What we're still learning from the Exxon Valdez environmental debacle 3 decades later

March 27 2019, by Hal Bernton And Lynda V. Mapes

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Before dawn on March 24, 1989, Dan Lawn stepped off of a small boat

and onto the boarding ladder dangling from the side of the grounded Exxon Valdez oil tanker. As he made the crossover, he peered down into the water of Prince William Sound, and saw, in the glare of the lights, an ugly spectacle he would never forget.

"There was a 3-foot wave of oil boiling out from under the ship, recalls Lawn, who was then a Valdez-based Alaska Department of Environmental Conservation employee helping to watchdog the oil industry. "You couldn't do anything to stop it."

Lawn was one of the first responders to reach the 986-footlong Exxon Valdez after it went off course and punctured its hull on Bligh Reef in a debacle that marked its 30th anniversary Sunday.

Lawn spent a long day on board assessing the damage as oil gushed out. There would be no quick and coordinated spill response to slow the spread. Some 11 million gallons of crude would leak out of the Exxon Valdez in what was then the largest oil spill in U.S. history, and one that Lawn had long warned could happen.

Eventually, the oil would foul parts of 1,300 miles of coastline, killing marine life ranging from microscopic planktons to orcas in an accident that would change how the maritime oil transportation industry does business in Alaska, and to a lesser extent, elsewhere in the world.

Today, due to changes to U.S. law and international regulations, all oil tankers traversing the oceans are double-hulled, unlike the more breech-prone single hull of the Exxon Valdez. This significantly reduces but does not eliminate the risk of spills, as was demonstrated last year when a double-hulled Iranian tanker exploded and leaked fuel oil after crashing into a freighter in the South China Sea.

In Washington state, the Legislature overhauled oil-spill laws in the years

after the Exxon Valdez. The state is a regional refining hub, with more than 9.45 billion gallons of petroleum products traveling over water annually. The lawmakers' actions enabled the state Department of Ecology to strengthen prevention and response efforts. All barges carrying oil—as well as oil tankers—must have double bottoms. Another requirement is for a rescue tug to be stationed at Neah Bay to respond to vessels in distress.

The volume of oil that tankers carry through Washington waters could increase dramatically in the years ahead. That's because Canada is poised to approve a tripling of capacity in the TransMountain Pipeline so that bitumen processed from interior oil sands can be exported from British Columbia to global markets.

The threat of massive spills does not only come from tankers. The 2010 Deepwater Horizon drilling rig explosion that killed 11 workers led to an oil spill of 168 million gallons—dwarfing the amount released by the Exxon Valdez.

"If there is a single lesson we have learned, it's that we have to do everything possible to prevent all sorts of scenarios that could lead to a catastrophic spill," said Rick Steiner, a marine conservationist who—at the time of the Exxon Valdez spill—was employed by the University of Alaska in the Prince William Sound community of Cordova.

Before the Exxon Valdez, Steiner and Lawn were outspoken critics of the Alaska oil industry's preparation for a potential spill by the tankers that ferried Alaska North Slope crude to refiners in Washington and elsewhere in the United States.

Steiner networked with Prince William Sound fishermen who believed the oil industry had reneged on safety measures, and a disaster was all but inevitable. He pushed, unsuccessfully, for the creation of a citizen

oversight council to prod the oil industry to ramp up safety measures. It was founded after the spill.

Meanwhile, Lawn sounded the alarm within the ranks of the state Department of Environmental Conservation. He said the equipment outlined in a response plan by Alyeska Pipeline Service Company, an oil industry consortium, was not readily available. Even if it could be accessed, it would fall far short of what was needed.

"The managers were told that, but they didn't want to hear it," said Lawn, who is now retired and divides his time between Kirkland, Washington, and Valdez, a Prince William Sound town where tankers load up with oil that arrives through the trans-Alaska pipeline.

When the accident happened, there was far too little response equipment, and some of it was buried in snow.

For three days, relatively calm weather prevailed. The oil lay thick around the vessel, offering a crucial window of time for action. Then came a storm that scattered the oil, splattering coastlines to the west and south. For four years, crews embarked on a $2.1 billion cleanup that left behind crude that still can be detected on some stretches of the Prince William Sound shoreline.

Up to 10,000 workers were employed in the cleanup, and 1,000 boats. One line of an attack was using hot water on the beaches, but that was stopped when it was found to cook marine life, do more harm than good, according to research cited by the Exxon Valdez Oil Spill Trustee Council.

Amid the oil slicks in the water, killer whales surfaced to breathe. Among a resident pod of 36 whales in the area, 14 had disappeared by 1990, according to the Trustee Council.

Over the long term, a transient whale pod that also frequented Prince William Sound fared the worst. Before the spill, the pod had 22 whales. Since then, the pod has declined to seven whales, and there have been no new calves born

Craig Matkin, a researcher for the nonprofit Gulf Watch Alaska, has monitored the whales since 1984. He said the transient whales, which eat seals, were probably the most heavily affected by the spill because they not only breathed the fumes and oil, but also ate oiled prey.

That pod appears doomed. "I give them maybe a 2 percent chance (of survival). It is so sad," Matkin said.

Three decades after the spill, Alyeska and the oil companies—under pressure from the state of Alaska—have greatly expanded measures to prevent spills. Two escort tugs, for example, accompany every oil laden tanker that motors through Prince William Sound. If needed, they can steer the tanker, counter any unwanted move or take it under tow.

If oil should escape a tanker, Alyeska has more than 40 miles of boom, compared with five in 1989.

Alyeska has 140 skimmers, compared with 13 back then, and the newer models operate much more efficiently, capturing less water.

The capacity to store cleaned up oil with barges or other floating equipment is more than 50 times greater than at the time of the spill.

"The technology has changed immensely," said Andres Morales, Alyeska's director of emergency preparedness. "And there are about 300 people dedicated to preventing and responding to spills."

Still, the Prince Williams Sound Regional Citizens Advisory Council, the

oversight group set up after the spill, continues to have concerns, which include a continued "response gap." Studies funded through the council found it "still is not possible to effectively clean up an oil spill during the strong winds and waves in which tankers are allowed to transport oil," according to a council statement.

In Washington, a network of contractors trains to respond to spills under response plans that have been approved by state regulators.

The biggest tanker vessels must have redundant operating systems, as well as tugboat escorts once they come in from the ocean to the trans-boundary waters of the U.S. and Canada in the Salish Sea.

The Legislature is considering ESHB 1578 to extend the protection of an escort tug to smaller vessels carrying oil through the Rosario Strait from Canada to Washington refineries at Cherry Point and Tacoma, including tug-pulled barges.

The bill would also authorize research toward eventually providing the same protection for the Haro Strait, a crucial summer feeding area for the southern residents orcas pod, which are struggling and listed under the federal Endangered Species Act and would be further imperiled by an oil spill.

Scientists with the National Oceanic and Atmospheric Administration, along with the Washington Department of Fish and Wildlife, have practiced drills to try to herd orca whales away from oil in the event of a spill by banging on pipes underwater, making loud noise. Other ideas include hazing the whales with seal bombs—underwater explosives—and helicopters.

Canada's regulations on oil spills are not as strict as those in the U.S., said Dale Jensen, program manager at the Washington State Department

of Ecology's office of spills response and preparedness. "We have never felt that Canada has been comparable to our capability on the Washington side," Jensen said.

Conditions put on the TransMountain pipeline expansion project by Canada's National Energy Board to improve spill safety are impressive, Jensen said, "but none of those build outs will happen without the expansion being approved."

"That is sort of disappointing to me; I would rather, regardless of whether approved or not, that they would make the investment to have the highest level of response."