

## Pre- and post-fire differences in suspended sediment values from a riparian Delta forest in the Majrase Nature Reserve, NE Sea of Galilee, Israel

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A severe forest fire in May 2017 in the Majrase Nature Reserve burnt 24 hectares of riparian vegetation of the Bethsaida Valley delta in the NE part of the Sea of Galilee shore, Israel. Using a turbidity sensor monitoring station established in late summer 2016, we compared and analyzed the suspended sediment concentration (SSC) values and properties during five flow events before the fire and five flow events after the fire in the Nahal Daliyat (Majrase) channel, the perennial stream that dissects the burnt area.

The analyses of all flow events show that during the hydrological year 2016-2017, prior to the fire - , the suspended sediments response, i.e, the sedigraph, correlated to the hydrograph, suggesting that the sources of the sediments were upstream with no apparent local contribution. The background concentrations were very low and the sediments were mineral. However, after the fire during 2017-2018, the background turbidity was already high from the beginning of the rising limbs of the hydrographs due to organic sediments that originated from the nearby burnt, ash-covered ground. Once the peak flood bore arrived, the mineral, suspended sediments from upstream, were dominant, diluted and masked the local sediment contribution. However, during the late recession of the hydrographs, the local organic source became dominant again and suspended sediments concentrations were rising back towards the original, post-fire background values. This local availability of sediment and connectivity was reduced with the rain season progress and the riparian vegetation quickly recovered over the burnt ground. At the end of the rain season in spring 2018, very few patches of ash were still visible and full restoration was reached. Our study shows that despite the initial severity of the forest fire over the delta, the permanent availability of surface and underground water leads to very quick (1-year) vegetation recovery and the disturbance is short-lived.