercourse due to inappropriate planting and grazing of forage crops

Figure 6. An intermittent artificial watercourse with adjacent slope ≤ 15 °. Channel width, distances from the edge of the bed (vertical white lines) to the PC1 proposed fence (1 m setback, black circles) on the True Left Bank (TLB) and the True Right Bank (TRB) are shown

SETBACKS for STOCK EXCLUSION

- Clarity and consistency regarding where setbacks for fencing are to be taken from is essential
- Layperson's understanding of the "bed" of a waterbody differs from RMA/planning definition (Figure 7 & 8)
- Vital that it is clear the "bed" encompasses the lower floodplain of watercourses of all sizes, which are essential spawning areas of native migratory galaxiid fish species, including inanga (Figure 8 & 9)
- Fence setbacks that do not allow for usual winter flood events are at risk of being damaged and/lost downstream, incurring additional costs to the landowner for fencing repairs/replacements (Figure 10)

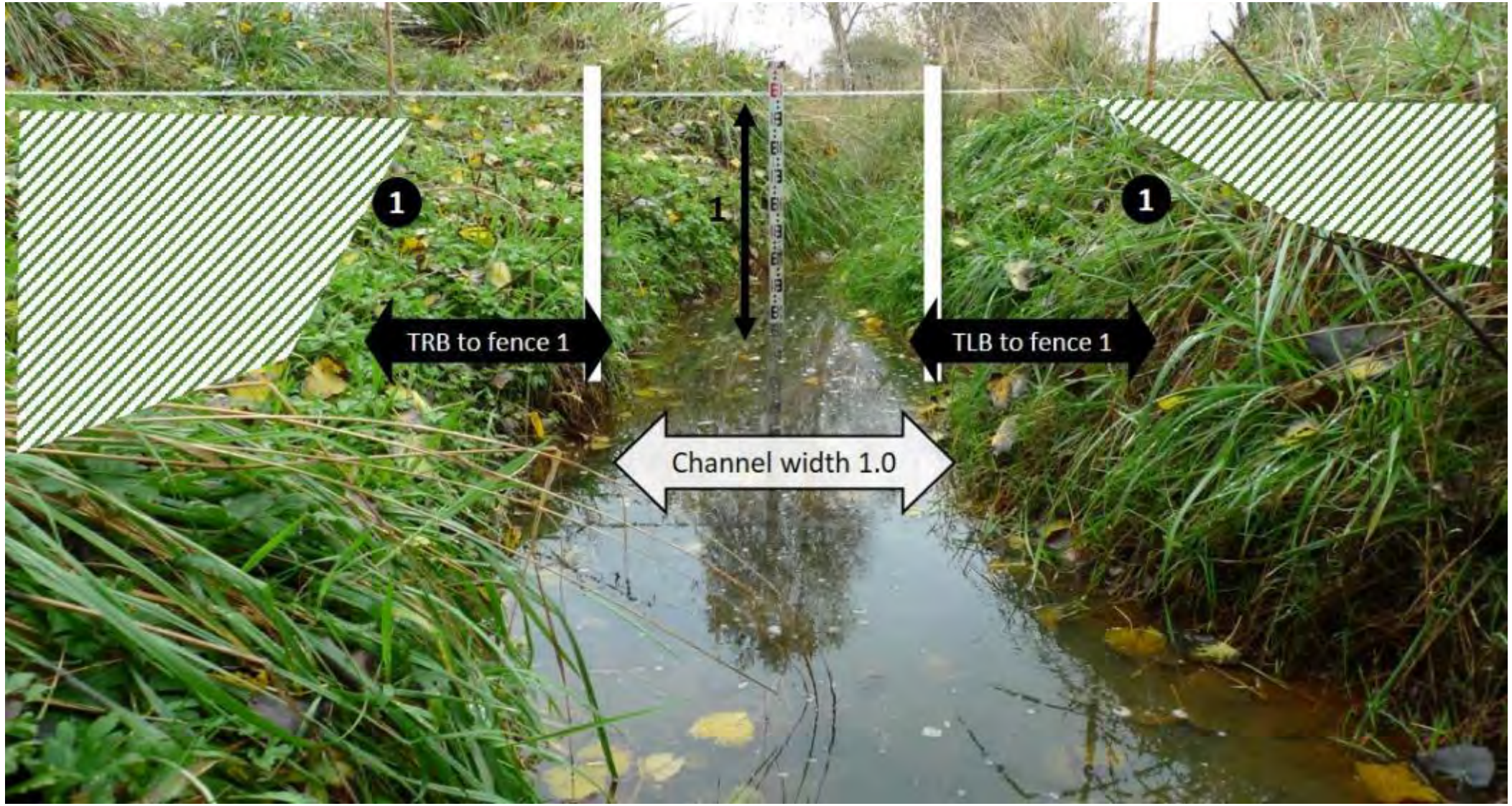

Figure 7. A small, tidally influenced permanent waterway (channel width 1 m), adjacent slope ≤ 15 °. A layperson may interpret the “edge of the bed” as edge of the channel (white vertical lines), and set back the fence 1 m from here (proposed PC1 rule; black circles). Green cross-hatching indicates the lower floodplain (~ 1 m high) which is suitable inanga spawning habitat

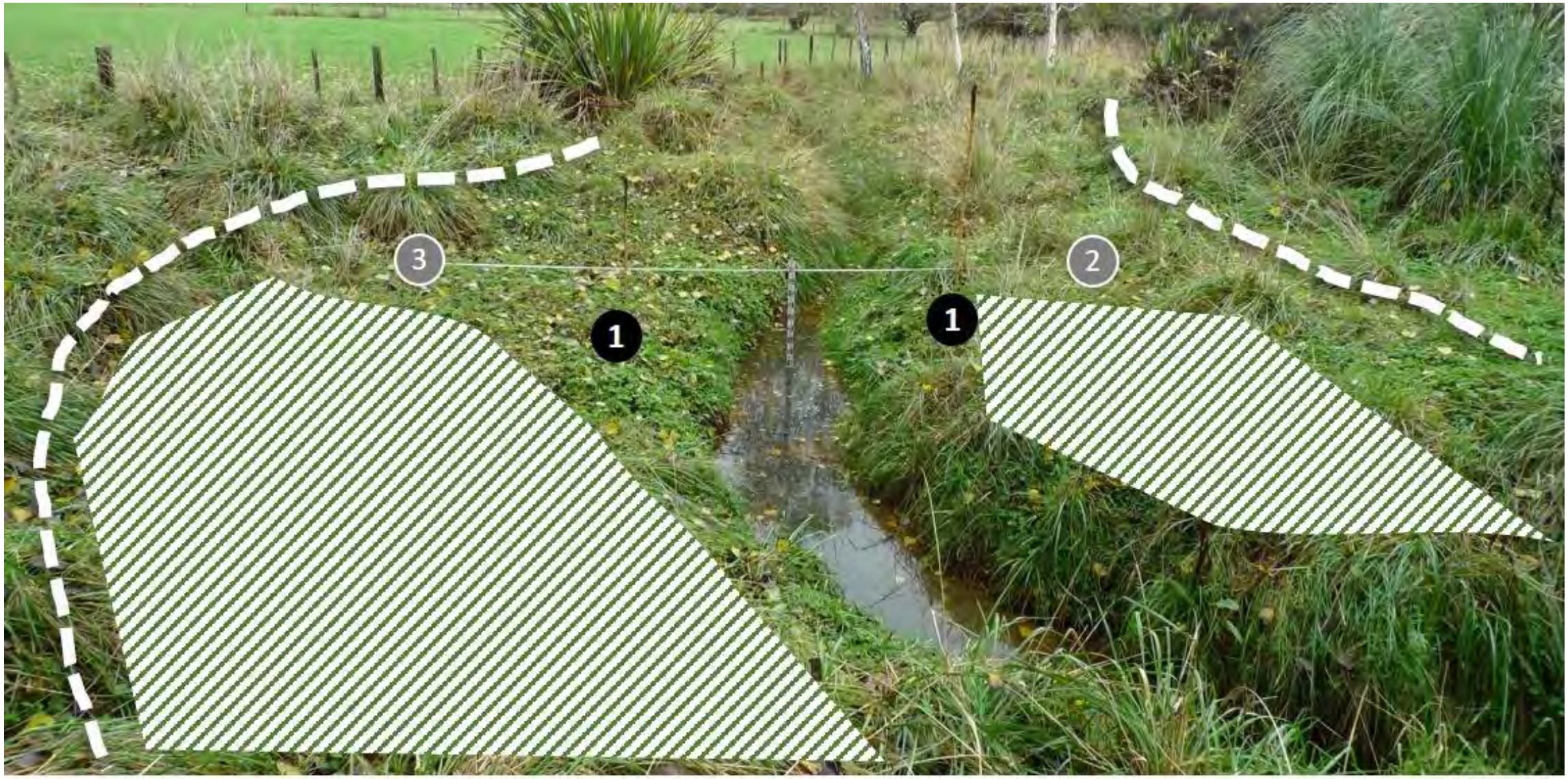

Figure 8. Small, tidally influenced permanent waterway (channel width 1 m), adjacent slope ≤ 15 °. The "edge of the bed" as per the RMA definition & inclusive of the lower floodplain, is shown for Left Bank (2 m) and Right Bank (3 m) in grey circles. Black circles, 1 m setbacks from incorrectly interpreted "bed". Green cross-hatching indicates suitable inanga spawning habitat

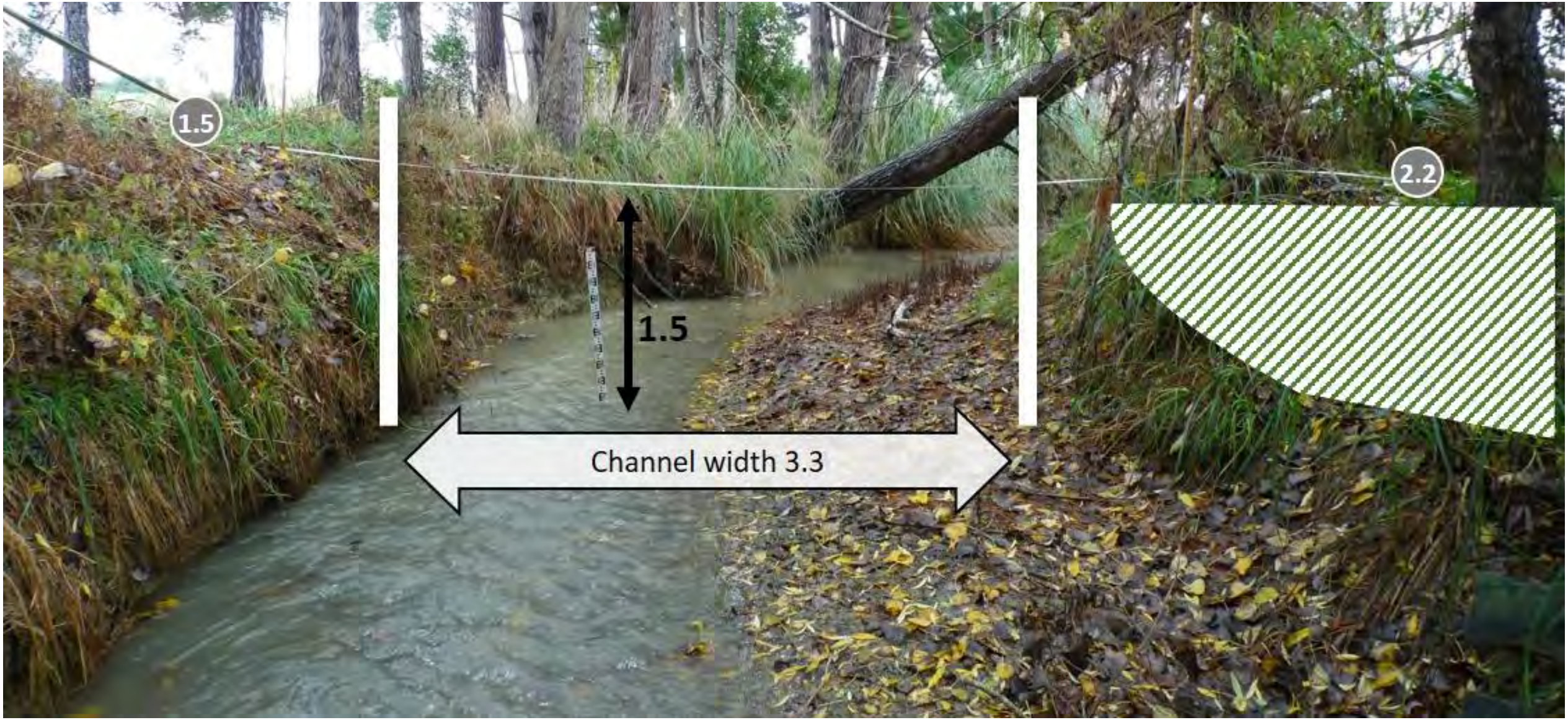

Figure 9. Large, tidally influenced permanent watercourse with adjacent slope ≤ 15 °. Channel width and distances to the crest of the upper banks (i.e. the "bed") are given in meters (grey circles). Green cross-hatching indicates areas of suitable spawning habitat for native diadromous galaxiids (whitebait species, including inanga)

Figure 9. A large, tidally influenced permanent watercourse with adjacent slope ≤ 15 °. Distances to the crest of the upper banks (i.e. the "bed") are given in meters (grey circles). The fence in the foreground is 2.5 m from the "bed" and is frequently washed away and damaged by floods (pers. comms. landowner). A minimum 5 m setback would be more effectual and cost effective