Apr 26th, 4:30 PM - 5:00 PM

Vessel Drift and Rescue Tug Response Analysis for the Strait of Juan de Fuca to the Southern Strait of Georgia

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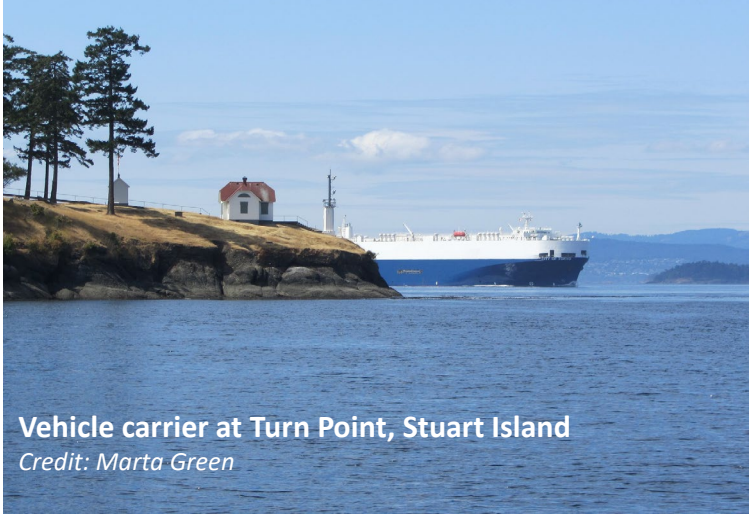
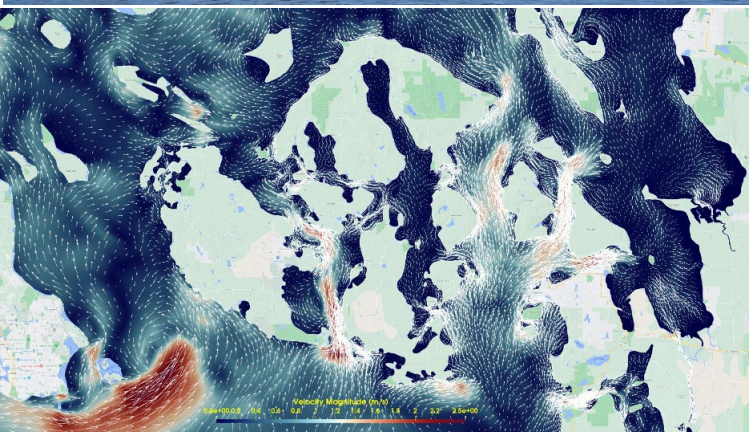
Vessel Drift and Response Analysis for the Strait of Juan de Fuca to the Southern Strait of Georgia

Emergency Towing Vessel for Inland Waters Demonstrated Effective in Preventing an Oil Spill



Vehicle carrier at Turn Point, Stuart Island
Credit: Marta Green



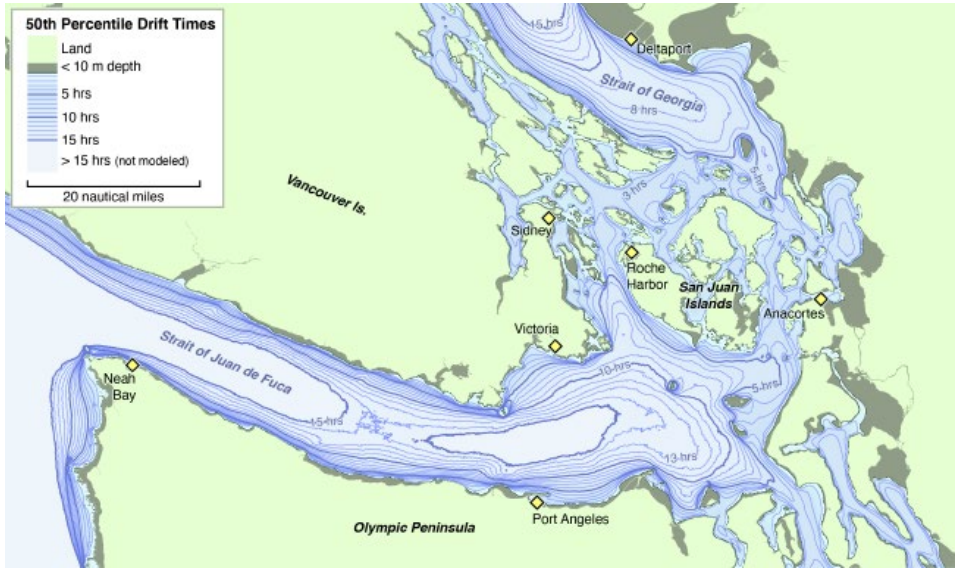
Predicted surface currents distribution from the Salish Sea Model on 1/1/2017 2:00:00 AM

DRIFT MODELING

Current and wind models estimate how long it would take a drifting loaded, mid-size containership to ground based on the winds and currents measured from 2014-2017.

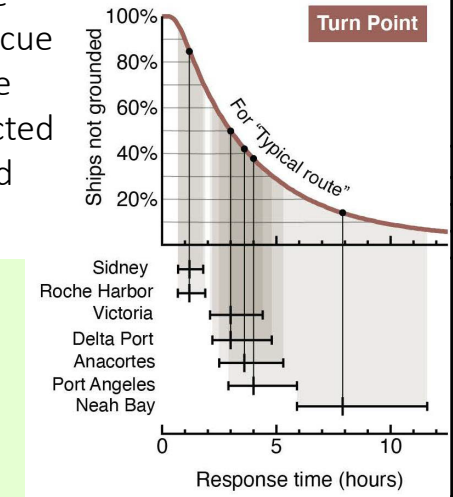
More than **6,500 model runs** yielded **15.6 billion estimates** of drift times.

The project modeled the time available to rescue a disabled vessel adrift in the central Salish Sea before it grounds, and the time it would take for an emergency towing vessel (ETV) to rescue ships adrift in Haro Strait and Boundary Pass, thus reducing the risk of an oil spill. Nuka Research & Planning previously conducted a vessel drift and response analysis for Canada's west coast and this study extends that modeling to inland waters.



Estimated time for a ship to drift to grounding based on the median case

ETV RESPONSE EFFECTIVENESS



Area That Vessel Drifts From Typical Shipping Route	Percent of Vessels Potentially Rescued From Grounding	
	Neah Bay	Sidney Roche Harbor
Boundary Pass	30%	75% - 80%
Turn Point	15%	85%
N Haro Strait	40%	90% - 95%
S Haro Strait	65%	90% - 95%

An ETV stationed in Sidney or Roche Harbor providing the mid-range response time would be effective in preventing 75-95% of disabled vessel groundings in cases modeled for these waterways, significantly improving the current rescue capability from Neah Bay.

The ETV response analysis focused on the shipping route through Haro Strait, Turn Point, and Boundary Pass. Rescue times were calculated for a hypothetical ETV positioned at six locations plus the tug in Neah Bay. Based on a range of travel speeds and distances, rescue times were bracketed as fast, mid-range, and slow.

Vessel Drift and Response Analysis Final Report, April 2021