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The Effects of Supply and Demand on Upper Cook Inlet Salmon Fisheries

The most fundamental principle of economics in a market economy is supply and demand. Price, or the economic value of an object, is a reflection of the relationship between those two important variables.

In the case of Upper Cook Inlet salmon values, the implications of supply and demand theory are stark. The radically divergent economic trends of the two segments of the Upper Cook Inlet salmon fishery during the past 15 years demonstrate that the future demand and value for one "use" is likely to continue to increase; while the demand and value for the other "use" is decreasing, or is at best stagnant and likely to remain so. In short, while worldwide demand for salmon sportfishing experiences is steadily growing, the worldwide demand for Alaskan salmon products has been shrinking.

The graph below depicts the relative values of Upper Cook Inlet sportfishing and commercial fishing since 1993.¹⁸⁷

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In essence, Alaska has a tremendous advantage in the global marketplace with regard to the supply of high quality wild salmon sportfishing experiences. In fact, it's near monopolistic as few destinations besides Canada can offer anything remotely similar. Add the close proximity of Upper Cook Inlet salmon sport fisheries to other major

¹⁸⁷ The last major sportfish study was conducted in 1999

worldwide tourist attractions (i.e.: Denali Park and Alaska generally) and the salmon sportfishing experience in Alaska is one that can't be matched *anywhere* – providing our Alaska salmon sportfishing “brand” a huge advantage in the worldwide marketplace.

That advantage is reflected in the significant growth of Alaska sportfishing tourism. During the past 15 years tourist spending on sportfishing statewide has increased from approximately \$199 million in 1993, to \$653 million in 2007.¹⁸⁸ In 2007, statewide tourism spending on sportfishing accounted for 19.2% of all tourism spending in Alaska (\$653 million/\$3.4 billion).¹⁸⁹ That means about one in five of all tourism dollars were spent on sportfishing. Moreover, approximately two-thirds of all nonresident fishing effort (angle days) and three-quarters of all nonresident sportfish spending took place in Southcentral Alaska, generating a \$428 million economic impact to the region.¹⁹⁰ Of that amount, nonresident sportfishing in the Upper Cook Inlet salmon fisheries generated approximately \$209 million and accounted for nearly half of all nonresident fishing days statewide.¹⁹¹ Thus, the economic nexus between state tourism revenues and the appeal of Upper Cook Inlet salmon sport fisheries is significant.

In contrast, the Upper Cook Inlet commercial salmon fishing industry has no dominant position for its product in the world market – and no ability to gain one. The fishery accounts for only about 2% of the total annual Alaska statewide salmon harvest and

¹⁸⁸ 1993 spending inflation adjusted (CPI) would \$282 million in 2007 dollars.

¹⁸⁹ ADF&G, <http://www.sf.adfg.state.ak.us/statewide/economics/>; RDC <http://www.akrdc.org/issues/tourism/overview.html>

¹⁹⁰ Southwick, Assoc., Inc., et al., xiv, xx Table E10

¹⁹¹ *Ibid.*, 91, xiv Table E4

approximately only 5% of the total statewide salmon harvest value. More significantly, in terms of assessing economic potential, the Upper Cook Inlet commercial salmon industry has lost considerable economic value in recent years (as have most Alaskan salmon fisheries) because of dynamic and irreversible changes to the global salmon products marketplace. The introduction of large quantities of farmed fish, particularly farmed coho salmon from Chile, has to a great extent displaced Alaskan wild salmon in the critical Japanese frozen salmon market.¹⁹²

As a 2004 UAA ISER study pointed out:

"In 1980 total world salmon supply was less than 550 thousand tons, of which 98% was wild. By 2001 world supply had more than quadrupled to more than 2.2 million tons, 62% of which was farmed. In 1980, Bristol Bay salmon accounted for 13% of world salmon supply, and the Bristol Bay catch¹⁹³ was a significant factor affecting world salmon prices. By 2001, Bristol Bay accounted for only 2% of world salmon supply, and

¹⁹² See Knapp, *Projections*, ES 3-4, "The Japanese frozen salmon market is the most important market for Bristol Bay sockeye salmon. In the Japanese market, wild sockeye salmon competes directly with farmed coho salmon and farmed trout. The Japanese consider these species to be "red-fleshed" salmon. During the 1990s, Japanese imports of farmed Chilean coho and farmed Chilean and Norwegian trout grew rapidly, while imports of wild sockeye declined. As a result, the share of frozen sockeye in Japanese red-fleshed salmon imports declined from 77% in 1992 to just 21% in 2001." See also *Ibid.*, IV 9-10, "The most important market for U.S. sockeye salmon is the Japanese frozen market. During the period 1989-1994, about 80% of U.S. sockeye production went to the Japanese frozen market. However, this share has fallen dramatically. . . . Between 2000 and 2002, only about 44% of U.S. sockeye salmon production went to the Japanese frozen market. The second most important market for U.S. sockeye salmon is the UK canned salmon market."

¹⁹³ At roughly 24 million fish, the Bristol Bay sockeye salmon harvest is roughly six times the average annual Upper Cook Inlet commercial salmon harvest (4.2 million). It also accounts for more than half of all US sockeye harvests in most years. ADF&G harvest data; Knapp, *Projections*, IV 4, IV 5 Table IV-5

Bristol Bay catch (sic) was a far less important factor affecting world salmon prices. ¹⁹⁴

While the Upper Cook Inlet salmon industry has some proximity advantages compared to Bristol Bay with regard to the lower-48 fresh salmon market, it has nonetheless suffered along with most Alaskan salmon fisheries because of the glut of farmed fish now on the market. Since reaching a historic high average ex-vessel value of \$108 million during 1986-1992, the Upper Cook Inlet commercial fishing industry's most recent 10-year average ex-vessel harvest value was only \$16.3 million.

Moreover, because about half of Alaskan sockeye salmon is canned,¹⁹⁵ Upper Cook Inlet commercial salmon products¹⁹⁶ must increasingly compete with displaced Bristol Bay

¹⁹⁴ Knapp, *Projections*, ES 2, V 2, "Japanese imports of Bristol Bay sockeye salmon (and other Alaska sockeye salmon) declined dramatically after 1995, while imports of sockeye salmon from Russia increased. As a result, the share of Bristol Bay sockeye in total Japanese sockeye imports fell from 59% in 1995 to only 27% in 2003-04."

¹⁹⁵ *Ibid.*, II-6 Table II-3, US wild salmon has a 70% share of world canned salmon markets, but less than a 15% share of US and world fresh and frozen salmon markets; *Ibid.* IV-1 "The share of U.S. sockeye salmon production going to fresh markets is increasing, but remains relatively small—less than 6% in 2000-02."

¹⁹⁶ Individual processor data regarding canning percentages is confidential. But Alaska sockeye salmon is increasingly canned. *Ibid.*, IV 1, Footnote 20, "The statewide COAR data show a significant increased (sic) in the canned share of sockeye salmon production since the early 1990s." In 2003, canned salmon represented 40% of all US sockeye salmon exports. *Ibid.*, IV 5, Table IV-2

salmon that was previously sold to Japan,¹⁹⁷ and farmed canned salmon recently introduced into the world canned salmon market.¹⁹⁸

From a basic supply and demand standpoint, therefore, the long term economic prognosis does not look good for the Upper Cook Inlet commercial salmon fishery. Harvest ex-vessel values have fallen dramatically in recent years as world market conditions have rapidly changed and UCI commercial salmon permit values are now at an all-time low.¹⁹⁹ Looking forward, there's no indication that the economic position of the fishery will substantially improve. Without a commanding market share of either Alaska or world salmon supply, the fishery has no ability to affect prices for its products. Steadily increasing competition in the world salmon marketplace also does not bode well for future values of the Upper Cook Inlet commercial salmon fishing industry.

As Professor Knapp pointed out in his 2004 Bristol Bay sockeye study:

"Demand for canned sockeye salmon may be gradually declining. In recent years, prices associated with any given pack volume appear to be lower than they were 10-15 years ago. It is likely that the availability of

¹⁹⁷ Knapp, *Projections*, VI 6, "The decline in Japanese demand for frozen sockeye salmon, in response to lower prices of competing farmed salmon, has caused Bristol Bay processors to reduce frozen production and increase canned production."; *Ibid.*, VI 1, "In recent years an increasing share of Bristol Bay sockeye salmon has been canned. In 2002, canned salmon accounted for approximately half of total Bristol Bay production."

¹⁹⁸ *Ibid.*, VI 6, "Another factor that might also have a negative effect on canned sockeye salmon markets in the future is competition from canned farmed salmon. Until recently, very little farmed salmon was canned. However, canned farmed salmon production is increasing, particularly in Chile, as salmon farmers seek new markets in response to falling prices for fresh and frozen farmed salmon. One indicator of growth in canned farmed production is a rapid increase in United States imports of canned farmed salmon from Chile, from 60 metric tons in 2001 to 2961 metric tons in 2003."

¹⁹⁹ *KRSA Executive Summary*, ES 9: "Current values of commercial salmon permits in Cook Inlet are about one-tenth (10%) of the all-time high values in the late 1980's and early 1990's."

new, more convenient consumer products is gradually reducing demand for canned sockeye in traditional markets such as the United Kingdom. This could tend to reduce canned sockeye salmon prices over time.”²⁰⁰

Future economic prospects for other potential UCI product lines appear equally problematic and dim.²⁰¹ Prices for Alaska sockeye fillets and headed and gutted frozen products are driven by the Japanese wholesale market and by farmed fish production – and the prices show signs of decreasing, or remaining flat, rather than increasing in the future.²⁰² As Professor Knapp has noted:

“A second--and more subtle--implication of our review of salmon price theory is that farmed salmon has likely changed the long-term dynamics of salmon markets and prices, including Bristol Bay ex-vessel prices. The long-term average price of (Alaska) salmon is likely to move up or down

²⁰⁰ Knapp, *Projections*, VI 6

²⁰¹ This statement is based on the extensive data that has been cited, which is from the 2004 ISER study. To the extent recent ASMI and other Alaska salmon industry marketing efforts based on sustainability and eco-friendly appeal have succeeded, or may succeed in recapturing market share in the future, economic prospects for the UCI commercial salmon industry may improve. But it is unclear to what degree. For the most recent five year period (2003-2007) UCI wholesale salmon prices have increased 19% over the previous five year period (1998-2002). UCI processor wholesale prices for the most recent five year period averaged \$1.99 lb compared to \$1.62 lb in the preceding five years. The reasons for the increase are unknown, as is whether or not the recent increase in price reflects a permanent trend. Source: ADF&G, COAR 4/1/09, *Wholesale Value of Salmon for Upper and Lower Cook Inlet for the Years 1998-2007*.

²⁰² *Ibid.*, V 18. Prof. Knapp concluded that the implications of developing trends in the Japanese market aren't encouraging for Alaska: “Per capita salmon consumption in Japan is very high relative to the United States and most countries in Europe. Salmon is widely available, and consumers are very familiar with salmon. The Japanese population is projected to stabilize or decline in the future. Thus neither total Japanese salmon demand, nor Japanese demand for wild sockeye salmon, seems likely to grow substantially in the future. One potentially important future trend is a shift in salmon reprocessing from Japan to lower-cost countries. Increasingly, farmed trout are being imported from Chile in fillet form. In addition, a growing share of the fish eaten in Japan are being processed in China (although the share of salmon processed in China remains relatively low). Lower foreign processing costs could tend to reduce Japanese prices for value-added salmon products (such as fillets), which could tend to reduce Japanese wholesale prices for headed and gutted salmon (such as Bristol Bay sockeye) sold to Japanese reproducers. Put differently, any reduction in costs for the salmon which competes with Bristol Bay (Alaska) salmon—including a reduction in costs of reprocessing—could put downward pressure on Japanese wholesale prices.”

with the long-term average price and production costs of competing farmed salmon. In effect, the ability of farmers to expand production at prices above their cost of production is likely to keep long-term average prices for both farmed and wild salmon from rising significantly in the future.”²⁰³

Summary: Policy Implications of Supply and Demand Theory for Upper Cook Inlet Salmon Allocations

Without question, Alaska’s two most valuable renewable resources are tourism and fishing. As one of the world’s last frontiers, Alaska’s tourism potential is unbounded and growing at an exponential rate.²⁰⁴ And as the Northern Economics study pointed out, Alaska’s seafood industry produces over half of all U.S. seafood landings.²⁰⁵ Even when compared to entire nations – Alaska ranks in the top 10 in the world in total seafood production.²⁰⁶ Properly managed, each of those resources will continue to produce tremendous economic yields for the state.

But the relationship of the Upper Cook Inlet salmon fisheries to each of those commodities is substantially different. While salmon sportfishing represents a significant portion of state tourism expenditures, the Upper Cook Inlet commercial harvest represents only 2% of the statewide salmon catch and produces only a small

²⁰³ Knapp, *Projections*, VII 15

²⁰⁴ Between 1993-2007 statewide tourism spending increased from \$653 to \$3.4 billion. The increase is 250% adjusted for inflation (e.g.: \$972 million to 3.4 billion in 2007 dollars). That’s compared to only a 41% general inflationary increase during the same period (based on CPI).

²⁰⁵ Northern Economics Inc., 1

²⁰⁶ *Ibid.*

fraction of Alaska's total harvest value (5%). More significant, the economic value of Cook Inlet commercial harvests have declined 85% from historic highs in the early 1990's – with no indication that the situation will reverse any time soon.

But from a supply and demand standpoint, Alaska has a commodity in wild salmon sportfishing that is truly unique – and thus largely immune to market supply pressures. That's especially true with regard to Cook Inlet, where the waters have been blessed with some of the world's best wild salmon runs – conveniently located at the very doorstep of the state's growing tourism, economic, transportation and population hub. With Cook Inlet, Alaska's ability to "supply" an expanding market with a wild sportfishing experiences with all the comforts of home is almost exclusive – and its value will only increase over time.

In real estate it's generally assumed that the value of a property is equal to its highest and best use. As a matter of policy, Alaska's Constitution requires essentially the same thing – that state resources be managed to achieve "maximum benefit" for Alaskans. In the case of Upper Cook Inlet salmon fisheries, basic supply and demand theory suggests that current allocations may not be achieving that result – and certainly cannot achieve it in the future. Today, 82% of the resource is devoted to a use that produces at most only 17% as much economic impact for the state as other current uses (\$209-\$36.6 million). Looking forward, the basic laws of supply and demand suggest that the potential future economic impacts of each use are diametrically opposed.

In the years ahead the Upper Cook Inlet commercial salmon fishing industry can be expected to generate around \$37 million annually in economic impact for the state. As only a small fraction of Alaska and world salmon supply, the fishery has no ability to affect price and little prospect for future economic growth. Changing world market conditions – particularly the increasing supply of farmed fish products – indicate that price will remain relatively flat. In stark contrast, the Upper Cook Inlet salmon sportfishing industry enjoys a dominant position in a growing niche market. In fact, Alaska's share of worldwide "supply" of that commodity is almost exclusive. In addition, the fishery's close proximity to major Alaska tourist attractions and Alaska's transportation and urban hubs suggests the future economic impact and growth potential of sport uses of Cook Inlet salmon fisheries by both residents and nonresidents is virtually limitless.

That assertion is supported by the fact that the economic impact of sport fisheries is not determined by harvest value (pounds of fish) – but instead by overall participation levels (e.g.: participant spending). To the extent the Cook Inlet sport fisheries are sustainable, well managed and provide a gratifying experience for visitors and residents, use will continue to grow along with population and tourism. So too will the economic benefits to the region and Alaska.

In the past decade alone, proof of that fact has become increasingly visible along the roadways bordering Cook Inlet. Soldotna today bares little resemblance to the small town of just a few years ago and sportfishing related business now dominate the

roadsides from Cooper Landing to Homer. That's anecdotal, but also indicative. Because the "value" a potential buyer places on an Alaska salmon sportfishing experience is intangible, dependent on many factors – some economic and some aesthetic – unlike the inelastic world market value of a pound of salmon. Thus the potential for economic impact from a sport fishery is not limited by the fishery's harvest yield, but by the subjective overall recreational opportunity it represents to a potential buyer. The more unique and gratifying the experience, the higher value the commodity will command. Despite current economic conditions, in the long run that bodes very well for Alaska. As the world becomes more urbanized, the value of a Alaskan wild salmon fishing adventure will only go up.

In addition, because the economic value of sport fisheries are not tied strictly to harvest yields, achieving "maximum benefit" does not require allocation of the entire yield to sport uses. It simply requires managing the fishery for the purpose of maximizing economic benefit "generally." Currently, Cook Inlet salmon fisheries are managed to achieve a very different result. The bulk of the Upper Cook Inlet salmon runs are managed expressly to maximize economic benefit for commercial fishing and 'commercial fishermen.' That narrow policy directive and management approach arguably results in economic inefficiencies that hurt both sectors. And the proof is abundant. Cook Inlet commercial salmon harvest and permit values remain near all-time lows, with roughly 1/3 of the commercial permits not even being fished – despite the fact that 82% of the total harvest is dedicated to commercial fishing. Clearly, current

management practices that utilize the resource at its lowest economic value are not only failing to maximize benefits for Alaska – they are failing to protect the UCI commercial fishing industry.

While a management change designed to maximize “overall economic benefit” for Alaska would result in reallocations to some degree, the process by necessity would also address the core economic problems that have plagued the Upper Cook Inlet commercial salmon fishery for some time. To the extent commercial fishing is necessary to guarantee the sustainability of Cook Inlet salmon runs (to prevent overescapement), or important for maximizing total economic gains from the fishery, the continued viability of the commercial sector would have to be ensured. That might involve buy-backs of some commercial permits to reduce competition and increase profitability and other measures designed to assist the struggling industry.

But the bottom line is that basic supply and demand theory suggests that one use of the Cook Inlet salmon resource has tremendous upside economic potential for Alaska – largely within policy maker’s control – while the other use has virtually no opportunity for future economic growth due to factors beyond its control.

Maximizing Economic Benefit for Alaskans: The Economic Implications of Salmon Allocation Shifts

Combined, the new economic studies and basic economic theory tells us the relative current values and likely future economic growth potential of the two major segments of

the Upper Cook Inlet salmon fisheries. But the data and theories don't tell us whether current allocations are achieving maximum economic benefit – or what combination of future allocations might. It's important to note that while grossly disproportionate, the current allocations are achieving nearly \$1 billion in economic benefit for the region and Alaska. In addition, with the possible exception of Susitna stocks, current management practices also appear to be achieving a reasonable level of yield sustainability.

A key issue in the policy analysis thus has to be whether or not a shift in allocations would actually result in *greater* economic benefit than the current system. A second corollary issue is whether a shift in allocations for that purpose would threaten resource sustainability by allowing too many fish in the rivers.

In his presentation to the Task Force, Prof. Knapp pointed out that allocation of more salmon to the sport/personal use fishery would not necessarily result in proportionately higher economic contributions. Prof. Knapp stated that two of the main reasons are that there's not a "one-to-one tradeoff between commercial and sport harvests," and that reallocation "(wouldn't) give Alaska anglers more money to spend."²⁰⁷ On the former point, there's not a one-to-one tradeoff in commercial and sport harvests. In terms of harvest volume, it's unlikely the sport/personal use sector could ever match the harvest efficiency or sheer volume of catch of the commercial fishing industry. To the extent fewer fish were harvested, there could potentially be some economic loss.

²⁰⁷ Knapp, *Comparison*, 41

At the same time, the intrinsic values of each sector are so fundamentally different that there's not a direct correlation between them in either harvest size or value. Thus an increase in sport allocation might be worth substantially more to Alaska – even if it resulted in fewer fish being harvested overall. To the extent a reallocation resulted in longer sport seasons (mid-late summer sockeye runs), increased bag limits, or a more gratifying overall experience – sport spending would undoubtedly increase. How much is unknown, but given the significantly higher proportionate economic impact from the sport sector already (7-1), it's probable that any meaningful gains in sport fishing opportunity or quality of experience would lead to significant increases in sportfishing participation and spending that would more than offset any loss from reduced commercial harvests. In effect, the reallocation of a tiny fraction of Alaska's total statewide salmon production (less than 1%)²⁰⁸ for the purposes of developing a key sport fishery would produce a disproportionately large economic return.

In addition, while the full economic impact of a reallocation in terms of sportfishing "sales" might not be realized immediately, as will be discussed, increases to allocation for "personal use" would generate significant new economic benefit for Alaskans immediately, as would increases to sport bag limits allowing Alaskans to utilize more of the resource as a food replacement.

²⁰⁸ The total Upper Cook Inlet commercial salmon harvest represents about 2% of the statewide salmon harvest. Thus a reallocation of even 50% in UCI to sport would constitute less than 1% of Alaska's entire statewide commercial salmon harvest.

Without a doubt, over time as word spread about greatly enhanced salmon sport fishing opportunities in Alaska, tourism would increase and so would overall spending on sportfishing by tourists and residents alike. Nonresidents already planning a trip to Alaska for other reasons (i.e.: cruises) might be more inclined to extend trips into Southcentral to experience the fishery and see the nearby attractions of Anchorage. Sportfishing enthusiasts around the globe would also place a high "value" on experiencing a wild Alaskan salmon fishery that was managed specifically with their interests in mind. Thus, implementing a policy change to manage the Cook Inlet salmon fisheries to achieve maximum benefit for Alaska (as opposed to current management designed to benefit "commercial fishing") would likely produce gains in economic impact for the state far in excess of one-to-one (harvest value). Because the Cook Inlet salmon sportfishery is a rare commodity in the world market, its value will only increase in the years ahead. And if we choose to build it – *they will come*.

A larger allocation to sport and personal use would also stimulate greater economic activity within the state. Resident spending would increase as the fishing season would be extended significantly and bag limits increased. The changes would lead to greater resident participation for longer periods of time – and significantly more spending and economic contributions for the Cook Inlet region. The increased spending would also be spread over the entire summer rather than compressed into the "salmon stampedes" currently experienced. That effect of a reallocation would be a significant economic benefit to tourism, hospitality and service related businesses along Cook Inlet.

Moreover, it should be recognized that a policy decision to manage the fishery to achieve maximum benefit would not involve a total reallocation – or anything approaching reallocation proportionate to current resource use (98% sport vs. 2% commercial). To the extent overescapement is a concern, commercial harvests of some level would still be required. Increased allocation for personal use could help maintain maximum escapement thresholds, but commercial harvests would undoubtedly still constitute a significant share of the overall catch. Thus any necessary increase in sport spending required to offset commercial harvest losses would be substantially reduced.

As an example, even a reallocation as large as 50% of the commercial harvest could be offset with an increase of only 8.5% in nonresident sportfish spending.²⁰⁹ In reality it would take less, as the loss of commercial harvest economic value would be offset by increases in *both* resident and nonresident sportfish spending. Thus, a 5% increase in nonresident spending combined with a relatively small increase in resident sportfish spending would likely offset any economic loss that would result from even a major (50%) reduction in the commercial harvest.²¹⁰ While increases in resident spending are

²⁰⁹ 50% of the UCI harvest has a wholesale economic impact value to Alaska of approximately \$18 million. An increase of 8.5% in nonresident Cook Inlet salmon sportfish spending (approx. \$209 in 2007) would generate \$17.8 million.

²¹⁰ For example, in 2007 resident sport anglers spent approximately \$430 million in Cook Inlet salmon fisheries. An increase of only 10% in spending would equal \$43 million in additional sales, or “economic contribution.” Combined with a 5% increase in nonresident sportfish spending (\$10.4 million “economic impact”) that would equal approximately \$53 million in total economic contribution to help offset the loss of the \$18 million currently produced by 50% of the commercial harvest. Given that longer sport seasons and increased bag limits would encourage more fishing trips and spending, it’s reasonable to assume that at least a 10% increase in resident spending would result – especially when you consider that current resident sportfish spending is generated by less than 1/2 of the Cook Inlet population base of potential resource users (134,000 licenses out of 415,000 Cook Inlet population/303,000 adults = 44%). Enhanced sportfishing opportunities would no doubt result in increased resident participation and spending.

economic contributions and not impacts, the spending nonetheless generates significant economic activity. Combined with only marginal increases in nonresident sportfish spending (i.e.: 5%) such increases would offset or exceed the economic impact of even a *major* allocative shift.

Additional Economic Considerations: The Economic Benefits of Personal Use and Sport Harvests to Alaskan Families

The Task Force heard arguments that increasing allocations to sport and personal use wouldn't create additional "economic impact" for Alaska because it wouldn't give Alaskans more money to spend.²¹¹ While true, that interpretation fails to acknowledge the significant overall economic benefit derived from those types of fisheries. To the extent that fish and game resources can be utilized as food replacements, they clearly create the equivalent of wealth in the economy and generate economic benefit for Alaska. Similar to a moose in the freezer, a winter's supply of salmon would allow Alaskans to use their paychecks and "money" for something other than food. As has been noted:

"Noncommercial fishing and hunting figure prominently in the economy and social welfare of many Alaskan communities. Even so, it's a relatively hidden component of Alaska's economy, unmeasured in the state's indices of economic growth or social welfare and neglected in the state's economic development policy. The state has never estimated the amounts of wild fish and game produced and utilized each year in Alaskan communities, though these harvests are of significant economic value.

²¹¹ Knapp, *Comparison*, 41

These wild foods and materials, if absent, would have to be replaced by imported substitutes at some economic and social cost."²¹²

Further, the economic benefit of a salmon harvested by an Alaskan for personal use is essentially the retail value of the fish. The harvester is in effect the consumer. The economic benefit is the retail price the consumer would have paid for that salmon – or minimally – the price they would have paid to feed their family something else for dinner. Thus, the money Alaskans would save by eating salmon instead of hamburger, steak or chicken could be used for other purposes. Increased allocations for personal use and sport fisheries (i.e. higher bag limits) would extend the purchasing power of Alaskan consumers, and the percentage of their paychecks that would have otherwise been spent on groceries could be used for something else.

With retail prices for sockeye salmon averaging between \$6.99 and \$11.99 per pound and chicken and beef products ranging from \$3 to \$11 per pound, the annual economic benefit that could be derived from increases to Upper Cook Inlet personal use allocations for Alaskans would be significant. Further, on a one-to-one harvest basis, the potential economic contributions of personal use allocations would also likely exceed by a wide margin the economic contributions currently produced for the economy by commercial

²¹² Wolf, Robert and Walker, Robert, *Subsistence Economies in Alaska: Productivity, Geography, and Development Impacts*, Arctic Anthropology, Vol. 24, No. 2, 1987, 1

harvests.²¹³ The exact extent to which they might be is unknown, but likely capable of being quantified.

VI. Options to Reduce Allocative Conflict in Cook Inlet: Applicability of the Alaska Limited Entry Act Buy-Back Program

SCR 21 charged the Task Force with investigating the legal and constitutional ramifications of using the commercial fishing permit buy-back program authorized by the Alaska Limited Entry Act²¹⁴ to reduce allocative conflict in Cook Inlet salmon fisheries. To comply, the Task Force requested a report by Commissioner Bruce Twomley²¹⁵ of the Alaska Commercial Fisheries Entry Commission (CFEC). Commissioner Twomley's 14 page written report to the Task Force has been included in full in the appendix of this report.

In essence, Commissioner Twomley advised the Task Force that a buy-back of Cook Inlet commercial fishing permits (driftnet and setnet) is an option that could be used providing the purpose for doing so was consistent with specific statutory guidelines and established legal precedent. Twomley cautioned, however, that even if the purpose satisfied legal requirements, the procedural aspects of implementing a buy-back are complex,

²¹³ According to Prof. Knapp, the total sales of an industry are used to determine both its economic impact and economic contribution. In the case of commercial fishing, total sales are represented by the first wholesale value of the product (processor price). In the most recent ten year period, the average wholesale value of a pound of sockeye salmon was \$2.30 lb. Thus, compared to even the price of a pound of hamburger (\$3.19 lb) it appears that personal use allocations would generate a significantly higher economic contribution. Knapp, *Comparison*, 24

²¹⁴ AS 16.43.010 – AS 16.43.990

²¹⁵ Commissioner Twomley was first appointed to the CFEC in 1982 by Governor Hammond. Since that time, he has frequently reported on the buy-back program to the legislature and BOF. Additionally, Commissioner Twomley is the principle author of the only CFEC optimum number decision upheld by the Alaska Supreme Court in *Simpson v. State*, CFEC, 101 P.3d 605 (Alaska 2004).

cumbersome and problematic with regard to Cook Inlet salmon fisheries. Twomley's report on each of those aspects of a buy-back program is summarized below.

Constitutional and Statutory Framework

Twomley stated that "the function of a voluntary buy-back program under the Limited Entry Act is to reduce the number of limited entry permits in a commercial fishery to a number considered optimum for the fishery's long-term benefit."²¹⁶ From a Constitutional standpoint, a buy-back program would have to be consistent with Article VIII, Section 15 which specifically authorizes the State to limit entry into any fishery for purposes including "to prevent economic distress among fishermen and those dependent upon them for a livelihood."

As Twomley noted, the remedy should be used with caution as it raises serious Constitutional issues. "A limited entry program should impinge on the open-to-entry principles of the Constitution as little as possible. In the event a fishery does become too exclusive, the commission is required to put more permits back into the fishery."²¹⁷ He added that to attempt to ensure the constitutionality of a buy-back program, CFEC would first have to perform an "optimum number study" to determine the optimum number of permits for the fishery.²¹⁸ For Cook Inlet, he indicated CFEC would need at least a year and one-half to perform such a study. Even then, the program could ultimately be

²¹⁶ Twomley, 4; AS 16.43.290 – 16.43.330

²¹⁷ Twomley, 5

²¹⁸ As required by AS 16.43.290 and articulated in *Johns v. CFEC*, 758 P.2d 1256, 1266 (Alaska 1988)

overturned by a court if the court determined the fishery had become too exclusive as a result of the buy-backs.²¹⁹

Twomley summarized the statutory²²⁰ requirements of a buy-back program as follows:

“The statutory purposes that must be served by a buy-back program are to produce a well conserved, economically healthy fishery with a sufficient number of participants to protect the reliance interests of those dependent on the fishery. The statutory purposes also suggest a long-term commitment to the well-being of the fishery and its participants.”²²¹

Procedural Considerations of a Buy-Back: The Cook Inlet Regulatory Environment

As noted, Twomley stressed that any buy-back program under the Limited Entry Act is a “cumbersome and issue-laden remedy.”²²² There are a number of legal and procedural hurdles to clear that require some time and careful analysis. In the case of Cook Inlet salmon fisheries, he indicated the procedural aspects of a buy-back program could be even more daunting. He noted that CFEC has never performed an optimum number study for a set net fishery and that doing so could be “problematic” because of the way set net fisheries record harvest data.²²³ In addition, he characterized regulatory treatment of Cook Inlet salmon fisheries as “a moving target” that makes performing an optimum number analysis very difficult.²²⁴ In determining the optimum numbers of permits for a fishery, CFEC gathers data to create models that attempt to anticipate the effects of

²¹⁹ Twomley, 5

²²⁰ AS 16.43.290

²²¹ Twomley, 7

²²² *Ibid.*

²²³ *Ibid.*, 6

²²⁴ *Ibid.*

known variables that respond to natural and market conditions. But frequent Cook Inlet regulatory changes and commercial restrictions artificially reduce harvest volume and make predicting price very difficult.²²⁵ As Twomley noted, "projecting the effects of this variable (regulatory intervention) into the future would be very difficult and could undermine the utility of an optimum number study."²²⁶

Another procedural hurdle would be funding the buy-back program. Under the Limited Entry Act buy-back programs are entirely voluntary²²⁷ and funded through assessments on remaining permit holders of up to 7% of their gross earnings.²²⁸ Twomley pointed out that statute does not provide an automatic funding mechanism for buy-backs and a state investment in the form of a loan would be required to front-load the program. The loan could then be repaid over time by assessments on remaining permit holders. Twomley believes that without a state loan to frontload the buy-back, a program would attract little support from permit holders.²²⁹

Private Alternative: Twomley also informed the Task Force that the Limited Entry Act also provides a less cumbersome private alternative to a formal buy-back program. AS 16.43.150(i) allows any permit holder to voluntarily relinquish their permit back to the state; and allows anyone to pay a permit holder for doing so. Twomley noted that only

²²⁵ *Ibid.*

²²⁶ *Ibid.*

²²⁷ AS 16.43.300(b)

²²⁸ AS 16.43.310(b); Twomley, 5, "However, actually imposing a tax on permit holders already suffering from economic pressure would be difficult unless a referendum of the affected fishermen supported the measure. By analogy, the legislature required a favorable vote by 2/3's of all permit holders before a salmon fishery association could institute an assessment for the purpose of fleet consolidation (AS 43.76.230)."

²²⁹ Twomley, 6

buy-back program undertaken in the State so far utilized that statutory vehicle recently to retire 35 permits from the Southeast salmon purse seine fishery.²³⁰ He cautioned, however, that even that approach is subject to the same Constitutional exclusivity issue.²³¹

Analysis: The Constitutional and Procedural Implications of a Cook Inlet Buy-Back Program

Constitutional/Statutory Analysis: It seems highly unlikely that a voluntary buy-back program implemented for Upper Cook Inlet would be overturned by a court on constitutional or statutory grounds. To the contrary, a strong legal argument can be made that application of Article VIII, Section 15 and AS 16.43.290-300 to the facts and economic circumstances existing in the UCI commercial salmon fishery suggest there is an expectation – if not statutory *obligation* – that the Limited Entry Commission take action to reduce the number of permits to assist struggling commercial fishermen. That argument is valid, regardless of whether a reallocation occurs.

From a Constitutional standpoint, it's clear that the framer's intended that Alaska should benefit to the fullest extent possible from the ongoing development and utilization of its resources. The Constitution states that natural resources are reserved for the "common use" and should be utilized to the fullest extent possible consistent with the public interest

²³⁰ *Ibid.*, 7

²³¹ *Ibid.*, Constitution, Art. VIII, Sec. 15

to achieve maximum benefit for Alaska.²³² With regard to fisheries specifically, strong Constitutional provisions were included to prevent a recurrence of the abuse that occurred during Territorial days when Alaska's salmon fisheries were monopolized by a few Outside processors who nearly destroyed the resource. Thus Art. VIII, Section 15 makes it clear that there can be "no exclusive right or special privilege of fishery." The *only* exceptions to that policy are where limited entry is necessary to conserve the resource; prevent economic distress to fishermen; or promote aquaculture.²³³

Applying those Constitutional principles to an Upper Cook Inlet buy-back program, it's inconceivable that a court would overturn a legislative effort designed to rebalance the fishery by reducing commercial permits in order to increase overall public utilization and benefit derived from the resource. Those are the very goals frequently articulated in the Constitution. The framers clearly understood that the process of maximizing resource use and benefit would involve tradeoffs between potential beneficial users – and require ongoing policy decisions by the legislature. In fact, the Constitution expressly requires the legislature to take an active role in managing state resources. Article VIII, Section 2 dictates: "The legislature *shall* provide for the utilization, *development*, and conservation of all natural resources . . . for the *maximum benefit of its people*" (emphasis added).

²³² *Ibid.*, Secs. 1,2 3. Article VIII is replete with pro-development, inclusive phrases. For example, Sec. 1, Statement of Policy: "It is the policy of the State to encourage . . . the development of its resource by making them available for *maximum use* consistent with the *public interest*;" Sec. 2: "The legislature *shall* provide for the utilization, *development* and conservation of all natural resources . . . for the *maximum benefit of its people*;" Sec. 3: "Fish . . . are reserved to the people for *common use*." (all emphasis added)

²³³ *Ibid.*, Sec. 15

Given that mandate and separation of powers doctrine generally, it seems unlikely that a court would usurp the Constitutional legislative prerogative to make such policy decisions.

Moreover, Article VIII, Section 15 of the Constitution expressly authorizes a buy-back in the present situation for two reasons. First, it allows limiting entry to "prevent economic distress among fishermen and those dependent upon them for a livelihood." Second, it also allows restricting entry to a fishery for the purposes of conserving of the resource. A Cook Inlet buy-back program could be justified on each of those grounds.

Undeniably, the situation in the Upper Cook Inlet commercial salmon fishery has created economic distress among fishermen. The fishery is seven times more crowded than other Alaskan salmon fisheries based on the ratio of permits issued to poundage caught.²³⁴ Increased farmed fish production and other dramatic changes in world markets have caused harvest and permit values to plummet, and they are now only a fraction of what they were just a few decades ago.²³⁵ As a result, about 1/3 of Upper Cook Inlet

²³⁴ In Cook Inlet 25 commercial salmon permits are fished for every 100,000 pounds of fish harvested, compared to 3 permits fished to harvest the same amount in other Alaskan salmon fisheries. Source: *KRSA Executive Summary*, ES 6, "Comparison of Upper Cook Inlet percentages of commercial salmon caught and permits fished statewide indicate that commercial salmon fishing effort is disproportionately concentrated in Upper Cook Inlet."

²³⁵ *KRSA Executive Summary*, ES 9: "Current values of commercial salmon permits in Cook Inlet are about one-tenth (10%) of the all-time high values in the late 1980's and early 1990's." Ex-vessel harvest values average around \$16.3 million. That figure represents a steep decline in harvest values equaling only 15% of the highest historic annual values for UCI salmon harvests, which averaged \$108 in value per year during 1986-1992. For current Cook Inlet commercial drift and setnet harvest and permit values and values during 1998-2007, see Twomley, Attachments A-B

salmon permits are not even being fished.²³⁶ And all of those negative economic conditions exist despite the fact that the UCI commercial fishing industry is allocated 82% of the salmon resource. Thus, even without a reallocation, a strong argument can be made that a Cook Inlet buy-back program is justified and necessary.

The argument that because of Section 15 you could not buy-back permits because it would make the fishery too "exclusive" is a narrow interpretation/circular logic and misses the Constitutional forest for the trees.

Harvest ratio 7 times the statewide average (24-100,000 pounds v. 3 per statewide)

Allocations way out of whack, maximum benefit or utilization not being achieved.

This analysis is also strongly supported by statute. Section 16.43.300(b) . . .

Procedural: Begs the question, if the statute is so flawed and has never been used, why has it never been changed? Clearly the Constitutional mandate is not being fulfilled and those dependent on fishing for a livelihood are suffering as a result.

Chicken and egg. You can't reduce the permits because it will make the fishery too exclusive. But the fishery is already too exclusive and the only way you can correct it is

²³⁶ In 2007, only 900 commercial permits were fished out of 1309 issued for Upper Cook Inlet. Source: Twomley, Attachments A 1, B 1

by reducing the permits (to expand overall participation). A reallocation of the resource forces the issue. Article 15 and AS 16.43.300(b) are then mandated to protect the fishermen, who have been miserably failed by the current system. The system is broke – and that's one way to fix it. Right now 1/3 of Cook Inlet permits are not even fished. Thus the fishery is on its own is becoming “more” exclusive. In time, the number of fished permits will dwindle even further – until the fishery finds a natural balance. But that Darwinian approach provides NO protection for current permit holders and their families who are struggling to stay afloat. Limited Entry and the buy-back program is the lifeboat the Constitution provided for fishing families when economic conditions threaten their survival. But in Cook Inlet, nothing whatsoever is being done to help them. The situation in the fishery arguably already violates the Constitution for both being “too exclusive” and for not taking steps to ensure the continued viability of an “optimum number” of commercial permit holders. That optimum level can only be established by analysis of all Constitutional and statutory requirements governing utilization of the resource. Not just the number of commercial fishing users. Once the overall resource use-benefit analysis has been completed, the buy-back program is a necessary tool to implement desired policy changes while protecting those traditionally reliant on the resource. To not use it is inexcusable – and leaves fishing families adrift in stormy economic seas over which they have no control.

In light of current grossly disproportionate salmon allocations in Cook Inlet, with 82% of the resource allocated to less than 3% of the users, it's hard to imagine That's especially

true when one considers the equally disproportionate economic benefit currently being generated by the two segments of the fishery (\$630 million sport - \$31 commercial). Further, without exception, analysis of each of the allocative statutory guidelines listed in AS 16.05.251(e) also suggests that current Cook Inlet salmon allocations are not achieving "maximum benefit" for Alaska – in large part because the current "use" of the resource has become too exclusive given significant demographic changes in the region.

Thus a strong legal argument can be made that current allocations already run afoul of Article VIII, Section 15 itself, which establishes first and foremost that "No exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State." Section 15 qualifies that clear prohibition only to the extent it authorizes the State to "limit entry" into a fishery for only the following three specific purposes: 1) to conserve the resource; 2) to prevent economic distress among fishermen; or 3) to promote aquaculture. Those are the *only* exceptions to the strong Constitutional prohibition against in Section 15 against