

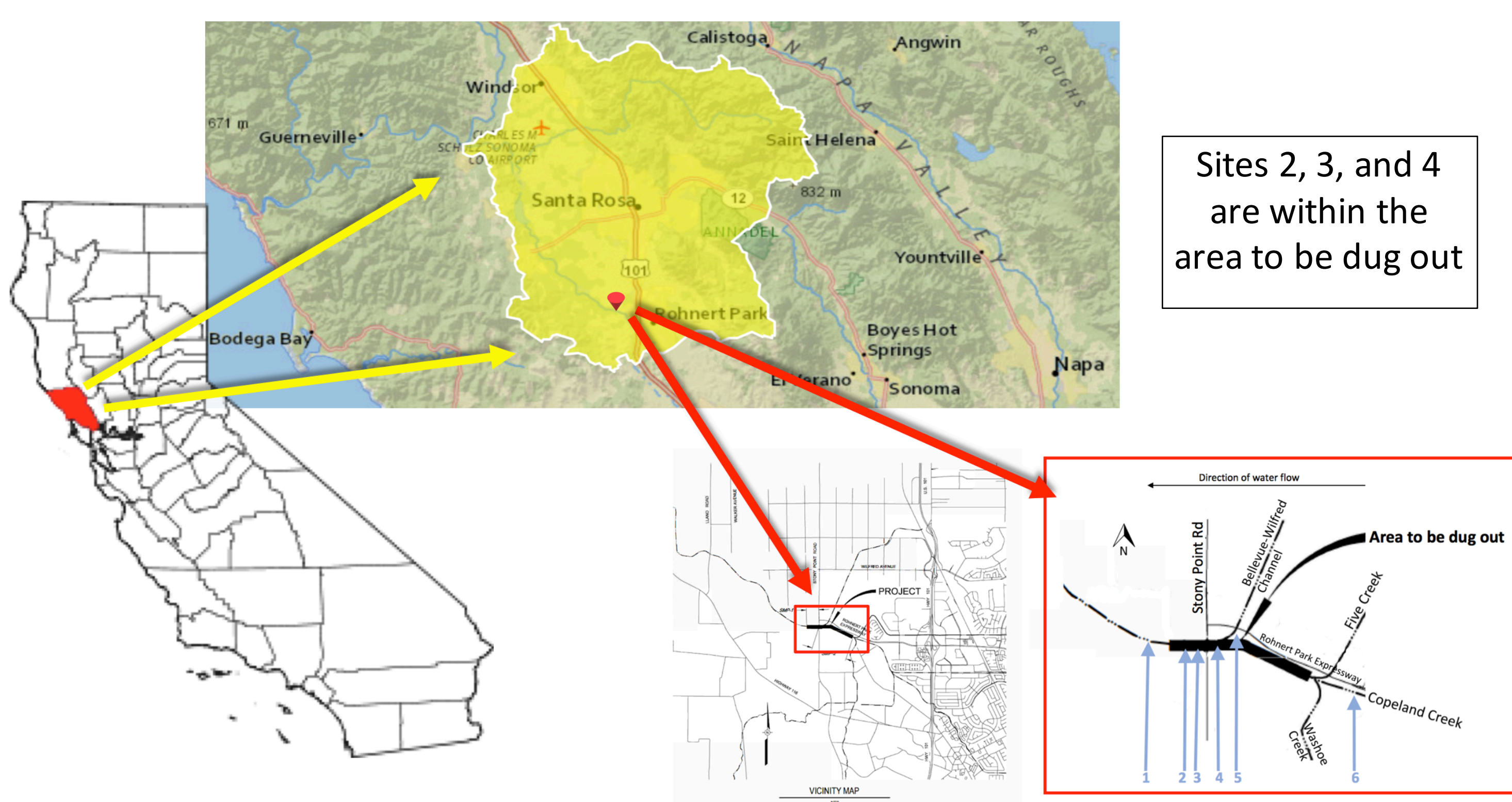
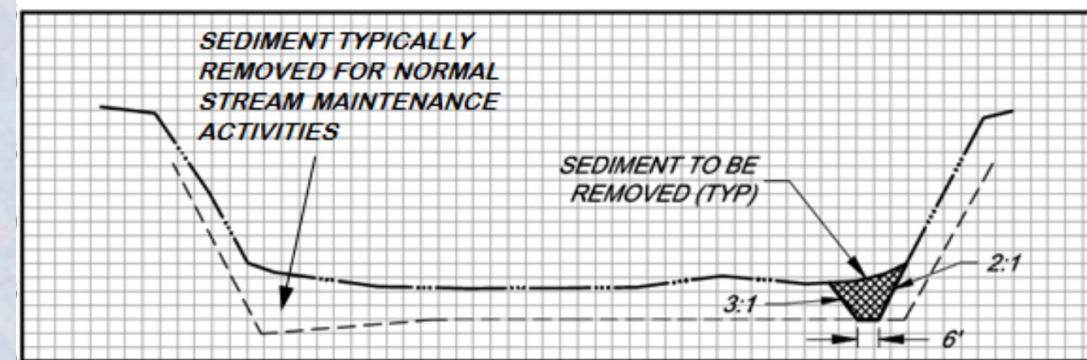
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Abstract

Sonoma Water plans to dig out sediment from the Laguna de Santa Rosa near Stony Point Road in Rohnert Park as part of their Water Quality Credit Trading Program. This part of the Laguna has become progressively shallower over the years as nutrient-rich sediment that washed downstream has slowed down and settled out. The problem with it being wide, shallow, and sunny is that the invasive weed *Ludwigia* thrives in these conditions and has overgrown the Laguna in this area. The digging project will result in a narrower, deeper, more shaded channel (Figure 1). We have identified six study sites in the area that will have sediment removed. At each site, we have taken photographs and characterized the shape of the channel, water depth, and plant types present. We plan to revisit these six sites each semester and repeat the measurements, expecting that the deeper channel design will prevent *Ludwigia* growth and improve habitat health.

Figure 1. Channel shape.



Methods



Creek morphology - the shape of the channel bottom was measured every meter using auto level equipment and visualized using Excel.

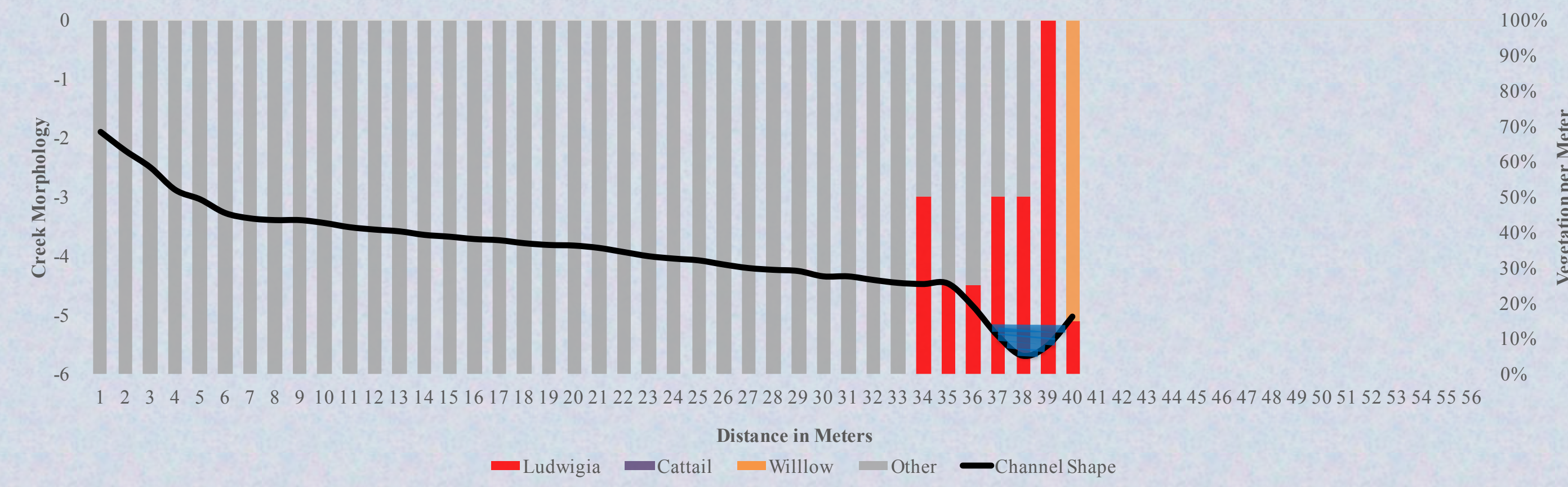


Water Depth – measured every meter using a meter stick (pushed down to root level if *Ludwigia* was present).

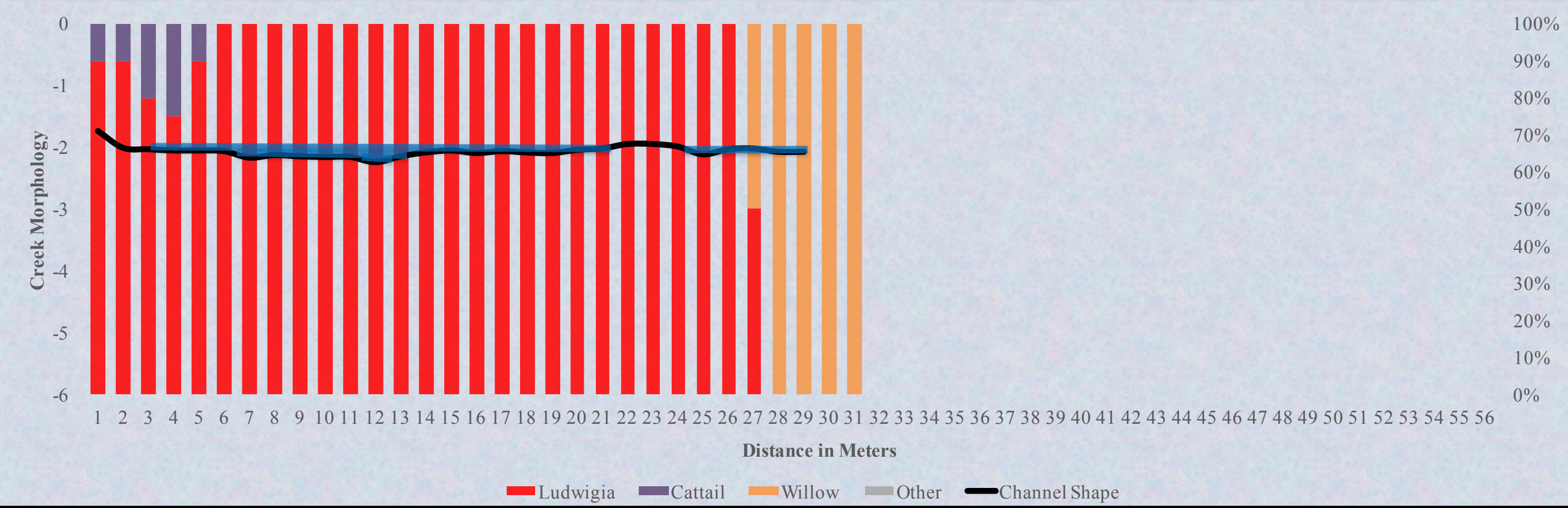


Mapping Plant Species – 4'x4' quadrats were used to mark off plots along the transect lines at each of the six sites. Plant type and coverage were recorded for each quadrat.

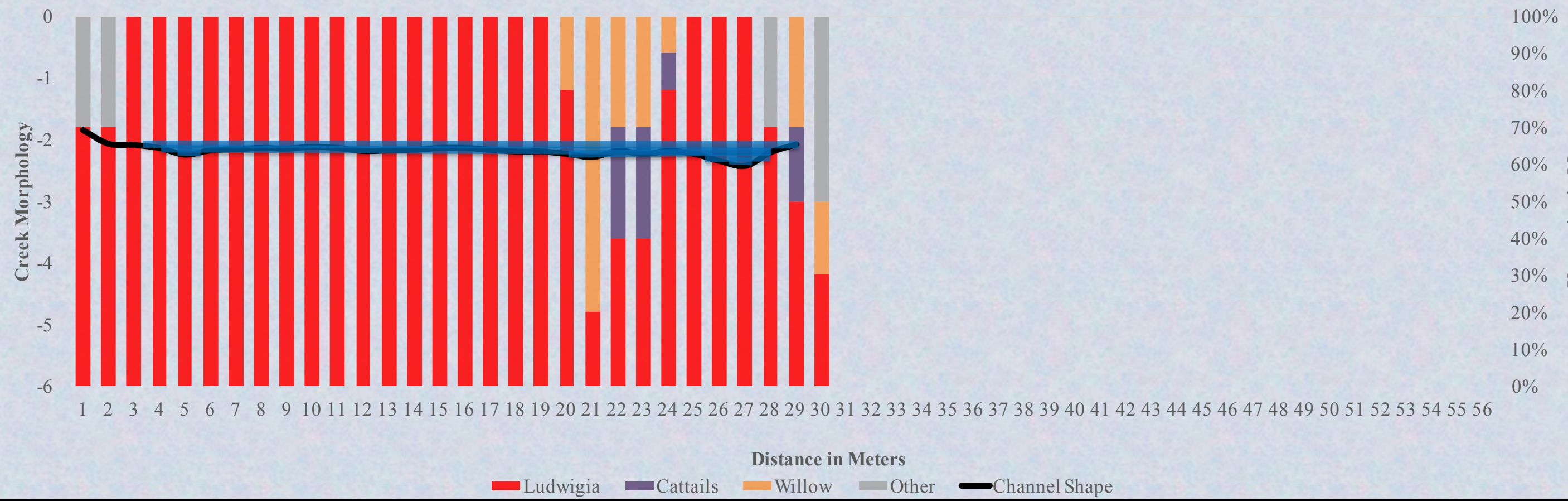
Site 1 (downstream)



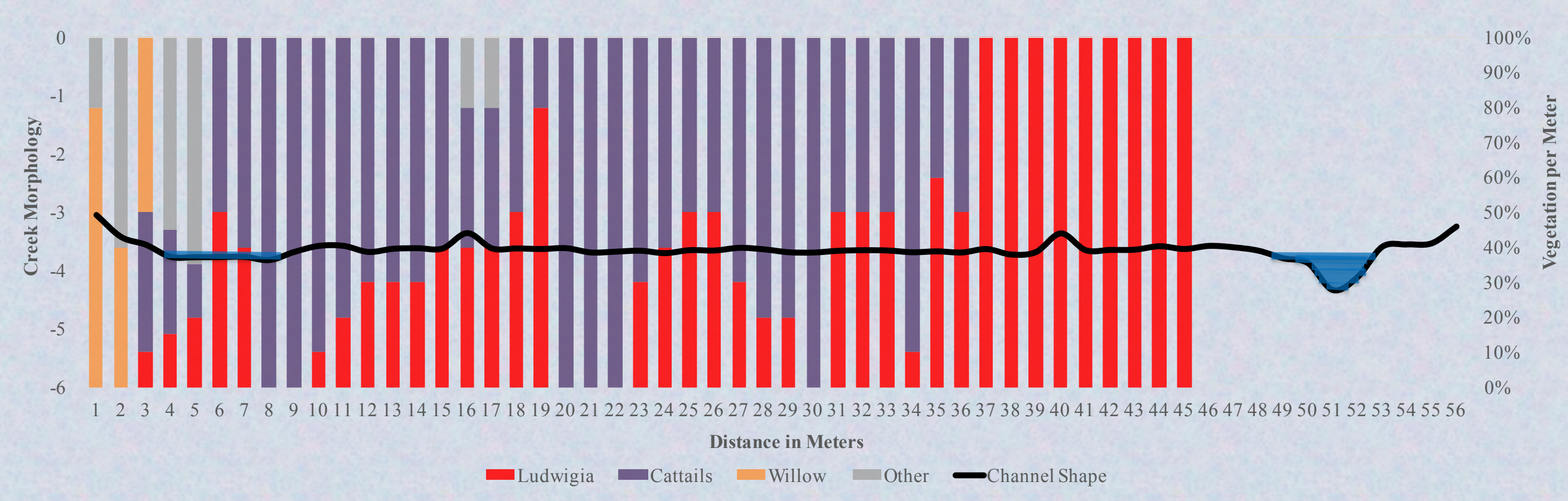
Site 2 (dig area)



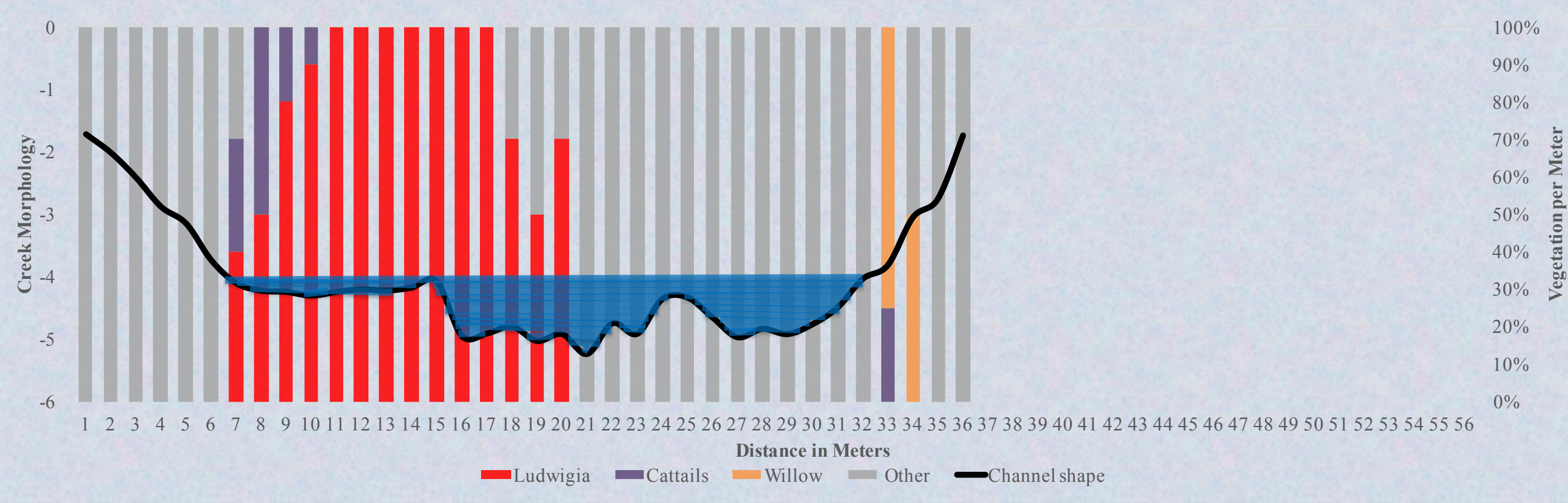
Site 3 (dig area)



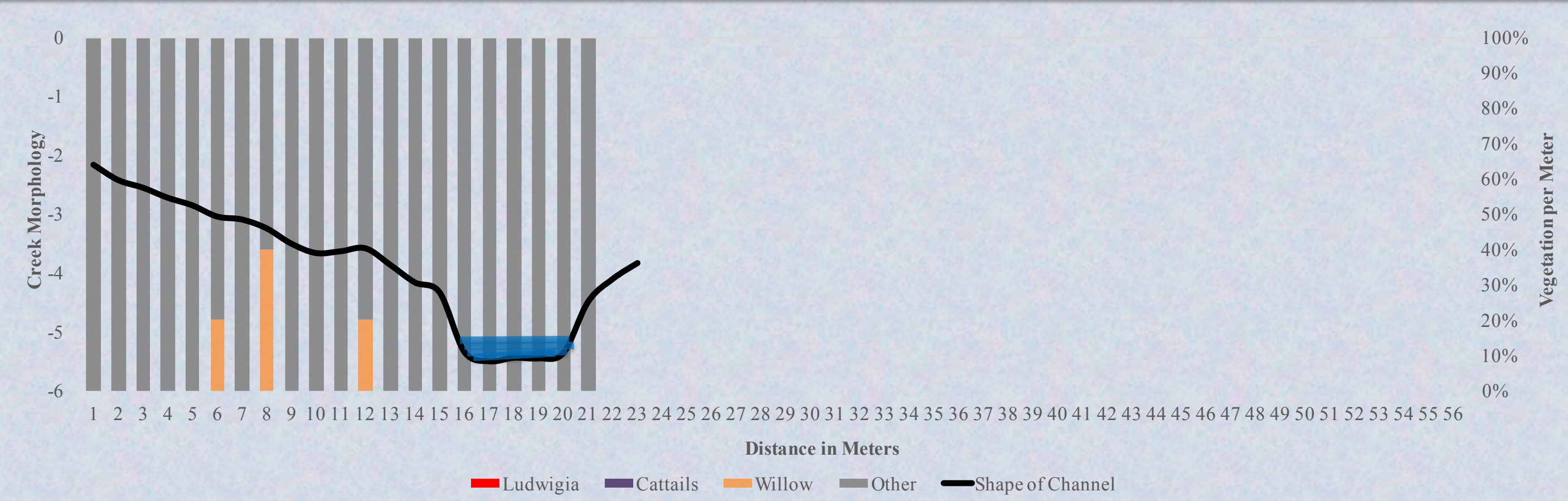
Site 4 (dig area)



Site 5 (tributary)



Site 6 (upstream)



Conclusions

- Site 1 had been previously channelized by Sonoma Water as a demonstration site for the digging project. It had full sun exposure with flowing water. *Ludwigia* did not grow well here.
- Site 2 was shallow and sunny, with stagnant water and dense *Ludwigia* growth.
- Site 3 was shallow and sunny, with stagnant water and dense *Ludwigia* growth.
- Site 4 had full sun exposure. Part of the channel had deeper, flowing water. Cattails seemed to grow well in the muddy flat, which may have shaded and outcompeted *Ludwigia*.
- Site 5 had full sun exposure with deep flowing water. At this site, water depth inhibited *Ludwigia* growth.
- Site 6 had an abundance of shade and a narrow, flowing stream. There was not any *Ludwigia* present at this site.



Acknowledgements

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