

THE 2016 SEASON AT THE TANANA RIVER TEST SITE

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Beginning just after ice out in May 2016, NNMREC UAF carried out an intensive season of demonstration projects at the Tanana River Test Site (TRTS). The TRTS was established in 2010 for demonstrating river energy converters and associated infrastructure and has been the site of numerous successful projects. The 2016 season extended from mid-May to late-September and was notable both for the number of completed projects (3) and because it was the culmination of a multiyear build out funded by the State of Alaska and the M.J. Murdock Charitable Trust with additional support for individual research projects at the site by the U.S. Department of Energy. At the beginning of the 2016 season, a new, UAF designed trawl net system for fishing the entire water column and suitable for baseline fisheries studies in Alaska's large and swift glacial river systems was tested for three weeks from a barge anchored in mid-river, downstream of UAF's debris diversion platform (Figure 1). Immediately following this deployment, UAF deployed a 5 kW New Energy turbine for three weeks (Figure 2). The turbine deployment marked the first time UAF has conducted all aspects of a turbine deployment including characterizing the power output of the turbine versus river velocity and turbulence and monitoring fisheries/turbine interactions. During previous deployments at the TRTS, turbine manufacturers and their contractors were responsible for collecting velocity and power performance data. Thus the 2016 season marked an important milestone for UAF in demonstrating their ability to carry out all aspects of the data collection and analysis of the power performance of river energy converters in natural and challenging Alaska river conditions. Finally, UAF completed the first multibeam bathymetric sonar survey of the TRTS since 2010 and the first such survey carried out entirely by UAF.

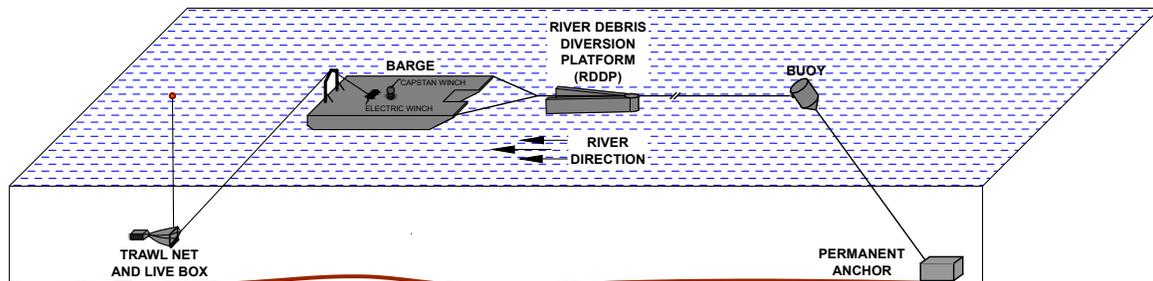


FIGURE 1. DIAGRAM OF TRAWL NET SYSTEM DOWNSTREAM OF THE RESEARCH DEBRIS DIVERSION PLATFORM.

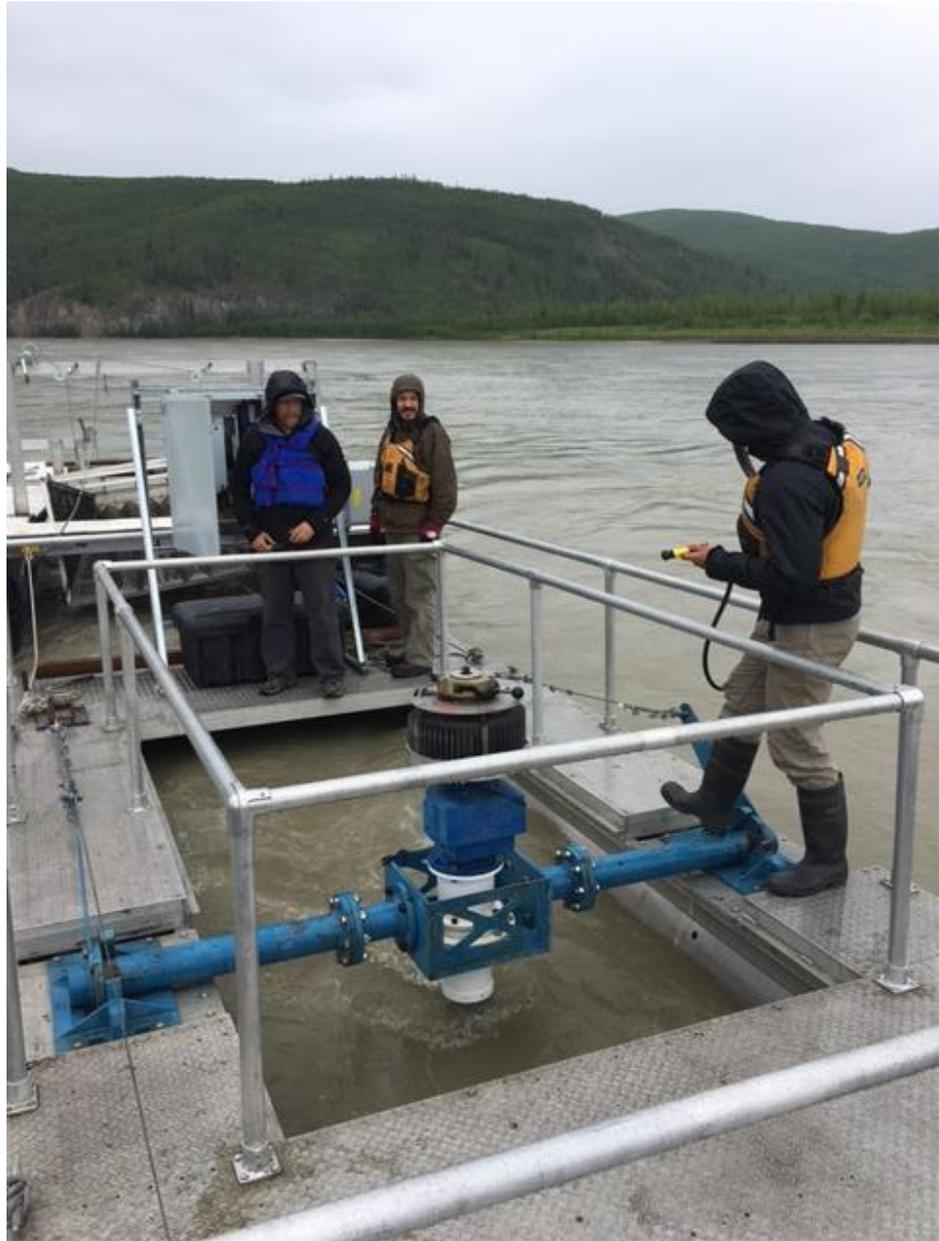


FIGURE 2. 5 kW NEW ENERGY TURBINE DEPLOYED IN SUMMER 2016 AT THE TRTS.

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