



Buoyming Washington State's Response to Abandoned and Derelict Vessels



DEFENDERS OF WILDLIFE

Defenders of Wildlife is a national, nonprofit membership organization dedicated to the protection of all native wild animals and plants in their natural communities.

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Introduction

The Puget Sound is home to a diverse marine ecosystem and several endangered species, including southern resident orcas and their primary prey, chinook salmon. The sound is also home to an active boating community, which comes with an unfortunate downside: abandoned and derelict vessels. Owners who have either lost interest or can no longer afford to operate and maintain their vessels often leave them to sit and deteriorate. Over time, decay and storms set many abandoned vessels adrift. These derelict vessels wash ashore or sink and are a major source of pollution harmful to orcas, salmon and other marine wildlife. Southern resident orcas, also known as killer whales, are one of the most critically endangered marine mammal populations in U.S. waters (Reynolds et al., 2009) and one of eight marine species at risk of extinction in the near future (NOAA, 2015). These highly endangered whales are icons of the Salish Sea, which includes the marine waters of Puget Sound, the Strait of Georgia, and the Strait of Juan de Fuca. They are a culturally important species to dozens of First Nations and are cherished by citizens throughout British Columbia, Washington and Oregon. Southern resident orcas spend up to half of the year in the Salish Sea, feeding on Fraser River chinook salmon in the summer and Puget Sound chinook salmon (and to a lesser extent coho salmon) in the fall (NMFS, 2008; Hanson et al. 2010). During the winter months, these orcas feed on chinook salmon runs gathering at the mouths of major rivers along the outer coasts of Washington, Oregon and California. They have been documented feeding on Columbia, Klamath and Sacramento-San Joaquin (San Francisco Bay) salmon runs.

Unfortunately, chinook salmon runs are declining across the southern residents' range. Some runs of chinook salmon have already vanished while others have been significantly reduced from their historical numbers. Over time, the orcas have had to rely on fewer and fewer fish. While habitat loss from floodplain development and dams has reduced salmon populations throughout the region, researchers have also shown that chemical contamination is a major issue for chinook and coho salmon in the Salish Sea. Native salmon often do not swim all the way to the open ocean. Instead, they live their whole lives in the Salish Sea, which increases their exposure to several toxics. These salmon contain up

to three to five times as many contaminants as salmon that spend years in the open ocean (Mongillo et al., 2016; NMFS, 2007; O'Neill and West, 2009).

Washingtonians cherish their salmon and orcas and value the state's vibrant maritime and shipping economy. Thousands of recreational boaters spend time in Puget Sound, along the Pacific Coast and on the Columbia River. While boating is a time-honored tradition in Washington, when older boats are abandoned and left to decay, they become a major problem for orcas, salmon and other marine wildlife. The recreational boating industry boomed in Washington after World War II, but now many boats are falling into a state of disrepair (Journal of the San Juan Islands, 2016). The recent recession exacerbated the situation, leaving many boat owners unable to afford the maintenance costs necessary to keep their boats seaworthy and consequently abandoning them. Many of these abandoned vessels have become derelict, drifting out into Puget Sound, the Columbia River and bays along the Pacific Coast, like Grays Harbor and Willapa, where they have continued to decay and eventually sink (Journal of the San Juan Islands, 2016), causing a host of problems for orcas and salmon. In 2017, the state of Washington identified 100 vessels that were either abandoned or derelict across 18 counties. This included the 12 counties that border Puget Sound, Grays Harbor and Pacific counties (which border the Pacific Ocean) and four counties along the Columbia River (DNR, 2017), all of which have important watersheds, rivers and/or estuaries for chinook salmon on which southern residents rely. The number of inventoried derelict vessels in these counties is likely a conservative estimate of the total number of abandoned and derelict vessels in Washington's waters.

Not only are abandoned and derelict vessels obvious eyesores, they are also a major source of pollution. Common toxics on vessels include oil, diesel, contaminated water, flammable liquids, antifreeze, toxic cleaning supplies, batteries, paint and varnish. Batteries often contain toxic heavy metals like mercury, lead, cadmium and nickel (Bach, 2009; Choksi, 2008; Sailors for the Sea, 2017). Many ships also store gray water (untreated water from sinks, showers, washing machines, etc.), which is full of detergents, soaps and bleaches. Sewage water is also a problem. Sewage waste tanks

on most vessels contain chlorine, ammonia and zinc, which are detrimental to marine life. Sewage water also can carry diseases from urine and feces. Both gray water and sewage water can release excessive nutrients, causing eutrophication events, rapid algal and plant growth that quickly depletes dissolved oxygen in an area and kills off marine life (Bach, 2009; Choksi, 2008; Sailors for the Sea, 2017).

Several toxic materials can be removed from vessels, but the vessels themselves can still leach toxics into the water. Paint used aboard ships often contains chromium, copper, lead, mercury and zinc (Choksi, 2008; Department of Ecology, 2017). The paint used on the outside of vessels is even more concerning. To prevent marine life from growing on the hull of a ship, antifouling paints are used. These paints are harmful to marine life and slowly leach heavy metals into the environment. Many older boats are coated with tributyl tin (TBT), which was banned in the United States in 2008. Today, a common alternative to TBT is copper, which can also harm marine life at high concentrations (Department of Ecology, 2017; Sailors for the Sea, 2017). Larger derelict vessels have an even greater potential to cause significant environmental damage. In Grays Harbor, a single 186-foot-long, abandoned tug boat contained 60,000 gallons of diesel and oil and 7,500 pounds of paint, flammable liquid, cleaners and other toxics. As little as one quart of oil, diesel or gasoline can contaminate acres of water (Bach, 2009).

As southern resident orcas and chinook salmon runs continue to decline, Defenders of Wildlife is concerned that toxics from a variety of sources, including derelict vessels, are increasingly contaminating individual orcas and salmon and having broader, population-wide impacts on both species. To restore orcas, state agencies and Defenders and other conservation partners need to work together to restore important habitat for salmon and to reduce toxics that are bioaccumulating in both salmon and orcas. Toxics from derelict vessels can contaminate and degrade the nearshore habitat that chinook salmon fry rely on as they transition from fresh to salt water environments. Fry undergo a physiological transformation in these bays and depend on eelgrass and other seaweeds that offer cover from larger fish and support small invertebrates, the food fry feed on to grow. Large rivers, like the Columbia, also provide important spawning habitat for chinook salmon. Toxic chemicals have the potential to destroy and degrade both nearshore and riparian ecosystems.

Ironically, the preferred prey species of southern resident orcas, chinook salmon, is also contaminating orcas and

causing a host of health problems. Toxics like PCBs, DDT and heavy metals bioaccumulate up the Salish Sea food chain. Chemicals are consumed by very small microorganisms, which are eaten by herring and other small fish, which are eaten by larger fish, like chinook salmon. At each stage of the food chain, the predator is consuming both the prey and all the toxics in the prey's body. Orcas, which are at the top of the food chain, consume dangerously high levels of toxic chemicals when they eat salmon. These toxics build up in their blubber and have been linked to a host of health problems for individuals and the population. When restoring salmon populations for orcas, it is important to both increase the number of salmon and decrease the toxics in salmon. Both goals can be advanced by reducing the amount of pollution reaching the Salish Sea and removing some of the major sources of this pollution—including abandoned and derelict vessels.

Overview of State Derelict Vessel Program

In 2002, the Washington Legislature passed the Derelict Vessel Act, creating the Derelict Vessel Removal Program. This program, administered by the Department of Natural Resource (DNR), authorizes public entities (including the DNR, Department of Fish and Wildlife, state parks, port districts and local governments) to either take possession or custody of abandoned and/or derelict vessels. To date, this program has removed over 700 abandoned and derelict vessels from Washington's waters (DNR, 2017, personal communication). While there has been considerable success, the program can be complicated. Some removal projects involve multiple agencies across several jurisdiction, making implementation and coordination difficult at times.

Typically, when an abandoned or derelict vessel is found within the administrative boundaries of an authorized public entity, that entity attempts to identify and contact the owner, who ideally removes the vessel. Unfortunately, identifying vessel owners is usually extremely difficult, and even when it succeeds, owners are typically either unwilling or unable to pay for removal. At this point, the DNR can decide whether the agency wants to shoulder the cost of vessel removal. Because of this, less than 1 percent of vessel removals are paid for by the owner (DNR, 2017, personal communication). Removal projects can be expensive, especially for larger vessels, which is why many local governments do not undertake removal projects on their own. To overcome this financial barrier, the Derelict Vessel Act of 2002 created the Derelict

Vessel Removal Account (DVRA), a fund managed by the DNR specifically for abandoned and derelict vessel removal. Under this program, authorized public entities who remove a vessel can be reimbursed for up to 90 percent of the removal costs; in-kind contributions, such as government agency staff time, can cover the remaining 10 percent (DNR, 2017).

Funding for the DVRA is generated from portions of the Washington Recreational Vessel Registration Fee and the Foreign Vessel Registration Fee. In 2015, the state approved an additional fee of \$1 per foot for commercial vessels to help fund the DVRA. The DNR also uses funding from the Aquatic Lands Enhancement Act (ALEA) to cover the agency's 10 percent contribution for removing abandoned and derelict vessels on DNR-managed aquatic lands. ALEA funds come primarily from the fees for leasing state aquatic lands to marinas, boatyards and shellfish producers. In the 2015/2017 biennial budget, the DNR had roughly \$2.46 million for derelict vessel removal efforts: \$1.93 million from the DVRA; \$528,900 from ALEA (DNR, 2017). The statute only allows DVRA to be used for removing vessels that are shorter than 200 feet in length (RCW 79.100.010). Removal of larger vessels is considerably more expensive, although these vessels often have a greater environmental impact. In 2013, the state provided the DNR with an additional \$4.5 million to remove three large, abandoned vessels, but these were still under 200 feet in length (DNR, 2017).

Due to limited funds and staff capacity, the DNR is not able to immediately remove every reported abandoned or derelict vessel. Once a vessel is reported, the DNR enters it in its Derelict Vessel Inventory Database and then attempts to rank vessels of concern based on the risk they pose to human and environmental health, safety and navigation channels. Under the department's current program, there are six priority categories that a vessel can fall under, with Priority 1 being vessels that the agency will address first and Priority 6 being the lowest priority vessels for removal. This ranking system has helped the agency use its resources effectively, removing vessels that pose the greatest risk to human health and the environment first (*see* Table 1, *page 4*).

Collaboration with Federal Agencies

In 2009, the *Davy Crockett*, an old 431-foot, former U.S. Navy ship, partially sank in the Columbia River, which supports a critical chinook salmon run that southern residents rely on in the winter. The ship slowly started to leak oil, and, after two years, its hull fractured, releasing approximately

1.6 million gallons of oil/water mixture and 39,000 gallons of bunker oil into the river. Several years later, an abandoned fishing vessel, the *Deep Sea*, caught fire in Penn Cove and sank to the bottom of Puget Sound near Whidbey Island. The oil and toxics released from this disaster forced the closure of shellfish farms in the area for two months. These were two of the largest environmental disasters caused by abandoned and derelict vessels in the country, costing millions of dollars to clean up, and both occurring in habitat on which orcas and salmon depend. In both instances, the owners of the vessels were unresponsive to requests to properly deal with their vessels. In light of these disasters, several members of Congress, led by Senator Maria Cantwell and Congressman Derek Kilmer from Washington, asked the Government Accountability Office (GAO) to review the impact of abandoned and derelict vessels in coastal waters and to summarize current regulatory authority to deal with these vessels. The last time the GAO had reviewed these policies was in 1992 (GAO, 2017).

The GAO responded to this request in 2017, issuing a report about various federal agencies' roles in responding to abandoned and derelict vessels (GAO, 2017). There is no single, overarching policy or directive pertaining to removing and/or preventing abandoned and derelict vessels at the federal level. Responsibility for dealing with these vessels is shared among the Army Corps of Engineers, the Environmental Protection Agency (EPA), the U.S. Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA), although agency involvement varies based on the vessel's location and the threat it poses. If a vessel is blocking navigation in federally maintained navigable channels, the Coast Guard and the Army Corps of Engineers will typically remove it from the channel, not necessarily from the water. In instances when pollution is a concern, agencies typically only remove major contaminants from the vessel, again, leaving it in the water. In these situations, the Coast Guard is the lead for vessels in the coastal zone, and the EPA is the lead in the inland zone.¹ Finally, NOAA has some limited involvement through its marine debris program, established under the 2006 Marine Debris Act, but this program does not specifically target abandoned and derelict vessel removal efforts (GAO, 2017).

¹ The coastal zone includes all waters subject to the tide, the waters of the Great Lakes and certain ports and harbors on major rivers. The inland zone refers to waters further inland that are not covered by the coastal zone (GAO, 2017).

Both the Coast Guard and the EPA point to lack of funding as a major obstacle to federal efforts to address abandoned and derelict vessels (GAO, 2017). While the cost of removal and disposal should fall on the vessel's owner, agencies often have a difficult time identifying owners after the vessel is abandoned. In other instances, the owner cannot afford to remove the vessel. In either case, removal costs fall on the agencies' shoulders. Agencies also stated that they are only mandated to maintain navigation channels and remove major

toxics from the vessels, not to fully remove derelict vessels from the water, which is considerably more expensive. State agency staff from several coastal states noted that coordination with federal agencies can be extremely difficult, and many expressed frustrations that only the pollution on the vessel was removed, not the vessel itself. Others expressed frustration that the Coast Guard will tow a vessel to the nearest safe harbor, typically a port, and leave it there without notifying the port, which is then responsible for dealing with the vessel (GAO, 2017).

Table 1. Priority levels, descriptions and numbers of inventoried vessels of concern per county as of April 26, 2017 (DNR 2017). For an up-to-date inventory see: <http://www.dnr.wa.gov/programs-and-services/aquatics/derelict-vessels/derelict-vessel-inventory-and-funding>

Priority Level	Title	Description
Priority 1	Emergencies	Vessels that are in danger of sinking, breaking up or blocking navigational channels, or that present environmental risks such as leaking fuel or other hazardous substances.
Priority 2	Non-emergency existing threats to human health, safety and environment	Vessels, floating or sunken, which pose an existing or probable future—but not immediate—threat to human health, safety and the environment. These vessels are likely to become Priority 1 vessels after a minor change in circumstances.
Priority 3	Vessels impacting habitat and not already covered in prior category	Any vessel, floating or sunken, that does not meet one of the previous categories but still poses a direct threat to any of the elements of the natural environment, including vessels that impact: <ul style="list-style-type: none"> ▪ Any plant or wildlife species listed on a state or federal endangered, threatened, proposed, sensitive, candidate, concern or monitor list. ▪ Essential habitats where listed species have primary association, such as spawning areas. ▪ Any other plant or animal species protected by a local, state or federal agency. ▪ Aquaculture practices and/or farming of food fish, shellfish, and other aquatic plants and animals in fresh water, brackish water or salt water. ▪ Marine protected areas, restoration areas or aquatic reserves (a vessel can potentially impact these areas without being located within its boundaries).
Priority 4	Minor navigation or economic impact	Vessels, floating or sunken, that do not meet one of the previous categories but pose an economic impact, such as blocking a marina slip, a public park buoy or guest dock; or vessels in trespass in a planned buoy field or at a private mooring buoy, etc.
Priority 5	Other abandoned or derelict vessels	Vessels that meet the definition of abandoned or derelict, but do not satisfy any of the criteria listed above. These vessels may be sunk at depth; floating but well-kept and attended vessels in trespass, etc.
Priority 6	Vessels abandoned in boatyards	Vessels seized under RCW 53.08.320 seeking reimbursement from DVRA when the vessel was abandoned in a boatyard.

Collaboration with Counties and Ports

As specified by the Derelict Vessel Act, counties, cities, and port districts are considered authorized public entities that can take temporary possession while obtaining custody of abandoned and derelict vessels and are eligible for reimbursement of removals (RCW 79.100.010). Participation in the program is based on need, so the level varies from year to year, but generally ports and counties are the most involved public entities. City governments typically do not have the dedicated funding or infrastructure needed to properly remove and dispose of abandoned and derelict vessels. At the county level, sheriff offices are usually responsible for responding to reports

of abandoned or derelict vessels. Depending on the county, some sheriff offices will coordinate with other departments, such as public works. Others will ask the DNR to take the lead. Since the Derelict Vessel Removal Program started in 2003, the DNR and other agencies have removed 722 vessels, spending over \$16.7 million (*see* Table 2, *page 6*). Once an authorized public entity identifies an abandoned or derelict vessel, the DNR encourages the entity to contact the DNR before removing the vessel. DVRA funds that are appropriated each biennium can only be spent on removal projects during that biennium. DVRA funds that are appropriated each biennium can only be spent on removal projects that occur during that biennium. Reimbursements cannot be made retroactively for projects that occurred in previous biennia. During the latest biennium (which ended in June 2017), the DNR received over \$400,000 of reimbursement requests that it cannot reimburse because the DVRA was depleted. This is the first time in the program's history that it has been unable to fulfill all reimbursement requests (DNR, 2017, personal communication).

From interviews conducted by Defenders of Wildlife staff with county sheriff offices, it became apparent that there are currently no formal agreements or processes regarding derelict vessel removal and prevention at the local level. Kitsap County had an informal program at one point, but when the county was contacted in May 2017, they were unable to provide any information about the county's efforts or processes to remove derelict vessels. Counties and ports typically only remove vessels when they are reported. None have a coordinated effort to search for and inventory derelict vessels. San Juan County had a formal program administered by the county Public Works Department to both remove derelict vessels and prevent older vessels that were starting to decay from becoming derelict. This program had a dedicated staff person who coordinated with the DNR on removal efforts and ensured that reimbursements were collected. In 2009, the county discontinued the program citing funding shortfalls (San Juan County, 2017). In 2016, the county restarted its removal and prevention program by hiring a local contractor. The program was funded entirely by donations from the Port of Friday Harbor and various sailing and boating groups (San Juan County, 2017). The county explored long-term funding options for the program, estimating that its administration would require four to 10 hours of staff time per week, costing \$10,000 to \$25,000 per year (San Juan County, 2017; *Journal of the San Juan Islands*, 2016). However, the

Vessels Inventoried Per County

None

King: 1; Lewis: 1; Snohomish: 2; Thurston: 3; Whatcom: 2

Cowlitz: 1; King: 1; Kitsap: 1; Pacific: 1; Pierce: 1; Whatcom: 1

Clark: 4; King: 5; Kitsap: 2; San Juan: 2; Skagit: 1; Snohomish: 2; Thurston: 1

Clallam: 1; Clark: 1; Grays Harbor: 4; Island: 3; Jefferson: 3; King: 11; Kitsap: 5; Mason: 3; Pacific: 8; San Juan: 14; Skagit: 3; Snohomish: 5; Thurston: 4; Wahkiakum: 3

None

program was eventually canceled, and all derelict vessels are now handled by the county sheriff offices. Most Washington counties rely on county sheriff offices, public works staff, and/or code enforcement staff to deal with derelict vessels, but none of the counties currently have a single point-person for derelict vessel removal or prevention efforts.

Table 2. Reported vessels removed per county from 2003 to April 2017 (DNR, 2017, personal communication). Counties in bold contain watersheds that drain into Puget Sound. The other counties either border the Pacific Ocean or border a section of the Columbia River.

County	Vessels Removed	Total Removal Cost
Benton	4	\$64,824.68
Clallam	30	\$140,653.96
Clark	21	\$131,282.98
Columbia	1	\$13,752.32
Cowlitz	6	\$22,778.30
Grays Harbor	31	\$1,140,630.77
Island	27	\$152,400.09
Jefferson	33	\$781,454.01
King	81	\$7,046,443.77
Kitsap	147	\$1,082,236.00
Mason	24	\$54,510.21
Pacific	18	\$17,230.39
Pierce	61	\$1,289,040.98
San Juan	86	\$642,840.29
Skagit	18	\$1,405,540.89
Skamania	1	\$23,093.72
Snohomish	49	\$1,289,984.38
Thurston	53	\$953,875.38
Wahkiakum	1	Removal cost not reported
Whatcom	30	\$478,609.10
TOTAL	722	\$16,731,182.22

Counties and cities typically reach out to the DNR after they discover a vessel in need of removal. If the DVRA still has funding, the local entity will remove the vessel, or ask the DNR to assist with removal. If funds in the DVRA are depleted for the biennium, local entities typically do not have the resources to fund the removal effort and will wait for the next biennium to remove the vessel so they can get reimbursed.

Prevention Programs

Removing and disposing abandoned and derelict vessels can be expensive. To prevent some vessels from becoming abandoned or derelict, Washington state started the Vessel Turn-in Program (VTIP) in 2014. This program assists boat owners with proper disposal before vessels become abandoned or derelict. The program is available for boats less than 45 feet long and for owners who do not have the financial means to properly dispose of the vessel on their own. Funding for VTIP comes from the DVRA, although the legislature stipulated that the DNR may not spend more than \$200,000 of the DVRA for VTIP in any biennium (RCW 79.100.160). By preventing vessels from sinking and polluting the Salish Sea, the state prevents pollution and ultimately saves money. Between May 2014 and May 2016, the average VTIP cost per vessel was \$5,333. From July 1, 2013, to March 10, 2017, the average removal cost per recreational vessel was \$9,839 (DNR, 2017, personal communication).

Cities and counties have also participated in prevention efforts to varying degrees. The city of Bainbridge Island closely monitors and inventories ships that come into the city's marinas and ports. This is part of their monitoring and prevention program for derelict vessels. The city has been able to remove most of the most problematic vessels from its waters thanks to assistance from the DVRA (DNR, 2017, personal communication). From 2013 to 2015, San Juan County received a grant from the Puget Sound Partnership to fund their derelict vessel removal and prevention program. As part of this grant, San Juan County met with other counties to discuss coordinating prevention efforts. In 2014, Jefferson, King, Kitsap, Mason, Pierce and Snohomish counties participated in discussions, led by San Juan County, on increasing intercounty coordination and cooperation to prevent vessels from becoming derelict (San Juan Islander, 2014). Each of these counties was contacted and interviewed by Defenders' staff to determine if these prevention programs were still

active. None of the county governments that were interviewed had an active prevention program. Most counties only get involved with removal efforts when the county's sheriff's office receives reports of abandoned and derelict vessels. None of the counties interviewed were surveying for abandoned or derelict vessels or monitoring vessels that may be at risk of becoming abandoned or derelict.

Before it was suspended due to a lack of funding, San Juan County's prevention program was effective at reducing the number of vessels sinking and becoming derelict. According to the county, 19 vessels were removed in 2012, costing \$76,586. After starting its prevention program, the county removed four vessels that had sunk and responded to 49 vessels of concern at a cost of \$23,521. The number of abandoned and derelict vessels continued to drop every year the program was active (San Juan County, 2017). When a problematic vessel was identified, the county attempted to contact the owner and identify options for either fixing or disposing of the vessel before it could sink. This program prevented dozens of vessels from sinking and polluting the Salish Sea and helped the county utilize its limited resources effectively. The county estimates that it typically costs \$1,000 per foot to remove a sunken vessel, but it only costs \$100 per foot to tow and demolish a vessel before it sinks (Journal of the San Juan Islands, 2016).

At a county commission meeting on March 20, 2017, San Juan County discussed long-term funding and management options for their removal and prevention program. The county, the Port of Friday Harbor, and the City of Friday Harbor have previous agreements on supporting and collaborating with one another through this program. County staff estimate the program would cost \$10,000 per year—enough to fund the 10 percent of vessel removal costs for which the county is responsible, staff time, a patrol boat to survey and document vessels that may become abandoned or derelict, and towing expenses. The surveys would be conducted by public works staff and the county sheriff office (San Juan County, 2017). This program is currently inactive, although the county is continuing to explore funding options.

Major Challenges and Opportunities

The DNR's Derelict Vessel Removal Program has made significant strides, removing hundreds of polluting vessels from Washington's waters. Defenders fully supports the DNR's efforts. We hope to work collaboratively with the agency and other relevant partners to build on the program's

success. As a starting point, this section offers recommendations for improving derelict vessel removal and prevention efforts in Washington, with an emphasis on restoring habitat important to chinook salmon and southern resident orcas.

Prioritizing Vessel Removal in Biologically Important Areas for Orcas

While the DNR's prioritization system for derelict vessel removal takes endangered wildlife into account (Priority 3), neither orcas nor their main prey, chinook salmon, are explicitly mentioned. Each of the 23 chinook salmon populations in Puget Sound relies on one of 11 major bays (Governor's Salmon Recovery Office, 2016). Estuaries and bays provide critical habitat to salmon during various stages of their life. Young salmon undergo a physical transition in estuaries as they prepare to move from a freshwater to a saltwater environment. Estuaries provide cover and prey for young salmon, and, when they return as adults to spawn, they rely on estuaries again as they transition back into a freshwater environment. The amount of time spent transitioning in estuaries varies, but some populations will spend up to a year developing in this environment (Duffy and Beauchamp, 2008). Because of this, estuaries that are heavily polluted (such as those in Puget Sound) pose a higher risk to orcas. WDFW researchers found that Puget Sound chinook salmon have PCB contamination levels three to five times higher than any other chinook salmon populations on the West Coast. This study also found that most PCBs were accumulated when the salmon were in Puget Sound, not while spending times in rivers. Chinook salmon put on the most (over 98 percent) of their adult body weight while in a marine environment (O'Neill and West, 2009). Puget Sound chinook salmon feeding in contaminated bays are likely consuming more toxics from contaminated invertebrates, crustaceans and smaller fish. The time spent in polluted waters is likely the main reason that Puget Sound chinook salmon have these extremely high toxic loads. Southern resident orcas consuming Puget Sound chinook salmon will ingest these toxics, which can lead to several serious health problems (O'Neill and West, 2009). Because of this, reducing toxic contamination in Puget Sound estuaries and bays that support chinook salmon should be a top priority.

Defenders identified the bay and/or estuary used by each of the 23 chinook salmon runs in Puget Sound. We noted the estimated historic population range for runs (where data was available) and the 10-year mean of wild-born, adult spawning

salmon² for each run (Table 3). Restoration efforts in bays and estuaries that supported historically high numbers of

² Population recovery goals measure success based on the number of wild salmon returning to spawn. Several chinook salmon runs in Puget Sound are supplemented with hatchery-raised fish. While orcas likely eat hatchery salmon as well as wild ones, we excluded hatchery fish from current population estimates for chinook salmon runs to be consistent with agency metrics and recovery goals.

returning adult salmon have high potential to increase the prey base for southern resident orcas. Bays that currently support large salmon runs are also important for restoration activities, specifically with regards to toxic cleanup from sources like abandoned and derelict vessels.

Historically, the Skykomish chinook salmon run was estimated to be the largest in Puget Sound, followed by the Upper Skagit, Snoqualmie, and Puyallup runs. Other large

Table 3. Bays and estuaries that support Puget Sound chinook salmon, the historical estimates of these runs (NMFS, 2007) and the current, 10-year geomean of the runs (Governor's Salmon Recovery Office, 2017).

Estuary	Chinook Salmon Population	Historical Estimate (spawning adults/year)	10-year Mean of Wild-Born Spawning Adults (as of 2015)
Bellingham Bay	North Fork Nooksack	20,000 – 30,000	415
	South Fork Nooksack	10,000 – 20,000	81
Commencement Bay	Puyallup	30,000 – 40,000	1,264
	White River	N/A	1,157
Dungeness Bay/Spit	Dungeness	< 10,000	152
Elliot Bay	Green/Duwamish	N/A	2,094
	Cedar (via Lake Washington)	N/A	1,686
	Sammamish (via Lake Washington)	N/A	167
Freshwater Bay	Elwha	N/A	403
Hood Canal	Mid Hood Canal	N/A	0
	Skokomish	N/A	459
Kydake Point	Hoko	N/A	366
Nisqually	Nisqually	10,000 – 20,000	135
Port Susan	North Fork Stillaguamish	20,000 – 30,000	229
	South Fork Stillaguamish	10,000 – 20,000	8
Possession Sound	Skykomish	>50,000	4,211
	Snoqualmie	30,000 – 40,000	1,978
Skagit Bay	Cascade	<10,000	0
	Lower Sauk	<10,000	0
	Lower Skagit	20,000 – 30,000	0
	Suitattle	<10,000	0
	Upper Sauk	<10,000	0
	Upper Skagit	30,000 – 40,000	0

salmon runs include the North Fork Nooksack, Lower Skagit, North Fork Stillaguamish, and South Fork Stillaguamish. These eight, historically large salmon runs rely on Bellingham Bay, Commencement Bay, Port Susan, Possession Sound and Skagit Bay. Currently, the most wild-born chinook salmon return to spawn in rivers draining into Possession Sound, supporting a 10-year average of 6,189 adult spawning chinook salmon. The next most abundant bays are Elliot and Commencement, supporting a 10-year average of 3,947 and 2,421 spawning chinook salmon, respectively. All other bays support fewer than 500 adults over a 10-year average (Governor's Salmon Recovery Office, 2017). Many of these bays, like Skagit, have robust hatchery programs, so there are still salmon in these rivers. Removing abandoned and derelict vessels from these bays can help restore nearshore habitat and reduce toxics in the local environment. This will help to increase the number of salmon and reduce the amount of toxic contamination reaching orcas. Toward that end, we recommend the following:

1. Create an additional priority level targeting removal efforts in important orca and chinook salmon habitat.

Given the extremely small size of the southern resident orca population and the role that Puget Sound chinook salmon play in transporting toxics into orcas, the DNR should consider creating an additional priority class between the current Priority Levels 2 and 3. Priority Level "2.5" could be titled "Essential Orca and Salmon Habitat." This priority level should include Bellingham Bay, Commencement Bay, Elliot Bay, Port Susan, Possession Sound and Skagit Bay (Figure 1)³. By adding this additional priority level, specifically targeting key geographic areas for cleanup, the DNR can utilize its resources more effectively and contribute to orca and salmon recovery.

2. Collaborate with the Department of Fish and Wildlife and the Department of Ecology to fund inventory and cleanup efforts in essential orca and salmon habitat.

The DNR should partner with the Department of Fish

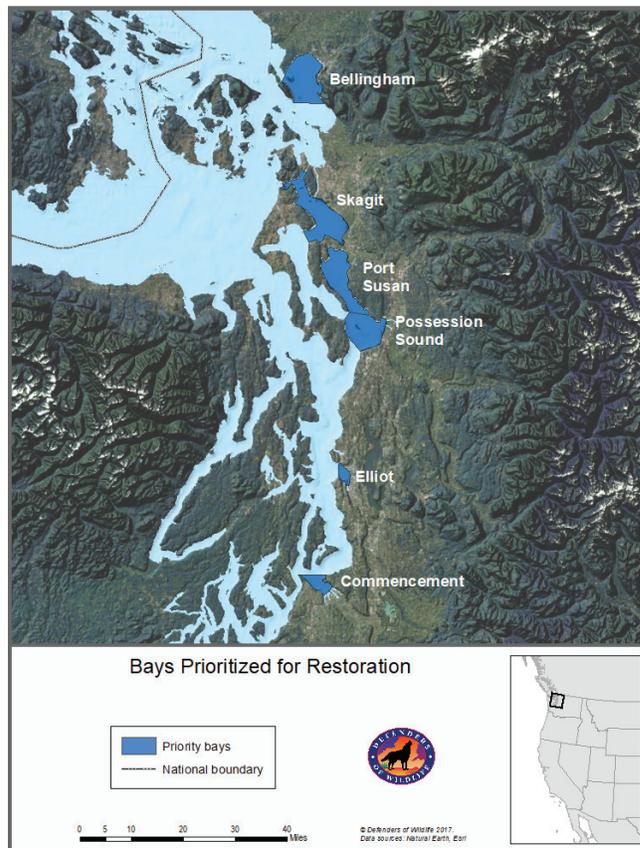


Figure 1. Priority bays in Puget Sound for toxic cleanup and restoration. These bays were identified because they provide important nearshore habitat for current and historically large chinook salmon runs in Puget Sound. Improving habitat and reducing toxics in these bays can support orca conservation efforts as well.

and Wildlife and the Department of Ecology to fund vessel removal in these prioritized areas. By pooling resources from three agencies and targeting a handful of high-priority bays, the state could have a greater impact on cleaning up important orca habitat.

3. Allocate additional funding for pollution inventory and removal efforts in priority areas. Given the high cost of abandoned and derelict vessel cleanup, the DNR's current budget may need additional funds from the legislature to specifically target these geographic areas. Funding from the legislature could be used to remove known abandoned and derelict vessels, to survey for additional vessels in need of removal in these bays and/or to clean up other sources of pollution in these bays. The

³ The DNR has removed derelict vessels inside and outside of Puget Sound. While counties outside of Puget Sound support important habitat for chinook salmon, the DNR should prioritize Puget Sound first. Pollution is a much larger problem for resident chinook salmon in Puget Sound. Most removal projects and inventoried derelict vessels are also in Puget Sound. While the Columbia River supports important chinook salmon runs, those runs are affected more by dams than by contamination.

legislature has appropriated additional funds to the DVRA for high-priority vessel removal projects in the past. Given the importance of these Essential Orca and Salmon Habitat bays, a similar, one-time funding allocation targeting these bays would be appropriate.

Funding

Removing abandoned and derelict vessels can be expensive. The average cost of removing a recreational vessel from July 1, 2013, to March 10, 2017, was \$9,839 (DNR, 2017, personal communication). Larger vessels are even more expensive to remove and require significant coordination. Although the DNR helped to remove hundreds of vessels with the DVRA, it could not fulfill an estimated \$400,000 in reimbursement requests this biennium (DNR, 2017, personal communication). This is the first time in the program's history that the DNR has not been able to reimburse an approved public entity for removing a vessel. This is largely due to an expensive removal of a single, large vessel in Snohomish County (DNR, 2017, personal communication). Similarly, funding for the DNR's VTIP program, which may not exceed \$200,000, was used up this last biennium (DNR, 2017), but the DNR continued to receive applications to the program. Both programs are clearly popular and effective. Adequate funding for these programs has been and continues to be one of the major challenges.

Not only can additional funding support existing programs, it can also help fund monitoring and inventory efforts. Currently, the DNR relies on reports from citizens, local governments and other agencies to identify abandoned and derelict vessels. While these efforts allow the agency to respond to identifiable vessels, there are likely several vessels in Washington's waters that have not been reported yet. These vessels have the potential to impact salmon, orcas and other endangered wildlife. Additional funding for monitoring and inventory projects in specific areas could enhance cleanup and restoration efforts in several ecologically important bays.

City and county governments also rely heavily on state resources. Only one county, San Juan, developed a program that specifically targeted abandoned and derelict vessels, and even this program struggled with funding. In the other counties interviewed, sheriff offices typically respond to reports of abandoned vessels as they would to reports of abandoned cars. No county has staff whose job it is to coordinate abandoned and derelict vessel removal and/or prevention efforts. Again, the key limiting factor for local governments is funding.

While funding is extremely limited, we recommend the following actions to ensure that abandoned and derelict vessel removal and prevention programs are effective and efficient:

1. **Explore expanding disposal incentive programs, such as VTIP.** The DNR's VTIP program was set up to help vessel owners who lack the financial ability to dispose of their vessels before they become derelict and abandoned. The legislature explicitly capped the amount of DVRA funds that could be used for VTIP at \$200,000. Given the popularity of the program, the state should reassess this cap to determine if more money from the DVRA could be used to support the VTIP program, based on demand for the program and funding needs for removal efforts. The state could also consider funding VTIP separately so as not to take resources away from removal efforts. The state should also look at ways to help vessel owners who live far away from boat yards, landfills and other facilities that can accept derelict vessels. The DNR could coordinate with counties and cities that do not have local facilities by setting up turn-in days for old, unwanted vessels, which could allow for the state and the county to transport several vessels at once to an appropriate facility.
2. **Allow for the DVRA to accept voluntary donations.** Under RCW 88.02.580, the Department of Licensing (DOL) may collect voluntary donations "to support the maritime historic restoration and preservation activities of the Grays Harbor Historical Seaport and the Steamer Virginia V Foundation." A similar program could be set up to allow boaters to voluntarily donate more money to the DVRA. This may not generate a significant amount of additional funds for the DVRA, but it should be considered and explored as an option. Also, because this would be a voluntary donation, it may be more socially acceptable than imposing new fees or increasing existing ones.
3. **Expand funds available for prevention efforts.** Currently, most of the money in the DVRA is used to remove derelict vessels. While this money has been used to help local governments, it has not been used to support prevention efforts, like the San Juan County derelict vessel prevention program. The county estimates that it would need \$10,000 to \$25,000 per year to fund this program, which supports staff time, a patrol boat, and towing fees. The state should explore options to establish a grant program specifically for counties interested in preventing vessels from becoming derelict. The Department of

Ecology had grants for programs like this in 2001, but the grants are no longer active. San Juan County was initially able to fund their program from a Puget Sound Partnership grant, but this funding source relies heavily on federal dollars, which may be scarcer in the coming years.

4. **Increase intercounty collaboration to fund staff for removal and prevention programs.** County and city governments typically have significantly fewer financial resources than state and federal agencies. This has been the main reason why only one Washington county, San Juan, had a formal derelict vessel program. Even this program has been unstable due to lack of funding. Because abandoned and derelict vessels impact the Salish Sea, its wildlife and its resources irrespective of county borders, intercounty collaboration can ensure that counties all benefit from coordinated cleanup and removal efforts. Counties can collectively pool resources and/or apply for a single grant to hire shared, intercounty staff that can coordinate vessel removal and prevention efforts across several counties. San Juan County's program was successful in increasing the number of vessels removed from Puget Sound and preventing even more from sinking. A staffed, multi-county program could increase collaboration among various partners, including the 12 Puget Sound, two Pacific Coastal and four Columbia River counties that regularly use the DVRA.
5. **Enact federal legislation to explicitly address derelict vessels and provide funding for large removal efforts.** Legally, the DNR is only allowed to use funds from the DVRA to remove vessels that are shorter than 200 feet in length. In 2013, the state legislature provided the DNR with \$4.5 million to remove three large vessels, but these were still under 200 feet. Removing larger derelict vessels is considerably more expensive. These vessels are often old fishing, military or other commercial and federal ships. In March of 2017, the GAO issued a report documenting federal agencies' responsibilities and authority pertaining to derelict vessels. No overarching policy addresses this problem. Federal legislation to correct this problem could be modeled after Washington's Derelict Vessel Act, explicitly noting the roles of each agency and their authority to deal with derelict vessels. Importantly, Washington's Derelict Vessel Act created the DVRA, which supports local governments removal of derelict vessels. A similar funding source at the federal level could provide funding to the states to remove large and costly

derelict vessels, such as the Davy Crockett. While the availability of federal funds may decrease, the federal government is still a critical funding source for various programs that protect the environment, human health and wildlife. Federal legislation could also identify locations throughout the country, including Washington, that lack adequate facilities (such as boat yards) where old vessels can be hauled to and disposed of and dismantled properly.

Coordination

Vessel removal can involve multiple agencies at different levels of government, and it can be challenging to coordinate them all. Recently, for the first time in the DVRA's history, the DNR was unable to reimburse local authorized public entities who removed vessels. Some counties removed vessels before contacting the DNR. When they applied for reimbursement, they learned that DVRA funds for that biennium were already spent (DNR, 2017, personal communication; San Juan County, 2017). Counties should thus contact the DNR before removing and disposing of a vessel. At the federal level, the Coast Guard has been known to tow abandoned vessels to the nearest port and leave them without notifying the port. The Coast Guard also often moves vessels out of navigation lanes but leaves the vessel in the water without notifying state or local agencies (GAO, 2017). Several other state and federal agencies address pollution and boating regulations to various degrees, but coordination between them is informal. This lack of coordination may prevent the DNR and other partners from initiating a proactive strategy to both efficiently remove several vessels and implement broad-scale prevention efforts. To improve inter-agency and -government coordination we recommend the following:

1. **Increase communication and collaboration between the DNR and local governments.** Several local governments qualify as authorized public entities that can be reimbursed up to 90 percent for removing derelict vessels. However, the DNR cannot reimburse removal projects that span biennia. The DNR should request that each county, port and other authorized public entity identify a point person for abandoned and derelict vessel coordination. Ideally, counties would pool their resources to hire one or two staff that coordinate derelict vessel removal and prevention efforts for several counties in the region (see #4 in funding recommendations, page 11). The DNR could convene regular (such as annual) meetings with these point people to update them on funding availability, how

to apply for reimbursements and the program's requirements. These meetings would also be a good opportunity for broader discussions about coordination, providing a venue for stakeholders to communicate their successes, failures and opportunities.

2. Develop and sign a Memorandum of Understanding (MOU) with federal partners. Various federal agencies are involved with issues surrounding abandoned and derelict vessels, but the main partner is the U.S. Coast Guard. According to the 2017 GAO report on abandoned and derelict vessels, several local and state governments have expressed frustration specifically about the lack of coordination with the Coast Guard. Other federal agencies have been called upon to assist with large vessel removals and clean-up efforts, but coordination is challenging due to the lack of a single, over-arching policy. We recommend that the DNR meet with federal partners, especially the Coast Guard, to develop an MOU that clearly lays out roles, responsibilities and expectations for how these various agencies will interact with each other when abandoned and derelict vessels are found in Washington. This can include protocols for the Coast Guard to follow when they find a vessel (such as notifying the DNR), coordination about where to tow the vessel and cost-sharing agreements for removal and disposal. It can also set up a chain of command or decision-making tree for how the DNR will work with federal agencies on large removal and cleanup projects, like the Davy Crockett incident in the Columbia River. As coordination increases, partners may also want to explicitly develop a shared priority list of removal projects, specifying lead agencies and financial commitments to removal efforts. The Puget Sound Taskforce,⁴ composed of multiple federal agencies working to restore and protect Puget Sound and its resources, may be a good venue for this discussion. All the federal agencies involved with derelict vessel removal are also part of this taskforce. The taskforce also has a mission of increasing collaboration and coordination with local partners, such as state agencies.

3. Offer voluntary measures in collaboration with boat owner associations, fishing groups, etc. Boating is a time-honored tradition in Washington, and boaters in the

state strive to be good stewards of our waters and wildlife. Thus, recreational boating and fishing organizations may be interested in assisting the DNR with reporting and towing efforts. The DNR can explore opportunities for engagement with these groups in projects like setting up a website for citizens to report vessels that look abandoned and/or derelict or helping to tow smaller, low-priority vessels to dumps and boat yards. This would allow the DNR to use its resources on large and potentially dangerous removal projects.

Vessel Registration

If a vessel is abandoned, the DNR first attempts to identify and contact the owner of the vessel to request removal or disposal of the vessel. If the owner cannot be identified or is unwilling to take care of the vessel, the DNR determines if the agency should remove the vessel and shoulder the costs. Fewer than 1 percent of DNR vessel removals are paid for by the owner (DNR, 2017, personal communication). Typically, owners either cannot be identified or are financially unable to remove the vessel. One of the main ways to find vessel owners is through updated vessel registrations. Unfortunately, enforcement of vessel registration is currently lax. To issue a ticket, law enforcement needs the date of birth of the offender, but the vessel registration database, which is managed by the DOL, does not include that information. Law enforcement officers who find an abandoned vessel, can write a ticket only if they can look up the driver's license information of the vessel owner. If a vessel's registration has not been updated in six years, it becomes almost impossible to identify the owner of the vessel, because the DOL deletes license and registration records for all vehicles and vessels after six years (DNR, 2017, personal communication).

Often, vessel owners will sell their old boats for very cheap; sometimes under \$100. When a sale happens, the title of ownership should be transferred to the new owner, but there is no penalty for failing to transfer the vessel's title (unlike with private car sales). This eliminates any responsibility for current boat owners looking to get rid of their older boats. One of the main ways that local law enforcement can hold vessel owners responsible for maintaining their vessels is through several changes to the way vessels are registered. We recommend that the DOL make the following changes to aid in enforcement and prevention efforts:

1. Send expired tab reminders. Currently, all Washington vessel tabs expire on June 30. Unfortunately, not all

⁴ More information about the Puget Sound Task Force can be found here: <https://www.epa.gov/puget-sound/puget-sound-federal-task-force>

boaters renew their tabs by that time, and many forget about it. According to a 2013 Legislative Proposal document, the DNR estimates that 25 percent of Washington recreational boats are not registered, depriving the state of at least \$962,500 in licensing fees annually, roughly \$175,000 of which would have funded the DVRA (DNR, 2012). To help remind boaters that they need to renew their tabs, DOL should send reminders in the mail to all registered recreational boaters in late May or early June along with instructions and a return envelope for renewals. This can help keep vessel information up-to-date and generate funds for the DVRA.

2. Maintain registration records for more than six years.

Currently, the DOL purges all records that are older than six years. For law enforcement, this makes it extremely difficult to track down the owner of an abandoned vessel (this is also an issue for officers dealing with abandoned cars). Several abandoned vessels have negligent owners who fail to update their registration or obtain a title of sale for the vessel. If the current owner is negligent on updating the appropriate paperwork for more than six years, law enforcement has an extremely difficult time tracking down responsible parties. The DOL should explore options for maintaining records beyond six years.

3. Include owner date of birth in the vessel database.

When local law enforcement finds an abandoned vessel, they will look up the registration information for the vessel and attempt to write a ticket. However, they can only write a ticket if they have the date of birth for the offender. Unfortunately, the vessel database that the DOL maintains does not include the vessel owner's date of birth (DNR, 2017, personal communication). Law enforcement has to look up the vessel owner's driver's license or locate the owner to get the information they need to write a ticket, which can be difficult and time-consuming. The DOL does require boaters to fill out their date of birth on the vessel registration form, so it should not be overly burdensome to add this piece of information to the existing vessel database.

4. Explore options for an online vessel registration platform. Vessel registration in Washington currently can only be done via mail or at a DOL office. The DOL should explore options to allow boaters to register their vessels online. This would also reduce costs if the DOL decides it wants to send registration reminders to boaters via mail (preferably email). Such a system should be set up

to maintain records for more than six years. This system could also seamlessly connect registration information—including the date of birth and drivers' license information of the vessel owner—to the DOL's vessel database. This would help law enforcement more easily identify the owners of abandoned and derelict vessels.

5. Provide penalties for failure to transfer title of ownership.

Washington requires the transfer of the title of ownership when private citizens sell and/or buy a car or vessel. Failure to transfer the title of ownership of a car within 15 days results in a penalty (RCW 46.17.140). No such penalty exists for vessel title transfers. Washington should adopt similar requirements and penalties for vessels. This can help ensure that the appropriate vessel owner can be identified if a privately sold vessel becomes a problem, and it provides incentives for current vessel owners to complete the appropriate paperwork.

Enforcement and Prevention

Not all boaters comply with the current licensing and registration rules, so it is essential that regulations are enforced and that potentially problematic vessels and their owners are identified early. We recommend the following for law enforcement:

- 1. Strictly enforce registration compliance.** County sheriff departments are responsible for checking licenses and registrations, but their resources are often spread thin. Other on-the-water enforcement agencies, such as the Coast Guard and the Department of Fish and Wildlife, could increase their on-the-water enforcement efforts for vessel registration and better coordinate with county sheriff offices. Increasing compliance not only helps identify negligent vessel owners, it also generates more revenue for DVRA removal and prevention efforts. However, this increased enforcement will also require increased funding, and the state should assess what that funding need would look like.
- 2. Monitor for other derelict and potentially problematic vessels through coordinated surveying by federal, state and local agencies, nonprofit organizations and academia.** It is likely that there are several, unknown derelict vessels in the Salish Sea and several others that may soon become problems. Local law enforcement offices, many of which are currently on the water, can collaborate with various other partners that have an on-the-water presence to monitor for other derelict vessels and ones that should

be monitored. San Juan County's derelict vessel prevention program can serve as a model for this effort. Potential partners include WDFW, the Coast Guard, NOAA, the nonprofit Soundwatch and various sailing, fishing, SCUBA and other recreation clubs. By coordinating with one another, partners could also inventory additional sources of pollution that may be found in the Salish Sea, such as creosote pilings and other abandoned and derelict structures. This would require a coordinated system that easily allows non-DNR partners to report their sightings. Ideally, this system would be online and have GPS and mapping capabilities. This system could also be open to citizens to put in individual reports. Ideally, staff funded by a multi-county, collaborative effort (see #4 in funding recommendations, page 11) would be able to assist with this effort.

3. **Expand disposal options in under-served parts of Washington.** The state should coordinate with federal partners to identify areas of the state with the greatest need for a boat yard or other derelict vessel disposal facilities. In some instances, there may be a suitable location where a new boat yard or disposal facility could be built. In other instances, existing landfills that currently do not accept derelict vessel could be improved or expanded to accept these vessels. A statewide analysis is needed to better understand which counties and cities have the greatest need for such facilities. Once these areas are identified, federal and state agencies can collaborate on developing plans to fund these projects (see #5 in funding recommendations, page 11).

Boater Education

Another challenge is educating boaters about the problem of abandoned and derelict vessels and how to properly prevent the problem. Educational materials about abandoned and derelict vessels are not available at vehicle licensing offices, nor is the subject addressed in Washington State Parks' mandatory boater safety program. Boaters are required to register their vessels and complete a boater safety course. These are potential avenues to provide information about the problems associated with abandoned and derelict vessels, the state's program to address this problem and actions that vessel owners can take to prevent their boat from becoming abandoned.

One key piece of information that needs to be included in these educational materials is the location of disposal facilities for boats. Many boaters do not know where to take boats once it is time to dispose of them. Some parts of the state do not have local boat yards, and towing vessels can be expensive. There are also only a few places where an owner can cheaply dismantle their own vessel before taking it to a dump. Because of this, we recommend that the state explore the following educational opportunities:

1. **Provide information to boaters when they register their vessel.** Washington boaters can register their vessels either at a DOL licensing office or by mail. Because of this, the DNR and the DOL can collaborate on developing an educational brochure for boaters about derelict vessel. This brochure can include information about the impact abandoned and derelict vessels have on sensitive wildlife, like orcas and salmon, and explain the state's various programs to mitigate this issue. It should also include information about how vessel owners can be involved in addressing this problem, such as keeping their registrations current to help fund the DVRA, maintaining their boats so they don't become derelict over time and knowing the options for safely disposing of old boats. The brochure should be handed out and/or mailed to boaters, potentially with registration renewal reminders. DOL should also make this information available on their website. The current DOL website contains lists of resources on topics like preventing the spread of invasive species and information about preventing vessels from becoming derelict could be added to this list.
2. **Collaborate with ports and marinas to develop educational signs.** Because many boaters in Washington moor their vessels at ports and marinas, educational signs at these facilities can target the boating community. Signs can include information about the problems caused by derelict and abandoned vessels as well as tips for how to prevent vessels from becoming derelict. Signs can also list phone numbers and websites where boaters can report derelict vessels and/or learn about disposal options for older boats. We encourage the DNR to work with these facilities to develop and install these educational signs.
3. **Add information about abandoned and derelict vessels to the mandatory boater education program.** In 2005, the legislature passed a law requiring all boaters

in Washington to complete a boater education program and to carry a card to prove it. The goal of the boater education program, which is managed by the State Parks Department, is to teach boaters about safety and maritime laws. This program could also include information about abandoned and derelict vessels, and the DNR and State Parks Department should collaborate on adding this to the curriculum.

- 4. Create a disposal guide for boaters.** For owners interested in disposing of their unwanted and old vessels, it can be difficult to find and transport vessels to facilities that accept them and not all will qualify for the DNR's VTIP program. The DNR can create an online, educational resource guide that provides the name of disposal facilities that either accept old vessels or allow owners to dismantle their vessels at the facility to easily haul it to a dump. Information should list facilities by county and include contact information and any restrictions associated with the facility. It could also include information about towing and hauling services in each county for owners who are unable to transport their vessel. This resource should be updated at least annually to reflect changes in the availability of various facilities.

Conclusion

Washington is a national leader in derelict vessel removal and prevention efforts. Several coastal states have begun to address the challenge, but Washington continues to stand out as an innovator and model for others to follow. Despite the significant strides made in removing hundreds of derelict vessels from Washington's waters, southern resident orcas and chinook salmon—species heavily impacted by toxic contamination from derelict vessels and other sources—have not recovered. The state can improve its derelict vessel removal program and expand its prevention efforts. By incorporating the above recommendations, the DNR and its partners can better utilize the program's resources to contribute to southern resident orca recovery.

In the near term, we encourage the state to increase collaboration between state, federal and local agencies. More communication among the various entities involved with derelict vessel prevention and removal is an important first step. Indeed, several of the above recommendations rely

on increased collaboration and communication. We also encourage the DNR to update its priority classes to include an additional priority level, Essential Orca and Salmon Habitat. Southern resident orcas need immediate actions to help increase their prey base and reduce toxic contamination. Prioritizing derelict vessel removal in high-priority bays and estuaries in Puget Sound can achieve these goals simultaneously. Also, the DNR can update its prioritization system outside of the legislative system. This allows the department to quickly redirect its resources to immediately benefit both orcas and salmon. Similarly, many of the expanded educational recommendations we've made can be implemented outside of the political process. Because derelict vessels are the result of negligent boat owners, it is extremely important to educate boat owners about how to prevent their vessels from becoming derelict. Further educating the boating community about how they can be a part of the solution may reduce the number of boats becoming abandoned and derelict, which both saves money and reduces pollution.

Other recommendations will require additional time and financial investments. Updates to the state's codes are necessary to improve vessel registration and licensing. Some of these improvements are minor but would greatly benefit enforcement and prevention efforts. We also recommended that the state fund two additional programs: one that would survey Essential Orca and Salmon Habitat for unknown derelict vessels and one to coordinate an intercounty prevention effort. Both programs will require significant time to coordinate the multiple partners and will likely require new funding sources. Defenders is committed to advocating for increased funding at both the state and federal level to support these programs, but that is likely to take time.

With over a decade of experience, the DNR is well positioned to build upon the successes of its derelict vessel removal program. Defenders is committed to supporting the DNR and the various other agencies and local governments involved with derelict vessel removal and prevention efforts. We will continue to advocate for policies and programs that further improve these efforts to help reduce the pollution in the Salish Sea that is affecting orcas and salmon.

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