

State of Alaska Comments – Pebble Project Preliminary Draft EIS, Section 3.6 Commercial and Recreational Fisheries

Agency	Comment No.	Section, Paragraph, and Page #	Cooperating Agency Comment (and Purpose of Comment)	Proposed Resolution (Additions or Deletion of Text)	Response
ADF&G/ Wildlife/ Refuges		Table K3.6-1:	"Sources: Sigurdsson and Powers 2012; Sigurdsson and Powers 2013; Sigurdsson and Powers 2014; Powers and Sigurdsson, 2016." Source noted at bottom of Table not included in References Chapter 9.	Provide citation/references.	Reference has been added to Chapter 9, References.
ADF&G/ Comm. Fish/Ho mer		3.6.1.1	The DEIS presents data on the price of Bristol Bay sockeye compared to other fisheries. While the reasons given are mostly factual they only reflect the past and current market pressures and the trends in how the fish are processed.	Historic average prices should be be adjusted to reflect present day values.	Prices per pound have been shown in real terms where appropriate. Bristol Bay processing has shifted in product form over the last decade from primarily canned to a fishery which balances market demand for frozen H&G and canned products. These changes in product form are reflected in prices shown in the document.
ADF&G/ Comm. Fish/Ho mer		3.6.3.1	No mention of the Cook Inlet communities that benefit from sport fisheries, particularly as it relates to charter vessel businesses and tourism, as well as sport harvests that are important food source of Alaskan residents that put up fish for freezing and canning in these communities as well as Anchorage.	Include information on economic benefit to livelihood of residents and visitors to the Kenai Peninsula who fish in Cook Inlet.	Added new saltwater recreational section.
ADF&G/ Wildlife/ Refuges		Sec 3.6.3	The EIS incorrectly estimates and reports on the sportfishing use and importance of streams on the west side of lower Cook Inlet; significantly underestimating the use and importance of sport fisheries in the project area. The SWHS data is based on user responses which may under report actual use. For instance they note the Kamishak River has only 276 average annual use days and only 1 mention in 20 years of SWHS data (Table 3.6-16); and no streams of importance in area N (Table 3.6-17). ADF&G McNeil River Sanctuary data reporting and Alaska Guide Logbook Program reporting clearly show that this system is used annually (particularly for guided fishing) and from 2006 - 2016 sport fish guides made about 111 trips (mean 93.6 MRSGS data, 128.6 SF Guide data) per year (about a 3 month season) to these Kamishak streams. Spending an average of 340 angler days (334 and 346 respectively). Angling an annual average of 4,358 fish of four species, with a harvest average of 489 fish, primarily Coho salmon. Even the EIS Appendix K3.6 notes that the Kamishak River has an average of 8 companies, 133 trips per annum, and 356 user or client days. As such Table 3.6-17 should reflect the Kamishak River, as well as, others in Area N that may have sport fishing value.	Consider all data sources and accurately report on sportfishing use and importance in all project areas.	Changed text and table, and added Kamishak.
ADF&G/ Sport		Sec 3.6.3	The sport fisheries at the eastern terminus of the pipeline and along the pipeline corridor in Cook Inlet salt waters are not	The Lower Cook Inlet Sport Fish Management Area supports roughly 10% of the total sport	Added additional recreation data in new saltwater recreational section.

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Fish			accurately represented and there should be a complete discussion for these fisheries.	fishing effort in AK. Most of that effort is focused on salt water opportunities including halibut, nearshore Chinook salmon, and intertidal razor clams. All three of these fisheries may be impacted with the proposed activities. Halibut fisherman routinely anchor and fish on the bottom along the pipeline corridor.	
ADF&G/Comm. Fish/Homer		3.6.3	No mention of recreational marine fisheries including Pacific halibut, multiple groundfish species, and Tanner crab, along with the potential for additional shellfish species if populations were to recover.	Include information on sport fisheries for halibut, groundfish, and Tanner crab, which are an important resource for the communities of Cook Inlet.	Added data suggested.
ADF&G/Comm. Fish/Homer		3.6.2	The following statement " Federal management areas are much larger than state management areas; thus, fishermen have greater flexibility to avoid fixed assets such as buried pipelines and undersea cables. For example, the statement, "halibut fishermen holding halibut quota for International Pacific Halibut Commission 3.6-23Area 3A, which includes Cook Inlet, can fish anywhere in the 3A managed area." implies that a takings is ok. Many halibut IFQ holders are small boat fishermen that salmon fish in the summer. To assume a small boat fishermen can go anywhere in 3A in the fall and winter months is not realistic. The loss of fishing opportunity is also cumulative, as this would not represent the first displacement of the fishing industry in the area.	The EIS should not determine what the value of one resource is over another. The EIS should instead state what the possible losses would be to existing activities should the development go forward. Delete quoted text and referenced map and replace with a statement that there would be a loss of fishing opportunity if these activities proceeded. Provide a surveyed map of the pipeline installation and state what if any buffer would be required for on bottom fishing gear and vessel anchoring to avoid conflict with the pipeline.	Adjusted text accordingly. No map was developed.
ADF&G/Comm. Fish/Homer		3.6	Two paragraphs referencing groundfish and halibut are poorly organized and include inaccuracies, such as "Limited fishing occurs near the pipeline's western terminus" (not true for halibut fishery), inaccurate summarization of management of the commercial halibut fishery, and minimizing the amount of harvest that occurs in the area of the proposed pipeline. Scoping comments provided by ADF&G previously summarized these fisheries.	Revise text to include the following information: The Pacific cod fishery is the largest commercial groundfish fishery in the Cook Inlet Area with about half of the total harvest occurring in the Cook Inlet District (waters of Cook Inlet north of a line from Cape Douglas to Point Adam). For combined federal and state waters of the Cook Inlet District over the recent 20 years, annual Pacific cod harvest has averaged ~2.7 million lb with a high of ~4.4 million lb, about 40% of which typically occurs in the federal waters between Kamishak and Kachemak Bays. The exvessel value of the fishery in the Cook Inlet District in 2017 was just under \$1 million with 37 vessels harvesting Pacific cod. The federally managed commercial Pacific halibut fishery in the Cook Inlet District had an average annual harvest of ~437,000 lb of halibut over the recent 10 years, with 66% of that harvest occurring in the federal waters between Kamishak and Kachemak Bays. In 2017, 42 vessels participated in the halibut fishery. Other commercially important species harvested in the	Added text and revised as suggested.

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				Cook Inlet District include lingcod, rockfish, sablefish, walleye pollock, spiny dogfish, and skate species.	
ADF&G/ Comm. Fish/Ho mer		3.6.2	Description of LCI groundfish species targeted in commercial fisheries in state waters should include lingcod and non-targeted commercial harvest should include octopus. Also, the paragraph focusing on groundfish fisheries uses generic "Rockfish" as opposed to listing the various species of rockfish harvested.	Add lingcod and octopus to the list of species commercially harvested in state marine waters of Lower Cook Inlet. Also, list rockfish by species rather than lumping them under "rockfish".	Added information on lingcod, octopus, and rockfish including noting which rockfish species within the rockfish complex are taken by fisherymen.
ADF&G/ Comm. Fish/Ho mer		3.6.2	There is no mention of Tanner crab, red king crab, or weathervane scallop fisheries. Though crab fisheries are currently closed due to low stock abundance (due to funding cuts, no surveys are conducted in Kamishak Bay so the population status is currently unknown) these used to be very valuable fisheries. There is a commercial weathervane scallop fishery within the pipeline corridor. Development could result is a direct loss of fishing opportunity since the dredge gear is hard on bottom. These suggestions were previously included in ADF&G's scoping comments.	Revise section to include additional fisheries and provide historical harvest levels and the potential to impact stocks that are currently closed to fishing, but could be opened in the future.	Revised information on weathervane scallops including a discussion on harvest amounts, the difference between the beds, and historic harvest effort.
ADF&G/ Habitat/ SPCS		Sec. 3.6.2	Section only addresses current salmon, herring and ground fisheries near the proposed pipeline but does not describe current scallop and historic crab fisheries that are temporarily closed due to low abundance.	Include current scallop and historic crab fisheries near the proposed pipeline that are temporarily closed due to low abundance.	Added LCI shellfish data
ADF&G/ Wildlife/ Refuges		Table 3.6-17	"Sources: Sigurdsson and Powers 2012; Sigurdsson and Powers 2013; Sigurdsson and Powers 2014; Powers and Sigurdsson, 2016." Source noted at bottom of Table not included in References Chapter 9.	Provide citation/references	Reference incorporated into Chapter 9, References.
ADF&G/ Sport Fish		Sec 3.6.3	Guided angler-days for the Newhalen do not appear to be correct. The 2012-2016 average should be 288 not "fewer than 200".	Review and update the data and text for this section.	We were not given access to the 2015 and 2016 logbook data and were referred to published reports which only went through 2014. The average for 2011-2014 is 174.
ADF&G/ Wildlife/ Refuges		Sec 3.6.3	"Angler effort is concentrated north of the project area for all the named sites, with the exception of the Kamishak River located north of Tuxedni Bay. The Kamishak River, which appears once as a named site in 20 years' worth of data, is located south of the project area near the McNeil River State Game Sanctuary and roughly 25 to 30 air miles from the potential Amakdedori port site (see Table 3.6-16)." Descriptions are incorrect and in conflict with one another. The Kamishak River is well south of Tuxedni Bay, and only 18 miles south of the Amakdedori site. Tuxedni Bay is approximately 80 miles northeast of the Amakdedori site and	Correct geographical errors in descriptions and accurately report on sportfishing use and importance in all project areas.	Sentence corrected

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			<p>about 96 miles north of the Kamishak River.</p> <p>As noted above the SWHS does not accurately depict all sportfishing in the project area. There are significant resources in the vicinity of the Amakdedori port site that are not being identified and represented in the EIS</p>		
ADF&G/ Comm. Fish/Ho mer		3.6.2	<p>Statement that "halibut fishermen...can fish anywhere in the 3A managed area" is an opinion that does not take into account travel time, weather, location of halibut resource, home port of fishermen, vessel size limiting ability to fish offshore, fuel costs being cost prohibitive to long trips for some fishermen, etc. Also, stating that "fishermen have...flexibility to avoid... pipelines and... cables" is minimizing the potential impact and gear impacts as well as making assumptions about fisheries and resources without providing facts to back up these statements.</p>	<p>The DEIS should refrain from irresponsible opinions implying that it doesn't matter if the resource is adversely affected in that area or if the project might displace fishermen. The document should maintain professional integrity and provide information on current fishing practices and potential impacts from the project.</p>	<p>Respectfully disagree. The impacts in this paragraph have been moved to Section 4.6 and were not changed.</p>
ADF&G/ Comm. Fish/Ho mer		3.6.2	<p>Commercial shellfish fisheries are completely omitted from this chapter. Extensive comments on shellfish fisheries in Cook Inlet that could be impacted by the proposed pipeline were provided in scoping comments. In particular, the weathervane scallop fishery and the scallop resource (bed) would be impacted, and there exists the potential for gear conflicts from scallop dredge interaction with the pipeline.</p>	<p>Revise text to include the following information: Weathervane scallops are found throughout the Kamishak Bay District and commercial harvest of this resource began in 1983. The fished component of the population is aggregated in two areas, or scallop beds, located east (North bed) and southeast (South bed) of Augustine Island in depths ranging from 30 to 90 m. Population biomass of whole scallops estimated from ADF&G dredge surveys conducted since 1996 has averaged ~5.7 million lbs. in the North bed and ~2.5 million lbs. in the South bed peaking at ~12.9 million lbs. in the North bed and ~6.8 million in the South bed. This biomass has supported a commercial fishery of up to 5 vessels harvesting ~28,000 lbs. of shucked scallop meats. Commercial harvest of Tanner crab in Kamishak Bay began in the mid-1960s but has been closed since 1991 due to low stock abundance. Harvest over this period for the Kamishak Bay and Barren Islands districts averaged ~1.6 million lb to over 4.6 million lb. Although the commercial fishery is currently closed, the noncommercial fishery was reopened to harvest in 2017 after being closed since 2012 due to low stock abundance. A commercial red king crab fishery occurred in the Kamishak Bay and Barren Islands districts from 1960 until 1984 when it was closed due to low stock abundance. Harvest over this period averaged ~2 million lb of king crab and peaked</p>	<p>Additional information on these resources was added.</p>

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				at ~5.5 million lb. The current population status of king crab in Kamishak Bay is unknown due to lack of assessment data, although it is considered a depressed stock. An active commercial razor clam fishery occurs around Polly Creek in Upper Cook Inlet, where the average annual harvest over the past 10 years was 314,000 lbs (in the shell). Other commercially important crab and shellfish species occur in Kamishak Bay including Dungeness crab, red sea cucumber, octopus, and many species of Pandalid shrimp.	

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ADF&G/Comm. Fish/Homer		4.6.4.1	Same comment as above. Also, under 4.6.4 intro, again states the transportation corridor would not be expected to affect long-term fish populations - need data to understand how this is concluded.	Include data to substantiate claim that there would be no measurable effect from Alternative 3. See above comments for Diamond Point Port site.	Section is consistent with Section 4.24, Fish Values.
ADF&G/Comm. Fish/Homer		4.6.2.1	The statement "This section relies on Section 4.24, Fish Values, which estimates that Alternative 1 would not reduce returning adult salmon to the Kvichak and Nushagak river systems as a result of project operations." ignores any potential for accidents. The same applies for cascading impacts that would be felt in the Fish Processing Sector and Fishery Fiscal Contributions.	As stated before: the DEIS does not include risk assessments with probabilities for accidents. It instead assumes that everything will go as planned during all phases of the project over decades and hundreds of years. It is imperative that the DEIS contain likelihoods throughout the document. There are a multitude of points along the way from the pit to the transfer of material to ships where potential accidents can occur both large and small. These can in turn have both large or small potential impacts on the commercial and recreational fisheries. They should be addressed in the DEIS.	Accidents are addressed in the spills section, and a reference to that section was added.
ADF&G/Comm. Fish/Bristol Bay		4.6.2.1	"This section relies on Section 4.24, Fish Values, which estimates that Alternative 1 would not reduce returning adult salmon to the Kvichak and Nushagak river systems as a result of project operations." However, Section 4.24 describes loss of anadromous habitat; potential for direct mortality from construction work at stream crossings; reduced production of spawning habitat from increased sedimentation; and increased metal concentrations due to fugitive dust deposition. While these impacts may seem small, they lead us to conclude that the project could potentially result in reduced returns of adult salmon to the Kvichak and Nushagak River systems.	Reconcile discrepancy or provide supporting information for the conclusion reached for Alternative 1 (i.e., would not reduce returning adult salmon to the Kvichak and Nushagak river systems).	Section is consistent with Section 4.24, Fish Values.
ADF&G/Comm. Fish/Homer		4.6.2.2	Same issue as with previous comment. Again, it is suggested that fishermen and all the businesses that support them, can just move to other areas. If the Pebble development forces them to move to another area, and then the other exploration and development projects that are listed in the RFFAs do the same, the options for fishing get more and more reduced and the "takings" becomes much larger.	The reduction in fishing opportunities needs to be quantified in this section. Maps needs to be included for all potential exploration and developments identified in the RFFA. This analysis should include survey data from fishermen, lodges, and outfitters, to obtain a realistic estimate of the river miles of alternative fishing areas and what percentage the loss of river miles makes up of the total. The survey should include the proposed Pebble project area and all applicable RFFAs.	Section is consistent with Section 4.24, Fish Values.
ADF&G/Sport Fish		Sec 4.6	Cook Inlet salt waters are not included in the table. These waters are an important migratory corridor for both smolt and returning adult salmon.	Include Cook Inlet commercial and sport fisheries.	Cook Inlet added to the table.
ADF&G/Comm.		4.6.5	Table 4.6.1 includes references to impacts to commercial fisheries that could be associated with	Include potential impacts to the purse seine (salmon and herring) fisheries in Lower Cook Inlet that may	Information added to this table.

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Fish/Ho mer			varoius project components. The Pipeline route section of the table suggests there will be no conflicts with commercial fisheries, regardless of the route selected, because the salmon fishery occurs in the top 30 feet of the water column. That may be true for drift gillnet gear in UCI, but not seine gear in LCI, which can contact the bottom in depths <95'. It also states that on-bottom groundfish fisheries (e.g., longline, pot, scallop dredge) can avoid conflicts by not setting gear near the pipeline. However, the applicant has not conducted baseline studies to characterize the shellfish/groundfish resources that are present along the proposed gasline route(s). It is therefore difficult to effectively judge the potential impact to these resources or the users who target them.	occur from the pipeline. Recommend applicant include baseline studies necessary to characterize shellfish/groundfish resources along the pipeline routes so agencies can effectively evaluate potential impacts to those resources or users. Specify why LCI commercial fisheries in the Amakdedori area, as well as Iliamna and Iniskin bays will not be impacted if this project is developed.	
ADF&G/ Comm. Fish/Ho mer		4.6.5	Broad statement on alternatives not expected to result in a long-term change - seems unlikely there would be no impact.	DEIS needs to provide data to back up these claims - there are a lot of potential environmental impacts from the project and many are detailed here and in other staff's comments - DEIS is ignoring the likelihood of incidents that could include (but not limited to) fuel spills, vessel accidents, pipeline damage, or containment breach in addition to interactions stated in previous comments here.	See Section 4.27, Spill Risk. This section focuses on operations.
ADF&G/ Comm. Fish/Ho mer		4.6.4.1	The Commercial Fishing section here states that "The Diamond Point port site is not located hear substantial commercial fishery resources". That is not accurate. Cottonwood creek is adjacent to Diamond Point and it is a significant producer of chum salmon (Esc Goal is 5,200-12,200). While harvest of this stock does not occur every year, it is significant in some years (e.g., over 160,000 chum salmon were harvested from this subdistrict in 2004; see Hammarstrom and Ford 2008, Appendix A22). Also, when the Kamishak sac roe herring fishery was active, harvests did occur in this area and may again when the stock recovers and the fishery reopens.	Include assessment of impacts to the sac roe herring fishery and the purse seine fishery targeting chum salmon returning to Cottonwood Creek. The location of the Diamond Point quarry was a concern for area fisherman at the time it was permitted because seiners targetting Cottonwood chums fish Diamond Point at certain stages of the tide. Operation of a major port at this location would at least disrupt if not preclude seining activity in this general area, and especially at Diamond Point. This comment/action also applies to Table 4.6.1 where it references effects to commercial fisheries for the Diamond Point port site alternatives.	The information requested has been added.
ADF&G/ Comm. Fish/Ho mer		Table 4.6-1	Table does not fully address potential impacts to commercial and recreational fisheries from the port site and pipeline route.	Similar comments as previously mentioned to address potential impacts from these two aspects of the project, particularly the scallop resource for the pipeline route in alternative 1 and the fact that the row is combined is not differentiating this effect. Groundfish fishermen needing to adjust their gear and having flexibility again minimizes impact. All Cook Inlet shellfish fisheries are again omitted - in	Addressed by adding text and deleting text.

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				addition to scallops, should include razor clam fishery, and impact to recovery of Tanner crab resource as potential impacts. Discussion in text should be consistent throughout document in regards to potential impacts. It is a broad statement to say "Cook Inlet and Anchor River fishing opportunities should be unaffected" under Alternative 3 Pipeline Route for recreational fisheries. Need data to substantiate claims.	
ADF&G/Comm. Fish/Ho mer		4.6.3 & 4.6.4	Alternatives 2 and 3 and summary table (Table 4.6-1) do not reflect needed comments made above. Nor do they address risk, likelihood, and probabilities of impacts from accidents	Alternatives 2 and 3 and the summary table need to be updated with regard to comments above.	The table was updated to incorporate this information.
ADF&G/Comm. Fish/Ho mer		4.6.3.1	This statement is inaccurate: "The Diamond Point port site is not located near substantial commercial fishery resources. " Additionally, there is no mention of Amakdedori harvests (see comment below). At right are the annual pink and chum harvest numbers from 1986-2017. These numbers are substantial and significant to Alaskan commercial fishermen.	Include numbers of chum and pink salmon commercially harvested from Iliamna and Iniskin Bays by year. year chum pink 1986 8,830 159 1987 9,695 246 1988 39,240 1,335 1991 1,031 1992 208 8 2002 17,036 146 2003 29,679 2004 161,887 6,446 2005 74,109 4,733 2006 36,174 13,055 2008 7,341 125 2009 1,540 2010 17,919 2011 285 2017 4,034 9,582	The data provided have been added.
ADF&G/Comm. Fish/Ho mer		4.6.3.1	It is presumptive to state there will be no effects on health or value of BB salmon fishery - need information to back up this conclusion. Again, Cook Inlet fisheries are omitted. Similar comments for Diamond Point Port as Amakdedori Port site - there are potential impacts with commercial fisheries - those impacts are not detailed in the DEIS.	Include data to substantiate claim that there would be no measurable effect from Alternative 2. From previous recommendations listed here, there are similar concerns as with the Amakdedori port site - the Diamond Point site would have similar effects with vessel traffic and the pipeline route could still impact fisheries, although direct impact on scallop beds would likely be reduced with further north route (might be able to avoid northern scallop bed).	Expanded section on consumer WTP value of salmon. Added materials on Cook Inlet fisheries. Added difference between northern route and southern route with respect to scallop fisheries.
ADF&G/Comm. Fish/Ho mer		4.6.2.1	Statements in this section regarding sport fishing is concerning because it seems to acknowledge potential impacts and displacement of users, although with little concern. Similar to other sections, Cook Inlet Area fisheries are not addressed - the Amakdedori port site is located	Address potential impacts to Cook Inlet sport fisheries as noted in column to the left under Alternative 1.	Amended text as suggested.

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			near recreational Pacific halibut fisheries, particularly utilized by charter vessels, salmon resources, as well as razor clam beaches on the west side of Cook Inlet so the statement that "there would be no direct or indirect impacts expected" is untrue.		
ADF&G/Comm. Fish/Homer		4.6.2.1	The comparison with the Kennecott Copper Mine is questionable, as it was a much different type of mine than the proposed Pebble mine. For example, it was an underground mine as opposed to an open pit, the Kennecott mine produced ~ 1 million tons of waste rock where as the Pebble mine at the 78+ year stage would produce > 15 billion tons.	The DEIS should look for more similar projects for comparison purposes and if none exist clearly state the limitations of the comparison.	Kept the Kennecott mine as an example, and added text to state the limitations.
ADF&G/Comm. Fish/Homer		4.6.2.1	Amakdedori Port is located where Pacific herring fisheries occur.	This fishery is currently closed due to low stock abundance but will open again once commercial thresholds are attained. The likelihood this will occur is great given the proposed longevity of the project.	Add information to Section 3.6. Added sentence to relevant section in 4.6
ADF&G/Comm. Fish/Homer		4.6.2.1	There is no mention of commercial Tanner crab or weathervane scallop fisheries. The scallop fishery would be directly impacted since the pipeline would traverse directly through one of two scallop beds in Kamishak Bay. This fishery drags 1000+ lb steel dredges that could severely damage or rupture the gas pipeline or could result in the loss of gear. The scallops beds in this area are relatively small, so the potential loss of opportunity could be significant. There will potentially be some level of direct mortality to weathervane scallops, Tanner crab, and other commercial and non-commercial fauna from the burial of the gas pipeline. As stated in comments for section 3.6.2, the DEIS implies that a takings is ok when saying the fisherman can just move to avoided the gas pipeline. Though Tanner crab fisheries are currently closed due to low stock abundance, the likelihood this will reopen is great given the proposed longevity of the project.	Address commercial shellfish and groundfish fisheries along the gas pipeline corridor. This should include quantifying the potential loss of resources to direct impacts of pipeline installation and the loss of fishing opportunity due to necessary avoidance of the pipeline.	The information requested has been added.
ADF&G/Comm. Fish/Homer		4.6.2.2	As with the commercial fishing section above, the DEIS implies that a "takings" is ok with regard to recreational fishing opportunities. The authors suggest that fishermen and businesses just move to another location. Further the "takings" is very likely going to be greater than implied, as fishermen looking for a wilderness experience are not going to want to fish near an industrial site.	This analysis should include survey data from fishermen, lodges, and outfitters, to obtain a realistic estimate of the river miles of alternative fishing areas and what percentage the loss of river miles makes up of the total. Additionally, competition is high in this recreational fishery and potentially reduced opportunity will increase that competition. This should be addressed.	Section notes that anglers and business occur a cost in adjusting and that substitutes may not be perfect or even available. Simply noting the availability of substitutes or the ability to substitute does not make any implication about "takings".

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ADF&G/ Comm. Fish/Ho mer		4.6.2.1	In the 2nd paragraph on this page, it states that the Amakdedori port site would not be located near substantial commercial fishery resources and would therefore not affect fishing effort. This statement ignores the reasonable possibility that the Kamishak sac roe herring fishery, while currently closed due to low abundance, will reopen once the population recovers and thresholds in the management plan are reached. Effort and harvest during that fishery historically occurred in southern Kamishak Bay from the Douglas Reef complex north to Bruin Bay, including the proposed Amakdedori port site. Purse seine gear interacts with the bottom in waters shallower than ~95' and may create a conflict with the NG pipeline and with port activities.	Recommend that this EIS consider potential impacts to the Kamishak Bay sac roe herring fishery. Since the marine habitat in this area is currently pristine, it is reasonable to assume that the Kamishak herring stock will recover to levels allowing a commercial fishery within USACE's 78-year time span of consideration for the Pebble project. This comment/action also applies to Table 4.6.1 where it references effects to commercial fisheries for the Amakdedori port site alternative.	Amended text as suggested.
ADF&G/ Comm. Fish/Ho mer		4.6.2.1	States that Amakdedori port site would not be located near substantial commercial fishery resources and makes assertion that increased vessel traffic should not affect fishing effort. This conclusion should be explained and supported. It seems that increased vessel traffic could directly affect fishing activity in the area, especially if large vessels are moving through the area to and from the proposed port site in the transportation corridor. Cook Inlet commercial shellfish (scallop and razor clam) and Pacific halibut fisheries are omitted from this discussion, and need to be included in the paragraph discussing interactions with the natural gas pipeline. The pipeline is slated to be located directly through one of two scallop beds in Kamishak Bay, therefore an impact to the resource would be expected as well as potential conflict with commercial scallop fishery vessels and dredge gear employed, which could come in contact with pipeline and cause damage. Statement that commercial fishermen may need to adjust gear placement assumes "they would have flexibility to do so" - how is this concluded? Similarly, concluding that there would be no impact to permit holder revenues and associated metrics seems opinion based and inaccurate - if fishery resources declined, it would be expected that revenues would also decrease. Also, Processing Sector and Fishery Fiscal Contributions under Alternative 1 again does not	Include Cook Inlet commercial groundfish, halibut, and shellfish fisheries in discussion, particularly the potential scallop fishery interactions as described. Groundfish and Pacific halibut longline gear could also interact with the pipeline and this gear type can be quite long and cover a lot of ground, therefore interaction is very possible. Opinions without fact should be omitted from this document - it appears that research into these potential interactions and impacts has not been completed and broad assumptions are being made that seem to dismiss the importance of these fishery resources to fishermen in this area.	Added necessary shellfish and groundfish discussions. Had previously noted the potential impact of large vessel traffic.

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			include Cook Inlet fisheries.		
ADF&G/ Comm. Fish/Ho mer		4.6.2.1	The Board of Fish (BOF) may adjust an OEG. The last sentence regarding OEG adjustment is not how ADF&G develops and modifies SEGs, BEGs and, inriver goals.	Clarify that BOF sets and modifies OEGs. Modify paragraph to include how BOF and ADF&G develop escapement goals. A measurable reduction in productivity could result in lower goals and reduced opportunity for subsistence, sport and commercial users.	Modified by changing to general "escapement" so as to avoid unnecessary complexity.
ADF&G/ Comm. Fish/Ho mer		4.6.1.2	No mention of recreational fishing in Cook Inlet marine waters.	Include Cook Inlet marine sport fisheries in discussion.	The information requested has been added.
ADF&G/ Comm. Fish/Ho mer		4.6.2.1	There is no mention of Amakdedori commercial landings (sockeye, coho, pink and chum). These numbers are substantial and significant to Alaskan commercial fishermen.	Include number of salmon harvested from Amakdedori and Chenik Subdistrict (249-55): year sockeye coho pink chum 1985 46,833 1986 387,997 210 757 1987 380,990 102 533 1,739 1988 749,825 73 1,303 7,426 1989 154,015 4 54 8 1990 283,988 34 639 1,649 1991 248,244 6 1,768 501 1992 55,296 62 220 1993 106,611 4 110 68 2004 127,921 2005 183,964 2006 38,809 3,216 21 2007 593,172 19 1,633 6 2008 750,037 46 65 2009 289,079 1,571 2010 24,626 2011 294,307 648 2012 258,465 2013 157,625 314 1,673 2014 25,453 50 2016 32,060 34 217 2017 386,932 189 7 2018 110,643 69 184	The data provided have been added to Section 3.6
ADF&G/ Comm. Fish/Ho mer		4.6.2.1	Document refers to Optimal Escapement Goals (OEGs). ADF&G may restrict or liberalize run is projected to exceed or not meet the escapement goal whether it is an OEG, Sustainable Escapement Goal (SEG), Biological Escapement Goal (BEG), or inriver goal. OEGs are not typically based on carrying capacity.	Update to reflect all types of escapement goals.	Converted text to say "escapement goals" to avoid mirroring the text in the different types of escapement goals. The purpose of the section is that ADF&G will adjust harvest to preserve the productivity integrity of the resource.
ADF&G/ Comm.		4.6.1.1	Under the Commercial Fishing section, only the Bristol Bay salmon fishery is discussed as being	Include potentially impacted commercial and sport fisheries in Cook Inlet in this section and subsequent	The information requested has been added. Note that processors are unlikely to be

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Fish/Homer			potentially impacted by the project. No mention is made of salmon/groundfish/shellfish commercial fisheries in Cook Inlet, where major project components (port and NG pipeline) occur and which therefore may potentially be impacted.	related sections (e.g., permit holders and crew, processors, Recreation and Tourism based Fishing, etc.), which also only discuss impacts to Bristol Bay.	affected in the Cook Inlet.
ADF&G/Comm. Fish/Homer		4.6	Similar to above issue, the "Recreational Fisheries" discussion on this page fails to include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon sport fisheries.	Include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon sport fisheries in this discussion of potential effects on these recreational fisheries by both private anglers and charter vessels (economy affected).	The information requested has been added in 3.6 and 4.6
ADF&G/Comm. Fish/Homer		4.6.1.1	Only Bristol Bay salmon fishery is mentioned under Commercial Fishing section and associated subheadings here - same issue as previous that there is no mention of Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries. No mention of commercial fish buyers/processors in Homer and Kenai, where majority of fish harvested in Cook Inlet is delivered.	Include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries, and associated infrastructure and economy where appropriate, in all discussions of commercial fisheries as affected by the proposed project.	The information requested has been added in 4.6, but note that affects to Cook Inlet processors are expected to be de minimis.
ADF&G/Comm. Fish/Homer		4.6	Recreational Fisheries impacts are incomplete.	The second bullet should read "if the project reduces fish populations or the quality of opportunities".	Edit made as suggested.
ADF&G/Comm. Fish/Homer		4.6.6.1	There are no data on the number of commercial fishing related jobs. With regard to Cumulative Effects, as defined in Section 4.1.3 of this DEIS, "Proximity is based on natural geographic boundaries of potentially affected resources and the period of time that the projects impacts would persist." There appears to be no analysis in the associated mining claims that meet the "proximity" definition.	Reevaluate which RFFAs meet the "proximity" definition and consider cumulative impacts.	Added to Section 3.6.
ADF&G/Comm. Fish/Region II		4.6.6.1	Example of a decline in 1,000,000 fish is overly simplistic and does not address lost future returns resulting from lost production.	Update text to reflect future loss in production.	The metric provided is simplistic and is not designed to reflect the "net present value" of a group of lost adult returners. It's designed to give people the reader a metric for valuing losses. Added text indicating that recurring losses of fish or deviations from baseline result in recurring monetary losses.
ADF&G/Comm. Fish/Homer		4.6.6	The first paragraph of this section references Section 4.1 and then lists Pebble South and Shotgun as two reasonably foreseeable future developments during the 78-year RFFA timespan. However, Section 4.1 (Table 4.1.1) indicates that development of Pebble South is NOT considered an RFFA (only continued exploration was	Resolve the discrepancy between sections, preferably by acknowledging that Pebble South is an RFFA and then considering potential cumulative impacts from that development in this EIS (as was recommended in an earlier comment).	Pebble South now in RFFAs; the cumulative effects section has been expanded and heavily revised.

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			considered an RFFA).		
ADF&G/ Comm. Fish/Ho mer		4.6	List of management areas incomplete - at least it references only salmon area, and if using letter designations document should also include the names of the management areas, specifically Bristol Bay Area (Area T) and COOK INLET AREA, which is not specifically discussed except to list Area H.	Instead of "Commercial Salmon Fishery Area", reference the Bristol Bay Area and associated salmon fisheries, the Cook Inlet Area and associated salmon, groundfish, and shellfish fisheries (Pacific halibut is not managed as a groundfish under state regulations), federal Central Gulf of Alaska Regulatory Area (CGOA; Area 630) and associated Pacific cod fisheries, and the International Pacific Halibut Commission 3-A Regulatory Area and associated commercial and charter Pacific halibut fisheries.	Changed text to "Registration area" and added additional language
ADF&G/ Comm. Fish/Ho mer		4.6	The list of management areas that comprise the study area is incomplete.	For those managed by ADF&G, it should include; Commercial shellfish Area H (Southern District and Kamishak Bay District) and the commercial groundfish Cook Inlet Management Area (Cook Inlet District). The reporting areas for IPHC area 3A should be included as well as area 630 for the NMFS.	Addressed with text change
ADF&G/ Comm. Fish/Ho mer		4.6	There are many more potential impacts then the 4 in the list.	Change "Long-term" to "short or long-term". Short-term losses could occur with catastrophic events such as dam failures. Other short-term (and long-term) losses could occur though the release of contaminants. Cook Inlet salmon fisheries were closed in 1989 due to the Exxon Valdez Oil Spill, though the spill did not affect some of the salmon streams the returning adults swam though contaminated waters. Should consider the potential loss of a unique lifestyle as a commercial salmon fisherman. Along with a potential reduction in recreational fishing effect, there could be a potential reduction in revenue to businesses and of loss of business that rely on that: lodge owners, flight operators, guides, outfitters, etc. The potential loss of fishing opportunity due to infrastructure installations or the privatization (temporary or permanent) of properties (see additions below).	Addressed with text change. Issue of contaminant related losses also addressed in additional text added to this section.
ADF&G/ Comm. Fish/Ho mer		4.6	Making the statement that Bristol Bay salmon is a "price-taker" is formal fallacy. This statement has nothing to do with the actual dollars that could be lost to fishermen; comparison to the Copper River fishery seems included specifically to attempt to diminish the value of the existing fishery.	This line of reasoning is not relevant or valid and should be removed.	Left text alone as it goes to position in the market. Nearly all salmon fisheries are "price takers" with prices determined by the global market. Copper River is an exception setting the price for the season as the first fishery and having a recognized brand name. Being a price taker does not diminish Bristol Bay, but the language recognizes that Bristol Bay does not currently have a definitive and established commerical brand name.

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ADF&G/ Comm. Fish/Ho mer		4.6	There is no discussion of potential impacts to Cook Inlet groundfish, shellfish, or Pacific halibut fisheries in the bulleted list and does not include specific mention of Cook Inlet salmon fisheries.	Include the Cook Inlet fisheries mentioned in the column to the left and potential impacts - "Long-term changes in groundfish, shellfish, and Pacific halibut marine populations that reduce the number of animals available for harvest by commercial permit holders and thus reduce"... (list same as that provided for salmon). Include same populations in bullet number two (reduction of consumer purchase due to perceived loss...)	Added bullet as suggested
ADF&G/ Comm. Fish/Ho mer		4.6	Description of ADF&G Commercial fishery boundaries within the study area reference salmon (Area T and H) and SF SWHS areas S, T, N, and P, but there is no reference to the applicable Commercial Groundfish Fishery Area (H for Cook Inlet)	Add reference to Commercial Groundfish Fishery Area H (Cook Inlet) to this section.	Added this information
ADF&G/ Comm. Fish/Ho mer		4.6	Similar to above issue, the "Commercial Fisheries" discussion on this page fails to include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries.	Include Cook Inlet groundfish, shellfish, Pacific halibut, and salmon fisheries in this discussion of potential effects on these sectors of commercial fisheries.	Added text and revised as suggested