

PNNL-32935

Enhancing Lifetime and Reducing Costs for Fish Diversion Netting Structures (Abstract)

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May 2022

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Dry Surface Technologies LLC
Lorama Group Inc.
Prometheus Innovations LLC
Pacific Netting Products
Taylor Shellfish Company, Inc.
River Connectivity Systems, LLC

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Pacific Northwest National Laboratory
Richland, Washington 99354

Abstract

This effort will focus on technology transfer and commercialization of antifouling coatings with an enthusiastic and engaged industrial team. Environmental requirements and operational demands call for a nontoxic coating/paint to prevent fouling on fish passage guidance netting at hydropower facilities. For example, one netting customer estimated the capital cost for compliance at \$12 million to \$15 million. This project will build partnerships between PNNL and private companies to optimize, demonstrate, mature, and commercialize a novel PNNL-developed technology that addresses this critical coating need of the hydropower industry. This effort will support modification of existing coatings for application to flexible netting structures.

Industrial partners include commercial coating development specialist (Lorama), hydrophobic material manufacturer and paint developer (Dry Surface Technologies), aquatic applications specialists (Prometheus Innovations and River Connectivity Systems), and hydropower netting producer (Pacific Netting Products). Engagement with the U.S. Army Corps of Engineers (USACE) and Bureau of Reclamation (BOR), two hydropower operators, throughout the project will provide expertise and field test sites that will provide crucial proof of real-world performance data (additional details provided in Teaming section). Taylor Shellfish Farms will provide organisms and fouling expertise as well as a perspective of potential broader impacts for the blue economy. Sample netting will demonstrate performance in a range of environments for key hydropower applications. PNNL will work with industrial partners to overcome commercialization barriers as well as resolving any manufacturing or regulatory issues.

This Phase 1 effort is focused on technology optimization for application to fish passage guidance netting and technology validation as verified by independent testing (through USACE, BOR, Taylor Shellfish and Prometheus Innovations). Through this effort, SLIC will be demonstrated for netting applications at technology readiness level (TRL) 5. The field test data will allow optimization of SLIC formulation and performance which is key to enabling technology transfer of a mature proven technology to industry and production of a viable commercial product specifically focused for hydropower needs.

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