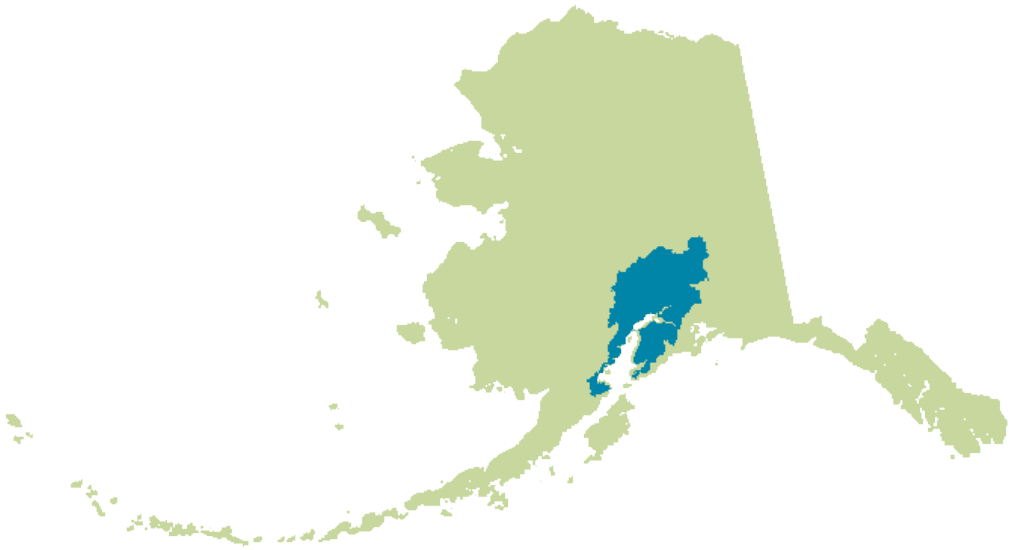
Clean Boating in the Susitna Valley
FY 2015 Final Report

Prepared for:

Alaska Department of Environmental Conservation
Alaska Clean Water Action Grant #15-04

July 1, 2014—June 30, 2015



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: Jet skis line the shore at Big Lake north launch.

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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-

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 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.

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 2014—June 2015, FY15), Cook Inletkeeper built upon past years efforts and expanded this project to include clean boating outreach not only at Big Lake, but also to reach a broader population of boaters at the Little Susitna River Public Use Facility and Deshka Landing in Willow.

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 the summer. In 2006, ADEC listed Big Lake as

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

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 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.

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 501c(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 FY13/FY14, 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; and 3) Work with stakeholders to develop a framework for a hypothetical 2-stroke "buy-back" program.

As the grantee for this project, Cook Inletkeeper utilized state fiscal year (FY) 15 (July 1, 2014–June 30, 2015) funding from the state of Alaska to hired a new Clean Boating Coordinator (Heather Leba) 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 to develop a framework for a 2-stroke trade-up incentive program. Included in this final report are summaries of all activities done under this grant project in FY15, and an overview of future work we will be doing under a fifth year of funding through FY16.

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, 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. Copies of the FY15 boater surveys are included in the Appendix, along with copies of media articles and clean boating 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 FY15. Volunteers who did help during the weekends were trained one-on-one, right as they began working with the clean boating kits and surveys at the launches .

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

The Clean Boating Coordinator and volunteers distributed 161 clean boating kits (Big Lake, 77; Little Su, 58; Deshka, 26) and 103 surveys through the FY15 Launch Host program. We visited Big Lake on 20 days, Little Su on 6 days, and Deshka on 4 days. One kit was generally distributed for each survey; however, boaters who refused the survey still received a kit if requested. We only distributed bilge pillows to boaters who can use them (i.e. boats with contained bilges, not to people with jetskis or open skiffs).

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 the main location 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 FY14, 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. This was an interactive and fairly neutral way to get a message out about pollution prevention while boating. 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 quite 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 FY15 to spend the most time at Big Lake, but visit the Little Su and Deshka as often as possible.

A number of local businesses assisted in spreading the word about the Clean Boating on Big Lake campaign and Launch Host program (more on this in the Public Outreach section on Page 12). Campground hosts and volunteers helped hang Clean Boating on Big Lake banners at the entrance 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.

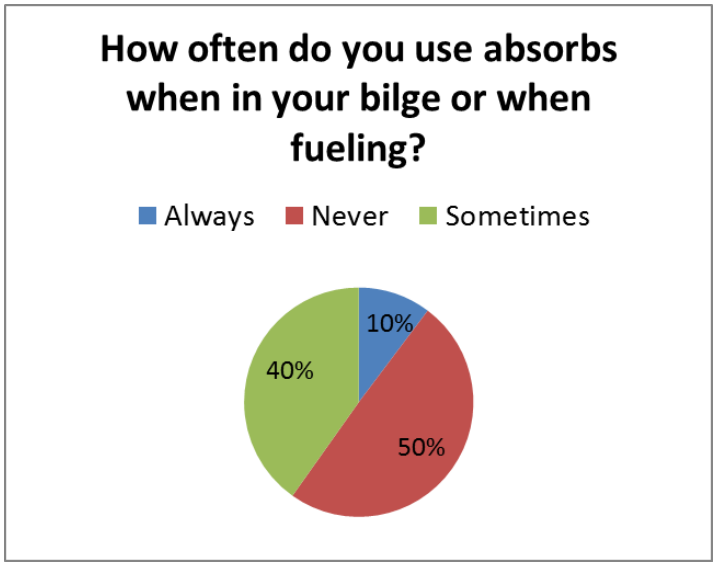
Top: Cook Inletkeeper Intern Hillary Fleming at the Little Su PUF distributing kits. Bottom: Deshka Landing launch.

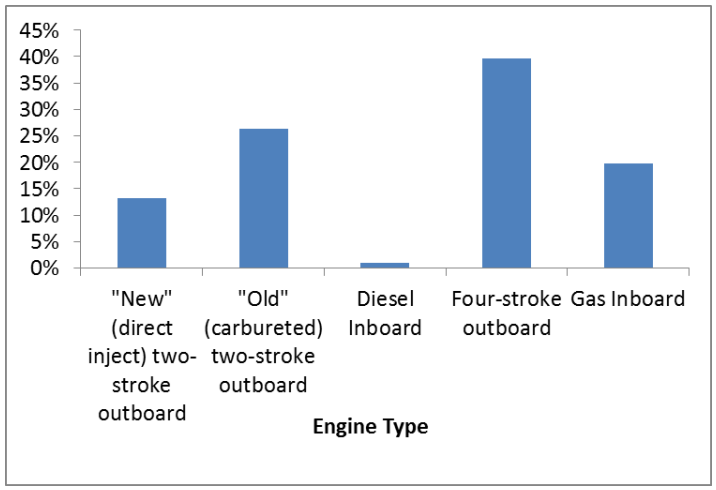
BOATER SURVEY RESULTS

Boaters completed a combined total of 36 surveys at Big Lake during FY15, 45 surveys at the Little Su, and 22 surveys at Deshka Landing. We gave out 161 kits spread across all launches. 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. Thirty-six percent of the total boaters surveyed lived in Anchorage most of the year, while 35% came from Wasilla, 10% from Palmer, 6% from Eagle River, and 6% from 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 Southcentral, and that wider outreach efforts (i.e. radio advertising and regional boat shows) are going to be increasingly important for effective messaging.

This year we saw an increase in boater awareness and knowledge of the pollution concerns at Big Lake. The majority of boaters surveyed at Big Lake (88%), Deshka Landing (91%), and the Little Su (100%) knew that Big Lake was listed as polluted. The top pollution concern for boaters at 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 (50%) of boaters still do not use oil absorbents. Clearly, although we are making progress, education to change behaviors is a long-term effort.

Out of the 103 boaters surveyed, four-stroke engines (40%) and old carbureted 2-strokes (26%) were the most common engine types used by boaters at Big Lake, the Little Su and Deshka Landing. Of those boaters surveyed, 35% at Big Lake said they had a 2-stroke, 29% at the Little Su, and 18% at Deshka Landing used 2-strokes.





Top: Percentage of boaters surveyed who said they use absorbs 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%).

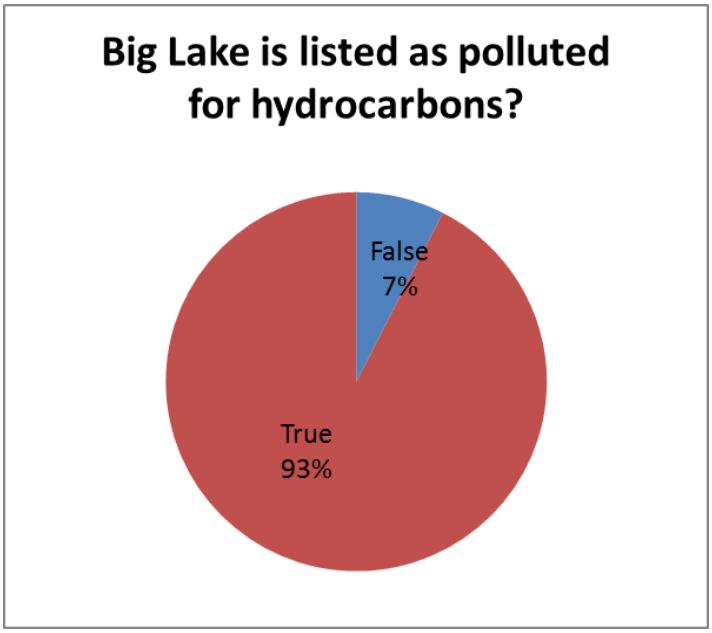
The top three actions that boaters were willing to engage in to support clean boating practices were: 1) use absorbent pads in the bilge; 2) drain boats away from the launch; and 3) minimize idling. Spreading the word and talking to other boaters about clean boating practices continues to be the least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

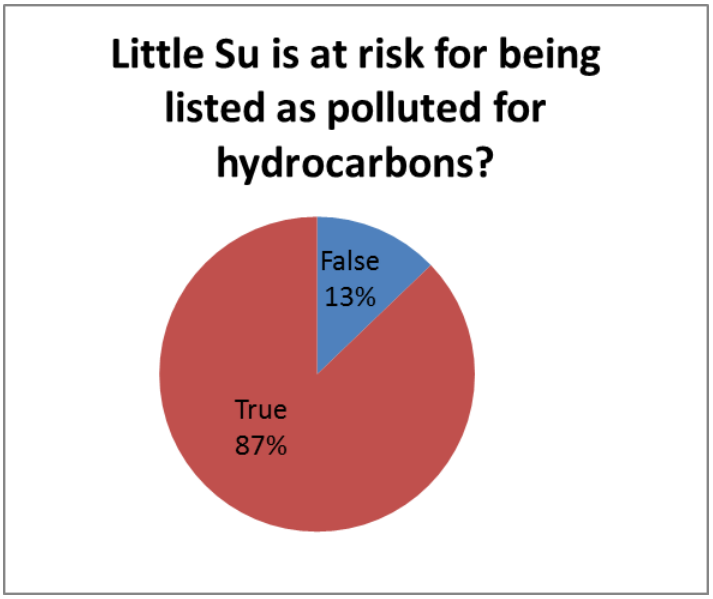
Twenty-nine percent of boaters surveyed said that they sometimes use oil absorbs, 15% said they always use them, and 60% said they never use absorbs. In the past we have seen this correspond with where people fuel their boats—many people fuel at gas stations where they don't think of containing spills. 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.

When asked when they would be likely to replace their older 2-stroke engine, 31% of respondents said they would if there was a cost-share/buy-back program, 19% said if the engine breaks down beyond repair, 14% said if it was required by law, and 24% said it was not applicable to them. 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 2015. Boaters at the show completed 40 surveys and received clean boating kits in return. The majority (45%) of boaters said they lived in Wasilla, with Palmer the next most common location at 15%. Four stroke outboard motors were the most common engine type (40%), followed by older carbureted 2-strokes (20%), and new direct fuel injected 2-strokes (18%). When asked if they used oil absorbs in their bilges or while fueling 28% said



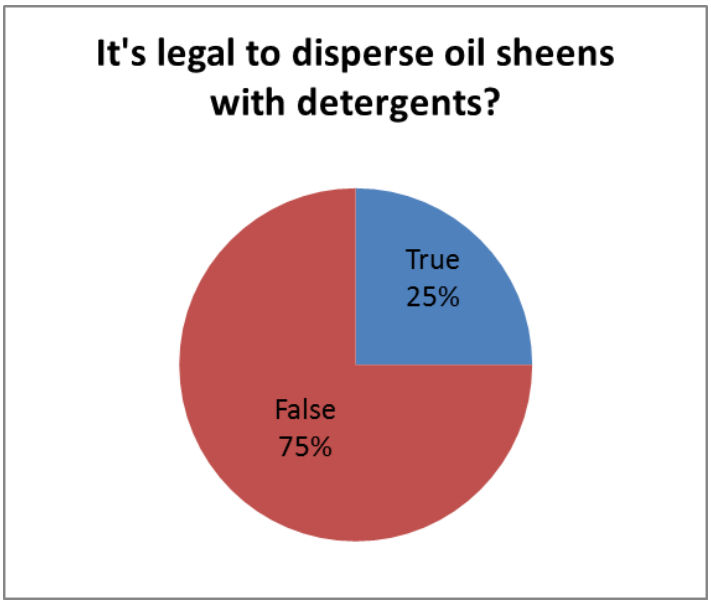


Most survey respondents were aware of the pollution concerns at Big Lake and the Little Susitna River. This awareness indicates great progress towards positive change throughout the region.

"always", 28% said "sometimes", and 44% said "never". When asked if it was legal to use soaps to disperse a spill or sheen, 75% of boaters said "false" and 25% said "true". The majority of boaters knew that Big Lake was listed as polluted for hydrocarbons (93%) and that the Little Susitna

was at risk of being listed (87%). When asked what their top pollution concern was, 45% said "routine small oil/gas spills & leaks", 45% "old-carbureted 2-stroke engines", 33% said "invasive species, and 20% said "improper sewage disposal". When asked to elaborate on these issues, many boaters said they would like to upgrade their engine, but cannot afford to. Boaters also indicated concern about sewage leaching into Big Lake from ageing septic tanks along the banks.

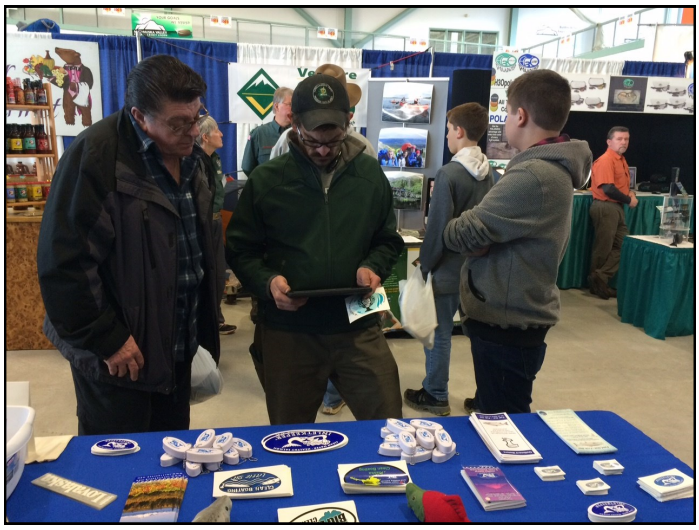
The top three actions that boaters were willing to engage in to support clean boating practices were: 1) use absorbent pads in the bilge and when fueling; 2) fuel away from the water; and 3) drain the boat away from the launch. Upgrading to a new 2-stroke or 4-stroke was the least popular option. Boaters 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.



Top: Three-quarters of boaters surveyed at the Mat-Su Outdoorsman Show knew it was illegal to use soaps to disperse a sheen. A quarter believed it was legal to disperse sheens with detergents. Bottom: Volunteer launch hosts working with boaters to fill out clean boating surveys at Big Lake. Photo: C. Inman.

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.



Top: Boaters take a survey at the Mat-Su Outdoorsman's Show Clean Boating booth. Bottom: A generic clean boating sticker, developed by Cook Inletkeeper, which was used in the early part of this project.

Print News

The Clean Boating Coordinator wrote clean boating letters to the editor for local and regional print media. Letters were printed in the Frontiersman and The Big Lake Times. Copies are included in the Appendix.

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. During the first quarter we worked with a professional radio person in Homer and developed two versions of a new 30 second clean boating radio advertisement for FY15. Optima Public Relations was contracted to do placement of one of the ads. Increased funding from ADEC in FY15 for radio advertisements allowed for paid radio advertisement placements during the first and fourth quarters. This was an exciting opportunity that we will expand upon in FY16. The ad can be heard at http://inletkeeper.org/resources/contents/clean-boating-radio-psa-1/view and http://inletkeeper.org/resources/contents/clean-boating-radio-psa-2/view.

Six radio stations (KTNA 88.9FM, KAYO 100.9FM, KVNT 92.5FM and 1020 AM, KMBQ 99.7 FM, KXLW 96.3FM & KBEAR 104.1FM) played our audio PSAs from July-September 2014 and May-June 2015, focusing more air time during weekends and targeting audiences in Anchorage and throughout the Mat-Su Valley. In-

letkeeper's Heather Leba was a guest on the Tom Anderson Show (KVNT 92.5FM) four times during the fourth quarter 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 FY16.

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 FY16. Over three days, Inletkeeper staff and volunteers talked with many individuals about clean boating on Big Lake and other Valley waterbodies. Boaters completed 40 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, but it was cancelled last minute by the organizers, so we did not attend.

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 FY15 the Fishing Derby occurred in September. Over 100 people attended the Derby, and the Clean Boating Coordinator hosted a clean boating table at the event. This venue provides good local outreach opportunities in the fall, after much of the recreational boating at Big Lake has died down. We will continue to have a clean boating presence at the Fall Fishing Derby in FY16.

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
- Mat-Su Borough Assemblyman Dan Mayfield
- Burkeshore Marina (200 stickers for distribution, 5 kits, and 20 bilge socks)
- Big Lake campground launch attendants (15 kits, clean boating flyers, 50 stickers)

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

Two-Stroke Buy-Back Program

During FY15, the Clean Boating Coordinator discussed the idea of a hypothetical 2-stroke engine

buyback program with Anchorage and Valley stakeholders, agencies, and businesses. The overall consensus was that a buyback program is a great idea, but numerous barriers exist for funding, implementation, and garnering support and participation from the boating public. Should a program be developed, several Anchorage and Valley businesses said they may be interested in participating, including Burkeshore Marina in Big Lake, Alaska Mining and Diving in Anchorage, and Anchorage Schnitzer, a salvage company in Anchorage. Advertising through radio and print media, and couching this program in such a way that encourages voluntary participation through the lens of "getting ahead of the problem" could be a successful approach. There are currently no regulations in place limiting older 2-stroke engine use on Big Lake, but boaters should be aware that if hydrocarbon levels continue to be elevated, that could become a reality. In addition, 2-stroke engine restrictions will take effect in 2017 on the Little Susitna River. Were a buy-back program to be pursued, it should be targeted not only at Big Lake boaters but at those on the Little Su as well. The largest hurdle for this program would be securing funding in order to provide monetary incentives to boaters who choose to upgrade and trade in their old 2-strokes and paying a salvage company to dispose of the old motors. A copy of the final suggested framework based on our research is included in the Appendix.

We have received positive and appreciative feedback about this project from many community partners, businesses and boaters throughout the Mat-Su Valley. These business owners, including Burkeshore Marina staff, are dedicated to providing boaters with clean boating materials and helping reduce hydrocarbon pollution in regional waterbodies. Clean boating resources are

Cook Inletkeeper staff spoke with many boaters and received some positive feedback at Big Lake during FY15.

centered around many businesses and organizations throughout the Valley and we hope to partner with more of them during our new FY16 initiatives. Our approach of "common sense practices and good housekeeping tips" is appreciated, and has proven to be non-confrontational. Although it is difficult say how much pollution prevention has been achieved directly through the education efforts, clean boating awareness has certainly risen, and many businesses and boaters recognize the need for these efforts. However, we feel that it is unlikely that pollution and hydrocarbon levels will be reduced through outreach alone, and that future regulations or restrictions may be necessary to see measureable changes in water quality. Further, many boaters, specifically those at Big Lake, have not made the connection between impaired water quality and impacts to salmon health. We'd like to pursue this topic during FY 16 and develop ideas about how to spread the message that impaired water is detrimental to the health of juvenile and adult salmon within the Mat-Su Valley.

Cook Inletkeeper received a fifth year of funding under the ADEC Alaska Clean Water Action grant program to continue and expand this project through 2015 and into 2016 (FY16). During FY16, Inletkeeper's Clean Boating Coordinator will continue on-the-ground implementation of the Clean Boating in the Susitna Valley efforts, including at Big Lake. The FY16 project objectives are expanded to include:

1. Continue and expand the educational clean boating program developed through previous ACWA grants;

2. Broadly educate regional boaters on the impacts of older carbureted 2-stroke engines on sensitive waterbodies and aquatic life; and,

3. Implement a new online clean boating incentive program using the BoatUS Foundation's free online clean boating course and partner with local businesses to develop a new boater incentive discount card .

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

In FY16 we will include outreach efforts at Big Lake, the Little Susitna River, Deshka Landing, and add outreach at the Kenai River launches. We will continue to work with campground hosts and launch staff, but will scale back our outreach efforts at launches since we have not found it to be an economic or efficient way of reaching boaters. 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 2015, the Mat Su Outdoorsman's Show in March 2016, and the Big Lake Boat and Sports Show in May 2016. New to FY16 will be a program to partner with local businesses to develop a new boater incentive discount card for boaters completing a free online clean boating course done by the BoatUS Foundation in order to reach a broader audience of regional boaters.

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, Bekah Mathiesen, Dan Mayfield, Hillary Fleming, Kylee Singh, Heather Liller, Kathleen Gustafson, Jamie and Justin High at Deshka Landing, Tom Anderson, Ink Spot, and Don Smith of A-1 Signs. We'd also like to thank Holly Peterson, Catherine Inman, Frankie Barker, Cindy Gilder, Laura Eldred, Damon Hampel, and Wayne Biessel for their ideas, critical involvement, and support throughout this project and for their efforts on other 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- FY15 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 absorbs 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

APPENDIX B- MEDIA EXCERPTS

Keep Big Lake Clean!

Monday, June 22 2015 @ 10:24 AM AKDT

Contributed by: Heather Leba

Views: 94

As Alaskans from all over come to Big Lake on sunny weekends, the amount of gas and oil in the lake increases to a dangerous level for fish and other aquatic life. Luckily, there are some things that we can do as boaters to take action and decrease the pollution in Big Lake. As Alaskans from all over come to Big Lake on sunny weekends, the amount of gas and oil in the lake increases to a dangerous level for fish and other aquatic life. Luckily, there are some things that we can do as boaters to take action and decrease the pollution in Big Lake. A few things to consider this summer:

• Every drop counts. Always keep absorbent pads on board and use them when fueling, checking or adding oil, and use them to collect any small spills that may happen.

• Go slow when fueling and always use an absorbent. Fueling your boat is not like fueling your car. Pay attention to where your fuel overflow vent is. Make sure to put something there to collect any overflow — don't let that expensive fuel out into the lake or onto the parking lot.

• Don't drain your boat on the launch ramp. Please wait until you are in the uplands, you've cleaned up any spills with absorbents, and there is some vegetation between you and the lake before you drain your boat.

• Avoid using soap to clean up spills. Soap sends oil to the bottom of the river or lake where it harms fish and other aquatic life.

Cook Inletkeeper is working with the community of Big Lake to provide tools and resources for boaters on Big Lake this summer. Inletkeeper staff will be at the North and South boat launches, as well as at the borough launch at Big Lake this summer. We will hand out absorbent pads, fuel efficiency information, and other fun and useful tools to help you do your part to keep fuel and oil out of Big Lake. Stop by our table to help keep Big Lake clean.

What's Related

- More by Anonymous
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Story Options

- Mail Story to a Friend
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Keep Big Lake Clean! | 1 comments | Create New Account
The following comments are owned by whomever posted them. This site is not responsible for what they say.
Keep Big Lake Clean!
Authored by: A Big Lake User on Monday, June 22 2015 @ 02:01 PM AKDT
Thanks for the tips! If everyone did their part we can keep Big Lake clean! And PLEASE don't trash Big Lake! Take your garbage with you, including fishing line.
[Reply to This | #]

Help keep Big Lake clean - Mat-Su Valley Frontiersman: Letters To Editor

43°
Broken Clouds

Mat-Su Valley Frontiersman

Help keep Big Lake clean

Posted: Friday, July 18, 2014 11:58 am

To the editor:

As Alaskans from all over come to Big Lake on sunny weekends, the amount of gas and oil in the lake increases to a dangerous level for fish and other aquatic life. Luckily, there are some things that we can do as boaters to take action and decrease the pollution in Big Lake. A few things to consider this summer:

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• Go slow when fueling and always use an absorbent. Fueling your boat is not like fueling your car. Pay attention to where your fuel overflow vent is. Make sure to put something there to collect any overflow — don't let that expensive fuel out into the lake or onto the parking lot.

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Heather Leba, Talkeetna

Do you love fishing and boating on Big Lake, Deshka River, and the Little Su? These are special places that see a lot of oil and gas in the water.

<u>YOU</u> can help keep them clean!

- ✓ **Always use oil absorbs** when fueling & checking oil.
- ✓ **Use bilge pillows** to soak up fuel and oil in your bilge.
- ✓ **NEVER use soaps on spills!** Soap sends oil to the bottom of the river or lake where it harms fish and other aquatic life.

Meet Cook Inletkeeper staff at boat launches to get your <u>FREE</u> clean boating kit!

Paid for in part by the Alaska Clean Water Actions (ACWA) grant from the Department of Environmental Conservation.

Do you love fishing and boating on Big Lake, Deshka River, and the Little Su? These are special places that see a lot of oil and gas in the water.

<u>YOU</u> can help keep them clean!

- ✓ **Avoid idling** your engine. Turn it off while waiting to save fuel and money, and keep fuel out of the water.
- ✓ **Fuel on land when possible.** Fill your tank slowly and only fill to 90%!
- ✓ **Wait to drain** your boat until you're away from the launch ramp.

Meet Cook Inletkeeper staff at boat launches to get your <u>FREE</u> clean boating kit!

CLEAN WATER · HEALTHY SALMON
INLETKEEPER®

Paid for in part by the Alaska Clean Water Actions (ACWA) grant from the Department of Environmental Conservation.

Do you love fishing and boating on Big Lake, Deshka River, and the Little Su? These are special places that see a lot of oil and gas in the water.

<u>YOU</u> can help keep them clean!

- ✓ **Always use oil absorbs** when fueling & checking oil.
- ✓ **Upgrade** from an old 2-stroke **to newer 2-stroke or 4-stroke engine!**
- ✓ **Wait to drain** your boat until you're away from the launch ramp.

Meet Cook Inletkeeper staff at boat launches to get your <u>FREE</u> clean boating kit!

CLEAN WATER · HEALTHY SALMON
INLETKEEPER®

Paid for in part by the Alaska Clean Water Actions (ACWA) grant from the Department of Environmental Conservation.

KEEP BIG LAKE CLEAN

Do you love fishing and boating on Big Lake, Deshka River, and the Little Su? These are special places that see a lot of oil and gas in the water.

<u>YOU</u> can help keep them clean!

- ✓ **Always use oil absorbs** when fueling & checking oil.
- ✓ **Upgrade** from an old 2-stroke **to newer 2-stroke or 4-stroke engine!**
- ✓ **Wait to drain** your boat until you're away from the launch ramp.

Get your <u>FREE</u> clean boating kit at boat launches throughout the summer!

CLEAN WATER · HEALTHY SALMON
INLETKEEPER®

Paid for in part by the Alaska Clean Water Actions (ACWA) grant from the Department of Environmental Conservation.

MAT-SU VALLEY TWO-STROKE BUY-BACK FRAMEWORK

Mat-Su Valley waterbodies are popular fishing and recreation areas for many people throughout Alaska. Water quality testing since 2004 has revealed high levels of hydrocarbons in Big Lake and the Little Susitna River. This framework is a working document presents options for a hypothetical voluntary two-stroke engine buy-back program to help minimize hydrocarbon pollution and reduce the amount of ageing motors on the water.

REDUCING HYDROCARBON POLLUTION IN THE SUSITNA VALLEY

BACKGROUND

In 2006, the State of Alaska 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. Gasoline can come from individual leaks and spills, with additional (and likely larger) inputs from the release of unburned fuel out of the exhaust into the water during combustion. This is especially the case with older two-stroke engines. 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. As part of our current Alaska Clean Water Action (ACWA) Grant through the Alaska Department of Environmental Conservation (ADEC), Cook Inletkeeper has been conducting education and outreach at boat launches across the Valley, including Big Lake, the Little Susitna River, and Deshka Landing. Along with these outreach efforts, ADEC has requested a framework that would outline a potential two-stroke engine buy-back program in order to remove two-stroke engines from the water. Since there are currently no regulations in place to restrict two-stroke engine use, this would be a voluntary effort on the part of boaters, and would require targeted outreach and advertising to promote the project and incentivize boaters to participate.

Hydrocarbon pollution

Studies have shown that increased hydrocarbon levels have a toxic effect on all small aquatic life, including aquatic insects that provide food to juvenile fish, as well to both rainbow trout and salmon fry. It is possible that over time fish and wildlife could be negatively affected by elevated levels of hydrocarbons in Mat-Su Valley waterbodies. Petroleum hydrocarbons contain known carcinogens such as Benzene and Benzo(a)pyrene. The effects of exposure to these compounds may not be immediately seen in aquatic life but may show up later depending on several environmental and biological factors. Research has demonstrated that chromosomal damage, reduced growth and high

FAST FACTS

30% of fuel and oil from a two-stroke is unburned and emitted directly to the water

Oil and gas in the water can impact aquatic insects, salmon eggs, and aquatic plants

On a two-hour two-stroke jet ski ride, 4 gallons of fuel end up in the water.

Efficiency of new DFI two-stroke motors can compete with 4-strokes

mortality rates of fish occur at extremely low levels of hydrocarbon pollution.

Differences in Engine Technology

Older two-stroke engines rely upon either mixed fuel, which combines a two-cycle oil with gasoline into one fuel tank, or the engine has a two cycle oil reservoir that allows the oil to be mixed at the carburetor or injector before burning. A four stroke engine requires only unleaded fuel for power; oil is added only for lubrication into a crankcase, similar to automobiles. In most cases a four-stroke motor will have an oil filter and dipstick or on smaller horsepower motors just a dipstick. Survey results collected from 2009-2013 indicate that older two-stroke engines account for 13% of the engines in use on Big Lake, but they contribute to approximately half of the petroleum hydrocarbons in the lake. Studies from 2007-2011showed that an average of 40% of motors in the Little Susitna River were carbureted 2-stroke engines. Turbidity is also a concern on the Little Su, where the average horsepower on the river is 65, but ranges from 25-225 hp. Older two-stroke stand-up jet skis are also common on Big Lake, where they account for nearly 25% of all watercraft, and other remote lakes throughout the Mat-Su Valley. Motor manufacturer and technology can have a marked impact on fuel efficiency. At an inefficiency of 4% (average value used to represent a 4-stroke motor), at idle the Yamaha would discharge 1/50th of a gallon, at cruising speed 1/6th of a gallon, and wide open 1/3rd of a gallon of gasoline in an hour. At an inefficiency of 27% (value used to represent a carbureted 2-stroke motor) discharge at idle would be 1/7th of a gallon, at cruising speed 1 gallon, and wide open 2.5 gallons of gasoline. .

Kenai River Success

In response to repeated high levels of hydrocarbons observed during 2000-2004 water quality sampling, the ADEC declared the lower 19 miles of the Kenai River as “Impaired” in 2006. From 2005-2007, the Kenai Watershed Forum (KWF), in collaboration with the Kenaitze Indian Tribe, implemented a two-stroke buy-back program to encourage boaters to upgrade their engines and remove ageing carbureted engines from the river. The program was designed such that each interested boater would contact the KWF, identify a motor they would like to trade in, sign documents indicating the engine was in working order, and have that motor inspected by KWF staff. After the inspection was complete, the fuel and oil drained, the motors were palletized and taken to local salvers for recycling. Each boater received a $500 voucher towards a new motor to be used at participating dealers. Yamaha Motor Corporation donated $100,000 to match the vouchers, so each boater would have $1000 toward a new motor. Nearly $500,000 in funding was obtained through an Environmental Protection Agency (EPA) Target Watershed Grant, $100,000 of which was dedicated to motor buy-back. Funds were also used to continue extensive water quality monitoring, support KWF and Kenaitze staff, and help with recycling costs. In partnership with Yamaha, Alaska State Parks, and the EPA, the program bought back 200 non-DFI, carbureted two-stroke motors.

Despite boater participation in the buy-back program, continued water quality exceedances required the state to take actions to eliminate the source of the pollution. In March 2008, the Alaska Department of Natural Resources Division of Parks and Recreation banned the use of two-stroke engines, with the exception of direct fuel injected (DFI) engines, within the Kenai River Special Management Area. Engines were also limited to 50 horsepower, except on Skilak and Kenai lakes. All motors in use within the management area were also required to obtain a decal from Kenai River State Parks Rangers

clearly identifying those motors as either DFI or four-stroke engines. Water quality testing results from the summers of 2008 and 2009 indicated a greater than 70% reduction in total aromatic hydrocarbons (TAH) concentration as compared to the 2007 data. While water flow and volume was greater in 2009, a paper published by KWF showed that the reduction in hydrocarbons was most likely due to the motor restriction regulations enacted in 2008. While the boating public voluntarily participated to reduce two stroke engines on the water, very few boaters participated prior to these new regulations. As reported by Robert Ruffner, 75% of the 200 motors relinquished were brought in after the new regulations were announced in 2007. It is likely that the greatest effect on hydrocarbon pollution reduction took place once the DNR regulations were in place, forcing boaters to abandon the use of older two-stroke engines.

SU VALLEY PLAYERS

In order to have a successful program, we believe that several players are needed to execute the key objectives of this project. We have identified some, but not all, potential partners below.

AK DEPT. OF ENVIRONMENTAL CONSERVATION – DIVISION OF WATER

Alaska DEC has implemented water quality monitoring programs throughout the Mat-Su Borough, including Big Lake, the Little Su, and Deshka River. ADEC also created a Big Lake FAQ Hydrocarbons Fact Sheet to address questions regarding water quality exceedances, regulations, and water quality monitoring. Recent conversations with Laura Eldred touched upon funding opportunities, program implementation, staffing requirements, and necessary staff time to implement this program.

AK DEPT. OF NATURAL RESOURCES – STATE PARKS

Discussions with State Parks Rangers provided some helpful insight regarding community engagement, advertising opportunities, and enforcement. Alaska State Parks Rangers have the authority to regulate and enforce boating practices on all Mat-Su waterbodies within Park boundaries, but there is concern about lack of staff within State Parks that would be able to enforce regulations and promote clean boating practices. Boating often takes a back seat to other more important issues. The Big Lake Management Plan also mentions working with State Parks to modify boat launches to include drains that would divert oily bilge water and post additional signage, but these ideas have not been implemented.

AK DEPT. OF FISH & GAME – HABITAT

In 2013, ADF&G Habitat Research Division published an inventory of impaired anadromous fish habitats in the Mat-Su Valley and recommendations for restoration. Along with impaired access to riparian habitats, culverts that block fish passage, and ATV traffic across spawning streams, he also mentions decreased water quality due to hydrocarbon pollution. This report notes that Big Lake is identified as an impaired waterbody and that the Little Su is at risk for increased levels of hydrocarbons and turbidity from recreational boaters. To mitigate water quality issues, a two-stroke engine buyback program similar to the one implemented on the Kenai River is suggested, and estimates of the program could be up to $300,000. The report states that a buyback program could help to reduce hydrocarbon pollution and that it will be imperative to continue educating the boating public. Outreach efforts to specifically focus on the idea that there are no regulations or fishing closures in place are important, but

should hydrocarbon levels continue to remain elevated, fishing closures and regulations may be in our future.

MAT-SU BOROUGH

The Mat-Su Borough could be instrumental in providing support and potentially assist in writing a grant for a buy-back program. Borough Assembly staff could be instrumental in garnering the Borough's support and brainstorming more program ideas. The Wasilla and Palmer Soil and Water Conservation Districts may be interested in participating if funding becomes available. Both organizations have conducted habitat and water quality monitoring throughout the Borough.

LOCAL GOVERNMENTS

Starting in 2010, a community Water Quality Workgroup of Big Lake residents and stakeholders developed an Action Plan for reducing hydrocarbon pollution in Big Lake. Among other identified action items, outreach and education is a primary focus. The Big Lake 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. The Action Plan called for a clean boating campaign, which Cook Inletkeeper has been implementing annually since 2011. The Big Lake Community Council has also participated in conversations regarding hydrocarbon pollution. Dan Mayfield, who was recently elected to the Mat-Su Borough Assembly, is a Big Lake resident and has been involved in the creation of the Big Lake Management Plan and could act as the liaison to the Borough for this project.

PRIVATE INDUSTRY

The KWF partnered with the Yamaha Motor Corporation who provided a 100% match for the 200 $500 vouchers given to boaters; this could be an option for this program as well. Alaska Mining and Diving (Anchorage) has indicated it would like to know more about the program and might be interested in helping with advertising/outreach. Schnitzer Alaska Metal Recycling (Anchorage), Anchorage Recycling Center, Anchorage Solid Waste Transfer Center & Hazardous Waste Collection Center are salvers or recycling centers that could be partners on the project to provide environmentally responsible motor recycling solutions.

COMMUNITY ORGANIZATIONS

Cook Inletkeeper, Wasilla Soil and Water Conservation District, Palmer Soil and Water Conservation District, Upper Susitna Soil and Water Conservation District, Valley Community for Resource Solutions (recycling) are just a few of the community and non-profit organizations that could serve as project partners. It is difficult to identify which organization, or combination of organizations, should take on the bulk of the project. This could depend largely on funding acquisition and staff availability and time. If enough funding is secured, there may be potential to hire on new staff to one or multiple organizations.

BOATING PUBLIC

Burkeshore Marina at Big Lake has been a keen partner in the Clean Boating Program and owner Katie indicated that the marina would be happy to participate in a buyback program and help with advertising/outreach. Big Lake Powersports and Marine is another local dealer that may be interested in participating and Big Lake Sailing Club may be able to help with local outreach.

From our conversations and additional research, we are could not identify an organization or partner that should spearhead this program. However, we believe that it order to be most effective, it should be a collaborative effort involving several local business, state agencies, non-profits, and corporate sponsors.

LOCATIONS

We think this program should be focused on the Valley, targeting the impaired waterbodies.

BIG LAKE

In 2006, Big Lake was listed by DEC as an impaired waterbody. Since 2004, 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. The sampling schedule demonstrated that the weather is more of a driving force than holidays for influencing increased boater use and hydrocarbon levels.

LITTLE SUSITNA RIVER

The Little Susitna River has not been listed by DEC, but is currently as risk for being listed as an impaired waterbody. Water quality testing from 2007 to the present has revealed elevated levels of hydrocarbons above State standards, as well as increased levels of turbidity. The Alaska Board of Fish announced this summer that a two-stroke engine ban will come into effect January 2017. Two stroke engine use will be banned during all recreational fishing activities on the Little Su; however, boaters who are not engaged in fishing activities, who are traveling to remote cabins, or are hunting, may still use two-stroke motors. This regulation may stimulate boaters to participate in the buyback program and upgrade their engines in order to be in compliance.

OTHER MAT-SU VALLEY LAKES & RIVERS

Though this program should focus its efforts on impaired or at-risk waterbodies, it is important to continue to target boaters throughout the Valley. The Mat-Su is home to many small, remote lakes and rivers that see increased fishing and boating traffic each year. By advertising this program in Anchorage and the Valley, we can target all boaters in an effort to reduce the overall number of two-stroke engines on the water. It is important to continue to spread awareness of hydrocarbon pollution because if one lake or river minimizes two-stroke use, there will be many more waterways for boaters to choose from, potentially spreading hydrocarbon pollution throughout the watershed.

BUDGET & FUNDING

Through our research and understanding of the Kenai buyback program expenses, we developed the following budget for a pilot one-year program. This budget explores two voucher options: $1000 and $2000. The project could start with a total of 200 vouchers for boaters and would be funded to provide 100 vouchers at cost, with matching funds for the remaining 100 vouchers requested from motor corporations. The $1000 voucher would cover approximately 10% of the cost of a new 4-stroke or DFI 2-stroke engine, both valued up to $10,500, whereas the $2000 voucher would cover approximately

20% of the motor cost. While it is difficult to say how much money will incentivize a boater to upgrade their engine, participation in this program may be more tightly linked to the status of their engines. Boaters whose engines are functioning well or are new may need more monetary incentive to participate, while boaters with older or poorly functioning engines that need to be replaced may be more willing to upgrade at a lower incentive.

	Buyback Infrastructure	Cost (Option 1)	Match (Option 1)	Cost (Option 2)	Match (Option 2)
Staff Time	2000 hours Buyback Program Coordinator to coordinate with project partners, contact boaters, develop outreach materials, write print media articles, inspect motors, @ $20/hr = $40,000	$40,000		$40,000	
	120 hours Clean Boating Program Coordinator to supervise the project and assess project performance @ $24/hr = $2880	$2,880		$2,880	
Travel	Travel within the Valley to inspect motors, 1000 miles @ $0.56/mile= $560	$560		$560	
	Travel to Anchorage to work with program partners, 2000 miles @ $0.56/mile = $1120	$1,120		$1,120	
Outreach & Advertising	Printed flyers and outreach materials = $1500	$1,500		$1,500	
	100 buyback vouchers for boaters valued at $1000 = $100,000	$100,000			
	100 buyback vouchers for boaters valued at $2000 = $200,000			$200,000	
	Paid radio media May-Sept = $10000	$10,000		$10,000	
Contractual	Anchorage Schnitzer drive bins to Valley to hold motors for recycling, 25 hours of transportation costs for bins @$160/hr = $4000	$4,000		$4,000	
	Anchorage Schnitzner - Pick up and weigh bins with motors, paid by weight = $5000	$5,000		$5,000	
Matching Funds	Yamaha Or Mercury Motor Corporation 100% match for each $1000 voucher, 100 vouchers @$1000 each = $100,000; match for 100 vouchers @$2000 each = $200,000		$100,000		$200,000
	Local business staff time match to help palletize motors @ $20/hr for 100 hours= $2000		$2,000		$2,000
	Burkeshore Marina advertising match = $1000		$1,000		$1,000
Total		**$165,060**	**$103,000**	**$265,060**	**$203,000**

There are several potential funding sources for a buy-back program, which could be combined to provide funds for the program:

POSSIBILITY 1

Private Industry/Community Foundation:

1) Gordon and Betty Moore Wild Salmon Ecosystems Initiative

2) Mat-Su Angler's Sport Fishing Club
3) Mat-Su Fishing Guides (Andy Couch)
4) Yamaha Motor Corporation or Mercury Marine to match vouchers

POSSIBILITY 2

Local Government Funding:

1) The Mat-Su Fish and Wildlife Commission via the Mat-Su Salmon Habitat Partnership
2) Mat-Su Borough

LEGISLATIVE APPROPRIATION

There is a slight possibility that a legislative appropriation could be used to fund a buy-back program. We recognize that in order to secure this type of funding, immense support would have to come from the local Mat-Su communities, assemblies, and mayor. Further, the State is experiencing a very tight fiscal situation and may be less likely to allocate funds towards a voluntary program without regulations to support it.

PROGRAM STRUCTURE

The structure of this proposed program would somewhat mirror the program implemented on the Kenai River, but would be tailored to the Mat-Su Valley community.

ELIGIBLE ENGINES

Similar to the KWF program, only older carbureted two-stroke engines would be eligible for the buy-back program. As a one year pilot program we would hope to reach as many boaters as possible in the Valley and Anchorage, with enough funds for 200 vouchers. Each boater would have to verify that their engine is functional and was recently in use. Engines would be inspected by the primary partner staff person or industry partner to verify they are in working order and the serial numbers would be recorded to avoid a "bait and switch". Engines up to 100 horsepower would be accepted? Kenai limited to 50 hp because that is the maximum allowed on the Kenai River, but there are no restrictions for Big Lake or Little Su.

HOW TO PARTICIPATE

Boaters would hear about the program through advertising mechanisms (print media and radio) and would contact the lead organization (whoever applied for and received funding) to obtain a voucher. The agency staff, or a partnering industry organization, would deal with relinquished engines, sign verification documents with boaters, and drain all of the fuel/oils. That staff would then work with the identified salver in order to palletize and transfer the used engines for recycling. The boater could then bring their voucher to a participating dealer to receive a discount for their purchase of a new DFI two-stroke or 4-stroke engine.

OLD ENGINE DISPOSAL

All used two-stroke engines would be disposed via environmentally-responsible means through the participating recycling center and salvers. Old fuel and engine oil would be drained and contained/disposed of according to DEC environmental protocols prior to the engine being dismantled

and recycled. Recycling these engines is an important component to keeping them off the water and being re-used.

RECORDKEEPING

A database of all boaters participating in the buy-back program would be created, including contact information, the type of engine they were relinquishing, the horsepower of that motor, the approximate age of the motor, and condition it was in when relinquished. Boaters would be required to sign a document certifying that the engine was in good working condition and recently used. In order to receive a voucher, engines would be inspected and certified that the above was true. Participating dealers would be asked to keep a record of boaters who used vouchers from this program to determine how many boaters who gave up engines actually then purchased a new one.

EVALUATION

In order to determine the program's success and level of participation, continued outreach, boater surveys, and calls placed to dealers would be necessary. Water quality monitoring would also likely need to continue in Big Lake and the Little Su in order to determine if removing two-stroke engines had any impact in reducing hydrocarbons emissions and improving water quality. It will also be important to understand the level of participation of boaters from each community and user group to understand whether the impending 2017 Board of Fish regulations for the Little Su impacted their decision to participate in the program.

ADVERTISING & OUTREACH

This program would require substantial outreach to the boating public to be a success. Different avenues of outreach include:

- Radio Public Service Announcements
- Articles in local newspapers (i.e., Alaska Dispatch News, Frontiersman, Big Lake Times)
- Posts on the Alaska Outdoors Forum in the Fishing and Recreation sections
- Participation with local businesses to spread the word, hang fliers, posters, etc.
- Notice on ADF&G Sport Fish website
- Blog posts on Cook Inletkeeper's website
- Hang posters at boat launches across the Valley
- Include fliers about the program in clean boating kits
- Outreach at outdoorsman shows and fishing events

METRICS OF SUCCESS

If this program were implemented, we envision measuring success in the following ways:

- Number of participants
- Number of two-stroke engines relinquished
- Increased awareness of hydrocarbon pollution
- Reduced number of two-strokes on priority waterbodies

- Improved water quality in impaired waterbodies (Big Lake)

REGULATORY NOTES

Clean boating education and outreach efforts have been ongoing in the Valley since 2011, yet there has not been a significant reduction in hydrocarbon levels in Big Lake. Results from our 2014 outreach surveys show that boaters are more aware of the hydrocarbon pollution problem at Big Lake and the Little Su; however, that awareness has not turned into action from the boating public. Though people want to do the right thing, a voluntary program may not be as successful in reducing hydrocarbon pollution as a program coupled with regulations. The buy-back program on the Kenai River went slowly until the two-stroke ban in the Kenai River Special Management Area was passed by the Alaska Department of Natural Resources (DNR) in 2008. Though the buy-back program was able to remove 200 two-stroke engines from the water, it is most likely that the DNR restrictions significantly contributed to the 70% reduction in hydrocarbon pollution seen in 2008 and 2009. As older two-stroke engines become obsolete, increasingly more expensive to fix, and are phased out with new technology, boaters may choose to upgrade their engines on their own. However, this cannot be relied upon as a "sit and wait" solution, since most boaters stick to what they know and the longevity of old motors is well known. A trade-up program will likely resonate most with boaters who are "on the fence" about upgrading their engines, and some monetary compensation may go a long way in helping them to make the switch. This program may not be able to obtain enough funding to provide boaters with a significant portion of the cost of a new motor, but could provide a valuable percentage of the cost (10-20% as shown in the budget options). New Yamaha 4-stroke 60 hp jet drive outboard engines (the average size motor at the Little Su) can cost on average around $9,200; larger 90 hp 4-stroke engines (average size motor at Big Lake) can cost as much as $10,600. When boaters are aware of pending regulations, or are planning to upgrade anyway, any assistance in decreasing their expenditures may be very welcome.

CONCLUSION

This report is intended to present and analyze options for a hypothetical two-stroke engine buy-back program in order to minimize hydrocarbon pollution on priority waterbodies in the Mat-Su Valley. In order to reach all boaters that recreate on Big Lake or the Little Su it would be incredibly important to advertise in the Valley as well as Anchorage. Boaters will need to be encouraged to participate in this voluntary program and provided an incentive, as well as education materials that highlight the environmental and economic importance of reducing hydrocarbon pollution to Valley waterbodies. For this program to be successful, key project partners that have the capacity to implement such a large-scale program need to be on board and boaters

APPENDIX I

Name	Organization/Company	Position	Contact Info
Jeff Smeenk	Palmer SWCD	District Manager	907-745-1441
Robert Ruffner	Kenai Watershed Forum		907-260-5449, ext 1204
Dean Hughes	ADF&G Habitat	Habitat Research Biologist	907-267-2207
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Wayne Biessel	Alaska State Parks	Park Superintendant	907-745-8935
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Nick	Alaska Mining and Diving	Owner	907-277-1741
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Denise Devero	Mecury Marine	Human Resources & Corporate Giving	920-929-5000