

# **Abandoned and Derelict Vessel Survey**

## **Conducted for the Cook Inletkeeper and Alaska Clean Harbors ADV Task Force by Northern Economics, Inc.**

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While still a young state, Alaska has become home to an ever-aging fleet of vessels. These vessels have contributed to an increasing number of abandoned and derelict vessels (ADVs) along Alaska's coasts and rivers. In February 2014, Cook Inletkeeper and Alaska Clean Harbors convened an ad-hoc ADV Task Force with the goals of improving coordination for addressing ADVs and identifying long-term needs for prevention and effective management of ADVs.

In spring 2015, Northern Economics, Inc. created and facilitated an online survey on behalf of the ADV Task Force aimed at collecting information on the costs associated with dealing with ADVs. This white paper summarizes the results of the ADV Survey.

A total of 20 survey responses were submitted consisting of 13 complete responses and 7 partial or incomplete responses. For comparison purposes, respondents are divided into two groups: private companies and harbor facilities. These groups both deal with ADVs, but often play much different roles.

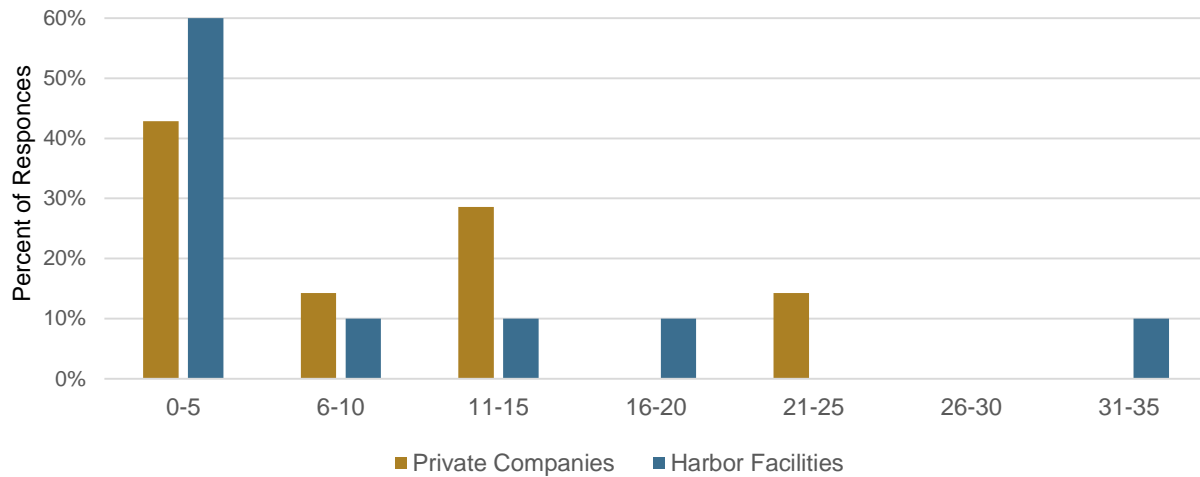
It should also be noted that the feedback received from this survey suggests that the costs associated with ADVs vary drastically on a case-by-case basis, and assigning an average cost to many of the tasks presented in this survey was difficult for many respondents.

### **How many ADVs does your organization deal with?**

When asked how many ADVs their organization had dealt with over the past five years, respondents from private companies reported an average of 9 ADVs in the past five years with responses ranging from 0 to 25 ADVs. Respondents from harbor facilities reported dealing with an average of 10 ADVs in the past five years, with responses ranging from 2 to 35.

Figure 1 displays the distribution of responses from each respondent category. Responses from private companies were more evenly distributed between 0 and 15 ADVs, accounting for over 83 percent of total responses from this category, compared to the responses from harbor facilities, which were more concentrated in the 0 to 5 ADV range (60 percent) but extended all the way out to 31 to 35 ADVs.

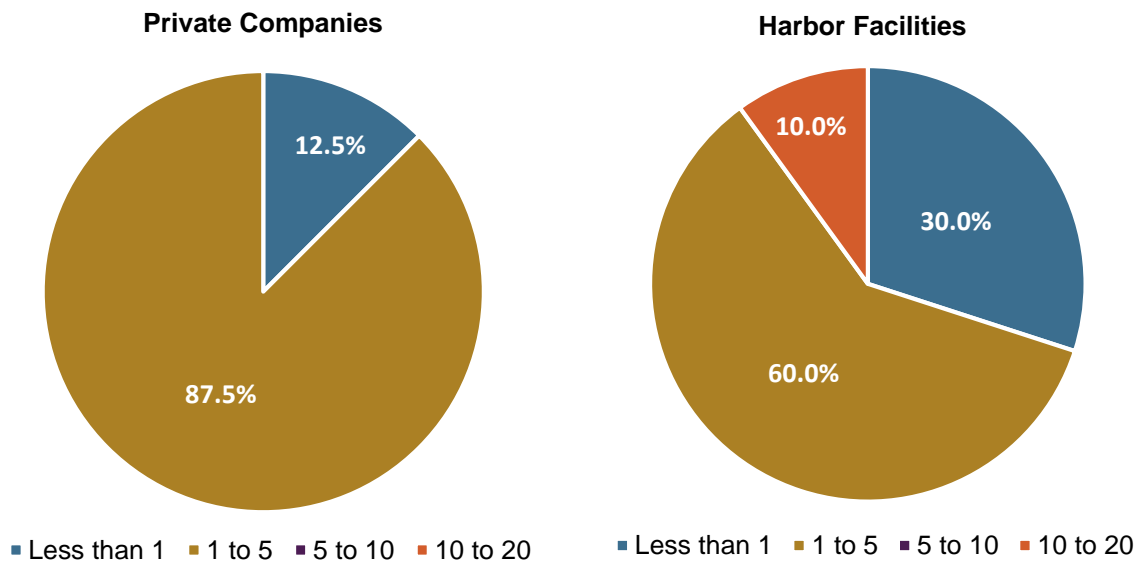
**Figure 1. Number of ADVs over the Last Five Years**



Source: Northern Economics, Inc. 2015

Respondents were also asked how many ADVs they dealt with in an average year. Results show that about 72 percent of total respondents deal with 1 to 5 ADVs every year, 22 percent deal with less than one ADV, and just over 5 percent deal with 10 to 20 ADVs in an average year. When separated into responses from private companies and harbor facilities, private companies reported dealing with fewer ADVs on an annual basis than harbor facilities (Figure 2).

**Figure 2. Average Number of ADVs per Year**



Source: Northern Economics, Inc. 2015

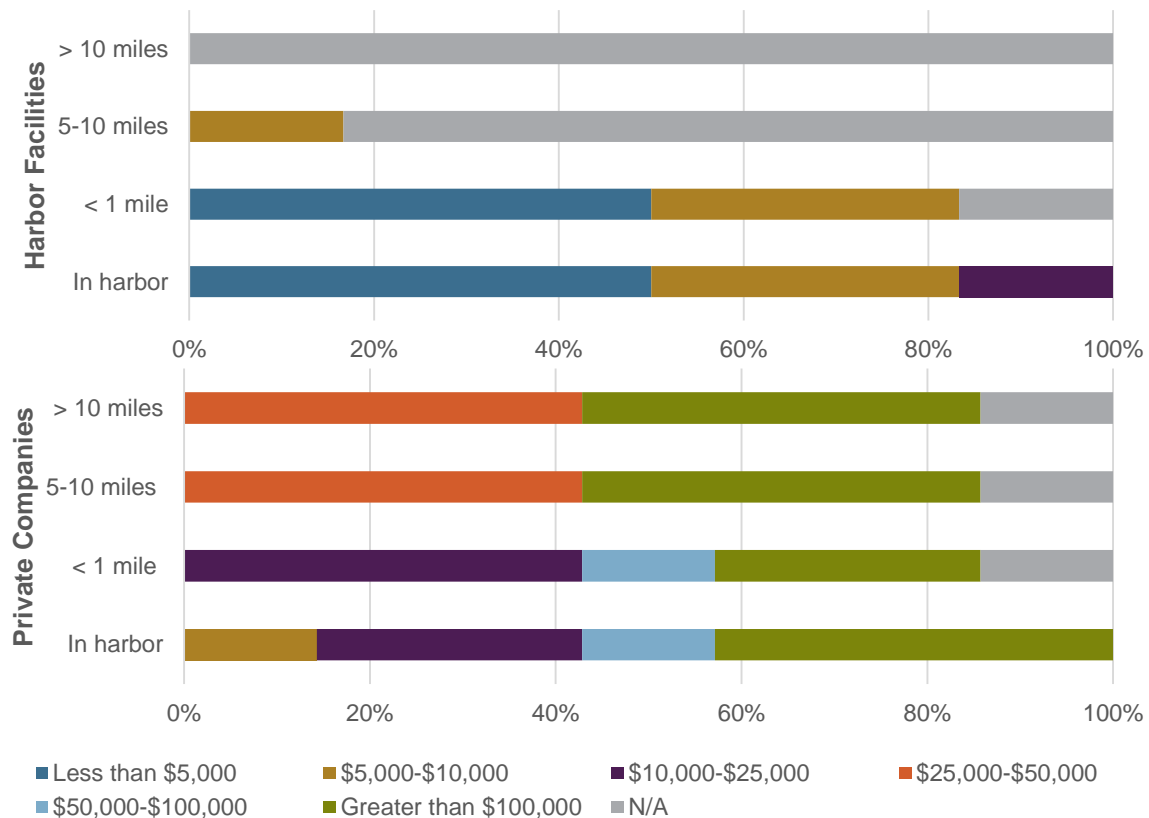
### **How much does it costs to physically remove an ADV?**

The next set of survey questions focused on the costs associated with the removal of a single ADV. Two factors that influence the overall removal cost are the vessel's distance from a harbor facility and the size of the vessel.

Respondents were presented with four distance ranges and asked to estimate the average removal cost of an ADV in each range. Figure 3 displays the removal costs by distance categories as a percent of the total responses under each of the respondent categories. Respondents that did not have experience with a specific distance category were asked to enter "N/A".

Not surprisingly, respondents from harbor facilities had less experience with ADVs that are more than five miles from a harbor facility. It should also be noted that the average cost from harbor facility respondents tended to be lower than the average cost from private companies for similar distance categories. The response from private companies indicate that while ADVs that are further away from designated harbor facilities are slightly less common, their removal costs tend to be higher than ADVs closer to harbor facilities.

**Figure 3. Cost of ADV Removal by Distance**

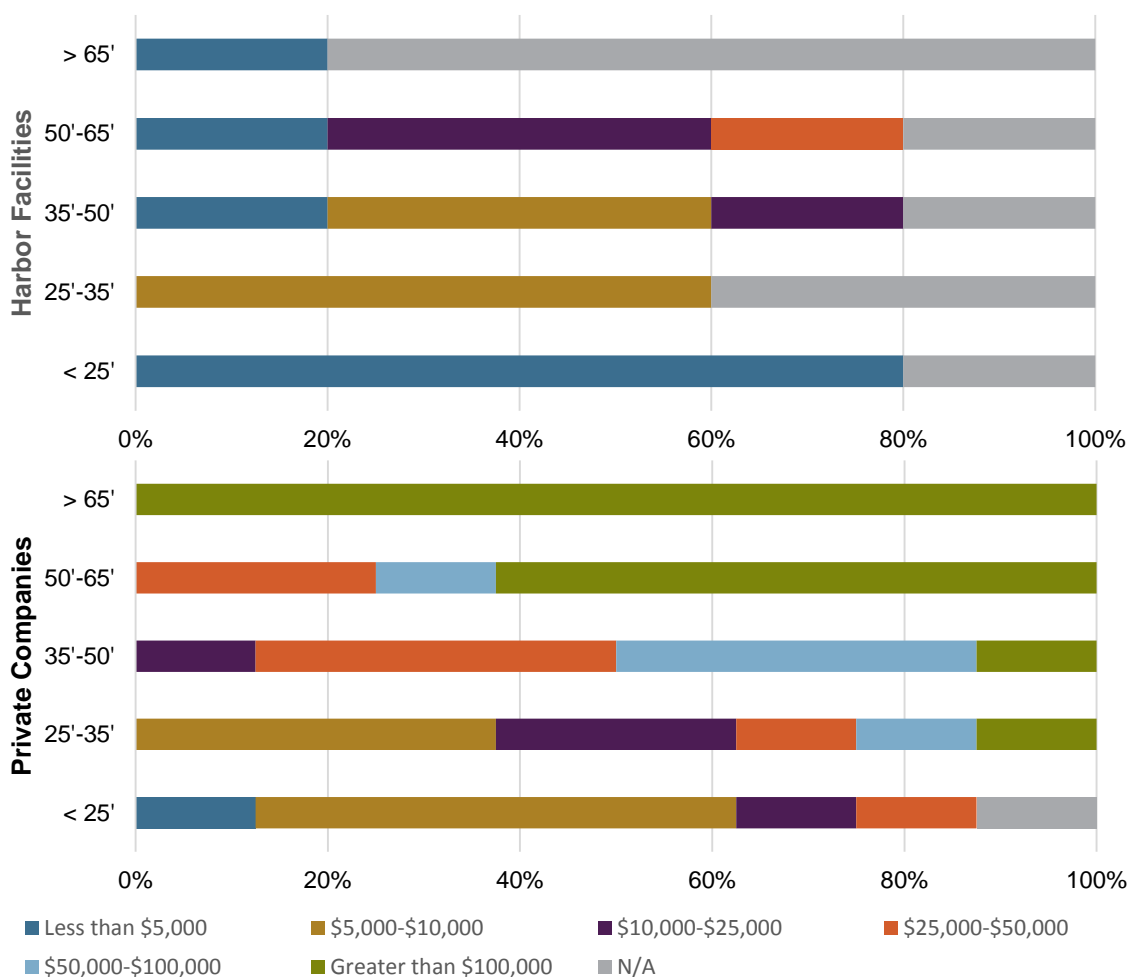


Source: Northern Economics, Inc. 2015

When asked how the size of the vessel impacted the overall removal cost of an ADV, respondents indicated that the larger the vessel, the higher the removal costs. Figure 4 displays the five vessel size categories presented in the survey and the average removal costs associated with each vessel size submitted by each of the respondent groups. Respondents that did not have experience with a specific vessel size category were asked to enter "N/A".

Respondents from harbor facilities generally had less experience with larger ADVs, but still indicated that the removal cost of an ADV increases with its size. Responses from private companies show an even stronger correlation between removal cost and vessel size. The majority of respondents from private companies estimated the cost of a vessel larger than 50' to be greater than \$100,000, the removal cost of vessels between 35' and 50' to be \$25,000 to \$100,000, and the average removal cost of vessels less than 35' to be under \$25,000.

**Figure 4. Cost of ADV Removal by Vessel Size**



Source: Northern Economics, Inc. 2015

Beyond the physical removal of the vessel, there are a number of additional costs associated with ADVs. The survey listed ten additional costs often associated with ADVs and asked respondents to estimate the average cost associated with each. Table 1 displays the list of additional tasks included in the survey as well as the average cost to address each of these tasks based on the responses received. The tasks with the highest average costs are environmental cleanup, lost revenues from affected facilities, and insurance costs. Due to the limited number of responses received for this particular question, the results are not split into the two respondent groups used previously in this summary but are instead presented as a total.

**Table 1. Additional Costs Associated with ADVs**

Task Category	Min	Max	Average	Median
	Cost (\$)			
Environmental Cleanup	500	750,000	122,429	5,000
Habitat Restoration	0	100,000	25,000	0
Damage to Other Vessels	0	100,000	16,833	0
Damage to Docks or Other Infrastructure	0	100,000	16,643	1,500
Removal and Disposal of Hazardous Materials	500	100,000	18,583	5,000
Owner Notification and Legal Costs	0	50,000	6,694	1,000
Unpaid Moorage/Other Fees	0	95,000	3,491	2,000
Lost Revenues from Affected Facilities	0	200,000	36,833	3,000
Administrative Costs	100	25,000	5,255	3,000
Insurance Costs	5,000	5,000,000	28,333	5,000

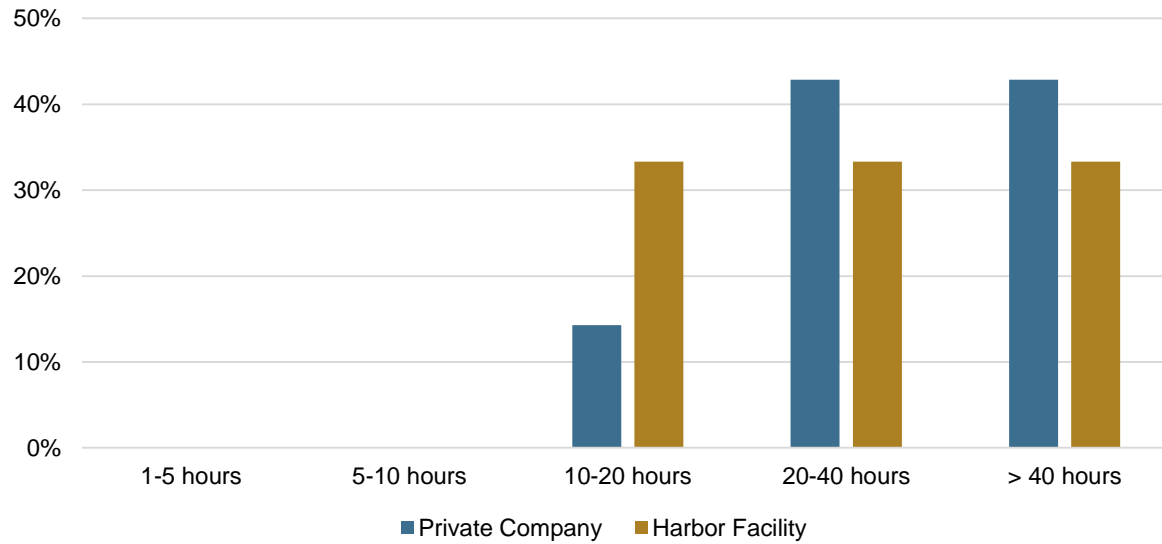
Source: Northern Economics, Inc. 2015

In addition to the tasks provided in the survey, respondents were also given the opportunity to write in any other tasks commonly involved with ADVs in an open response format. Vessel recycling fees (\$10,000–\$50,000), dump fees (\$2,000), legal and admin costs (\$10,000), and interest from unpaid accounts (\$500–\$2,000) were listed. The most common response received from this open-ended question was that each ADV has to be dealt with on a case-by-case basis, and that the tasks and costs associated with ADVs vary drastically depending on the circumstances. This should be taken into consideration when evaluating the results of this survey.

#### **How much time does it take to deal with an ADV?**

Dealing with ADVs is not only expensive, but it can also be a time-consuming task. Respondents were asked on average how much time is spent dealing with a single ADV case. Figure 5 displays the average time that it takes to address a single ADV based on the responses received from both respondent groups.

**Figure 5. Time Costs of ADVs**



Source: Northern Economics, Inc. 2015

Respondents from both private companies and harbor facilities indicated that addressing an ADV takes no less than 10 to 20 hours and can extend past 40 hours on a fairly regular basis. Time estimates from private companies were slightly higher than those from harbor facilities, but both groups indicate an average time range that is greater than 10 hours and extends past 40 hours

When asked what the longest amount of time their organization has spent on a single ADV, respondents replied with a wide variety of answers ranging from 4 days to 5 months to 3 years. Again, respondents reiterated that addressing ADVs varies drastically on a case-by-case basis in this open response section of the survey.

## **Conclusions**

The ADV survey results should not be viewed as a census of all ports and harbors, nor as statistically significant, but the following conclusions can be drawn:

- On average, harbor facilities and private organizations address 1 to 5 ADVs per year.
- The tasks and costs associated with the removal of an ADV vary significantly from case to case and are difficult to generalize or assign averages to.
- In general, the distance from the harbor impacts the total cost of removing an ADV.
- The larger the vessel size, the greater the costs will be to remove an ADV.
- On average it takes a minimum of 10 hours to remove a single ADV and can take up to 3 years in extreme circumstances.

The median costs associated with addressing a single ADV are listed in Table 2 by both distance from a harbor facility and the size of the vessel. The median results of this survey are presented for both respondent categories, harbor facilities and private companies, as well as the median cost of all the responses received.

**Table 2. Median Cost of Addressing an ADV**

Criteria	Harbor Facility	Private Company	All Respondents
<b>Distance from Harbor</b>			
In harbor	< \$5,000	\$50,000–\$100,000	\$10,000–\$25,000
<1 mile of harbor	\$5,000–\$10,000	\$50,000–\$100,000	\$10,000–\$25,000
5–10 miles of harbor	N/A	> \$100,000	> \$100,000
>10 miles of harbor	N/A	> \$100,000	N/A
<b>Size of Vessel</b>			
<25' vessel	< \$5,000	\$5,000–\$10,000	\$5,000–\$10,000
25'–35' vessel	\$5,000–\$10,000	\$10,000–\$25,000	\$10,000–\$25,000
35'–50' vessel	\$5,000–\$10,000	\$50,000–\$100,000	\$25,000–\$50,000
50'–65' vessel	\$10,000–\$25,000	> \$100,000	\$25,000–\$50,000
>65' vessel	N/A	> \$100,000	> \$100,000

Source: Northern Economics, Inc. 2015

The results of this survey show that the cost of addressing a single ADV range from less than \$5,000 for vessels in a harbor and less than 25' in length to greater than \$100,000 for vessels more than five miles away from a harbor or greater than 50' in length. As noted throughout this summary, the costs associated with addressing ADVs vary drastically on a case-by-case basis, but the median costs presented in Table 2 can be used as a starting point to determine the average costs of an ADV.