



Clean Boating in the Susitna Valley

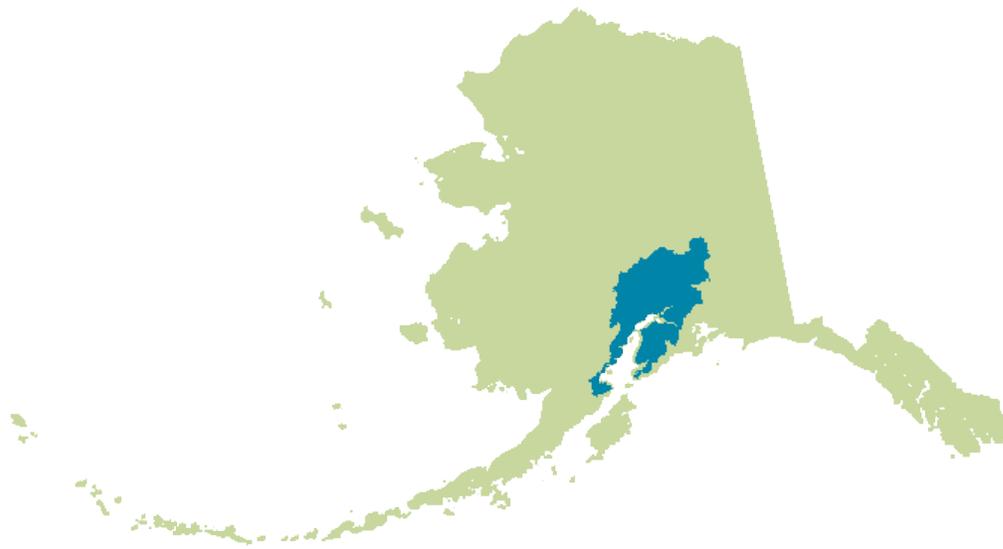
FY 2016 Final Report



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Cook Inletkeeper is a community-based nonprofit organization that combines advocacy, outreach, and science toward its mission to protect Alaska's Cook Inlet watershed and the life it sustains.

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Cover photo: Burkeshore Marina docks on Big Lake

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INTRODUCTION

The Mat-Su Valley is a recreational hotspot for boating, fishing, and camping. Boaters come from all over Southcentral Alaska, including Anchorage, to recreate in the Mat-Su Valley. This influx of people provides economic growth opportunities for the area, and the Valley has many communities deeply connected to their nearby waterbodies.

High boat use on lakes and rivers, however, can lead to high levels of petroleum hydrocarbons in the water. Water quality testing on several popu-

highlighted three regional waterbodies as top priorities for educational outreach to reduce pollution. Big Lake, the Little Susitna, and the Deshka River support many species of fish and aquatic life, including several species of salmon. Persistent and increased levels of hydrocarbons can have negative impacts on juvenile and adult fish health. It is important to take this into consideration as we continue to expand and explore ways to effectively reach out to boaters and educate them on the impacts of hydrocarbon pollution in high priority waterways.



Thousands of Alaskans come to Valley waterbodies to recreate and use motorized watercraft during the summer months. Here, boats and jetskis line the shore at Big Lake.

lar waterbodies by the Alaska Department of Environmental Conservation (ADEC) has demonstrated harmful levels of oil and gas as a result of high boat use. Gasoline can come from individual leaks, drips and spills, with additional (and likely larger) inputs from the release of unburned fuel out of the exhaust into the water during combustion from older 2-stroke outboard engines.

Water quality testing and boat use patterns have

Boaters throughout the Mat-Su region can no longer afford to recreate without understanding how they can be part of a solution to the pollution problems facing the community. Through this ongoing project, our overarching objective is to work with local communities, private businesses, Alaska State Parks, boaters and other stakeholder groups to identify and fill gaps in clean boating education and resources to ultimately reduce petroleum pollution in these and other Mat-Su Valley waterbodies.

Over the past fiscal year (July 2015—June 2016, FY16), Cook Inletkeeper built upon past years efforts and expanded this project to continue clean boating outreach at Big Lake, the Little Susitna River Public Use Facility, and Deshka Landing in Willow. We also launched a clean boating discount card program which partnered with businesses from Talkeetna to Kenai.

Big Lake

The residential community in Big Lake is growing. The 2010 population was 3,350; this represents an increase of over 27% from the 2000 census. Additionally, thousands of visitors come to Big Lake during summer months for boating,

fishing, and jet skiing. Drivers entering the Big Lake community are greeted by a large map of the area with the headline: “Alaska’s Year-Round Playground”. There are 4 private marinas on Big Lake with over 300 slips for boat moorage and public boat launches at two state and one borough-owned public recreation areas, all of which are heavily used for lake access during

hydrocarbon pollution in Big Lake. Among other identified action items, outreach and education was a primary focus. The Water Quality Workgroup prioritized ensuring that all motorized watercraft users on Big Lake know and implement basic skills to maintain and run their engines with minimal fuel, oil, and other hazardous materials released into the water. Unfortunately, these skills are often not learned and tend to be overlooked by boaters throughout Alaska. All boaters can use efficient and effective best management practices to dramatically reduce, and in some cases eliminate, harmful discharges. Best management practices can also save money in fuel costs and maintenance. Through this project we are bringing these tools to boaters throughout the region, with a continued heavy focus at Big Lake itself.



A map of Big Lake greets visitors at the turn-off to North Shore Drive.

the summer. In 2006, ADEC listed Big Lake as impaired for petroleum hydrocarbon pollution above state water quality standards. The primary source of hydrocarbons (e.g. gasoline) to Big Lake is motorized watercraft—boats and personal use watercraft. Water monitoring results show higher concentrations of hydrocarbons during busy holiday weekends and in certain locations: near marinas, boat launches, and other high traffic areas in the east basin. Additional testing in 2013 showed hydrocarbon levels continue to exceed water quality standards on good weather days during the summer.

Starting in 2010, a community Water Quality Workgroup of Big Lake residents and stakeholders developed an Action Plan for reducing hy-

Little Susitna River

Other regional waterbodies face similar pollution concerns to Big Lake, including the Little Susitna River. The ADEC has conducted water quality sampling on the Little Susitna since 2004. High boat traffic on the Little Su helped catalyze preliminary testing for hydrocarbons and turbidity in 2007. Sampling conducted above, at and below the Public Use Facility in 2007-2010 documented hydrocarbon levels exceeding state water quality standards, and high turbidity during times of increased boat use. The Little Susitna is a popular sport fishing and hunting area, with high boater and fisher volume during Chinook salmon season in June and Coho salmon season during August. In 2017, the Alaska Board of Fisheries will put in place a 2-stroke engine ban during all fishing activities. This regulation may be a catalyst that stimulates boaters to upgrade their engines which will help reduce hydrocarbons in the Little Su.

Deshka River

Access to the Deshka River is through Deshka Landing, a privately-owned boat launch on a slough of the Susitna River. Boaters launch here to access remote homes, cabins, and fish on the Deshka River and other tributaries of the Susitna. Fishing pressure is highest during the early-summer Chinook salmon runs, and again in late-July/early-August during the Coho salmon runs. Additionally, closures that impact other areas such as the Little Su may not close the Deshka, likely resulting in increased pressure as fishermen move to open areas to fish. Limited water quality sampling on the Deshka River by ADEC indicates there may be elevated levels of petroleum hydrocarbons, especially in the lower 3 miles of the River. Similar to water quality concerns on Big Lake and the Little Su, high boat use can lead to high levels of hydrocarbons in the water.

Our Project

Concerned citizens founded Cook Inletkeeper in 1995. Inletkeeper is a 501(c)(3) non-profit organization with the mission to protect Alaska's Cook Inlet and the life it sustains. Organizational values include protecting water quality, wild salmon, lasting communities and sustainable local economies. Funding for this project came from the ADEC's Alaska Clean Water Actions grant program. Through this funding we can work with boaters throughout Southcentral Alaska who recreate in the Mat-Su Valley and enjoy Big Lake, the Little Su and Deshka River, on our common long-term goal to improve water quality so these waters of concern meet State water quality standards and are healthy for salmon and other aquatic life.

The individual tasks under this project all focus

on improving water quality through effective boater outreach. Objectives for this specific grant year were to: 1) Continue to implement the successful educational clean boating program developed during FY14/FY15, ensuring that boaters know how to practice clean boating skills with an understanding of the negative impacts of petroleum on human health and fish habitat; 2) Empower regional boaters to practice and encourage clean boating techniques through a broad clean boating outreach campaign; 3) Work with local businesses from Talkeetna to Homer to develop a discount card program to incentivize participation in clean boating; and 4) Visit Kenai launches to conduct outreach with boaters there.

As the grantee for this project, Cook Inletkeeper utilized state fiscal year (FY) 16 (July 1, 2015–June 30, 2016) funding from the state of Alaska to continue funding the Clean Boating Coordinator to oversee the on-the-ground implementation of these goals, including clean boating outreach to the wider regional community of boaters, including the Little Su PUF and Deshka Landing. Inletkeeper also worked with regional stakeholders and businesses to develop a new clean boating discount card program. This program encourages participation in a free online clean boating course via the BoatUS Foundation and boaters receive a discount card to be used at participating businesses. Local businesses support clean water efforts and offer discounts in exchange for free advertising and promotion. Included in this final report are summaries of all activities done under this grant project in FY16, and an overview of future work we will be doing under a fifth year of funding through FY17.

LAUNCH HOST PROGRAM

The Launch Host program began at Big Lake and is intended to educate boaters one-on-one about the importance of clean boating and tools to keep our rivers and lakes clean. Similar programs exist in other states, including a large “Dockwalkers” program in California (<http://www.coastal.ca.gov/ccbn/dockwalkers.html>).

The foundation of this program lies in one-on-one boater outreach with boaters as they launch and load their boats. Through this engagement, boaters receive free clean boating kits and are asked to fill out a clean boating survey.

For this project, clean boating kits included an oil absorbent pad, a magnet with clean fueling tips, brochures on clean bilges/spill response/clean oil changes, a floating keychain, a Clean Boating on Big Lake sticker, Clean Boating Little Su sticker, a Cook Inletkeeper sticker, a clean boating fishing license holder containing a card of clean boating practices, tidebook, and a tote bag. Clean boating surveys capture basic demographic information about boaters, as well as information on their boats, their clean boating knowledge and their relevant boating behaviors. We updated our survey and moved to electronic survey collection on iPads, which made summarizing boater responses easier. A copy of the FY16 boater survey is included in the Appendix, along with copies of media articles and clean boating discount card flyers. Summarized survey results are included in this report under ‘Boater Survey Results’.

Since the beginning of this effort in FY12, finding volunteers has been challenging during the busy summer months. Inletkeeper’s Clean Boating Coordinator conducted much of the launch outreach herself during FY16. Outreach at launches was scaled back this year to focus on business outreach for the discount card program, but in



Top: Outreach table at Burkeshore Marina during the Fall Fishing Derby. Bottom: Clean Boating kit materials on display. Photo: C. Inman

general outreach efforts were successful.

The Clean Boating Coordinator distributed 89 clean boating kits (Big Lake, 74; Little Su, 8; Doshka, 7) and 21 surveys through the FY16 Launch Host program. Homer staff distributed 3 boating kits at Kenai launches. We visited launches on holiday and nice weather weekends. One kit was generally distributed for each survey; however, boaters who refused the survey still received a kit if requested. We only distrib-

uted bilge pillows to boaters who can use them (i.e. boats with contained bilges, not to people with jetskis or open skiffs), but gave an oil absorbent pad to all boaters.

Big Lake launches were the typically the busiest, with three locations to visit: the North Campground launch, South Campground launch, and the Mat-Su Borough launch. The Little Su PUF was where outreach was conducted for the Little Su, since this is the most popular access point for this river. Deshka Landing is a privately owned launch facility and provides access to the mainstem Susitna River, Deshka River and other tributaries.

Continuing with the successful approach from FY15, an outreach table was set up during Launch Host efforts at the boat launches. Each table had a project banner, a boating kit, a demonstration of the amounts of oil and gas lost with three types of common outboard engines, and temporary tattoos for kids. The Big Lake South Launch campground is not very busy and boaters are more relaxed, with more time to stop and engage. The Big Lake North Launch is a larger and much busier campground, and has more in-and-out launching activity. Deshka Landing is also a busy launch, with most boaters focused on getting out on the water. The best time to reach boaters is while they are waiting to launch, walking from the parking lot, or waiting for their trailer. Boaters at the Little Su PUF are more relaxed and much more willing to spend time talking, taking surveys, and leisurely launch their boats. Efforts were made in FY16 to spend the most time at Big Lake, but visit the Little Su and Deshka as often as possible.

Campground hosts and volunteers helped hang Clean Boating on Big Lake banners at the en-

trance to North launch and info flyers were hung at the pay station kiosks at the North Big Lake launch and the Little Su PUF. The staff at Burkeshore Marina handed out clean boating stickers and bilge socks to interested boaters. The owners of Deshka Landing handed out stickers and hung spill prevention signs near the launch.

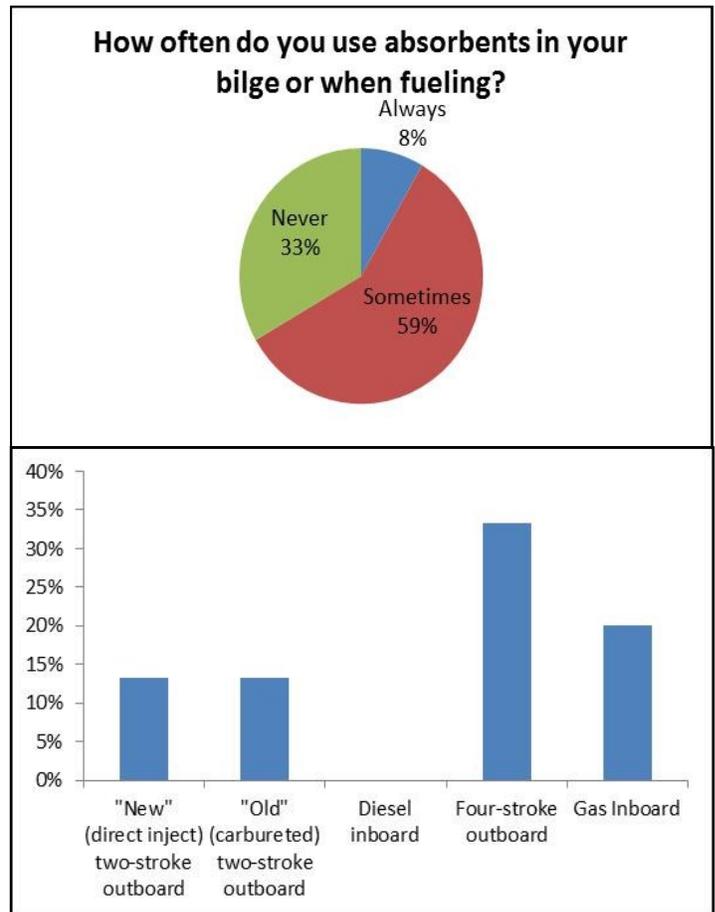


Top: Boaters and jet skiers enjoy Big Lake North launch. Bottom: Deshka Landing launch.

BOATER SURVEY RESULTS

Unfortunately, due to an online software glitch, 7 surveys from July-Sept of FY16 were lost. However, the surveys 7 surveys that boaters completed at Big Lake and the 7 from Deshka Landing were retained. We gave out over 50 kits at Valley launches and 3 at the Kenai launch. Many boaters refused to take a survey at Big Lake, citing lack of time or interest and their desire to get out on the water as soon as possible. Wasilla, Anchorage, and Big Lake were the most common communities visiting Big Lake. Results from this question continue to support the finding that the broader boater population at these launches is represented by several communities in South-central, and that wider outreach efforts (i.e. radio advertising and regional boat shows) are going to be increasingly important for effective messaging. We chose to present launch data separate from the outdoorsman show data to observe any differences in responses. Data from the MatSu Outdoorsman show (page 9) is separate from the Great Alaska Sportsmans Show (page 10) because of the high percentage of ocean boaters at the GASS.

Boater awareness and knowledge of the pollution concerns at Big Lake was on par from results in FY15. The majority of boaters surveyed at Big Lake (85%) and Deshka Landing (83%) knew that Big Lake was listed as polluted. The top pollution concern for boaters at both Big Lake and Deshka Landing was old carbureted 2-stroke motors. This demonstrates that our broad-scale outreach efforts and expanded radio advertising is beginning to have an impact. Despite their awareness of pollution, the majority (59%) of boaters only use oil absorbents sometimes, and 33% never use them. Clearly, although we are making progress, education to change behaviors is a long-term effort. In the past we have seen this correspond with where people fuel their



Top: Percentage of boaters surveyed at launches who said they use absorbents when fueling or in their bilge. Bottom: The majority of respondents indicated they have a 4-stroke engine on their boat (40%), followed by older 2-strokes (26%) and gas inboards (20%).

boats—many people fuel at gas stations where they don't think of containing spills. This is definitely a stormwater runoff concern, however is outside of the scope of this project as the nearest land-based gas stations are often a mile or more from launches.

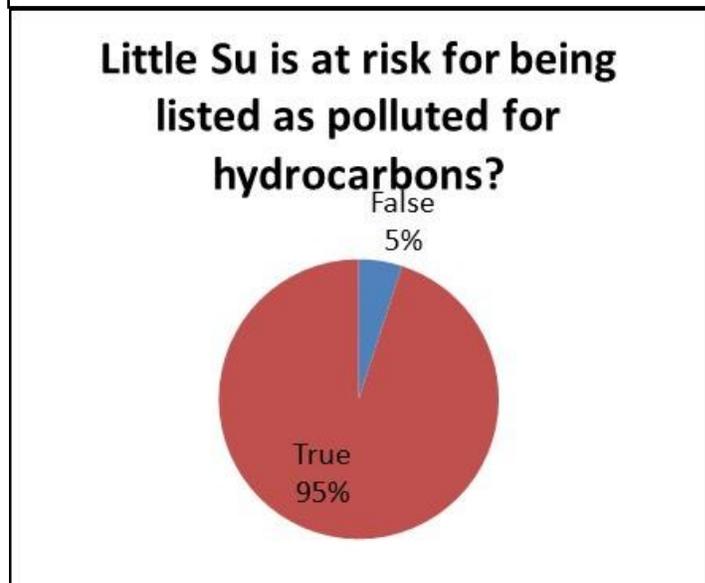
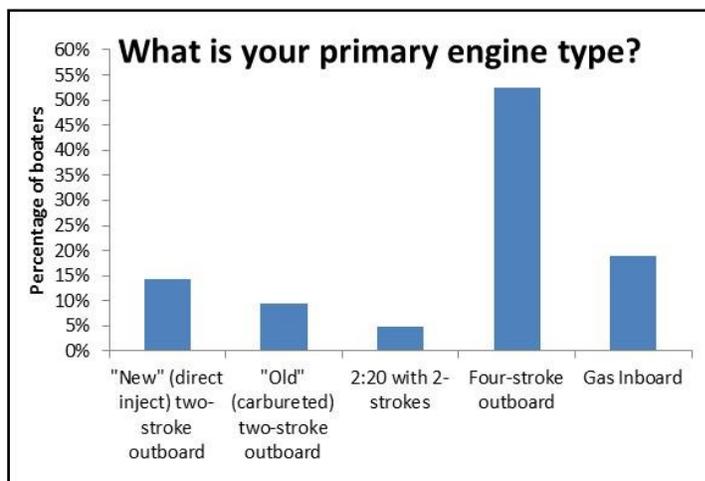
Out of the 13 boaters surveyed, four-stroke engines (33%) and old carbureted 2-strokes (13%) were the most common engine types used by boaters at Big Lake and Deshka Landing. The top

three actions that boaters were willing to engage in to support clean boating practices were: 1) use absorbent pads in the bilge; 2) fuel away from the water; and 3) drain boats away from the launch ramp. Spreading the word and talking to other boaters about clean boating practices continues to be the least popular proposed action.

When asked when they would be likely to replace their older 2-stroke engine, the few respondents who used 2-strokes said that they would not replace them or if it were required by law. These data show that there are barriers to engine replacement within the boating community, but that a buy-back program would be an incentive for some boaters to replace their older 2-strokes.

Mat-Su Outdoorsman Show

In addition to outreach at Big Lake, the Little Su and Deshka launches, the Clean Boating Coordinator and volunteers talked with over 100 individuals about clean boating on Big Lake and other Valley waterbodies at the Mat-Su Outdoorsman Show in March 2016. Boaters at the show completed 20 surveys and received clean boating kits in return. Boaters who did not want to complete surveys were then just given kits. The majority (60%) of boaters said they lived in Wasilla or Big Lake, followed by Anchorage and Palmer. Four stroke outboard motors were the most common engine type (55%), followed by gas inboards (20%), and new direct fuel injected 2-strokes (15%). When asked if they used oil absorbs in their bilges or while fueling 40% said “always”, 25% said “sometimes”, and 35% said “never”. When asked if it was legal to use soaps to disperse a spill or sheen, 90% of boaters said “false” and 10% said “true”. All boaters surveyed knew that Big Lake was listed as polluted for hydrocarbons (100%) and most knew that the Little



Top: Engine types among boaters surveyed at Mat-Su Outdoorsman Show. Bottom: This awareness indicates great progress towards positive change throughout the region.

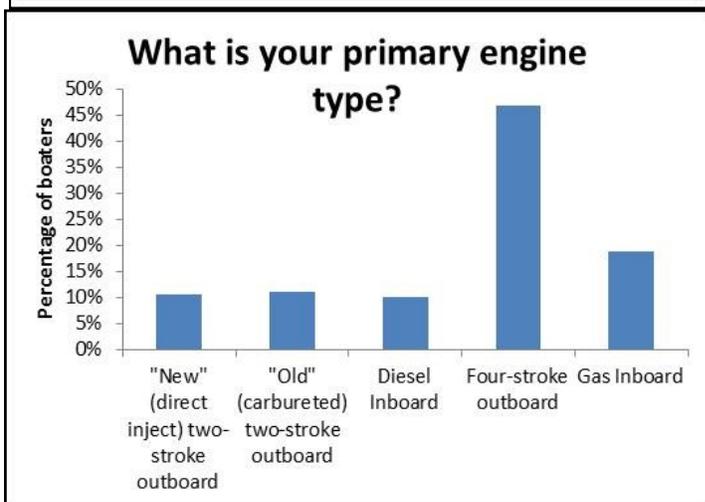
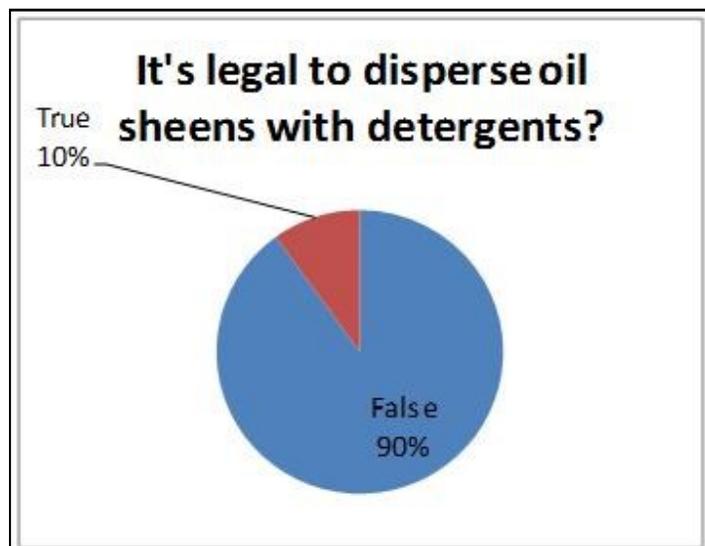
Susitna was at risk of being listed (95%). When asked what their top pollution concern was, 60% said “routine small oil/gas spills & leaks”, 25% “old-carbureted 2-stroke engines”, 10% said “fuel dock spills”. When asked to elaborate on these issues, many boaters said they would like to upgrade their engine, but cannot afford to.

The top three actions that boaters were willing to

engage in to support clean boating practices were: 1) use absorbent pads in the bilge and when fueling; 2) fuel away from the water; and 3) drain the boat away from the launch. Upgrading to a new 2-stroke or 4-stroke was the least popular option. Boaters who indicated they owned a 2-stroke engine were asked when they would be most likely to replace their 2-stroke engine. Thirty-eight percent said they would if it was required by law, 25% said if there was a cost-share buy-back program, 25% said pollution concerns in lakes and rivers, and 12% said if the engine breaks down beyond repair. Similar to what we saw at the launches, a buy-back program would be an incentive for some boaters to replace their old 2-stroke engines.

Great Alaska Sportsman's Show

As in years past, we also attended the Great Alaska Sportsman's Show in Anchorage March 31-April 3. The booth was a big success. We collected 171 boater surveys and handed out nearly 200 clean boating bags. Out of 171 boaters surveyed, 47% said that a 4-stroke was their primary engine. Only 11% of boaters surveyed indicated that an old carbureted 2-stroke was their primary engine, and 10% responded that they used a direct fuel injected 2-stroke. When asked what would make them replace their old 2-stroke engine, 47% of boaters responded that they would replace it when it breaks and cannot be repaired, while 32% said they would do so if there was a buy-back program in place. When asked how often boaters used oil absorbs, 37% said always, 23% said sometimes, and 40% said never. The majority (75%) of boaters knew that it is illegal to use soaps and detergents to disperse an oil sheen. The top three pollution concerns for boaters surveyed were routine oil and gas spills, improper sewage disposal, and fuel dock spills. This



Top: Ninety percent of boaters surveyed at the Mat-Su Outdoorsman Show knew it was illegal to use soaps and detergents to disperse a sheen. Bottom: Primary engine types from boaters surveyed at the Great Alaska Sportsman's Show.

shows that boaters are concerned with oil and gas pollution in our waterways, but are still perhaps somewhat unsure about how they can make a difference in water quality.

COMMUNITY OUTREACH

A major component of this ongoing project is raising awareness among boaters and the surrounding communities of the collective impact of individual spills of fuels and oils on water quality. Many boaters come to recreate on rivers and lakes in the Susitna Valley from Anchorage, Eagle River, Wasilla, Palmer and other Southcentral communities. Therefore, spreading awareness in these larger population centers is critical to achieving success. In addition to the Launch Host Program (described on page 7), specific actions to increase public awareness are described in detail below.

Print News

Blog posts, Facebook posts, and threads on the Alaska Outdoor Forum were used to promote the Clean Boating Discount Card. Print media articles were published in Alaska Dispatch News and the Peninsula Clarion.

Radio

With so many boaters coming to Valley boat launches from large population centers in the region, radio advertising is an extremely effective way of raising clean boating awareness. Optima Public Relations was again contracted to do placement of the ads. Increased funding from ADEC in FY16 for radio advertisements allowed for paid radio advertisement placements during the first, third and fourth quarters. Working with Optima Public Relations and using PSA recordings from FY15, we secured over 1,800 spots to be played on 10 radio stations from Talkeetna to Kenai in FY16. These stations include: KTNA (Talkeetna), KAYO (MatSu), KBRJ (MatSu), KVNT (MatSu/Anchorage), KOAN (Anchorage), KZND (Anchorage), KBOB (Anchorage), KWULF

(Anchorage), KWHQ (Kenai), and KSRM (Kenai) from July-September 2015 and February-June 2016 focusing more air time during weekends and targeting audiences in Anchorage and throughout the Mat-Su Valley. Inletkeeper's Heather Leba was a guest on the Tom Anderson



Top: Boaters take a survey at the Mat-Su Outdoorsman's Show Clean Boating booth. Bottom: CIK booth at the Mat-Su Outdoorsman Show.

Show (KVNT 92.5FM) three times during the third and fourth quarters to talk about the objectives of the clean boating program and inform local boaters how they could get involved. This is

a great way to reach a lot of boaters in the Valley and Anchorage with a positive and pro-active message, and we look forward to continuing and expanding this effort in FY17.

Mat-Su Outdoorsman Show

As part of this project, Cook Inletkeeper hosted a table at the Mat-Su Outdoorsman's Show for three days in March at the Menard Sports Complex in Wasilla. This show continues to be a very effective early-season outreach event, and we will attend it again in FY17. Over three days, Inletkeeper staff and volunteers talked with many individuals about clean boating on Big Lake and other Valley waterbodies. Boaters completed 20 surveys and received clean boating kits in return. Survey responses are described in more detail on page 10. Keychains and stickers continue to be the most popular items at our tables, aside from the oil absorbents which boaters highly value.

We had intended to participate in the Big Lake Boat show, however the show was canceled.

Big Lake Fall Fishing Derby

Sponsored by the Big Lake Chamber of Commerce, the Big Lake Fall Fishing Derby is a popular event with boaters and is held at Burkeshore Marina. In FY16 the Fishing Derby occurred in September. Over 250 boaters attended the Derby, and the Clean Boating Coordinator hosted a clean boating table at the event. Prior to the Derby, we gave the Big Lake Chamber of Commerce 100 oil absorbents, 100 stickers of each "Keep Big Lake Clean", "Clean Boating Little Su", and our Cook Inletkeeper sticker, 100 floating keychains, and fuel efficiency fliers to include in their boat bags they were handing out to derby partici-

pants. We will continue to have a clean boating presence at the Fall Fishing Derby in FY17.

Community Participation

In addition to the above efforts, we engaged the following community partners in outreach efforts to raise awareness of clean boating practices and resources in the Big Lake area:

- Big Lake Community Council
- Wasilla Community Council
- Mat-Su Borough Assemblyman Dan Mayfield
- Burkeshore Marina (300 stickers for distribution, 5 kits, and 40 bilge socks)
- Big Lake and Little Su PUF launch attendants (clean boating flyers, 100 stickers)

Clean Boating Discount Card Program



Boater at Big Lake Fall Fishing Derby at Burkeshore Marina holding a dolly varden.

During FY16, the Clean Boating Coordinator developed a new program to partner with regional businesses from Talkeetna to Homer to incentivize boaters to engage in clean boating practices.

The framework was to work with regional businesses to secure discounts and promotions to incentivize boaters to engage in clean boating practices. In order to receive a clean boating card, boaters needed to pass the comprehensive and very applicable free online BoatUS Clean Boating course. Upon completion of the course, boaters completed a survey, were sent their card and outreach packet, and could then use their card to receive discounts at participating businesses. We developed a webpage to advertise the program and link to the online BoatUS course and have a form to fill out to obtain their card. Boaters learned about the program and participating businesses through social media, updates on CIK's website, blog posts, radio advertisements, and online news media.

Outreach with businesses was extensive in FY16, working with each business to identify their own unique discount offering, providing them with outreach and advertising materials, and encouraging them to post about the program on their own social media websites. We connected with over 40 businesses in the Mat-Su, Anchorage and Kenai areas during the second quarter. Talkeetna and Homer staff called, emailed, and made numerous in-person visits to businesses in order to present each business with a program sponsor letter, a promotional flyer, and a copy of the discount card. Fourteen businesses in Talkeetna, Big Lake, Wasilla, Anchorage, Soldotna, and Homer chose to participate in the program. We promoted these businesses with flyers for the discount card program at the Great Alaska Sportsman's Show and included a flyer for the program in each clean boating bag we distributed. We also promoted the program and distributed flyers during the MatSu Outdoorsman Show, Great Alaska Sportsman's Show, the Big Lake Block Party and at Big Lake and Little Susitna



Cook Inletkeeper staff spoke with many boaters and received some positive feedback at Big Lake during FY16.

launches, in addition to social media and blog posts.

All boaters who completed the discount card survey indicated they would practice clean boating and learned something new from the online BoatUS Foundation clean boating course. A list of participating businesses, along with a thank you letter, Keep Big Lake Clean and Little Su stickers, an Inletkeeper sticker, coupons and gift cards for select businesses, and their discount card were be mailed to each boater who chose to participate in the program. To date, 36 boaters signed up for the discount card program and have received their program packets and discount card. This number is well below our targeted participation of at least 100 boaters; however, we believe the momentum for the program is building and gaining recognition through all of our media and outreach efforts.

Cook Inletkeeper received a sixth year of funding under the ADEC Alaska Clean Water Action grant program to continue and expand this project through 2016 and into 2017 (FY17). During FY17, the project will continue on-the-ground implementation of the Clean Boating in the Susitna Valley efforts as well as the clean boating discount card program. The FY17 project objectives include:

1. Continue and expand the educational clean boating program developed through previous ACWA grants;
2. Continue the clean boating incentive program using the BoatUS Foundation's free online clean boating course and expand our business partnerships and boater participation;
3. Expand our presence through online and radio media to promote the clean boating and discount card programs.

In FY17 we will include outreach efforts at Big Lake, the Little Susitna River, Deshka Landing, and Kenai River launches. We will continue to work with campground hosts and launch staff. We will again host a clean boating table, with information on Big Lake, the Little Su and the Deshka, at the Fall Fishing Derby at Big Lake in September 2016, the Mat Su Outdoorsman's Show in March 2017, the Great Alaska Sportsman's Show in 2017. New to 2017 will be the addition of a clean boating table at the Kenai Sports Show in 2017.



"Baby salmon live here" sign posted at the Big Lake north launch.

ACKNOWLEDGEMENTS

Cook Inletkeeper would like to thank the community of Big Lake for their engagement, support, and dedication to these efforts and so many more to help improve and protect the water quality in Big Lake. Thank you to all of the boaters at the Little Su and Deshka Landing who were supportive of this program and provided helpful insight. We'd like to especially thank Nick and Katie Gittlein, Dan Mayfield, Kathleen Gustafson, Tom Anderson, Jessica Speed, Nancy Wainwright, and Ink Spot. Additional thanks to the many business staff who provided insight and thoughtful participation in our Clean Boating Discount Card program, including Sportsman's Warehouse, Denali Brewing Company, Kaladi Brothers, and Burkeshore Marina. We'd also like to thank Cindy Gilder and Laura Eldred, for their ideas, critical involvement, and support throughout this project and for their efforts to protect Big Lake, the Little Su, and Deshka River's water quality for present and future generations.

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APPENDIX A- FY16 CLEAN BOATER SURVEY

Clean Boater Survey for Valley Boat Launches

- 1) Where do you live most of the year?
 - a. Anchorage
 - b. Eagle River
 - c. Wasilla
 - d. Palmer
 - e. Big Lake
 - f. Houston
 - g. Willow
 - h. Talkeetna
 - i. Other AK community
 - j. Outside AK
- 2) What is the overall length of your boat?
 - a. 16 to 25 ft
 - b. 26 to 39 ft
 - c. 40 to 65 ft
 - d. Over 65 ft
- 3) What engine is on your primary vessel?
 - a. Old carbureted 2-stroke
 - b. New DFI two-stroke
 - c. 4-stroke outboard
 - d. Gas inboard
 - e. Diesel inboard
 - f. Sail/No Power
- 4) What would make you MOST LIKELY to replace your older 2-stroke engine?
 - a. It was required by law
 - b. There was a cost-share/buy-back program
 - c. Pollution concerns in lakes and rivers
 - d. The engine breaks down and can't be repaired
 - e. I would not replace my older 2-stroke engine
- 5) How many hours do you run your engine per year?
 - a. Less than 20 hours
 - b. 20 to 50 hours
 - c. 50 to 100 hours
 - d. 100 to 200 hours
 - e. More than 200 hours
- 6) Do you have single or double engine?
 - a. Single
 - b. Double
- 7) What is the total horsepower of your engine?
- 8) How often do you use absorbents in your bilge or when fueling?
 - a. Never
 - b. Sometimes
 - c. Always
- 9) If you use a marina with a fuel dock, does the gas attendant use an oil absorbent pad with the fuel nozzle to prevent fuel spills from entering the water?
 - a. Yes, always

- b. Sometimes
 - c. Never
 - d. I don't use fuel docks
- 10) TRUE OR FALSE. It's legal to disperse oil sheens with soaps or detergents?
- a. True
 - b. False
- 11) Where do you most often go boating?
- a. Big Lake
 - b. Deshka River
 - c. Little Susitna River
 - d. Other freshwater
 - e. Coastal harbor
- 12) TRUE OR FALSE. Big Lake is listed as polluted by the State of Alaska for hydrocarbons (fuel and oil)?
- a. True
 - b. False
- 13) TRUE OR FALSE. The Little Susitna is AT RISK for being listed as polluted by the State of Alaska for hydrocarbons (fuel and oil)?
- a. True
 - b. False
- 14) In your opinion, what are the TOP pollution concerns for boaters in Alaska (select your top three)?
- a. Routine/small oil and gas spills and leaks
 - b. Invasive species
 - c. Old 2-stroke engines
 - d. Improper sewage disposal
 - e. Fuel dock spills
 - f. Boat washing practices
 - g. I'm not concerned about small boat pollution
- 15) Please check all the things you're willing to do as a boater to protect the water while boating.
- a. Use absorbent pads in the bilge
 - b. Use absorbents while fueling
 - c. Drain my boat away from the launch
 - d. Minimize idling
 - e. Fuel away from the water when possible
 - f. Consider upgrading engines
 - g. Talk to other boaters to encourage these practices
 - h. Volunteer with Cook Inletkeeper



April 8, 2016

Dear Boater,

We're thrilled that you decided to practice clean boating and promote clean water throughout Alaska's lakes, rivers, and coastal waters from the Mat-Su Valley to the Kenai. In order to make changes to water quality statewide, it is important for everyone to be on-board, so thank you for doing your part! The availability of clean water affects our lives, not only through the salmon we eat, but also in the beer we drink, the food we make, and the rivers and lakes we swim in. You are helping to keep these important waterbodies safe from oil and gas pollution by practicing clean boating and supporting the local businesses in your area that are part of this program.

Since 2010, Cook Inletkeeper and partners have been educating boaters and fishermen in the Susitna Valley on the importance of clean boating practices. Our Clean Boating campaign (<http://inletkeeper.org/clean-water/clean-boating/Su-Valley>) has been successful at reaching boaters at several priority waterbodies in the Susitna Valley that are listed or at risk for being listed as polluted, including Big Lake, the Little Susitna River, and Deshka River (<https://dec.alaska.gov/water/wqsar/index.htm>). Our goal is to provide tips and tools boaters can use to reduce the amount of hydrocarbons (oils and gas) in these and other regional waters. While small drips and leaks from one boater may not make a large impact, it is the accumulation of drips and leaks from hundreds of boaters that leads to poor water quality. Our rivers, lakes and ocean are important for recreational boating and fishing, hunting, and access to remote cabins and it's important to keep the water clean for fish and other aquatic life. Through this program and the BoatUS course you completed, you now have the tools to help protect Alaska's waterways and save money in the process!

Included in this packet is your Clean Boating Discount Card, a list of participating businesses and the discounts they are offering, a few clean boating stickers, and an Inletkeeper sticker. Don't forget to use your discounts to benefit you and the environment!

More information can be found on our program website, <http://bit.ly/1TntXYd>. If you have any further questions, please email (heather@inletkeeper.org).

Thank you again for practicing clean boating!

Sincerely,

Heather Leba
Clean Boating Coordinator



Clean Boating Discount Card Business List

Denali Brewing Company (Talkeetna)- \$20 gift cards to first 50 boaters to sign up

Mountain High Pizza Pie (Talkeetna)- ask in store

Burkeshore Marina (Big Lake)- \$50 off service of \$250 or more

Lumberyard Deli (Big Lake)- free lemonade with purchase of a sandwich

Grape Tap (Wasilla)- 50% off one food or drink item

3 Rivers Fly and Tackle (Wasilla)- 10% off regular items

Sportsman's Warehouse (Wasilla, ANC & Soldotna)- 10% off Fishing Dept.

Cabela's (Anchorage)- \$20 off when you spend \$150

Alaska Raft and Kayak (Anchorage)- 10% off all safety gear

Kaladi Brothers Coffee (Wasilla, ANC & Soldotna)- 1 free drink coupon

SteamDot Coffee (Anchorage)- 5% off any coffee drink

Napa Auto Parts (Wasilla, Palmer, Eagle River, Glenallen, Valdez) -

10% off regularly priced merchandise

Odie's Deli (Soldotna)- free fountain drink with purchase of a sandwich

Coop's Coffee (Homer)- 10% discount

CUT THIS PART OFF AND STICK IT IN YOUR WALLET WITH YOUR CARD!

Clean Boating Discount Card Business List

DENALI BREWING COMPANY	SPORTSMAN'S WAREHOUSE	GRAPE TAP
MOUNTAIN HIGH PIZZA PIE	ALASKA RAFT & KAYAK	STEAMDOT COFFEE
BURKESHORE MARINA	KALADI BROTHERS COFFEE	ODIE'S DELI
LUMBERYARD DELI	NAPA AUTO PARTS	COOP'S COFFEE
3 RIVERS FLY & TACKLE	CABELA'S	

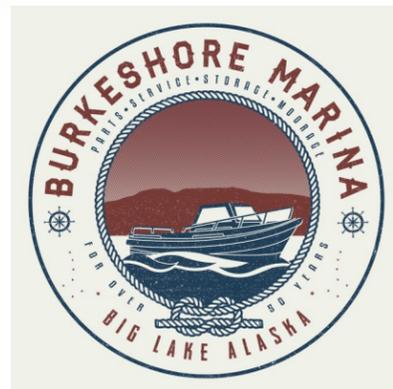


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Sign up for your **FREE** Clean Boating Discount Card!!!

*Learn tips and tricks on how to keep our waterways clean
Practice clean boating and earn discounts at these businesses:*



Sign Up Today!

**Visit us at <http://bit.ly/1TntXYd>
or email: heather@inletkeeper.org**



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Clean Boating Course Online Survey

- 1) What are some simple ways you can reduce spills while fueling your boat?
 - a. Use oil absorbs around the gas nozzle and deck fill to catch drips
 - b. Know the capacity of your tank to reduce overflows
 - c. Don't fill your tank to capacity to leave room for gas to expand
 - d. Fuel on land instead of on the water
 - e. All of the above
- 2) Which of these are suitable oil absorbents to use in and around your boat?
 - a. Fuel bib
 - b. Bilge sock
 - c. Fuel collar
 - d. Absorbent pad
 - e. All of the above
- 3) True or False. It is legal to use soaps and detergent on oil spills or sheens.
 - a. True
 - b. False
- 4) True or False. The main concern with dumping sewage into the water is the introduction of bacteria and excess nutrients.
 - a. True
 - b. False
- 5) True or False. It is illegal to discharge raw, untreated sewage within 3 nautical miles of the coastline.
 - a. True
 - b. False
- 6) Which of the following are good practices to keep your bilge clean and free of oils?
 - a. Keeping your engine tuned to eliminate leaks
 - b. Checking that clamps and filters are sealed properly
 - c. Using oil absorbs or bilge socks next to your bilge pump
 - d. All of the above
- 7) When washing your boat, which of the following practices can help you prevent pollution?
 - a. Use phosphate and chlorine free products
 - b. Pressure wash wherever you can
 - c. Frequently hose your boat down with fresh water
 - d. All of the above
 - e. A and C only
- 8) True or False. All necessary repairs and boat maintenance should be done while hauled out when possible.
 - a. True
 - b. False
- 9) True or False. Upgrading your engine, minimizing idling, and keeping your engine in top condition can all prevent excess fuel and oil from entering the water.
 - a. True
 - b. False
- 10) To minimize trash and other discharges into the water, which of the following are important to tell your boat passengers when they board your vessel?

- a. Instruct them on location and proper use of the head
 - b. Show them where trash and recycling receptacles are located
 - c. Encourage them to use on-shore restrooms before boarding
 - d. All of the above
- 11) Boat wakes can have negative impacts to docks, sensitive shorelines, and other boats. What can you do while boating to minimize wakes?
- a. Obey “no wake” and “slow speed” signs
 - b. Travel in and out of docks and moorings as fast as possible
 - c. Reduce speed in shallow waters
 - d. All of the above
 - e. A and C only
- 12) True or False. Oil and gas pollution can negatively impact fish health in important habitats such as Big Lake, Little Susitna River, Kenai River, and Deshka River.
- a. True
 - b. False

Rate your agreement with the following statements (1=totally agree, 2=agree somewhat, 3=neutral, 4= somewhat disagree, 5= strongly disagree).

- 13) I learned new ideas for reducing pollution while boating.
- a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
- 14) I feel confident in my ability to minimize oil and gas leaks and spills while boating.
- a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
- 15) I will implement clean boating practices, such as using oil absorbs, draining my boat away from the launch, and fueling on land, while boating.
- a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5

Have the following as a fill in form/survey on our webpage-

Please fill out the following information to obtain your FREE Clean Boating discount card:

Name _____ Date _____

Mailing Address _____ City _____

State _____ Zip Code _____ Where do you boat most often? _____



Sign up for your **FREE** Clean Boating Discount Card!

Love boating on Alaska's
lakes and rivers?
Then this opportunity is for YOU!

-  Protect clean water & healthy salmon
-  Earn discounts at your favorite stores
-  Learn tips & tricks to save money



Sign Up Today!

<http://inletkeeper.org/clean-water/clean-boating>
or email: heather@inletkeeper.org



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APPENDIX B- HISTORICAL BOATER DATA SUMMARY

Since 2010, Cook Inletkeeper and partners have been educating boaters and fishermen in the Susitna Valley on the importance of clean boating practices. Our Clean Boating campaign has been successful at reaching boaters at several priority waterbodies in the Susitna Valley that are listed or at risk for being listed as polluted under the Clean Water Act by the Alaska Department of Environmental Conservation (DEC), including Big Lake, the Little Susitna River, and Deshka River. The foundation of this program lies in one-on-one boater outreach with boaters as they launch and load their boats. Through this engagement, boaters receive free clean boating kits and are asked to fill out a clean boating survey. In addition to outreach at launches, we have also reached out to boaters at sportsman's shows, fishing derbies, and other community events over the last several years. Our goal has been to provide tips, tools and other clean boating resources boaters can use to reduce the amount of hydrocarbons (oils and gas) in these and other regional waters. Additionally, we hope to increase boater awareness of oil and gas pollution in MatSu lakes and rivers and empower them to take action to reduce hydrocarbons.

Since 2013, we have observed trends in boater response to certain questions in our survey at boat launches and at sportsman's shows. One of the first questions on our survey asks boaters if they know that priority water bodies in the MatSu Valley, specifically Big Lake and the Little Susitna River, are listed by DEC as a polluted waterbody or at risk of being listed. Our results indicate that there was an increase in awareness of hydrocarbon pollution for these two waterbodies. Awareness at Big Lake was low in 2013 and 2014, only around 30%, but increased dramatically in 2015 and 2016 to nearly 100% (Figure 1). A similar trend occurred with boaters surveyed about the Little Susitna River, with low awareness in 2014, and nearly 100% awareness of pollution in 2015 and 2016 (Figure 2). These data are derived from surveys taken by boaters during launch outreach, and so in theory reflect a more place-based increase in awareness and successful communication of the message during our clean boating efforts.

Using oil absorbents and bilge pillows are a quick and easy way to reduce small spills and leaks while changing oil, refueling your boat, or by simply having one in a boat's bilge to absorb oils. In our survey we asked boaters whether they always, sometimes, or never use oil absorbents. We observed an increasing trend in boater described oil absorbent use from 2014 to 2016, with a high of about 40% of boaters indicating they always used absorbents in 2016 (Figure 3). Interestingly, data from 2013 were similar to 2016. We also asked boaters about their engine use and which engine type served as the primary engine for their vessel. Choices in the survey included: 4-stroke, new DFI injected 2-stroke, old carbureted 2-stroke, gas inboard, diesel inboard and other. Unfortunately, we have not seen a dramatic decrease in the use of carbureted 2-strokes as primary engines. From 2013 to 2016 use of carbureted 2-strokes has held constant around 20% (Figure 4). We have seen an increase from 2015 to 2016 in boater knowledge regarding the use of soaps to disperse an oil sheen. In 2015, 70% of boaters surveyed said it was illegal to use soaps on sheens and in 2016, 73% knew it was illegal (Figure 5). These data are compiled from launch data, MatSu Outdoorsman Show data, and Great

Alaska Sportsman’s Show data for each year presented. In doing so, we hoped to show knowledge of oil spill clean-up among a broader boater demographic.

In addition to questions about gear and clean boating, we asked boaters to identify what their top three pollution concerns, with regard to clean water, were for Alaska. As in Figure 5, these data were also compiled from launch data and sportsman’s show data for each year presented. Routine small oil and gas spills was the top concern for boaters in 2015 and 2016 (Figures 6 & 7). In 2015, old carbureted 2-stroke engines was the second most important concern and fuel dock spills the third highest concern. Improper sewage disposal and fuel dock spills were the second and third place concern for 2016 (Figure 7).

These data show that while clean boating outreach these last few years has been successful in increasing awareness about oil and gas pollution, boaters are still not willing to take action to protect clean water. Boaters are concerned that small oil and gas spills are impacting MatSu lakes and rivers, but have not necessarily made the connection that old carbureted 2-stroke engines are one of the main contributors of that pollution. Alternately, some boaters are aware of this problem, yet refrain from upgrading their old engine due to economic concerns. Residents of Big Lake remain concerned about ageing septic systems at houses that border the lake and are worried they are impacting water quality. With continued and focused outreach coupled with the clean boater discount card program we hope that boaters will continue to be engaged in protecting clean water.

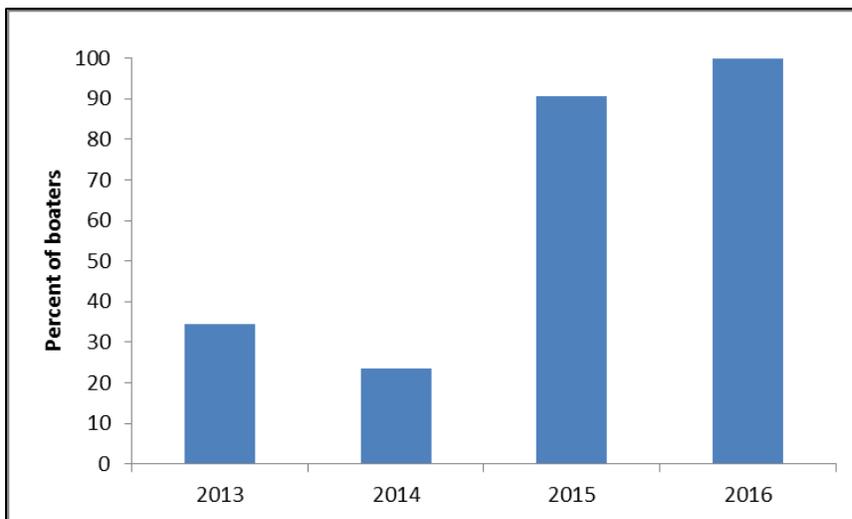


Figure 1. The percent of boaters surveyed who knew Big Lake was polluted for hydrocarbons.

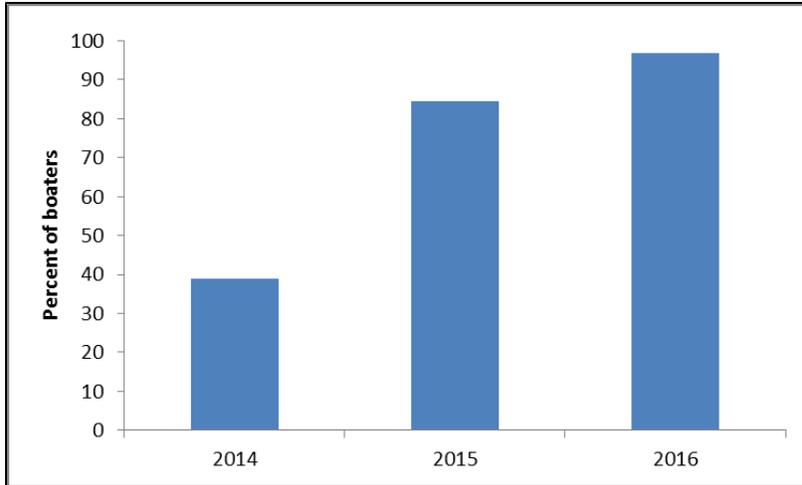


Figure 2. The percent of boaters surveyed who knew the Little Su is at risk of being listed as polluted.

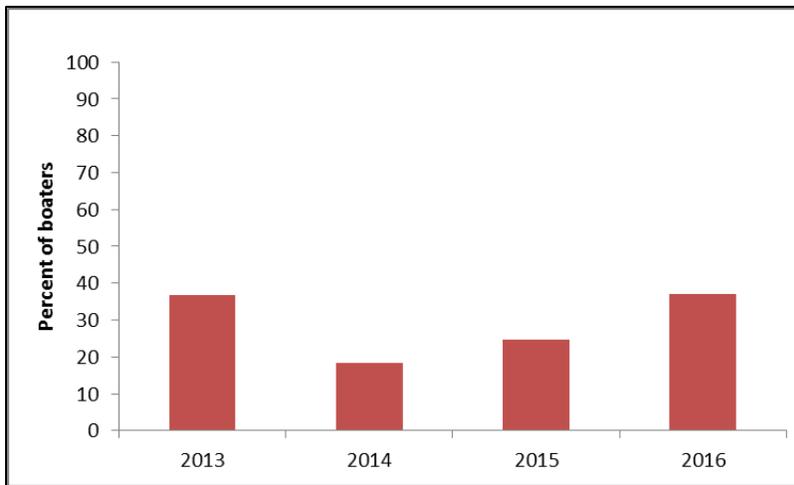


Figure 3. The percent of boaters surveyed who said they always use oil absorbents.

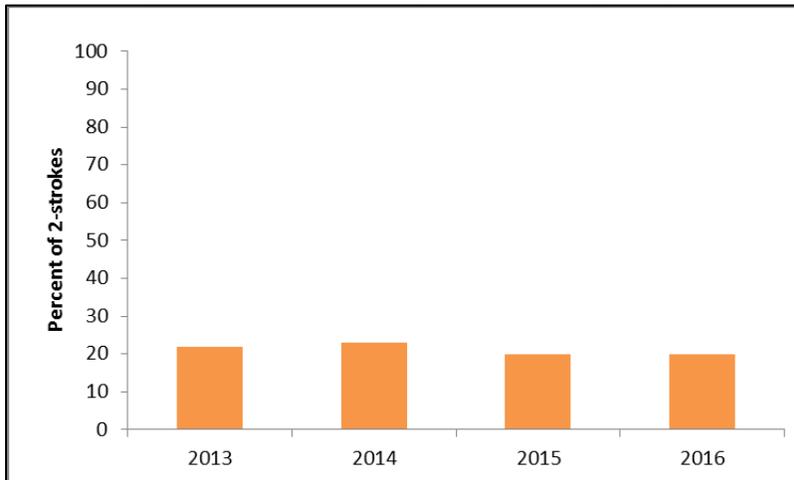


Figure 4. The prevalence of 2-stroke engines that serve as primary engines.

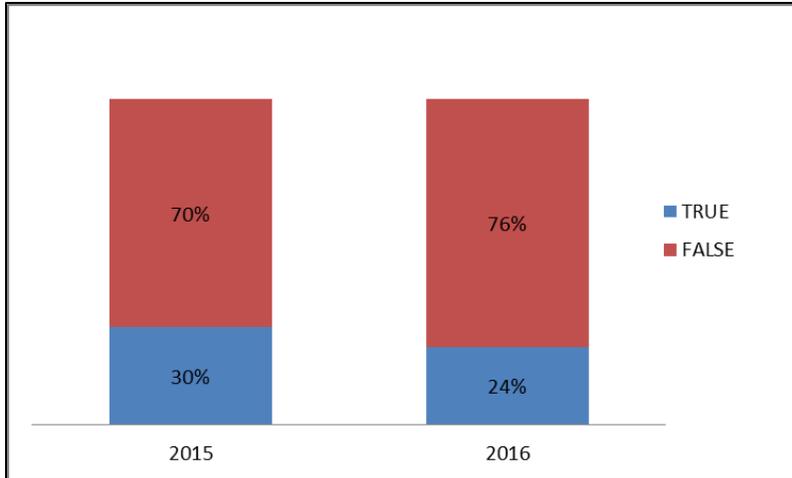


Figure 5. The response from boaters when asked if using soaps and detergents to disperse oil sheens was legal.

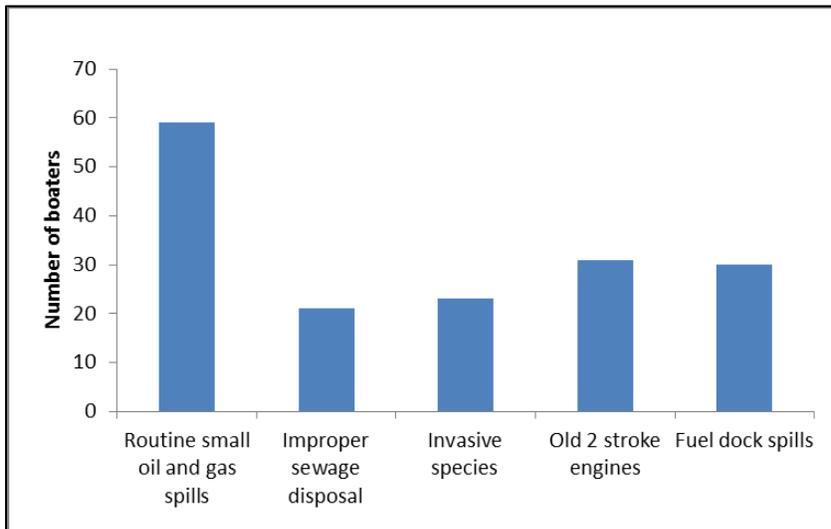


Figure 6. Boater identified pollution concerns for Alaska in 2015.

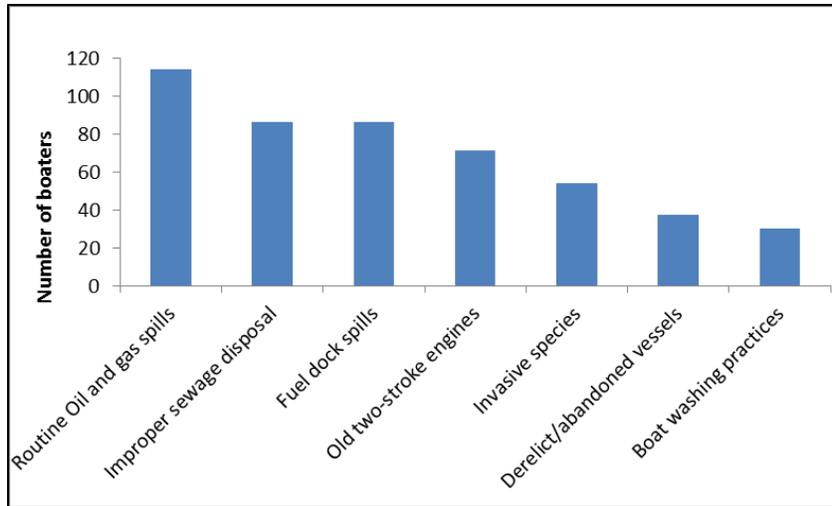


Figure 7. Boater identified pollution concerns for Alaska in 2016.