CASE STUDY

Sunnyside Valley Irrigation District Fish Guidance and Debris Boom

SUNNYSIDE, WASHINGTON

PNP
PACIFIC NETTING PRODUCTS
INCORPORATED

APPLICATION: FISH PASSAGE

Pacific Netting Products designed and manufactured a dual pontoon floating HDPE fish guidance and debris boom for the Sunnyside irrigation district. The boom facilitates the passage of salmon and steelhead smolts around a head gate that diverts surface water from the Yakima River into an adjacent irrigation canal. The boom supports the overall objective to enhance fish survivorship by reducing the number of fish that enter the head gate. The design of the PNP guidance structure allows juvenile fish to remain in the mainstem of the Yakima River past the intake structure, thereby reducing the overreporting of losses due to fish getting diverted through the canal head gate and needing to navigate back through the existing fish bypass infrastructure in the canal.

The boom is composed of three single MultiFunction Boom™ sections, and six sections of dual PNP MultiFunction Booms. The guidance structure is positioned with a concrete shore anchor and a dam-mounted beam slider assembly to accommodate changing river stages. The upstream single portions of boom are fitted with a heavy-duty, nylon reinforced rubber skirt, contoured to fit the bathymetric profile. The dual pontoon portion of the boom is equipped with five four-foot-deep removable wedge wire fish guidance screens. The parallel sections of boom are connected by steel structural cross members. The dual pontoon design helps to reduce rotation of the boom in high flows and allows the fish guidance screen to remain vertical. The rear pontoon is ballastable for final trim and alignment. The front pontoon is foam-filled for added safety. The system is designed to be adaptable, modifiable, and/or reconfigured for operations.

INSTALLATION FEATURES

- Dual HDPE floating MultiFunction Boom
- Wedge wire screen for design flows up to 4 cfs
- Enhances survivorship of salmonid smolts
- Minimizes irrigation impacts
- Accommodates changes in surface water elevations
- Durable enough to divert large woody debris downstream