

WSDOT SR 520 pontoons fish salvage: An Unprecedented Approach to Aquatic Resource Conservation - Aberdeen, Washington

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Introduction

At 7,578 feet long, the existing SR 520 Bridge is the longest floating bridge in the world and is a critical transportation link between Seattle and Kirkland, Redmond, and Bellevue, WA. The existing bridge is undergoing replacement by the Washington State Department of Transportation to address structural and functional deficiencies. The replacement bridge will be supported by 77 float pontoons that will be anchored to the Lake Washington bed. Twenty-one of the new pontoons are 360' long, 75' wide, and nearly 30' tall. These and 12 smaller pontoons were constructed in a 4-acre casting basin adjacent to Grays Harbor in Aberdeen, Washington. After a batch of up to six pontoons was constructed, the basin was flooded, and the pontoons were towed to Lake Washington. After each batch of pontoons was floated out of the basin, a comprehensive fish salvage effort was conducted to remove fish that entered the casting basin during basin flooding. Multiple fish species were recovered, enumerated, and released into Grays Harbor during each fish salvage effort.

Methods

A general summary of the fish salvage effort involves:

- dropping the water level in the casting basin to 30" deep;
- installing a "power crowder" in the north end of the basin to consolidate and move fish toward the south end of the basin for collection;
- seining crowded fish into aerated fish boxes for transport by a crane out of the basin to a floating enumeration station in Grays Harbor;
- installing screens and fyke nets after the power crowder is removed during basin water draw down to collect fish that weren't captured during operation of the power crowder; and
- surveying the basin for any remaining fish as the water levels drop.

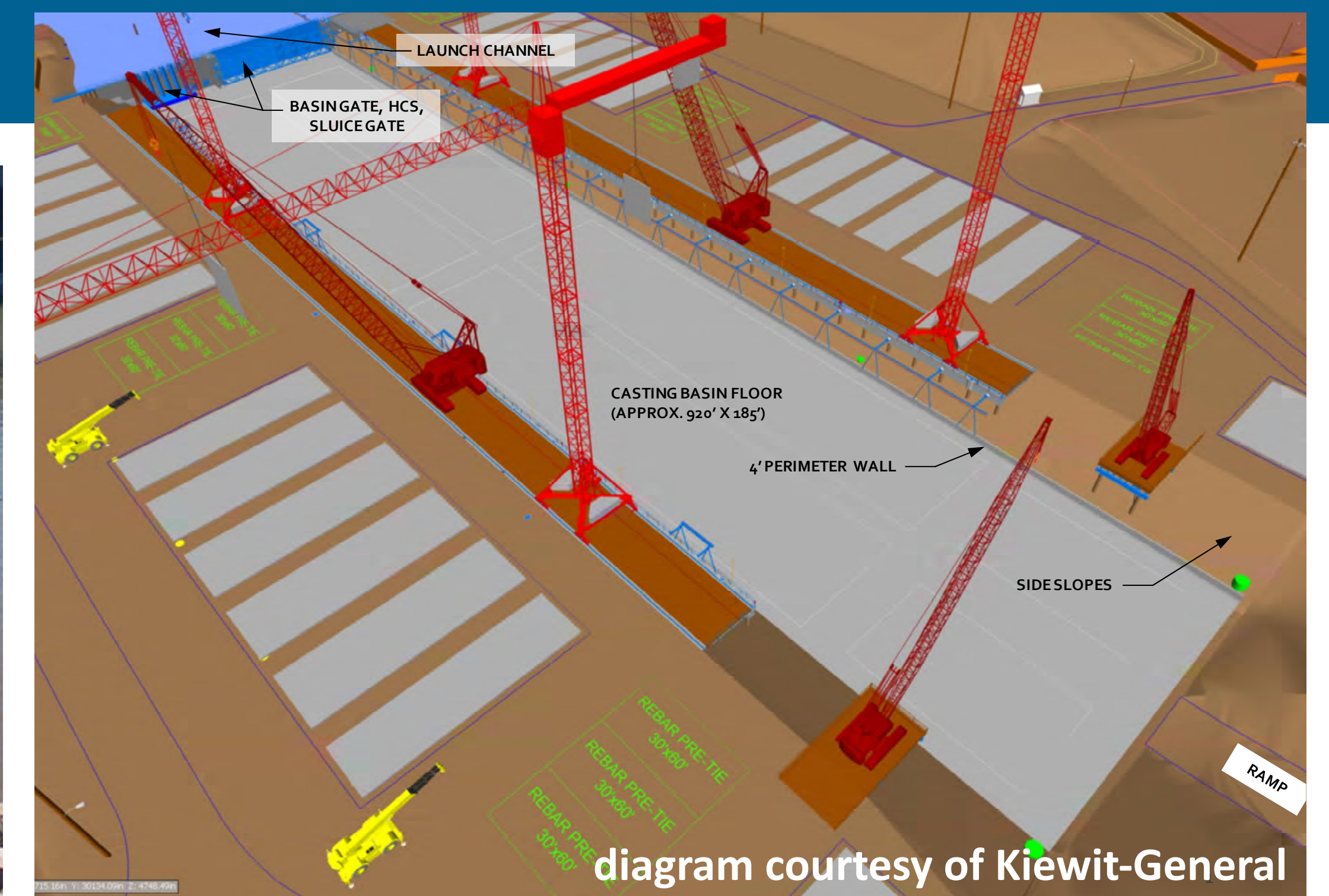
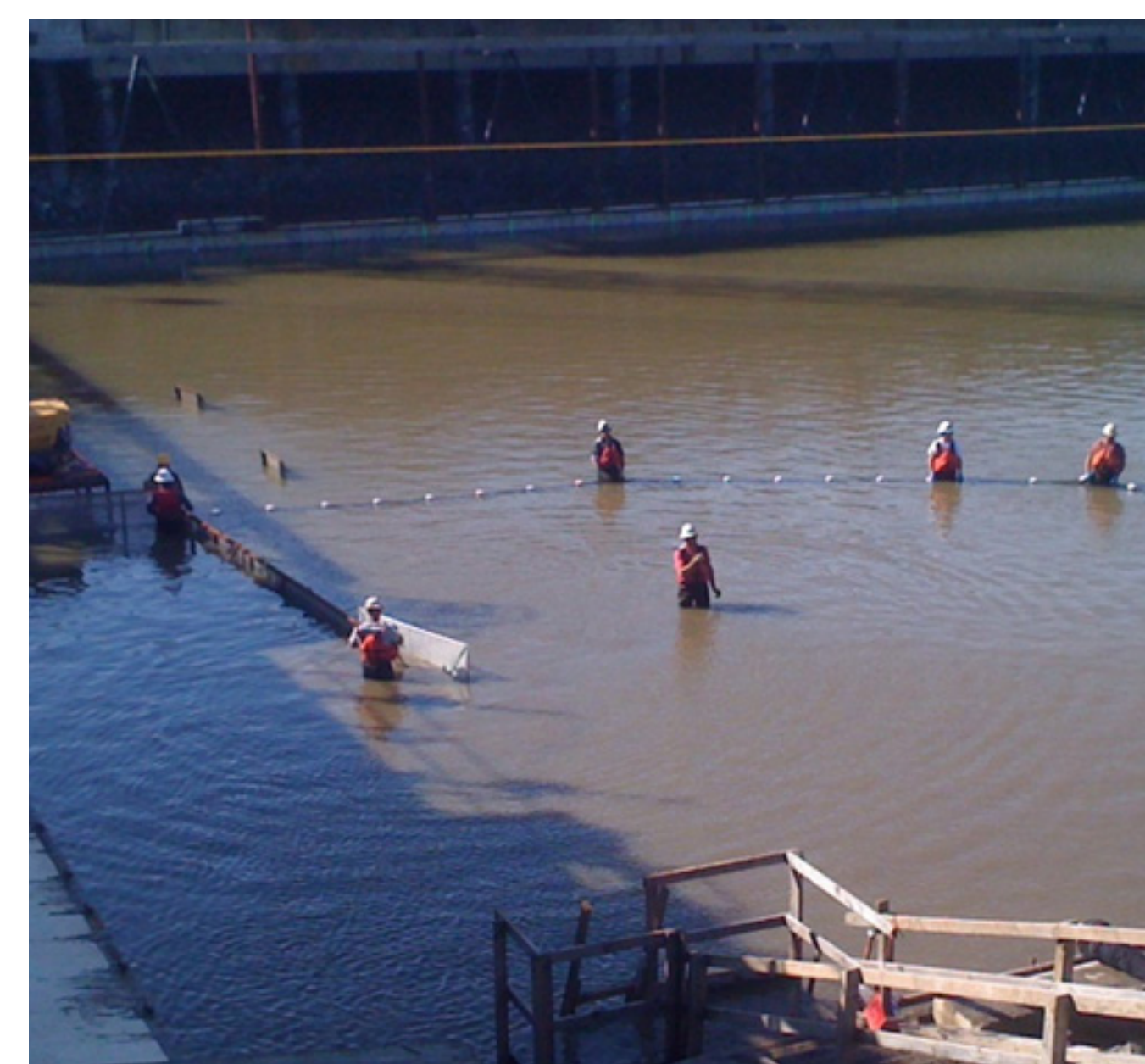
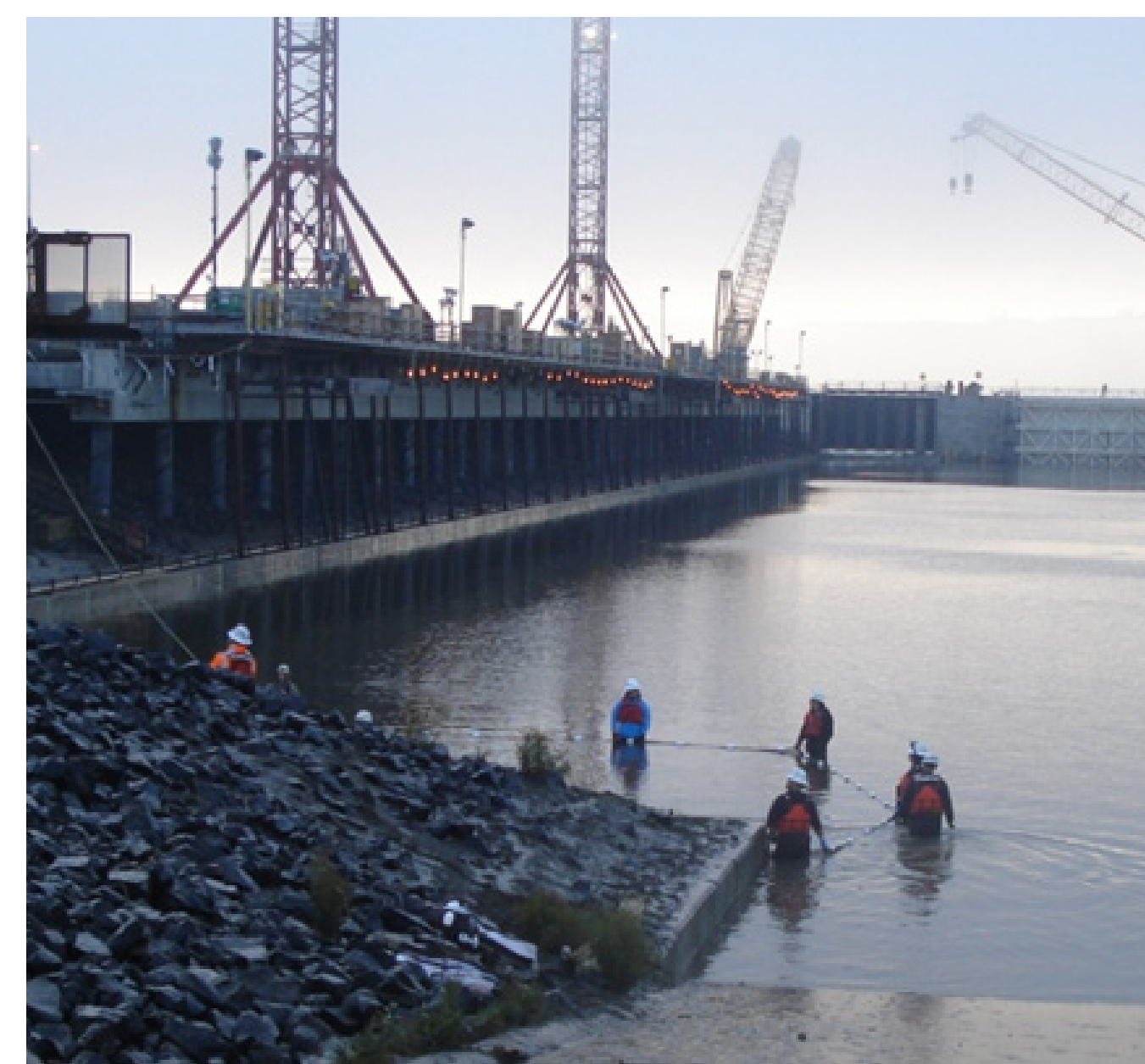
Results*

- Six fish salvage efforts have collected and removed approximately 71,200 fish.
- Pacific snake prickelback and threespine stickleback were the most numerous species salvaged.
- Approximately 40 different species of fish were salvaged.
- Species ranged from freshwater species such as largemouth bass to marine benthic species such as English sole.
- Six salmonid species were recovered including Chinook, coho, and chum salmon; as well as steelhead, bull trout, and cutthroat trout.
- Three federally-listed species occur in Grays Harbor: green sturgeon, eulachon, and bull trout. Bull trout are the only listed species affected by the project. One adult bull trout was successfully salvaged in cycle 4. No other listed fish were noted to enter the basin.

* As reported in the WSDOT Fish Handling Monitoring Reports submitting to resource agencies.

Conclusion

- Fish salvage in large, flooded construction zones is challenging and requires adaptive management approaches.
- Grays Harbor supports a wide array of fish species with very different life histories.
- Benthic species such as starry flounder and gunnel are difficult to capture via seining and power crowding techniques.
- Listed fish species did not appear to be adversely affected by fish salvage efforts.



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Project Partners:

Washington State Department of Transportation - Owner
 Kiewit-General - Prime Contractor
 Confluence Environmental Company - WSDOT ESA Compliance Consultant

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