Sea Grant
Alaska
Marine Advisory Program

Preliminary Report

Fall 2008 Alaska Commercial Fishermen and Tender Fuel Survey

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ALASKA FISHERIES BUSINESS ASSISTANCE

Table of Contents

Table of Contents 2
Introduction 3
Background 3
Summary Findings 4
Survey Parameters 5
Survey Respondent Information 6
- Make up of Survey Responders 6
- Current fuel usage 6

Changing Behaviors 6
- Fishing Practices 6
- Fuel Saving Techniques 7
- Investment Into Fuel Saving Devices 8

Income Impacts 9
- Current Cost of Fuel 9
- Increase in Fuel as a Production Cost 9
- Impacts to Crew Income 10
- Help from Processors 11

Fisheries Management Impacts 11
Further Technical Assistance 12
Appendix I – Survey Tool 14

The fuel survey and subsequent reports was led by Sunny Rice with contributions by Paula Cullenberg, Torie Baker, and Glenn Haight of the Alaska Sea Grant Marine Advisory Program; Carol Kaynor, Doug Schneider and Dave Partee of the Alaska Sea Grant Program; Greg Fisk with SeaFisk Consulting; and Mark Vinsel of United Fishermen of Alaska. The survey was a product of the Alaska Sea Grant Marine Advisory Program's fuel and energy committee, under the Alaska Fisheries Business Assistance Program (FishBiz).

Introduction

In fall 2008, the Alaska Sea Grant Marine Advisory Program (MAP), in partnership with the United Fishermen of Alaska, conducted a web-based survey of Alaska's commercial fishermen and tender operators. The survey asked respondents how increased fuel prices impacted their fishing businesses, what steps they took in response, and what further technical assistance would help them adapt to increasing costs. Following a strong response of 126 completed surveys, representing a broad cross-section of gear types and fishing locations in the state, MAP identified several technical issues that require further research and support.

Background

The Alaska seafood industry is the state's largest private sector employer and its main economic engine along Alaska's vast coastline. In the spring of 2008, the Alaska seafood industry braced for the highest fuel prices ever. Diesel-dependent seafood processors and commercial fishermen, sometimes operating in highly remote areas of the state, faced per gallon prices in excess of $5 to $6. Some areas reported prices in excess of $7 per /gallon. In some cases, this increase represented a doubling of fuel costs.

The resulting huge production costs likely offset many of the gains the sector had made on improved seafood prices, and any future increases in fuel costs will continue to cast a pall over the fishing sector. This prospect, combined with growing consumer trends favoring food sources that use less fossil fuel to produce, serve as compelling reasons to reduce and/or eliminate fossil fuel use.

As first responders to the Alaska commercial fishing industry, MAP developed a detailed survey for the fleet to gather baseline information and determine initial impacts. This information serves to identify areas for further research, outline long-term alternative energy needs and prompt policy makers to address this crucial issue for coastal Alaska's main economic engine.

Summary Findings

This section summarizes significant survey findings listed throughout the report.

Changing Behaviors

- On average, fishermen attempted to lower their fuel costs through several changes in their fishing practices.
- The most common method of reducing fuel usage was less prospecting for fish.
- Other common methods include staying closer to home or staying out on the grounds longer.
- These top techniques for reducing fuel during fishing appear to indicate less overall effort.
- The most common fuel saving techniques in the fishing operations were throttling back and maintaining engine and fuel systems.
- The next most common fuel saving techniques were more careful planning of routes and timing, keeping the vessel bottom clean and propeller tuned, and monitoring vessel trim.
- Respondents indicating they owned a Bristol Bay gillnet permit were the least likely to change their operation to reduce fuel consumption.

Impact on Income

- Forty-three percent of the survey respondents projected fuel expenses between 10-20% of their total gross income. Expanding that range to 10 - 30% of total gross income expands the percentage of respondents to 70%.
- Almost 90% of the survey respondents indicated their fuel cost as a percentage of income increased "somewhat more" or "more than doubled" over the past five years.
- Eighty percent of the respondents with crew reported higher fuel costs negatively impacted income to crew members.
- Twenty-four percent of survey respondents received some form of fuel assistance from their processor.

Fisheries Management Impacts

- A majority of the respondents (64%) believe fisheries management decisions may affect their fuel costs. Conversely, only 40% believe fisheries managers should consider the impacts on fuel usage when managing fisheries.

Survey Limitations

- Underreporting of conditions for fishermen in the AYK region requires additional review. These regions sustain high fuel costs, and with gas powered engines, employ some of the more inefficient engines in the fishery.

Survey Parameters

The fuel survey ran on Survey Monkey©, an online survey tool, from late September until mid October.

Results of this survey are unscientific. Respondents were self-selected members of the Alaska commercial fishing industry, referred to the survey website by radio or newspaper stories, fishing-related listserves, or by direct referral from MAP faculty or others. As the survey was conducted using a web-based survey-hosting site, respondents were limited to those with internet access. Neither names nor computer IP addresses were collected with responses and no attempt was made to verify that respondents had identified themselves accurately.

Respondents were asked 17 questions on topics ranging from energy saving techniques to fisheries management impacts and possible research areas. Appendix I provides the survey tool.

While we were pleased with the response rate (126 total responses) and the information provided, there are over 10,000 permit holders in the Alaska state fisheries alone. Furthermore, the number of respondents per gear type in some cases was very small.

Despite these limitations, we feel these results provide a relevant snapshot of the impacts of, and fishermen's responses to, increased fuel prices.

Survey Respondent Information

Make up of Survey Responders

126 Alaska commercial seafood harvesters and tender operators responded to the survey. Table 1 provides the gear type and, in some cases, the region of each responder.

124 survey respondents indicated participating in 199 separate fisheries. This indicates several fished in more than one fishery. Two skipped the question. Almost 50% of the responders were gillnetters.

Several areas in this report provide gear- specific results where notable differences occurred between gear types.

Table 1

Answer Options	Response Count	Response %
Gillnetting - Bristol Bay	12	9.7%
Gillnetting – Arctic, Yukon, Kuskokwim (AYK)	2	1.6%
Gillnetting – other locations	46	37.1%
Setnetting	9	7.3%
Trolling	15	12.1%
Seining	24	19.4%
Longlining	37	29.8%
Trawling	14	11.3%
Diving	3	2.4%
Jigging	7	5.6%
Pot fishing	19	15.3%
Tendering	7	5.6%
Other	4	3.2%
Comments	11	
Total Responses	199	
Total Respondents	124	
Skipped questions	2	

Current fuel usage

A large majority, 78%, of the respondents had diesel engines. This result may overestimate the percentage of diesel vessels in the fleet because of the low number of AYK responses (only 2 out of 126). Small boat fishermen in the Arctic, Yukon, Kuskokwim (AYK) region tend to employ gas powered engines.

Changing Behaviors

Fishing Practices

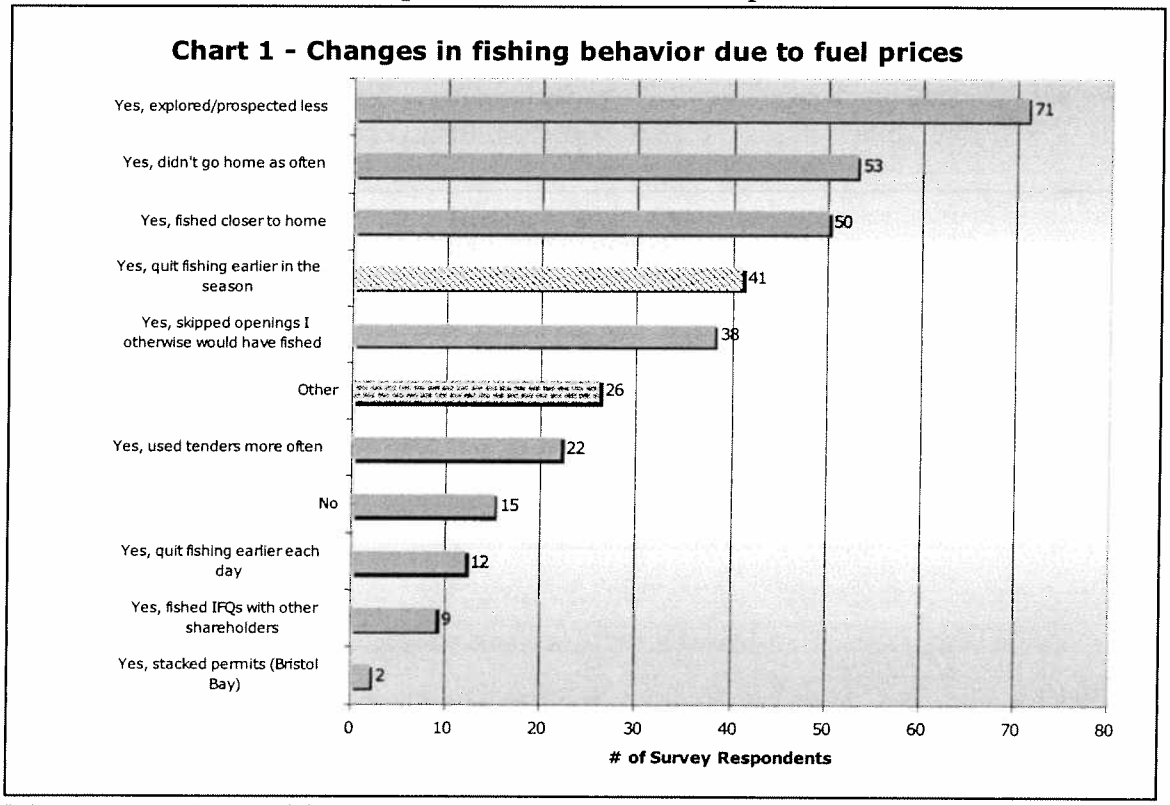
The high cost of fuel dramatically changed the fishing activity of the survey responders. While survey results revealed 15 individuals (12% of total respondents) that did not change the way they fished because of the increasing cost of fuel, the vast majority of the respondents did change the way they fished.

An examination of respondents indicating no change in fishing activity by gear type reveals over half were Bristol Bay gillnetters.

After removing these respondents, there were a total of 324 responses on types of changes made. This equates to an average of three changes per respondent. This indicates fishermen changed fishing practices in several ways to mitigate the high cost of fuel.

The most common response was that fishermen prospected less. This may have caused lower harvests as fishermen targeted areas known for large harvests, missing altogether areas that produced less fish historically.

Other top answers included, not going home as often and, conversely, fishing closer to home. The other top answer was fishermen quit earlier in the season.



Most responses would seem to indicate less total harvesting activity. Chart 1 provides a summary of changes in fishing practices.

Fuel Saving Techniques

The survey sought information on what fuel saving techniques fishermen employed in the operation and maintenance of their vessels. Over 70% of

respondents indicated that they "paid lots of attention" to maintaining their engine and fuel systems, and throttling back. Over 60% paid attention to planning their routes and timing.

General maintenance of the vessel proved very important with fishermen. This included carefully cleaning their boat, maintaining the propeller, and monitoring vessel trim.

Table 2 summarizes all responses to Question 9, *"How much attention do you pay to the following techniques for decreasing fuel consumption?"*

Table 2

Answer Options	Lots of attention	Some attention	Very little attention	Response Count
Throttling back	90	23	5	118
Maintaining engine and fuel systems	89	23	4	116
Planning your route and timing	78	25	11	114
Keeping bottom clean	61	39	10	110
Keeping propeller tuned	58	36	15	109
Monitoring vessel trim	54	31	25	110
Maintaining fuel consumption records	46	33	27	106
Adjusting autopilot to improve tracking	43	23	26	92
Reducing vessel weight	33	44	37	114
Cutting back on diesel genset use	28	20	29	77
Other	14	2	6	22
Comments				19
			Total answered	119
			Total skipped	7

Investment Into Fuel Saving Devices

The survey attempted to learn what kinds of investments fishermen were considering making into fuel saving equipment. Adding a new engine drew the most positive response, while adding a flow meter was a close second. Items like bulbous bows, aerofoil-shaped rudders and kort nozzles were not as highly considered.

Table 3 summarizes all responses to Question 10, *"What new DEVICES have you used or considered using to decrease your fuel consumption*?" Not counting the "Other" category, the answers are sorted by those that drew the most favorable responses (measured as the "Added this year", "Added prior year", or "Considering adding").

Table 3

Answer Options	Added this year	Added prior to this year	Considering adding	Not interested	Response Count	Positive Response Count
New engine	12	21	42	19	94	75
Flow meter	3	17	44	22	86	64
Bulbous bow	2	5	22	44	73	29
Aerofoil-shaped rudder	0	8	17	44	69	25
Kort nozzle	0	5	15	48	68	20
Other	9	1	6	8	24	16
Comments					25	
				Total answered	109	
				Total skipped	17	

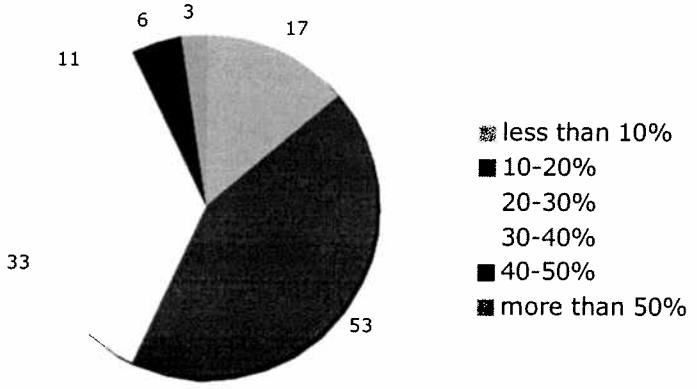
Income Impacts

Current Cost of Fuel

Survey respondents were asked what percentage of their income was spent on fuel. Forty-three percent of fishermen surveyed said they spent between 10 to 20% of their gross fishing income on fuel. Seventy percent (n=86) fell in the 10 to 30% range.

Chart 2 highlights the survey results for Question 4, *"Over the past year, what percentage of your gross fishing income has been spent on fuel?"*

Chart 2. Percent Gross Fishing Income Spent on Fuel

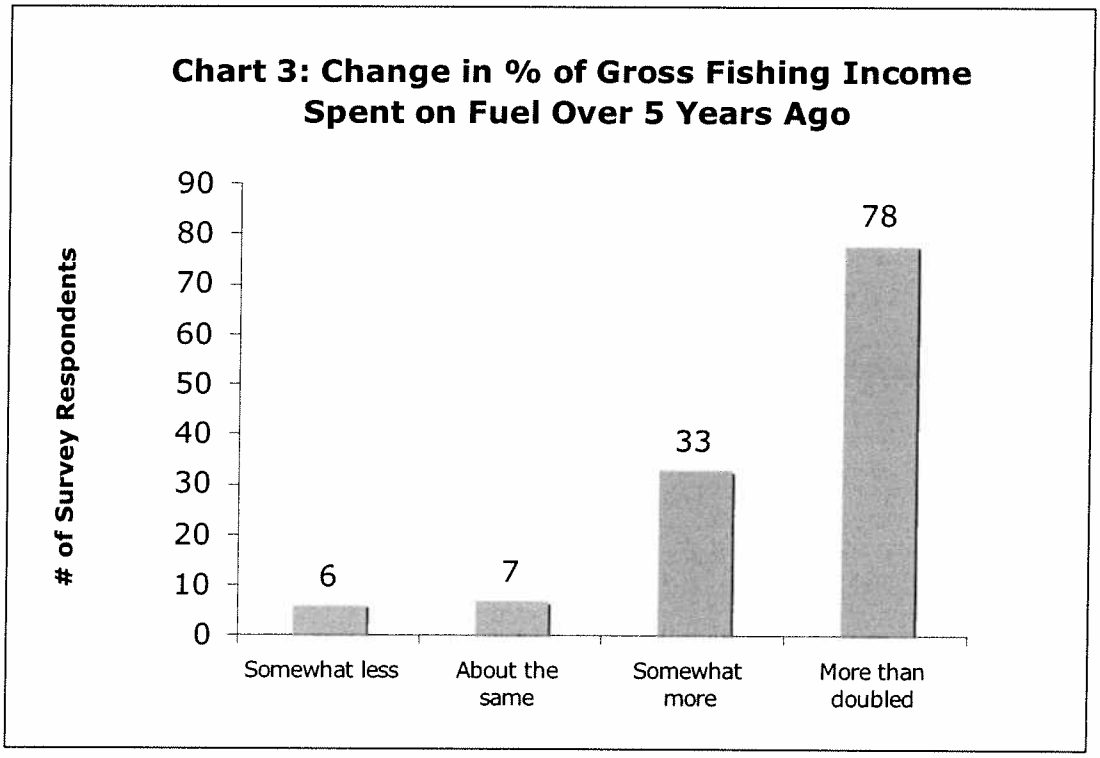


Increase in Fuel as a Production Cost

Respondents were then asked how much the cost of fuel increased as a percentage of income over the last five years. Sixty-three percent offered it more

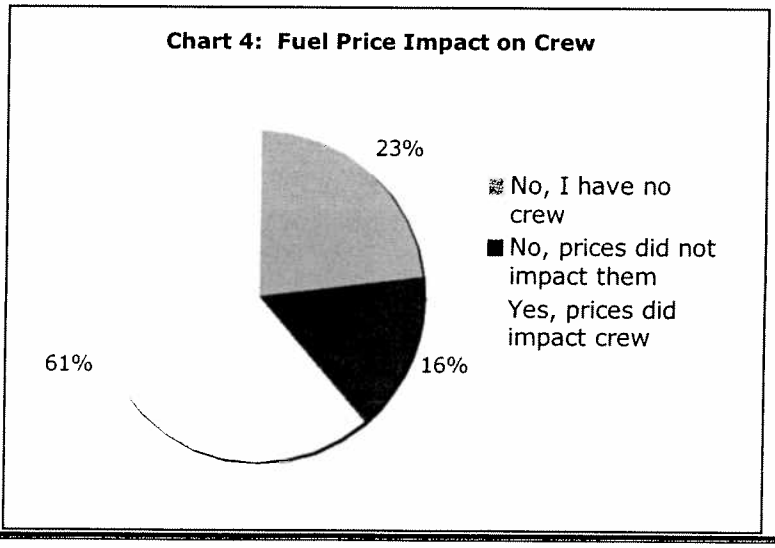
than doubled over that time. Very few indicated no real change at all. In total, 89.5% of the survey respondents indicated their fuel cost as a percentage of income increased at least "somewhat more". This is a disturbing trend considering that increased market prices in most salmon fisheries should have increased their income over that period of time.

In reviewing gear specific responses to this question, it appears this doubling of fuel costs occurred consistently across all fisheries. Chart 3.



Impacts to Crew Income

Permit holders were not the only ones impacted. A majority (61%) of respondents



said their crew also felt the pinch of high fuel prices. A large portion, 23%, offered they had no crew. Of the remaining respondents, 80% indicated the price of fuel impacted how much income the crew made.

When asked how crew were impacted, most said that crew shares were reduced because the cost of fuel was taken off the top before shares were calculated. In many cases, this was the first year permit holders considered fuel costs in the crew share calculation. Others indicated that they fished short-handed or didn't hire crew at all. Others said they quit fishing or laid crew off sooner.

Help from Processors

Finally, survey respondents were asked to detail whether they received fuel cost assistance from their processor. Comments provided under this question indicate that processors assisted primarily through selling fuel to them at a bulk fuel price or providing fuel bonuses. Twenty eight percent of fishermen said that their processors provided assistance with their fuel costs. Table 4 summarizes the answers.

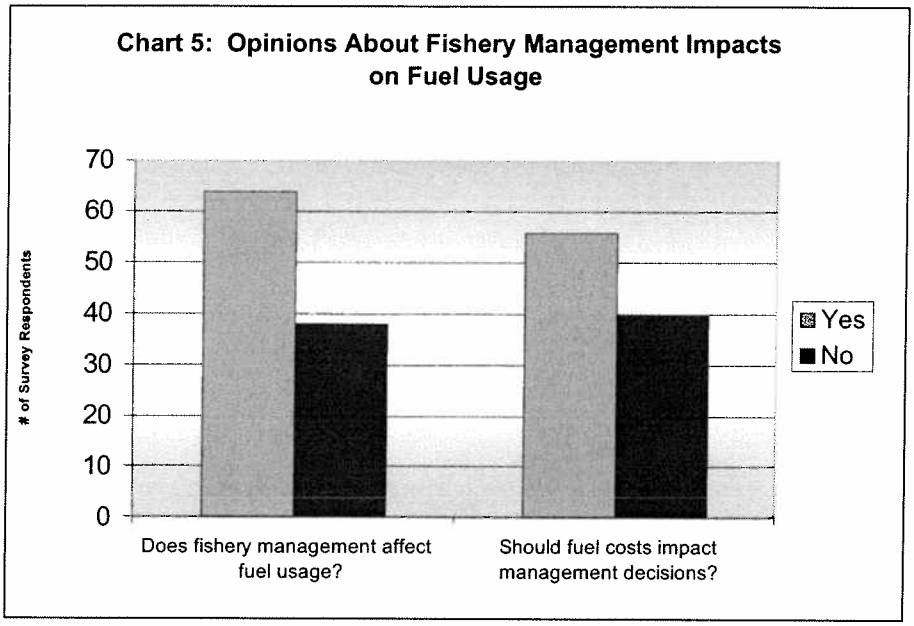
Table 4

Answer Options	Response Count	Response Percent
Yes	34	27.6%
No	89	72.4%
Comments	29	
Total answered	123	
Total skipped	3	

Fisheries Management Impacts

Finally, respondents were asked about fisheries management's impact on fuel consumption. While 64 respondents said that management did affect fuel consumption rates in their fisheries, only 40 felt that "fuel costs are a valid concern and should be integrated into the fishery management process," with 56 indicating that "management should be strictly biological."

When these responses are examined by gear group, however, only one gear group indicated a contrary opinion. 53% of trollers responding felt that fuel costs should be integrated into fishery management decisions, while 33% felt that management should be strictly biological.



Further Technical Assistance

As a final question, the survey asked respondents to identify how else the Marine Advisory Program could help adapt to rising fuel prices and if they had any particular questions or comments. The survey received a number of responses which may or may not fall within the purview of the Marine Advisory Program. In any event, they are informative for the general discussion.

Selected comments, including those of great frequency, are provided here.

- Clear technical advice from engine and fuel industry.
- Funding options for new engine or engine rebuilds.
- Promote energy independence for country and Alaska.
- Alternative assistance from processors.
- Develop harvesting privileges for dive fishery.
- Subsidies for food suppliers.
- Improved technology for alternative fuels and energy.
- Pre-season lectures/workshops on energy use.
- More coordination with the Alaska Department of Fish & Game.
- Research into green technologies adapted for the fishing industry.
- Fuel consumption comparisons between engines.
- Investment cost recoupment calculator for engine overhauls.

- Low interest loan/tax relief for engine upgrades. *(Author's Note: Please check with the Alaska Division of Investments for their new program for energy efficiency improvements.)*
- Constant and current information for industry.
- Literature/project review to determine successful programs in other areas of the world.
- Lower other government costs like taxes and permit fees.
- Seek cooperation from Alaska fuel refineries to sell to Alaska producers, like truckers, farmers, fishermen, at a point a slight profit margin.
- Continue focus on other profit points like improving ex-vessel value of fish.
- Seek removal of fuel tax on fishing boats during the season. *(Author's Note: commercial fishing activity is exempt from paying federal fuel excise tax. Most fuel suppliers have fishermen fill out appropriate paperwork and handle the exemption. If you fuel at the regular gas station or aren't getting the exemption, keep track of your fuel costs and write it off on your income tax.)*
- More information on pyrometers - specs, efficiencies, etc.
- Workshops for outboard and boat engine maintenance.
- Weekly price reports on different port fuel charges.

And finally....

- "Give me the winning Power Ball #'s so I can keep fishing until the money is gone." *(Author's Note: It is good to see a sense of humor even as we deal with our most trying issues. Thanks to all who assisted with the survey. It does make a difference.)*

Appendix I – Survey Tool

The following is the survey tool used to develop the information for this report.

Q1. Did the price of fuel cause you to change how you fished this year (check all that apply)?

Answer Options
_____ Yes, stacked permits (Bristol Bay)
_____ Yes, fished IFQs with other shareholders
_____ Yes, quit fishing earlier each day
_____ No
_____ Yes, used tenders more often
_____ Other
_____ Yes, skipped openings I otherwise would have fished
_____ Yes, quit fishing earlier in the season
_____ Yes, fished closer to home
_____ Yes, didn't go home as often
_____ Yes, explored/prospected less
Comments

Q2. Which types of commercial fishing operations do you run (check all that apply)?

Answer Options
_____ Gillnetting - Bristol Bay
_____ Gillnetting - AYK
_____ Gillnetting - other locations
_____ Setnetting
_____ Trolling
_____ Seining
_____ Longlining
_____ Trawling
_____ Diving
_____ Jigging
_____ Pot fishing
_____ Tendering
_____ Other
Comments

Q3. Which type of engine do you run on your primary fishing vessel?

Answer Options
_____ Gas
_____ Diesel

Q4. Over the past year, what percentage of your gross fishing income has been spent on fuel?

Answer Options
_____ less than 10%
_____ 10-20%
_____ 20-30%
_____ 30-40%
_____ 40-50%
_____ more than 50%

Q5. How does this percentage compare to 5 years ago?

Answer Options
_____ Somewhat less
_____ About the same
_____ Somewhat more
_____ More than doubled
_____ Comments

Q6. Did your buyer or processor assist you with your fuel costs?

Answer Options
_____ Yes
_____ No
_____ Comments

Q7. Did increased fuel prices impact your crew?

Answer Options
_____ No, I have no crew
_____ No, prices did not impact them
_____ Yes, prices did impact crew
_____ Comments

Q8. How else have fuel prices impacted your fishing business this year?

Q9. How much attention do you pay to the following techniques for decreasing fuel consumption?

Answer Options
_____ Throttling back
_____ Reducing vessel weight
_____ Cutting back on diesel genset use
_____ Keeping bottom clean
_____ Keeping propeller tuned
_____ Maintaining engine and fuel systems
_____ Adjusting autopilot to improve tracking
_____ Monitoring vessel trim
_____ Planning your route and timing
_____ Maintaining fuel consumption records
_____ Other
_____ Comments

Q10. What new DEVICES have you used or considered using to decrease your fuel consumption?

Answer Options
_____ New engine
_____ Flow meter
_____ Bulbous bow
_____ Aerofoil-shaped rudder
_____ Kort nozzle
_____ Other
_____ Comments

Q11. If you have repowered or are planning to repower your vessel for greater fuel efficiency, what are your estimated costs?

Q12. Can you share any specific websites, periodicals or other sources that you use for information on fuel efficiency?

Q13. Do you feel that management decisions affect fuel consumption rates in your fishery (fisheries)?

Answer Options
_____ Yes
_____ No
_____ Comments

Q14. Should managers (Board of Fish, ADF&G, NPFMC, IPHC) take fuel cost issues into account when making management decisions?

Answer Options

_____ Yes, fuel costs are a valid concern and should be integrated into the fishery management process
_____ No, management should be strictly biological
_____ Don't know
_____ Other
_____ Comments

Q15. What kinds of management changes do you think could be made in your fisheries to reduce fuel consumption?

Q16. In addition to our fuel efficiency webpage, which you will be redirected to when you finish this survey, how else can the Marine Advisory Program help you adapt to rising fuel prices?

Q17. Comments or questions for the Alaska Sea Grant Marine Advisory Program or United Fishermen of Alaska?