



**Nicholas Singers**  
**Ecological Solutions**  
Innovation in conservation

26<sup>th</sup> March 2021

Dear Tania,

**DESK-TOP ASSESSEMENT OF WETLAND #7476 ADJACENT TO AN UNNAMED TRIBUTARY OF THE POURERERE STREAM**

James Bridge has engaged me to investigate the issue you identified in your email dated 25/2/2021 specifically the 'Works within a wetland'. The wetland in question is #7476 in the Hawkes Bay wetland layer.

As some background I am a Freelance ecologist with 23 years professional experience and hold a Master of Science Degree in Ecology gained at Massey University in 1997. My thesis was on wetland ecology — Dune slack wetlands at Tangimoana in the Manawatu. In 2016 through 2017, I was contracted as the wetland expert for the Hawkes Bay Regional Council regarding the definition of a wetland and its practical delineation in Hawkes Bay, for the regional policy statement and plan, which was heard by the Environment Court.

Upon reading your email and discussing it with James, I informed him to first provide me with a series of photos so that I could assess whether the polygon labelled #7476 is a wetland and whether I needed to visit the site to undertake a thorough ecological assessment. I asked him to take these photos from specific locations while he was on site, including using a drone. These locations and other points of interest are shown in Figure 1. The photos included are only some of the many images and these can be made available to HBRC as well. Having seen these photos I can identify the vegetation inside polygon #7476 as pasture and it is my opinion that inclusion as a wetland is an error, so should be removed from the Hawkes Bay wetland database. Additionally, having looked through a series of aerial photos from Google Earth between 2010-2018. The image taken in 2010 had a greater cover of rushes upstream of the gum trees than in 2014 and 2018. I do not think the area was a wetland then or previously. Sometime prior to 2014 control of rushes in this paddock occurred.

A full analysis of this can be found on the following pages. Please contact me to discuss this more if required.

Regards

Nicholas Singers

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The technical method for determining wetland boundaries used by NZ ecologists is Clarkson (2013). This is a methodology specifically targeted to provide a vegetation-based tool to assist in the identification and delineation of wetlands in New Zealand consistent with the definition within the Resource Management Act 1991. A key component of this relates a classification of 'wild' plants in New Zealand into a range of classes from obligate upland species to obligate wetland species. Wetlands contain mostly plants classified as either obligate wetland, facultative wetland and at times facultative species. Wetlands do not contain plants classified as obligate upland species.

### **Ecological Description of area identified as wetland #7476**

The landform is a small alluvial terrace of the unnamed tributary of the Porerere Stream (Figures 1 & 2). This is known to occasionally flood during extreme weather events. The vegetation of the area identified as # 7476 is dominated by pasture species including rye grass (*Lolium perenne*), paspalum (*Paspalum dilatatum*), browntop (*Agrostis capillaris*), rats' tail (*Sporobolus africanus*) and white clover (*Trifolium repens*) — see photos. Other species present include Californian thistle (*Cirsium arvensis*). Collectively these species appear to occupy >90% of the area. These are all obligate upland or facultative upland species as identified in Clarkson (2013), with the exception of rats' tail (*Sporobolus africanus*) which is not listed in Clarkson (2013). However, Champion et al. (2012) describes the habitat of this grass as sunny north-facing hill grassland, scrub, wasteland and on roadsides usually near the coast, which indicates that it is an obligate upland plant.

Minor species include a species of rush (*Juncus* sp.) and gorse (*Ulex europaeus*). The species of rush appears to be soft rush (*Juncus effusus*) which is an introduced species. Soft rush is a facultative wetland species which means it usually is a wetland plant but occasionally found in uplands and gorse is a facultative upland species but occasionally found in wetlands (Clarkson 2013). Therefore, as no plants present in these photos are identifiable as obligate wetland species and only one is a facultative wetland species, it is clear #7476 does not meet the criteria of a wetland defined by the NPS 2020.

Outside of the wetland polygon, along the edge of the Porerere Stream and the upstream of the gum trees along the margin of the unnamed tributary stream, are scattered areas of wetland plants mostly species of *Bulboschoenus* and *Carex*. Based on the drone photos I estimate these patches as being only 0.5m – 2m wide and combined less than 500m<sup>2</sup>. Upstream of the gum trees these patches of wetland plants are barely discernible on Figure 2. These native wetland species are not present at the proposed stream crossing.

### **References**

Champion, P.; James, T.; Popay, I. & Ford, K.(2012). An illustrated guide to common grasses, sedges and rushes of New Zealand. New Zealand Plant Protection Society, Christchurch, New Zealand.

Clarkson, B.R. (2013). A vegetation tool for wetland delineation in New Zealand. Prepared for: Meridian Energy Limited. Landcare Research, Hamilton, New Zealand Ltd.

The following photos were taken on Wednesday 24<sup>th</sup> March, located by the large gum trees looking upstream along the unnamed tributary and downstream towards Pourere Stream.

Figure 1: Area mapped as wetland #7476 in HBRC wetland layer and key points of interest. The black arrows indicate the direction of photos 1 – 3.

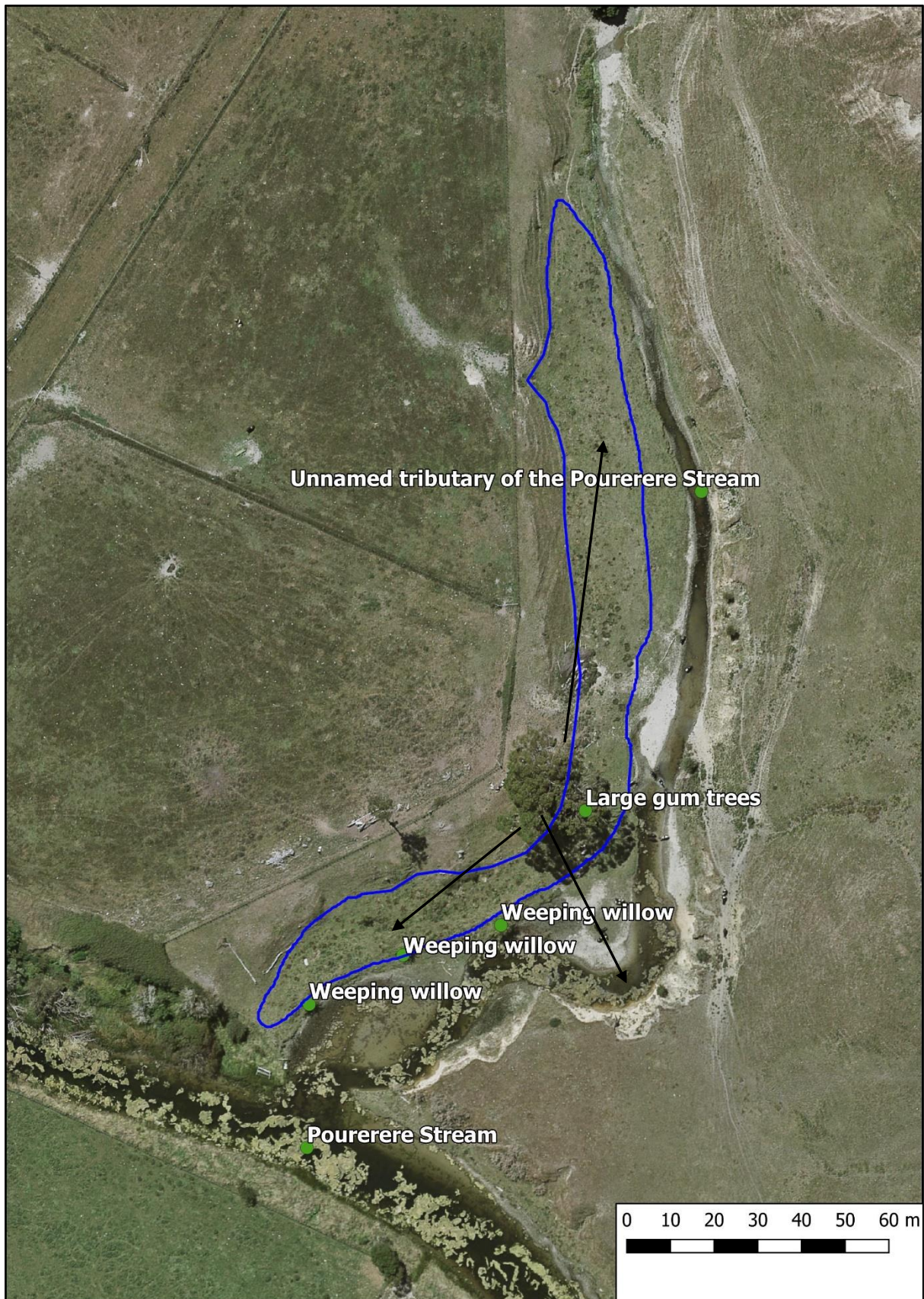


Figure 2: Drone image looking west showing area #7476. Hatched boundary is the approximate extent



**Photo 1: Looking upstream from near the base of the large gum trees, hatched line showing approximate boundary of area identified as wetland #7476**



Photo 2: Looking towards the east (seaward) from the base of the large gum trees, hatched line showing approximate boundary of area identified as wetland #7476



Photo 3: Looking downstream from near the base of the large gum trees, hatched line showing approximate boundary of area identified as wetland #7476



**Photo 4: Overview of vegetation (rye grass, paspalum and clover pasture) upstream of gum trees**



**Photo 5: Close up of pasture upstream next to 2<sup>nd</sup> gorse bush upstream of gum trees**





