species under the Endangered Species Act. This is unacceptable. A time period for in water work should be developed that is specific to the Columbia River threatened and endangered species, smelt, and sturgeon and habitat for these species.

4. There are no ***beneficial uses of dredged material*** from the estuary. The preferred disposal alternative drops disposal sites that require mitigation and uses sites near port owned lands in Vancouver, St. Helens, Kalama, and Longview which provide material or future commercial/industrial uses. There are similar beneficial uses for material near the mouth of the Columbia River yet none are included in the Draft EIS. Direct disposal on eroding beaches in Washington State also does not receive adequate analysis and consideration although the economic benefits of this would be substantial. There is a proposed beneficial use at Millar/Pillar in the estuary. The purpose of this "beneficial use" site is to create shallow water estuary habitat. We question whether this is indeed a beneficial use as it is creating shallow water habitat for juvenile salmon adjacent to Miller Sand and Rice Island where avian predation on juvenile salmon in shallow water is already a large problem. In addition, mid water habitat is valuable for estuarine benthic populations and most mid-water habitat has been lost in the estuary due to dredging activities. Millar/Pillar should be removed as a restoration site.

5. The ***economic evaluation*** used to justify the proposed deepening in the Draft EIS uses economic data that is out dated. Recent changes in shipping market conditions to larger deeper draft container ships are not considered. It is unlikely that even a 43 feet deep channel would allow modem container ships (requiring 50 feet draft) access to upriver ports. If the channel deepening project is for grain shipping only than the benefits derived from a deeper channel could also be derived from using LOADMAX river forecasting and/or a regional port in Astoria. The difference in economic benefits and costs from the different alternatives presented in the Draft EIS is unclear. In addition, the economic impacts to natural resources and fisheries are not evaluated in the Draft EIS and deserve attention. An independent economic analysis of this Draft EIS is needed.

6. There is no ***mitigation*** planned for estuary or ocean impacts from dredged material disposal. Impacts from dredged material disposal in the estuary and for 80 square miles of the ocean need to be mitigated. This includes the proposed "beneficial use" at Millar/Pillar. We question this site as a restoration or beneficial use site. If disposal takes place at Millar/Pillar, it should be mitigated.

7. Significant ***water quality impacts from sediment contamination*** will occur from the channel deepening as proposed. Increases in turbidity are expected from all in water dredging and disposal. Lower levels of dissolved oxygen are expected to occur during all in water dredging and disposal. Sediment contamination especially in the Willamette River is also a major concern. Contaminants will enter the water column from disturbing sediments from the proposed dredging and blasting which is required to deepen the Willamette River. The draft evaluation of Section 404 of the Clean Water Act is not effectively proven or referenced and does not adequately address turbidity increases, lower levels of dissolved oxygen, and sediment contamination.

8. Impacts to ***commercially valuable and other important species*** are not addressed. We disagree with the conclusion that no significant impacts will occur to Dungeness crab and flatfish from ocean disposal. Long term mortality of white sturgeon from entrainment is not known. Entrainment and disposal in deep water areas may significantly impact this fishery. The lack of research cited regarding impacts from dredging and disposal and the lack of baseline data referenced on biological resources of the estuary and nearshore ocean seriously undermine the Corps continued assertion that there are minimal impacts to the coastal zone from the proposed channel deepening. In addition, the EIS does not adequately study or explain the potential of this project to impact fisheries nor does it take into account these impacts on the economy.

In summary, we feel that the United States Army Corps of Engineers has not at all justified their conclusion that "*adverse impacts on life stages of aquatic life and other wildlife dependent on the aquatic ecosystem, on ecosystem diversity, productivity, or stability, or on recreational, aesthetic, or economic values would not occur*". Our review of the Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement: Columbia & Lower Willamette River Federal Navigation Channel has lead us to conclude that substantial environmental impacts will result from the proposed project. The integrity of the estuarine and river ecosystems the health of the people in the communities surrounding the river, and the economy of the rural communities surrounding the estuary are all likely to be impacted. We insist that the United States Army Corps of Engineers seriously address the concerns summarized in this letter and take measures to protect the natural resources, human populations, and economy of the communities along the Columbia River estuary.

POB 72
Ilwaco, WA 98624
February 4,1998

District Engineer
U.S. Army Corps of Engineers District, Portland
Attn: CENWP-EC-E
PO Box 2946
Portland, OR 97208-2946

To whom it may concern:

The idea of dredging the Columbia another 3 feet in order to allow even bigger ships to move over 100 miles inland seems unwise and impractical for a number of reasons.Creating deep water ports closer to the ocean would involve fewer risks. I've heard that in order to gain the additional 3 feet part of the river will not only be dredged but blasted-solid rock will have to be removed.

Finding a location for disposal of dredging spoils will not be easy. I've heard that dumping them near the North Jetty of the Columbia on Benson Beach is a possibility. Who will test for the inevitable toxic materials that are in the sediments at the bottom of the river? Who will assure public safety in this process? Will the State of Washington's most popular state park have potentially toxic wastes on its most heavily used beach? I'm thinking of dioxin from the paper mill residues in the Columbia and Willamette Rivers, PCBs, heavy metals, and possibly radioactive silts.

If these materials are dumped at sea, I've heard they will possibly be dropped on critical habitat for crab and other fisheries.

This project will benefit no community down river from Portland, but these smaller, less politically powerful communities will bear the risks and possible injuries of a massive, tax-payer funded project.

Why not leave well enough alone? This is a boondoggle in the making.

Sincerely,
Victoria Stoppiello
Victoria Stoppiello

Corps of Engineers Response

Comments noted. See response # 5 and #10 to the CREST letter.

2707 24th Avenue N.E.
Olympia, WA 981506
December 6, 1998

U.S. Army Corps of Engineers
Portland District
CENWP-PE-E
P.O. Box 2946
Portland OR 97208-2946

Attention: Steven J. Stevens

Gentlemen:

This letter is written in response to the proposed deepening of the Columbia River channel. I have proposed a couple of questions from the perspective of parties who may have interests in the effects of this proposed deepening of the channel.

Question 1: What does the Corps say about people's lands?

First, let us look at the Columbia River as a river highway located on the end of the shortest route to the Orient. This means that the most economically feasible route to transport grain and other bulk commodities to the Orient is through Columbia River ports.

According to one Port of Portland official, Columbia River ports are the second largest combination of grain exporting facilities in the world. Mississippi River ports export more grain, but the Columbia River offers a considerably shorter route to an expanding and ever-increasing market for food: the Orient. Therefore, deepening of the Columbia River is about the export of grain. It is not about container shipping. It is not about providing jobs for American longshoremen or seamen. It is about guaranteeing maximum profits for American agribusiness interests. It is about the taking of a public resource for private profit.

The Corps can only and will only address the so-called "national economic benefits" to deepening the channel. It can only build up a prima facia case to present to the public for deepening the channel.

We are not talking about facile immediate benefits to deepening the Columbia River. We are talking about the survival of the Pacific salmon. We are talking about corporate taking of a public resource. We are talking about using foreign flag vessels which do not employ U.S. labor. We are talking about the loss of habitat for species in the food chain. The deepening of the Columbia River channel is about these issues in addition to all the economic issues mentioned in this letter.

So the Corps does not speak to that which all the people of the U.S. hold in common. A natural protein source which will suffer from the impact due to dredging. Nor does the Corps address the signed treaties with sovereign Native American nations as to their need for salmon. Nor does the Corps address the need of non-Native American

Corps of Engineers Response

Comments noted. The report and EIS evaluate all relevant factors related to the alternatives considered, including potential impacts to anadromous fish. Any final decision will be made based on consideration of these factors.

fishermen and users of the river. Instead, the Corps presents a plan to be executed for the benefit of corporate agribusiness interest.

I realize the Corp's job is to execute, and discharge the laws of the land under the direction of the Commander-in-Chief, so it is impossible for the Corps to comment upon the wisdom of projects it is assigned to undertake. To that end the Corps is to be commended for its extensive comment meetings and periods. It is to be hoped the comments made during these meetings will have some impact on the outcome of the river for users other treat corporate interests.

Question 2: What do port representatives say about deepening the river channel?

With the effervescence of commercial boosterism, the ports tout the notion that increased commerce with the Orient will be a boon to the job market. They point to the increased employment opportunities for the transportation, storage, and loading of the grain onto enormous new ships.

Let us look at job creation. Railroad, barge, and longshoring of bulk cargoes is and always has been a low job producing system. The reason for bulk shipment of commodities such as grain is efficiency and is less labor intensive than break bulk and container shipment.

As of now, Peavey Grain Terminal in Kalama uses non-union labor to load the vessels and breakaway pilots to pilot ships in and out of the river. No union person wants to support this kind of job loss yet. The Port of Kalama taxed the union people to bring non-union jobs to their community.

What all ports want is to fill the existing vessels to full and downloaded conditions. These are non-union, flag of convenience carriers. The ports want that extra tonnage because it means extra fees for the ports. What do the people get out of it? They get to pay for "Port improvements" so that Archer-Daniels-Midland can send its produce on flag-of-convenience ships through the Port of Longview.

In all of this boosterism, I hear the prima facia case for deepening the channel, but not one word do I hear for the salmon, for Native and non-Native American fishermen, and the people who live along the river, and who have lived there for more generations than there have been ports in some cases on the river.

The ports and port commissioners are supposed to be the citizen's elected officials, not sweetheart deal-makers for non-union anti-labor American collective farmers.

In the midst of all this glib boosterism we are hearing the same glib argument about economic benefit to the Pacific Northwest that we have heard for the damming of the Columbia River. We have lost much more than we have gained as a nation, and will lose just much more from the further industrialization of the Columbia River.

It is time for the people who make their lives along the river to receive a user fees in the form of a tonnage tax on every ton of grain crossing the port docks for restoration as follows:

1. The complete restoration of the Lower Columbia River salmon runs.
2. The protection of shoreline property.
3. The protection of wetland and wetland habitat.

In conclusion, I realize we cannot stop progress. However, I believe progress should pay for itself in the form of payment of fees that are set sufficiently high to protect and restore the environment affected by ships navigating Columbia River waters.

Sincerely,

Harvey Williamson

Harvey Williamson

2707 24th Avenue N.E.
Olympia, WA 981506
December 6, 1998

U.S. Army Corps of Engineers
Portland District
CENWP-PE-E
P.O. Box 2946
Portland OR 97208-2946

Attention: Steven J. Stevens

Gentlemen:

I have lived in Southwest Washington almost all my life; first, while growing up in Longview, and now, as an adult, in Olympia. As a child taking family outings, I enjoyed playing on the shores of the Columbia River. It was great fun to see the ships come by, wonder where they had been and where they were going next. And it was fun to play in the waves the ships cast on the sandy shores.

1.

Since growing up, the ships have grown much bigger. And faster. And the waves are bigger, too. But the beaches are becoming smaller. For example, about 25 years ago when I first met my mother-in-law, it was possible to walk from one end of her property to the other on the sand next to the water's edge. Since then, most of her beach has washed away. She has rip-rapped her shoreline in an attempt to stabilize her property, but fast-moving ships throw such a high wave that many of the boulders have become dislodged. Some large trees that once held the soil fast have been washed over by the huge waves, further weakening the shoreline.

It is not right that some big, powerful entity can come along and do damage to property without making compensation. Other property owners along the river surely are having their land taken, and without compensation. Either the ships should be limited as to their size and speed, or property owners should be amply compensated for the loss of their property. Not only is the quantity of my mother-in-law's property reduced, but the character has been changed as well. No longer is there a sandy beach for the enjoyment of her grandchildren, friends, and passers-by who have long been welcome to use her property, but a rocky barricade faces them instead. So, of course, the desirability and value of her property has been negatively impacted.

2.

While there are other issues and values I could point out (detrimental effects on marine plants and animals, for example), I focus on the economic value of property because, unfortunately, that is the *only* consistent measure of value on our society. And, ultimately, it is the only way property owners can be compensated for the damage caused to their land. If the Corps of Engineers must deepen the channel so that private businesses can profit, these private businesses must compensate private property owners for the damage done by their profit-gaining activities. A substantial award must be made to property owners who face no option other than watch their property diminish in value, character, and quantity.

Corps of Engineers Response

1. Comments noted.

2. The number and size of vessels projected to call on the river in the future is expected to be independent of any channel improvement alternative. Currently, there are vessels moving on the river with design drafts greater than 40 feet, and this is expected to continue with or without the proposed channel improvement. Sandy beaches are easily eroded and the deeper channel should not cause a measurable increase in erosion. This issue is addressed in sections 5.1.5.3 and 6.2.3.1 of the EIS.

Let me also suggest that if some sort of structure could be built to protect the shoreline when the channel was deepened, that would be preferable. Until such a structure could be put into place, the only protection for property owners is the economic one: compensation for damage.

3.

I appreciate the opportunity to comment. I hope that sufficient weight will be given to the comments of us "little people" when we have not the organizational structure nor the economic weight of those in power, who can maybe pay a little overtime to send many voices to speak on behalf of the companies which employ them.

Sincerely,

Barbara Williamson

Barbara Williamson

Corps of Engineers Response

3. Comments noted.

Date: January 11, 1999

To: Army Corp of Engineers

From: Daniel Oja, Commercial Fisherman

Subject: Navigation Hazards created by Army Corp of Engineer

Re: Dumping of Dredge Spoils

I've written this letter out of concern for the safety of fishermen while navigating the Columbia River Bar. I've noticed that it is no longer safe in the channel. The "humps" or dump sites created by the Corp of Engineers now cause the waves to break over the top of buoy number three and ricochet into the channel. We are no longer safe "just being in the channel". The waves also break on the inside of the channel between numbers six and eight buoys. When you enter the channel, you can not even use the ship ranges on Cape Disappointment. Where do we go now? Your dump sites are getting
1. more dangerous every year to our boats and lives. The fishermen are aware of the dangers created by your agency, but this hazard will eventually kill some unsuspecting boaters. We have made your agency aware of these problems, but you have chosen to ignore us. Your boats are here only in the summer when monitoring the river and ocean bottoms. I suggest you come in the winter and try ... only then will you notice the impact of your dump sites. The weather is very severe in winter, but we **must** fish in these conditions, and it does no good for you to show during fair weather and then insist that the dump sites have "little or no impact on navigation".

The Corp of Engineer has a big ocean to dispose of the dredge spoils, but the agency continues to dump on prime crab fishing grounds. Even worse, the agency intends to expand these dump sites along the Long Beach Peninsula and around the mouth of the Columbia River, despite the fact that the commercial fishermen have vigorously opposed
2. this decision. The Corp has continually ignored all suggestions and has refused to consider the impact of their decisions on the people living near the mouth of the Columbia River. We are disappointed by the Corps continued refusal to cooperate with the communities that they impact, however, it is not surprising given the past history that we have personally experienced with the Corp of Engineers.

Daniel E. Oja

cc. Senator Patty Murray
Senator Slade Gorton

Corps of Engineers Response

1. Comments noted. Past disposal has resulted in adverse wave conditions near the entrance channel. This was a major concern during the site selection process and in preparing the disposal site management plans. The depth of disposal would be restricted to limit wave height increase to 10 percent or less at the sites. More information is located in Appendix H, Exhibits B and H.

2. Further workshop meetings have been conducted and the ocean disposal plan has been changed. The North and South sites have been eliminated, and the currently proposed sites have been reduced in size and located further offshore to minimize impacts to the commercial fishery, including crabs. The Ocean Disposal Working Group has agreed to the currently proposed sites. We have minimized the impact to commercial fisheries as required by the Ocean Dumping Act to the extent possible. A Management and Monitoring Plan is located in Appendix H, Exhibit H. The EIS has been revised to reflect this information.

Stevens, Steven J NWP
From: Robinl0l3@aol.com
Sent: Wednesday, January 27, 1999 4:30 PM
To: steven.j.stevens@usace.army.mil
Subject: (no subject)

Date: January 27, 1999

US Army Corps of Engineers
Portland District
CENWP-PEEATTN
Steven J. Stevens
P.O. BOX 2946
Portland, Ore.
97208-2946

Dear Steven,

We own nearly three hundred feet of Columbia river frontage, that is east of Cathlamet, Wa. On behalf of my wife and myself, as well as every property owner, and every outdoor enthusiast (which constitutes for nearly every person between Hood River, Ore., and Astoria, Ore.), the proposed US ARMY CORPS of Engineers Draft Integrated Feasibility Report for Channel Improvements (from here on called USACEngDIFRFCI), is environmentally unsafe and unnecessary. Since we have owned our property for over ten years, we have witnessed a steady increase of river related recreation on the lower Columbia River. If the USACEEngDIFRFCI was
1. approved, and deepening the river channel by an additional 3-4 feet was executed, the local population between Portland and Astoria would be faced with an environmental disaster, thanks to government and industry greed. Dredging nearly four hundred million cubic yards of Hanfords reservations' heavy metal and radioactivity particles laying in the sand at the bottom of the lower Columbia River and dispersing the dredged material along adjacent wetlands, farmlands, nearby public parks and private property shorelines, would be a huge mistake for the environment. In todays world, the emphasis is on cleaning up the planet, from decades of industrial neglect and an uncaring U.S. Gov;t.

The westcoast is surrounded by deep water ports in ; Seattle and Tacoma, Wa., Vancouver, B.C., San Francisco and Long Beach, Ca. One would assume that the surrounding Portland economy would continue to carry on and prosper just fine without accepting deep drafted hulls. This proposal would financially benefit such a small percentage of our population. Can't the Corps. of Engrs. show a little compassion for our local environmet, and our health?! In reviewing the USACEngDIFRFCI proposal, it appears that the project would be indirectly funded by taxpayers money. The funding would be made possible through a congressional appropriation. It seems so ironic that taxpaying citizens would be paying for this ridiculous project, that would ultimately have
2. such a devastating impact on human health, as well as our fragile environment. Probably the most immediate impact this project would have on Columbia River shorelines is ; increased erosion on river banks. Further property damage would result due to Larger, deep drafted vessels producing much larger and more destructive wakes than in the past and present. Virtually all property along the Columbia River would experience severe erosion like never before. River banks and wetland vegetation would be eroded at a faster rate than ever before, due to larger, deep drafted ships trekking between Astoria and Portland, Ore. An unprecedented and continual dredging operation would have to be implemented to maintain a deeper channel depth. Larger deep draft hulled vessels would produce much larger and more destructive wakes than in the past, and present.

Corps of Engineers Response

1. Comments noted.

2. If it were more economical for Columbia River exports to be exported through San Francisco, Seattle, or other ports, then goods would not be exported using the Columbia.

The number and size of vessels projected to call on the river in the future is expected to be independent of any channel improvement alternative. Currently, there are vessels moving on the river with design drafts greater than 40 feet, and this is expected to continue with or without the proposed channel improvement. Sandy beaches are easily eroded and the deeper channel should not cause a measurable increase in erosion. This issue is addressed in sections 5.1.5.3 and 6.2.3.1 of the EIS.

In the proposed project, the Corps. of Engrs. states that there would be an ecosystem restoration for fish and wildlife habitats. If the river floor (which consists of fifty plus years of radioactive, dioxin, and heavy metal deposits from upriver hanford, pulp mills, and industry) is stirred up by means of a deeper dredging operation, how could any ecosystem survive? In summary, an effective solution could be established. Local state and federal Governmental agencies could
3. implement rules and regulations that focus on benefitting the beautiful Columbia River, and not turn their backs to this proposal. All Northwest ports (including California) should form an alliance. The alliance would establish what vessel sizes can enter into which port, in relation to how the specific type of vessel affects surrounding environments. There is approximately three weeks remaining to voice concerns from the public. Please take the time to contact local state governmental agencies, and the US Army Corps of Engineers representatives, before it's too late!

Thank You,

Brian Utley
P.O. BOX 641
Cathlamet, Wa.
98612
email: robinl013@aol.com

Corps of Engineers Response

3. Comments noted.

John L Carter, M.D.
40820 McKenzie Highway
Springfield, Oregon 97478
Tel. (541) 746-2285
Fax: (541) 746-8593

District Engineer
U.S. Army Corps of Engineer District, Portland
Attn: CENWP-EC-E
P.O. Box 2946
Portland, OR 97208-2946

Attn: Col. Robert T. Slusar

Dear Col. Slusar:

My family are landholders in the Astoria-Warrenton area in Clatsop County and citizens of the State of Oregon. Others of our family have interests in the oyster-farming industry in Willapa Bay, Washington. Consequently, we are interested and concerned stakeholders with regard the consequences, as well as the stated benefits, to accrue as a result of the proposed dredging of the Columbia River channel. At this point, after reviewing what material has been made available, i.e., the "Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement: Columbia and Lower Willamette River Federal Navigation Channel", we have strong concerns that the potential adverse consequences associated with the dredging project have neither been entirely and clearly defined nor substantially and objectively addressed. Further, it appears that alternatives to the proposed dredging have been poorly addressed and evaluated. Beyond these concerns, it seems clear that the motive forces which have generated the proposed dredging project in the first place do not reflect the combined interests of the regions and communities of the lower Columbia River and adjacent coastal areas.

There appears to be an overbalanced response on the part of the USACE to eastern Oregon, Washington, Idaho interests to provide high cost access to Portland port facilities in spite of the strong potential for better, more long term deep water port facilities which could be developed in the Astoria-Warrenton area with quick access to and from the Pacific Ocean. It appears also that input from people, agencies, and other interests in the lower Columbia River regions has not been respectfully and carefully attended to by USACE and, in fact, has been otherwise ignored and/or dismissed over the nine years since the initial USACE Reconnaissance Study was started in December, 1989, until public comment was finally solicited in October, 1998. I have strong concerns that input solicited by the USACE at this late date will be given lip service only in the face of a "done deal" and the dredging project will progress unchanged even though it may in many ways be counter-productive to not only the lower Columbia region and the States of

Corps of Engineers Response

Comments noted. See our responses to the CREST letter. Additional information has been included in the final EIS on the regional port alternative. The number and size of vessels projected to call on the river in the future is expected to be independent of any channel improvement alternative. Currently, there are vessels moving on the river with design drafts greater than 40 feet, and this is expected to continue with or without the proposed channel improvement. Sandy beaches are easily eroded and the deeper channel should not cause a measurable increase in erosion. This issue is addressed in sections 5.1.5.3 and 6.2.3.1 of the EIS. All conclusions in the EIS are based on the best scientific information available for a given issue.

Oregon and Washington to do so, but also even the eastern areas of these States and Idaho as well in the long run.

The development of deep water port facilities in the Astoria-Warrenton area which already has natural deep water areas to accommodate all shipping needs with little modification makes infinitely better sense than blasting, pounding pilings, backfilling and dredging a 42 foot channel to Portland which, I am told, will not accommodate the newer 50 foot draft container ships which would replace the aging ships currently in use. What then? Is it back to the old partial fill in Portland and top-off somewhere else routine until the channel is deepened again to accept the 50 foot draft ships? The Feasibility Report does not address these questions.

It is my understanding that better rail and highway access to the Astoria-Warrenton area is already in the planning stage and that plans are in process to rehabilitate the current rail line to Astoria. How much better an investment of public dollars can there be than in developing the natural resources already present in the Astoria-Warrenton area at the site of the potential world-class regional port with high probability of a long term future and access to all inland and world markets? On the other hand, what can be a worse investment than sinking millions upon millions of public dollars to serve the narrow short-run interests of a few into shoring up what amounts to an interim port looking at long term obsolescence in Portland which can never be a world class regional port no matter how much money, time, and effort is poured into it unless the polar ice-caps melt rather soon? I do not see any part of the Feasibility Report that comes anywhere close to addressing these questions.

Many people, I am sure, will address concerns about ship wake damage to shores, estuaries, natural deeps and shallows; about where dredged material will be dumped and the effect on fish and wildlife, plant life, fishing, crabbing, water quality, radioactive (especially from Hanford) and other toxic (such as heavy metals from Albany area) sediments, water turbidity, changes in nutrients and oxygen content, pH, sediment plumes, sedimentation rates, mounding, infill in natural deeps and holes, swamps, marshes, inlets, bays; changes in current and hydraulics. None of these things are dealt with well in an objective scientific manner in the Feasibility Report. For example: How will wave action be effected in the off-shore dumping areas and nearby? Will coastal currents be changed? How will sediment effect Willapa Bay and the Oyster industry? How will the ocean beaches and clam beds be effected? Will kids on Long Beach be playing with radioactive sand?

My concerns are those above plus others. How will the regional communities be effected? It appears that crab, sturgeon, bottom fish, shrimp, oysters, clams and the people who for many decades have depended upon these fisheries will be adversely impacted by the huge dumping of dredged materials. It is hard to fathom the costs to these people as well as to the ambience of the whole region. With salmon stocks dwindling and many salmonids being listed as endangered yet another major environmental trauma such as the proposed dredging does not make good sense. This is especially true when it is a sure bet that court actions will probably at least hold up the proposal to dredge for a long term and cost tons of money in litigation expense. Does no one care about this? If litigation does happen, as it likely will, what will happen to the potential development of other, possibly more favorable, alternatives than the dredging project to solve shipping problems without compromising of the way of life of most of the people in the entire lower Columbia region? Since a large amount of time, money, and energy has been sunk into the study and development of the channel deepening project over the past nine years I think that the best thing to do at this point would be to listen to and evaluate the concerns that I and others are expressing, re-evaluate the content of the Feasibility Study in light of these things, and do a thorough job of re-evaluation of the alternatives of (1) no action (2) non-structural upgrade of existing river stage forecasting system (3) development of regional ports to locate deep-draft facilities closer to the mouth of the Columbia River, especially the Astoria-Warrenton area. Once that is done I think that it will be obvious that any of the above alternatives is more cost effective; more beneficial to the lower Columbia region and the States of Oregon and Washington and Idaho; less traumatic to the environment; in fact, more beneficial to the morale and economic well-being of all people involved. Most of the USACE studies are valuable and should be used, not to start the dredging project as outlined, but as a benchmark in establishing cost/benefit ratios of the other alternatives to facilitate their rapid development, assessment, and implementation of the best of the three.

Sincerely,

John L. Carter, M.D.

cc: CREST

Clatsop County Board of Commissioners

Senator Ron Wyden

Senator Gordon Smith

February 3, 1999

District Engineer
U.S. Army Corps of Engineers, Portland District
Attn: CENWP-EC-E
P.O. Box 2946
Portland, OR 97208-2946

Dear Sir:

The Columbia River shipping channel at present is maintained at a depth of 40 feet upriver to Portland. The channel itself is 600 feet in width for most of the 115 mile distance from the river's mouth to the head of navigation in the Willamette. Should the channel be deepened by 3 feet to a depth of 43 feet, a simple calculation indicates that for every river mile where dredging is necessary to accomplish this, the volume of water in the main shipping channel will be increased by over 218 acre-feet.

Logic would indicate that for the volume of water in the shipping channel to be increased by a substantial margin during the deepening process, a corresponding volume of water must be drained away from the margins of the river. Thus it becomes clear that in the Columbia River estuary, where much of the river is characterized by shallow channels, sloughs, grassy islands colloquially termed "prairies," shoals, sand bars, partially submerged lands and marshes, all within the inter-tidal zone, for every river mile dredged by an additional three feet:

- over 218 acres of tidelands will be drained by a depth of one foot;
- approximately 145-1/2 acres of tideland will drained by one-and-one-half feet;
- nearly 72-3/4 acres will be drained by three feet.

Since it is precisely those margins of the estuarine environment which are among the most productive life-zones of the Columbia River, containing as they do critical habitat for a remarkable variety of organisms, on this basis alone, without reference to the numerous other issues involved, it is astounding that the Corps of Engineers could possibly conclude that the proposed channel-deepening project would result in "no significant environmental impact." Think again.

I strongly urge you to reevaluate your findings.

Sincerely,

Hobe Kytr

Hobe Kytr
5253 Ash Street
Astoria, OR 97103

cc: C.R.E.S.T.

Corps of Engineers Response

Comments noted.

Arno Michaelis
5161 Birch St.
Astoria, OR 97103

Feb. 3, 1999

District Engineer
U S Army Corps of Engineer District, Portland
Attn: CENWP-EC-E
P O Box 2946
Portland, OR 97208-2946

Dear Sir,

My official public comment is (and the meaning of is; is, this is it!), do not dredge until we have investigated the alternatives. I believe that your intent was to dredge before you did the Feasibility Study. You spent $6,000,000+ of our money on a study with a foregone conclusion. Not nice! I ask you to listen to the people who pay for all this in more ways than one.

Please take heed of the CREST study and consider seriously, alternatives to a 43 foot channel; such as, LOADMAX and a deep-water port east of Tongue Point.

Thank you for your consideration,

Arno Michaelis

Corps of Engineers Response

Comments noted. See our responses to the CREST letter.

3 Feb. 1999

District Engineer
U.S. Army Corps of Engineers District, Portland
Attn.: CENWP-EC-E
PO Box 2946
Portland, OR 97208

Re: Draft EIS on Columbia River Channel Deepening Proposal

I am writing as a concerned citizen to comment on the DRAFT EIS issued by the Corps of Engineers on the proposed Columbia River channel deepening. Here are my concerns with this document:

Overall, the Draft EIS fails to address the impact the proposed deepening will have on water quality, commercial fisheries, cultural resources, and the fragile environment of the lower Columbia River estuary. A large unanswered concern is the resuspension and/or deposition on beaches of toxic wastes (including radionuclides from Hanford reach and heavy-metal toxins originating in the Willamette River). These materials would be in direct contact with humans (if used as proposed for beach mitigation), and will in any case enter the food chain of the lower River. This is a very common concern among citizens of the lower River. The EIS must address the safety of dredged material, particularly the existence of radionuclides and toxins.

In proposing new ocean dumping grounds for dredged material, the Draft EIS does not consider the impact on areas currently in use by commercial fishermen nor the drastic impact on Dungeness crab habitat. Fisheries are part of our culture as well as economy; it is short-sighted to propose ruining productive crab grounds instead of exploring other sites for dumping.

The impact on air and water qualities from additional ship traffic is also a concern, as is the increased hazard of marine oil spills.

Finally, the proposed channel deepening will have a definite impact on cultural resources, including the built and natural environments on both sides of the lower River, through erosion, loss of wildlife habitat, relocation of dredged materials, and an open in-water dredge period that ignores protection for migrating fish.

In all, the DRAFT EIS is an unconvincing document that serves to raise serious concerns about the long-term wisdom of deepening the channel. An *independent* economic analysis of the commercial importance of the proposed channel is needed, and should also look further ahead to the need for 50-foot draft ships. I strongly urge the Corps to balance a realistic look at the economic alternatives with a long-range, HARD look at the environmental effects of this proposal. Thank you for the opportunity to comment.

Anne Witty

Anne Witty
1573 Grand Ave., Astoria, OR 97103

Corps of Engineers Response

Comments noted. See our responses to the CREST letter.

PACIFIC FISHERY MANAGEMENT COUNCIL
2130 SW Fifth Avenue, Suite 224
Portland, Oregon 97201

Telephone: (503) 326-6352

CHAIRMAN
Jerry Mallet

EXECUTIVE DIRECTOR
Lawrence D. Six

February 4, 1999

Mr. Steven J. Stevens
U.S. Army Corps of Engineers
Portland District, CENWP-PE-E
PO Box 2946
Portland, OR 97208-2946

Dear Mr. Stevens:

We wish to comment on the *Draft Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement (DEIS) (Columbia and Lower Willamette River Navigation Channel).*

1. We have serious concerns about the location of the north and south disposal sites and the impact of dredged material disposal on the Dungeness crab resource and fish species managed by the Pacific Fishery Management Council (Council). The mouth of the Columbia River is an extremely productive area not only for crab, but also for salmon, groundfish species including flatfish, and numerous other species.

The Council was created by the Magnuson Fishery Conservation and Management Act in 1976 with the primary role of developing, monitoring, and revising fishery management plans for fisheries conducted within federal waters off Washington, Oregon, and California. Subsequent congressional amendments in 1986, 1990, and in 1996 added emphasis to the Council's role in fishery habitat protection. Amendments in 1996 directed the National Marine Fisheries Service (NMFS), as well as the regional fishery management councils, to make recommendations regarding federal or state agency activities that may affect the essential fish habitat (EFH) of a fishery under its authority. The Magnuson-Stevens Fishery Conservation and Management Act's amendments also mandate that threats to EFH be identified, and conservation and enhancement measures be described that minimize those adverse impacts. The proposed disposal sites are located within EFH for salmon and groundfish as identified by the Council in fishery management plan amendments. The groundfish plan amendment has been adopted by the Council and submitted to the Secretary of Commerce for approval. The salmon plan amendment will be adopted by the Council in March 1999. We expect these amendments to be approved.

The ocean disposal alternative in the DEIS proposes to utilize two ocean sites (north and south) encompassing 81.3 square miles. Over 50 years, these sites would receive over 225 million cubic yards of material from the maintenance dredging at the mouth of the Columbia River, and if approved, the maintenance and construction of the 43-foot channel deepening project.

Corps of Engineers Response

1. Comments noted. The North and South sites have been eliminated. The current proposed sites have been agreed upon by the Ocean Disposal Working Group, and have been reduced in size and located further offhsore to minimize impacts to the fishing industry and EFH. A discussion of EFH as it relates to offshore disposal has been added to the final EIS and Appendix H.

Regarding the impact of disposal in the north and south sites, the DEIS states:

> No significant impact on other known uses of the ocean such as commercial and recreational fishing or navigation; actual or anticipated exploitation of living marine resources; actual or anticipated exploitation of nonliving resources, including sand and gravel or other mineral deposits, oil and gas explorations, or structural development, and scientific research are anticipated (DEIS Exhibit D, page 3).

The DEIS also states:

2.

> The proposed sites are located in the nearshore area and many pelagic organisms occur in the water column over these sites. These include zooplankton (copepods, euphausids, pteropods, and chaetognaths) and meroplankton (fish, crab, and other invertebrate larvae). The organisms generally display seasonal changes in abundance since they are present over most of the coast, those from the mouth of the Columbia River are not critical to the overall coastal population. Based on evidence from previous zooplankton and larval fish studies, it appears there will be no impacts to organisms in the water column (Sullivan and Hancock*) (DEIS page 6-23).
>
> (*Note: The above reference does not appear in the literature cited section of the DEIS.)

We believe the DEIS does not provide enough biological information on the disposal area to make the statements referenced above (DEIS Exhibit D, pate 3; DEIS page 6-23), especially given the volume of material proposed for ocean disposal. Our concerns include:

1. Based on existing ecological information, there is reason to believe that ocean disposal off the mouth of the Columbia River will be in conflict with fisheries resources and the fishing industry, and have an adverse impact on EFH.

2. The area defined as the mud hole off Washington state has been described as a unique marine habitat with high biological productivity. This area is within the north site and should be avoided. In addition, the mouth of the Columbia River is a unique marine habitat, being an extremely productive flatfish nursery area.

3.

3. The DEIS states on page 12, Appendix H, Volume 1, that from July 1997 through August 1998 the U.S. Army Corps of Engineers (Corps) convened a series of workshops, which included fishing groups and natural resource agencies, to identify new offshore disposal options (e.g., management of erosion along the Washington coast, including Benson Beach) for the Columbia River navigation projects. However, according to the Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife (ODFW), agreements reached in that process to date are not reflected in the DEIS. It is also our understanding that the Corps is obligated to seek beneficial uses for dredged material first, and exhaust all of those uses before disposal is considered. We encourage the Corps to continue to work on reducing impacts to fisheries resources by exploring dredge disposal site alternatives such as beach renourishment.

4.

4. Disposal of dredged material will alter the benthic-epibenthic community structure by changing sediment characteristics. This will affect benthic prey organisms and the fish and crab that depend on them. Further analysis is also requested to validate the statement "Since (meroplankton and zooplankton) are present over most of the West

5.

Corps of Engineers Response

2. See response #1.

3. Concur with comment.

4. Concur. The EIS has been revised to better reflect the process that was used in site evaluation and selection. The results of the working group and the information provided by the group has been incorporated into the final EIS. The Corps does have the requirement to identify beneficial uses of dredged material; however, the beneficial use should be evaluated for cost effectiveness. We do have the ability to provide beneficial uses that are more costly to the federal government if a non-federal cost-sharing partner is identified.

5. Concur. Localized impacts will occur to ocean resources by the placement of dredged material. These impacts however, are not likely to affect coast-wide resources. The deep-water site has been selected to avoid local populations of limited distributions.

Coast, those from the mouth of the Columbia River are not critical to the overall coastal population." Coastal distribution of a species does not preclude the destruction of a local population from having an impact on the population as a whole. Source populations for the species potentially impacted by the dredging process should be investigated and identified. In addition, river mouths, mixing zones, and estuaries are thought to be areas of especially high biological productivity. Hence, meroplankton and zooplankton populations distributed along the West Coast may not make equal contributions to productivity, biodiversity, or the maintenance of ecological processes.

5. (con't)

5. The Corps discusses the thin layer dredge spoil disposal method as an option. The Corps assumes that impacts from this method would reduce impacts to crab resources (i.e., fewer burial moralities). However, no field testing has been conducted off the mouth of the Columbia River to determine if dredges are capable of delivering the disposal material with such precision that the resulting dump mound is below the lethal limit for crabs. According to ODFW, "Given the lack of supporting evidence for appropriate management of thin layer disposal off Oregon, the lack of a specific management plan, the expected impacts of dredge material disposal on marine habitats, marine resources and economic potentials, plus the huge areal extent of the north and south sites, ODFW is convinced that thin-layer disposal methods are not compatible with the marine environment off Oregon and should not be employed by the Corps."

6.

6. We are concerned with the deepening and incremental maintenance dredging of the estuarine portion of the project. Dredging activities kill Dungeness crab which can be found in estuarine areas. We recommend the Corps Portland district office develop a strategy similar to the one developed for Grays Harbor, Washington which outlines in detail the methods for avoiding, minimizing, calculating, and mitigating crab impacts.

7.

The Council has not developed a formal position with regard to the proposed channel deepening project. We realize that dredging and disposal of dredge spoils are a necessary part of keeping the Columbia River a functioning economic arterial; however, the Council opposes the north and south disposal site based on the following:

1. Unprecedented size of the proposed ocean disposal sites.

2. The known resources that will be impacted (crab, juvenile flatfish. etc. Note: the importance of Dungeness crab larval stages, particularly megalopae, as forage for many groundfish species as well as chinook and coho salmon is well documented).

8.

3. Impacts to the crab fishery. (Note: Although the Council does not directly manage the crab fishery, most crab fishermen also participate in Council-managed fisheries, and any impact to the crab fishery will have implications in other fisheries.)

4. Uncertainties about impacts of thin-layer disposal.

In addition, we request that, before the deepening project proceeds further, any ocean disposal alternative be revised to include sufficient biological information on the impact of dredge material on fish and shellfish resources and their EFH. This information should also be collected for ocean disposal activities of ongoing dredge disposal activities at the mouth of the Columbia River. Once those impacts have been more fully identified and evaluated, appropriate steps can be explored with input from resource agencies and the fishing industry

Corps of Engineers Response

6. Thin-layer disposal is no longer being considered.

7. Impacts to the resources have been minimized by reducing the size of the sites and locating them in areas that have acceptable impacts to the commercial fishery. There is no measurable increase in dredging of the MCR project; consequently, entrainment will not be increased.

8. The North and South disposal sites have been eliminated. Thin layer disposal is no longer being considered. We disagree and believe that there is sufficient data to characterize the offshore area biologically. This information combined with the overlay information used in the workshop site evaluation process, aided the selection of suitable sites. We have agreed to conduct pre- and post-construction assessment surveys.

to minimize impacts and mitigate unavoidable impacts from ocean disposal activities. Also, we recommend that any future consideration of ocean disposal include a comprehensive monitoring plan. This should be accomplished in cooperation with the fishing industry.

We look forward to working with you in this important process. Please feel free to contact the Council staff at (503) 326-6352.

Sincerely,

Jerry Mallet

Jerry Mallet
Chairman

SHP:klr

F:\LDS\L\corps-99.feb.wpd

COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
729 N.E. Oregon, Suite 200, Portland, Oregon 97232
Telephone (503) 238-0667
Fax (503) 235-4228

February 5, 1999

General Robert Griffin
Northwestern Division
Corps of Engineers
12565 West Center Road
Omaha, Nebraska 68144-3869

Colonel Robert T. Slusar
Portland District
Corps of Engineers
P.O. Box 2946
Portland, Oregon 97208

Dear General Griffin and Colonel Slusar:

The Columbia River Inter-Tribal Fish Commission (CRITFC), at the direction of the Confederated Tribes and Bands of the Yakama Indian Nation (YIN), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), the Confederated Tribes of the Warm Springs Reservation of Oregon and the Nez Perce Tribe, has reviewed the Corps of Engineers' draft environmental impact statement entitled, "*Integrated Feasibility Report for Channel Improvements*" (DEIS). We have prepared the following comments.

General Comments

1. CRITFC has serious concerns that the DEIS failed to consider the cumulative impacts [1] resulting from implementation of the preferred alternative -- the least-cost alternative of dredging and disposal of 19.1 million cubic yards of bottom sediment from the lower Willamette and Columbia Rivers to increase the navigation channel from 40 to 43 feet. The DEIS failed to adequately analyze the impact of the proposed alternative on treaty reserved resources including but not limited to Pacific salmon, sturgeon and steelhead and Pacific lamprey. For example, the DEIS fails to discuss or analyze the impacts of the proposed action if John Day and the Lower Snake

1 The Council of Environmental Quality defines "cumulative impacts" as the impact to the environment which results from the incremental impact of this action when added to other past, present and reasonably foreseeable future actions regardless of what agency, federal or non-federal or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. The DEIS failed to consider the impact of the preferred alternative to the existing degraded lower river and estuarine habitat for anadromous fish and for other river operations and conditions other than those reasonable and prudent alternatives in the NMFS 1995-1998 FCRPS Biological Opinion for Snake River Salmon and the NMFS 1998 FCRPS Biological Opinion for Columbia River Steelhead. The DEIS failed to consider the impacts of the preferred alternative on salmon recovery measures in the NWPPC Fish and Wildlife Program and in the CRITFC tribes' *Spirit of the Salmon* restoration plan.

Corps of Engineers Response

1. Additional information has been added to the EIS on pacific lamprey and sturgeon. The other treaty reserve species you mention have been addressed in the EIS.

dams are removed in the future. The DEIS fails to include any analysis of the synergistic impacts of the proposed alternative with other river operations other than the current operations, and fails to examine significant changes projected for the Willamette and Columbia River hydrographs as a result of global warming. In addition, the DEIS failed to adequately address the importance of protecting and improving the estuary. Given how so many have sought to minimize the responsibility of the FCRPS for salmon mortality by pointing fingers at potential mortality stemming from problems in the estuary and the ocean, it is somewhat ironic that activities that will adversely affect salmon migration and feeding areas in the estuary would be termed "insignificant."2

1. (con't)

At no point during the development of this DEIS did the Corps or other federal government agencies provide a consultation for the CRITFC tribes. In fact, we could not find any mention of the impact of the preferred alternative on treaty resources anywhere in the DEIS, including the appendices. This includes consultation on the USFWS' Coordination Act Report on the DEIS alternatives. This failure to address tribal concerns must be rectified if the NEPA process for this proposed action proceeds.

2.

Nowhere in the DEIS is there an analysis or discussion of providing alternative transportation for commodities, such as rail, to other well established ports such as Seattle or San Francisco. This failure exists despite the fact that most of the present agricultural and commodity transport from transporting commodities by rail or truck to Astoria or even Longview was not well developed, because the capital and operations and maintenance costs of the dredging were not included in the overall costs of shipping commodities to and from Portland, thereby precluding reasonable comparison.

3.

The DEIS failed to consider the possibility that currently depressed Asian and other world markets may never rebound to levels analyzed in the DEIS. If the proposed alternative is implemented, water quality of these rivers would surely erode. The synergistic impacts of supertanker oil spills and bilge releases3 into the Columbia and Willamette River and their impacts on the ecological food chain and critical anadromous fish habitat were not included in the DEIS analyses. The proposed designation of the Lower Willamette River as a superfund site was not mentioned in the DEIS, nor was the designation considered in analyses of DEIS alternatives. We understand that the Corps owns property on the Willamette River that is under consideration as a superfund site,4 but the Corps remains non-committal regarding cleaning up this site. While the

4.

---

2 Due to the importance of the estuary in the salmon lifecycle, it is essential that any Corps activity in the estuary improve, not degrade, salmon survival.

3 The problem of exotic species being introduced into American harbors is significant, extensive, and costly. On Feb. 4, 1999, the Clinton Administration announced its proposal to almost double spending to address this problem. Scientists estimate that this problem costs the nation approximately $123 billion each year (Oregonian, 2/4/99 at A6). Without question, the Corps' environmental and economic analyses must thoroughly address the hazards from and prevention of introduction of exotic species resulting from releases of bilge water.

4 Due to the problems that are unique to the Willamette that have yet to be addressed, it is important that any dredging activities proposed for the Willamette be dealt with in a separate and subsequent analysis. These issues cannot be

Corps of Engineers Response

1 (continued). Historically, navigation channel maintenance dredging has not been sensitive to variations in flow hydrographs. Consequently, potential changes to flow hydrographs due to global warming are not expected to change the 20-year dredging forecast.

The proposed project is not expected to have significant, adverse impacts on salmon migration and rearing as discussed in the EIS and Biological Assessment.

2. Your agency has been on the mailing list for all coordination efforts for this project. The USFWS also coordinated its Coordination Act Report with your organization.

3. If it were more economical for Columbia River exports to be exported through San Francisco or Seattle, then goods would not be exported via the Columbia River.

4. The general consensus among major entities such as the World Bank, the International Monetary Fund, and the United States Department of Agriculture, is that the Asian economies have reached the trough of their downturn, and that those economies (along with the associated trade) are rebounding. The crisis has resulted in a short-term reduction in Columbia River exports, but the crisis does not represent a fundamental change in Asian economies that would result in a long-term decline or even stagnation of exports. Indeed, most forecasts call for Asian recovery to be well underway by 2001, and the first year that a deepened channel would be available is 2004. We have added this information to the EIS and Economic Appendix.

The potential listing of the Portland Harbor section of the Willamette River is a recent event and is discussed in the final report. The property owned by the Corps in the Willamette River, the US Moorings, is not a part of the CRCD study area. The Corps has requested of DEQ that the US Moorings be added to the States voluntary clean-up program and is awaiting their action on this request. The local sponsor has requested that dredging of the Willamette River be delayed in order to allow coordination with the ODEQ investigation and remediation planning for the Portland Harbor. No further Corps studies of Willamette River sediments are anticipated prior to completion of the remediation plan. Further sediment quality evaluations will be required and conducted prior to any dredging and disposal activities. The Corps has and will continue to participate in USEPA's and ODEQ's efforts to clean up the Willamette River.

DEIS states that the proposed action will likely entrain toxic sediments, such as DDT, PCBs and heavy metals in the rivers, the overall conclusion of the Corps is that the proposed action will,
5. "...provide ecosystem restoration for fish and wildlife habitats." Entraining toxins, such as DDT PCBs, and heavy metals, onto clay sediments, which stay suspended and easily bond with organic tissue (e.g., fish), is hardly likely to "provide ecosystem restoration."

The impact of the DEIS alternatives on the life histories of salmon was not considered in the DEIS, and the DEIS and the Coordination Act Report only provide the most cursory discussion of the impacts. Species listed and proposed for listing under the Endangered Species Act include
6. Lower Columbia chum and Willamette spring chinook. The impact from the preferred alternative on critical spawning and rearing habitat for these stocks and other listed and non-listed stocks was not adequately developed in the EIS. These serious deficiencies were noted by the Columbia River Estuary Studies Team (CREST) in recent public hearings in Astoria.

The DEIS states that the impacts of in-water disposal of dredge spoils on shallow bays that are vital juvenile rearing and adult holding habitat, "... could have a long term impact on species
7. utilizing these shallow water areas." Yet, the DEIS preferred alternative fails to include this conclusion and instead states that no adverse impacts to fish and wildlife are expected from implementing the preferred alternative.

The DEIS failed to consider the effects of potential improvements to LOADMAX, an existing system that allows for increased shipping opportunities by forecasting river levels and tidal shifts. Contrary to the DEIS perspective, CRITFC believes that it is unlikely to improve the 5-day river
8. forecast because of the forecast uncertainty surrounding Bonneville Dam releases, which control about 85% of the mainstem Lower Columbia flows. However, it is possible to make a 30-45 day guidance forecast, based on the CWS model runs issued by the Corps Reservoir Control Center and NWRFC, which may be beneficial to the shipping schedulers. It does not appear that the Corps considered this possibility.

The DEIS preferred alternative, creating a deeper, wider channel would lead to more ship traffic, more wave action, and more bank erosion. Widening the channel could shrink shallow-water habitat. Sub-marine slopes that would need to have an increased angle of inclination for a deeper
9. channel would be more unstable, and hence, more maintenance dredging would be required than with the present channel conditions. The Corps 0 & M budget continues to shrink (Corps NWD Water Management Chief Bill Branch, 1999 pers. comm.) creating problems maintaining the existing channel, thus, the 43 foot channel may not be able to be maintained, certainly not at taxpayer expense.

The DEIS failed to examine the impacts on anadromous fish from creation of additional predatory
10. avian habitat. For example, the creation of Rice Island in the Lower Columbia from dredge spoils has created an entire colony of Caspian terns that are consuming thousands if not millions of listed

adequately addressed in this EIS process.

Corps of Engineers Response

5. See response #4.

6. A discussion of expected impacts to listed stocks of salmonids was provided in the EIS and Biological Assessment provided to the NMFS. The proposed project is not expected to have significant, adverse impacts to listed stocks of salmonids.

7. There will be no disposal in shallow bays that are vital juvenile rearing habitat. Adult salmon do not hold in shallow bays.

8. See response # 2 to the US Department of Interior letter concerning LoadMax. Additional information on LoadMax has been included in the EIS.

9. Sections 4.4.3.2 and 6.2.3.1 of the report discuss these concerns.

10. These impacts are addressed in the EIS and Biological Assessment. No additional habitat for avian predators, such as Caspian terns, double-crested cormorants and/or glaucous-winged/western gull hybrids would be created by implementation of the proposed project. Disposal options in the Columbia River estuary, where avian predation on juvenile salmonids has been identified as a problem, would use existing disposal sites, Rice Island and Miller Sands Spit, where avian predators currently nest. No new disposal sites would be created. Habitat management actions are being implemented in 1999 to manage Caspian terns. Long-term management actions for these avian species are under consideration by the Caspian Tern Working Group, an interagency team.

and non-listed salmon smolts. 5

11. The DEIS trivializes the potential effects of underwater blasting on critical habitat and anadromous fish that are present all year in the proposed dredging area. The DEIS fails to adequately estimate the amount of submarine basalt to be blasted because of inadequate surveying.

12. The no-action alternative, maintaining the 40 foot navigation channel, continues to cause degradation of critical anadromous fish habitat. Given the value and precarious state of Columbia Basin anadromous fish, to provide a full range of alternatives for analysis that is required by NEPA, the Corps should provide an analysis of a no-dredging alternative.

13. In some ways, we are surprised that this dredging proposal is even being made. While navigation interests have prospered through the dredging and general "taming" of the Columbia River, the salmon, and the tribes that depend upon them, have suffered greatly. Many runs of salmon have been listed as threatened or endangered. Other runs have been extirpated. The tribes' treaty secured right to take fish has been constrained by the federal government's asserted need to minimize salmon mortality, yet here the federal government proposes an action that will harm salmon. The Corps anticipates significant disturbance of both river bottom and river during periods when salmon and other species are either residing or migrating. Placement of dredge spoils will cause further extensive disturbance. The extent of the potential impacts that could result from the proposed dredging is enormous. Yet to rebuild the runs, it is essential that salmon survival increase. It is likely that the sacrifices of the tribes and other fishers will be nullified, not to mention other salmon protection measures, if this dredging proposal is allowed to proceed.6

Specific Comments

Lower Columbia Channel Improvements DEIS, Appendices A-H

Appendix A, Chapter 4—Columbia River State Forecasting Analysis

14. Sec. 4.1 (Introduction):

The first paragraph presumes a deeper channel is preferred, without offering any alternatives.

Sec. 4.2 (Background)

The second paragraph ignores operational change made by the NWS-NWRFC over a year ago,

5 The Portland District, Corps of Engineers has estimated that ESA listed salmon stocks suffered between 6%-25% mortality from avian predators originating on Rice Island (Public Notice Number CENWP-EC-E-98-08 Caspian Tern Relocation, Columbia River, Clatsop County, OR; October 29, 1998).

6 The Corps must also be mindful of impacts to other aquatic species, including those that support fishers in other parts of the river and estuary. Navigation interests should not be allowed to further enrich themselves at the expense of these fishers, either.

Corps of Engineers Response

11. The blasting plan was developed in conjunction with the state and federal resource agencies. The 10 psi requirement was developed by NMFS and agreed to by the Corps. All blasting will be done during the approved in-water work period, which is a time when fish numbers are low. The blasting plan will also include measures to scare fish away prior to the blast.

12. The no action alternative is the base condition or existing condition. All economic and environmental evaluations are compared to existing conditions. The base condition was reviewed and further defined in the recently completed Columbia and Lower Willamette Dredged Material Management Plan/SEIS, June 1998. Modification of that base condition, such as no dredging, would require congressional revision of the navigation authority for the Columbia and Lower Willamette River project. This is not considered a reasonable alternative.

13. See previous responses #6 and #7 concerning salmon impacts from the proposed project.

14. See previous response #8.

where the twice-a-day stage forecast (e.g., 3-day forecast released by 7:30 AM and the 6-day forecast released by 1:30 PM) was replaced by the 1:30 PM six-day forecast.

Sec. 4.3 (Forecast System Limitations)

Whether the NWRFC was consulted for this analysis was not mentioned. The DEIS suggested that the study was incomplete, but we believe this is erroneous.

The third paragraph lists four limitations in the current river stage forecasting system. The Corp's Portland District's analysis indicates a lack of understanding of the DWOPER computer model used by the NWRFC to help generate harbor stage forecasts for points inclusive of Portland to Astoria.

14. (con't)

Specific points:

1. Accuracy of the Forecast. No attempt was made to list or understand the limitations. Major controlling factors: diurnal tidal cycle, Bonneville Dam releases and mainstem Willamette flow (40% regulated by 13 Corps projects). Minor controlling factor: local "side" flows from the Lewis, Cowlitz, and Clackamas Rivers. Furthermore, a skilled, but subjective, blending of the current observed stages with forecast stages is applied by the NWRFC forecaster before the forecast is released. Otherwise, unchecked model results may go out to the Corps and Port of Portland (PoP).

   Diurnal tide forecasts are obtained from official NOAA- National Ocean Service Tide Prediction Tables. These tables may go out to one year in the future.

   Schedulers electronically release the outflow release schedule for BON to NWRFC forecasters. The NWRFC uses the 7 am 3-day BON release schedule when modeling the Willamette River, in coordination with the COE-RCC, and the 1 pm 6-day release schedule for running the DWOPER harbor forecast program. The two release schedules often vary widely. Schedule differences of 5000 to 30,000 cfs are common, due to changes in power marketing. Represent ~85% of the mainstem flow on the Columbia.7

   The mainstem Willamette flows are 40% controlled by regulatory operations of the COE-RCC and 60% influenced by rapidly developing weather systems- with significant impacts at times. Willamette represents about 10% of the mainstem flow on the Columbia. The Lewis, Cowlitz, and Clackamas flows represent about 5% of the mainstem flow on the Columbia.

Appendix A, Chapter 4—Columbia River Stage Forecasting Analysis

Sec. 4.3 (Forecast System Limitations)

---

7 One alternative that the Corps should consider would be to see whether management of Bonneville Dam could be used to maintain downstream water levels to alleviate the perceived need to dredge between Portland and Longview.

Corps of Engineers Response

14. (con't) 2. Inadequate Forecast Span. Since the Bonneville Dam releases control about 85% of the total volume of the lower mainstem Columbia, it is very difficult to have a reliable release schedule that goes very far into the future, given all the uncertainties and the dynamic, rapid changes associated with power marketing. Relatively good accuracy of 1-2 days into the future is the best that can be achieved given present restrictions. Thus, the greatly improved forecast system that supports the benefits of the preferred alternative is highly unlikely and the benefits will not materialize.

Appendix A, Chapter 6—Geotechnical Information

Sec. 2 (Methodology), b (Coordination):
No coordination was attempted with CRITFC or any Columbia Basin tribes.

Sec. 4 (Rock Areas and Quantities), d (Slaughters Bar):
From Col. R. Mile 63 to 67, near Longview, blasting is proposed to remove any in-place rock.

Sec. 4 (Rock Areas and Quantities), f (Morgan Bar):
Near Col. R. Mile 101 to 101, blasting is proposed to remove suspected in-place rocks.

15.

Sec. 4 (Rock Areas and Quantities), g (Willamette River):
From Willamette R. Mile 4 to 71/2, blasting is proposed to remove suspected in-place rocks.

Sec. 6 (Blasting Information), a (General):
Although blasting did occur in the channel during the 1960's and 1970's, the COE did not keep any records so as to evaluate the geophysical character of the remaining rocks in the channel.

Sec. 6 (Blasting Information), b (Rock Requiring Blasting)

In addition to the above mentioned blasting sites, the DEIS preferred alternative requires blasting at Wauna Bar, Stella Fisher Bar, and Warrior Rock. The Corps admits that they do not know the character of the rock (i.e, is the basalt fractured or massive). This is an important point because massive basaltic rock will require a substantial amount of explosive compared to fractured rock. Hence, the DEIS may easily underestimate the amount of explosives needed. Comprehensive geophysical surveying would be needed to determine the character of the proposed rock to be blasted. The DEIS fails to include the study.

Sec. 6 (Blasting Information), d (Mitigation of Blasting Effects on Fish)

16. The DEIS states that blast effects will be 10 psi or less, with little substantiation. If the composition of the rock material is denser than that surveyed, many more blasts will be required that will potentially harass or injure anadromous fish. The DEIS fails to include a blasting

Corps of Engineers Response

15. Comments noted. Your agency has been on the mailing list for all coordination efforts for this project. The USFWS also coordinated its Coordination Act Report with your organization. Surveying the rock to be blasted will be performed during the next phase of design (PED).

16. See previous response #11.

schedule, thus, whole migrations of anadromous fish could be at risk from this activity.

Appendix H, Volume I Columbia River Ocean Dredge Disposal Sites

A significant concern is the timing of the dredging and proposed disposal in the ocean and estuary on migrating anadromous fish. Because of safety concerns, it appears the best time of year to
17. dredge is limited from May to October, with most of the work performed after July 1st, with 50 – 60 days, 24 hour a day operations (p. 13). On p. A-18, a diagram showing the periods of migrating adults clearly illustrates that summer-time dredging will have enormous impact on the adult salmon.

Exhibit C Fish and Wildlife Coordination Act Report and Impacts of the Proposed Columbia River Channel Deepening Project on Fish and Wildlife Resources

Page 20. There will likely be significant changes to the freshwater and saltwater interface if the preferred alternative is implemented, especially in low flow periods, changed river operations and if weather patterns change as a result of global warming. The DEIS failed to examine these possibilities. The result would be increased movement of the saltwater plume up the river. This will change the temperature and trophic structure of the river. Primary production areas now
18. available for millions of juvenile salmon will be changed, forcing juvenile and adult salmon to change physiological transformations between saltwater and fresh water and cause added impacts to the existing degraded conditions (Sherwood et al. 1990; Bottom and Jones 1990). The constant impacts to estuary trophic structures from maintenance dredging has not been considered in the DEIS. Dredging is counter to the normative river paradigm expressed by the Independent Scientific Group (Williams et al. 1996).

Conclusion

The DEIS appears flawed with respect to considering a full range of alternatives as required by NEPA, including an adequate cumulative effects analysis. Another significant problem is the lack of integration of the alternatives with other significant actions occurring in the basin. These include but are not limited to, hydro-system operations, anadromous fish restoration plans and
19. tribal and international treaties. The preferred alternative in the DEIS will likely cause direct, indirect, and cumulative impacts on treaty reserved resources. Although we do not support any dredging, if the Corps is to continue with considering additional dredging in the lower Columbia River, we strongly recommend that a full scoping for a new DEIS be initiated with full tribal consultation from the onset of scoping.

Corps of Engineers Response

17. Construction timing considerations are included in the Biological Assessment sent to the NMFS. The NMFS is preparing a Biological Opinion based upon the assessment.

18. We disagree. The results of the salinity intrusion analysis indicate very little change in the freshwater/saltwater interface. See Section 6.2.3.3 in the EIS and Appendix F for more information.

19. Relevant state and federal fish and wildlife programs have been considered in evaluating the proposed action. The effects of deepening on all Columbia and lower Willamette River resources are addressed in the EIS. Formal scoping of this feasibility study/EIS was initiated in 1996 with a scoping notice. This notice, as well as copies of the draft report were addressed to all Columbia Treaty Tribes.

We appreciate the opportunity to provide DEIS comments. Should you have questions regarding these comments, please contact Robert Heinith at (503) 238-0667.

Sincerely,

Ted Strong
Executive Director

References

Bottom, D.L. and K.K. Jones. 1990. Species composition, distribution, and invertebrate prey assemblages in the Columbia River estuary. P. 243-270. In: M.V. Angel and R.L. Smith [ed]. Columbia River:estuarine system. Progress in Oceanography. 25(1-4).

Sherwood, C.R., D.A. Jay, R.B.Harvey, P. Hamilton and C.A. Simenstad. 1990. Historical changes in the Columbia River estuary. In: M.V. Angel and R.L. Smith [ed]. Columbia River:estuarine system. Progress in Oceanography. 25(1-4).

Williams, R. and eleven co-authors. 1996. *Return to the River:* Restoration of salmonid fishes in the Columbia River ecosystem. Northwest Power Planning Council. Portland, Oregon.

Lcdres.docl

LOWER COLUMBIA RIVER ESTUARY PROGRAM

WORKING FOR SOLUTIONS

January 26, 1999

U.S. Army Corps of Engineers, Portland District
CENWP-PE-E ATTN: Steven J. Stevens
P.O. Box 2946
Portland, Oregon 97208-2946

Dear Mr. Stevens:

Thank you for the opportunity to review the draft Environmental Impact Study (EIS) for the proposed deepening the Columbia and Willamette River channel from 40 to 43 feet. The Lower Columbia River Estuary Program (Estuary Program) is a joint venture between the states of Oregon and Washington and the Environmental Protection Agency to prepare a Comprehensive Conservation and Management Plan (Management Plan) for the lower Columbia River and Estuary. The programmatic direction for the Estuary Program comes from a 31 member Management Committee, representing the range of interests and groups involved in activities that utilize and impact the river. The Management Committee benefits from the participation of the Corps as one of the federal agencies represented on the Committee.

1. The mission of the Estuary Program is "***to preserve* and *enhance* the *water quality of* the *estuary to support its biological and human communities***". The Policy and Management Committee have identified seven priority issues that reflect the problems in the river. These are summarized in Chapter 4 of the draft Management Plan. The plan goes on to identify 43 specific actions to help remedy the problems (Chapter 6). Of particular concern is the loss and modification of habitat, including wetlands, in the lower river and estuary. Several actions call for multiple partners to work to achieve a net gain in habitat in the lower river and estuary. Also of concern is the quality of water and sediment. As you know, toxic contaminants have been found in both sediment and fish tissue.

There are comments throughout the draft Management Plan which have some bearing on the channel deepening project. Attached to this letter is a copy of the current draft of the plan. Of the 43 actions in this draft, several relate to natural resources likely to be affected by the deepening project. There are nine actions relating to habitat protection and enhancement that deal directly with issues common to the Estuary Program plan and the channel deepening. Those are action numbers 1 through 6, 12, 21, and 29. Actions number 3 and 12 seem the most on point. I am attaching the pertinent nine actions.

2. The Estuary Program requests that you evaluate the draft EIS for consistency with the Estuary Program actions as they relate to the deepening plan. We ask that you include in this analysis how the deepening project will be consistent with and further the objectives of the Management Plan. We invite you to present a summary of your evaluation to the Management Committee at one of its upcoming meetings. I will be happy to arrange that meeting with you.

Thank you for the opportunity to comment and for your attention to these comments. We look forward to discussing this with you soon.

Sincerely,

Debrah Richard Marriott

Debrah Richard Marriott
Director, Lower Columbia River Estuary Program

811 SW Sixth Avenue Portland, Oregon 97204 • Phone: 503-229-6066 Fax: 503-229-5214
E-mail: chamness.jeanne@deq.state.or.us

Corps of Engineers Response

1. Comments noted. Any actions related to channel deepening and disposal of sediments would necessarily consider water quality impacts and impacts to important resources such as wetlands and riparian habitat. Based on sediment testing results, sediments which may be affected by deepening the navigation channel would be suitable for unconfined in-water disposal. The possible exception to this involves some segments of the Willamette River adjacent to the existing 40-foot channel. Various management options, including avoidance of these areas, could be employed. However, the prudent measure at this point is to wait until DEQ completes the Willamette River sediment management plan before proceeding with any action. As described by the habitat screening process in Chapter 4 of the EIS, with few exceptions the most important habitat would be avoided by the proposed action. Also, the ecosystem restoration component of this action would restore about 1,500 acres of riparian, wetland and general wildlife habitat to the lower Columbia River ecosystem.

2. We have reviewed the Draft Management Plan and will continue to coordinate with your office in an effort to be consistent with the plan. Further, we will continue to seek contributing partners in achieving the objectives of the plan.

The Estuary Program Role:

CONSULT — CONVENE — COORDINATE

PRELIMINARY COST ESTIMATES: Non Estuary Program staffing costs need to be determined. Staff would be for program development, criteria selection, supervision of the assessment process, and development of appropriate protection and restoration techniques. Other Costs: Riparian survey $1,000 to $15,000 per mile; habitat assessment $150.00 per mile; mapping costs are undetermined at this time.

FUNDING SOURCE: Funding sources for non Estuary Program staff need to be determined.

REGULATIONS REQUIRED: This action will require legislation to designate habitats not to be altered.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)	Maintains Oil Spill inventory. Mapped critical resources including habitat and prioritized for protection from spills	
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)	Provides grants and technical assistance to implement the Salmon Recovery Act, the Steelhead Recovery Pilot Program, and the Watershed Management Act. Mapped sensitive resources for oil spill protection purposes.	Identify critical habitat issues and propose project to resolve them.

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

Habitat and Land Use

1. ACTION: Inventory and prioritize habitat types and attributes needing protection and conservation. Identify habitats and environmentally sensitive lands that should not be altered.[1]

ENVIRONMENTAL SIGNIFICANCE: *Well over 50% of the important fish and wildlife habitat in the lower river basin has been lost as a result of human activities. What is left needs to be identified, characterized and protected if ecosystem functions are to be maintained and if healthy populations of native species are to be sustained. Completing an inventory of habitat types is the first step in a comprehensive effort to institutionalize the protection of important habitats in the lower river. It will result in a greatly improved knowledge base and provide a method to assess habitat health.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints.*

HOW:

- Research and assess habitat types important to sensitive, threatened, and endangered species, and other populations at risk, and identify factors which limit their proper functioning. Habitat types may include: tidal wetlands, riparian habitats, habitat corridors, and deep water and nearshore environments.
- Develop appropriate criteria and prioritize habitat types to be protected and restored.
- Map existing habitats and identify priority habitats.
- Identify possible protection and restoration projects and designate habitats that should not be altered.
- Reach agreement on appropriate protection and restoration techniques and guidelines.
- Identify indicator species closely associated with particular habitat types, and monitor these species to evaluate the health and proper functioning of their habitats.

ENVIRONMENTAL MEASUREMENT: By 2005, specific habitats and environmentally sensitive lands have been protected.

ACTION MEASUREMENT: By 2001, existing habitat is mapped and a process and schedule is in place to prioritize habitats for protection, restoration and conservation. By 2003, indicator species are identified, a criteria for prioritizing and protecting habitat is in place, and a monitoring plan is in place.

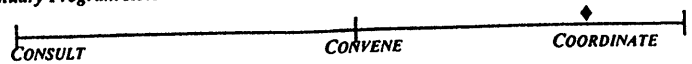
WHERE: Study area.

WHO: The Estuary Program coordinates with appropriate federal, state, and local governments and entities, and private landowners. Build on work completed by the Oregon Biodiversity Project and other existing inventories.

[1] Actions number 1-6 are somewhat cumulative. The assessment required in this action must be completed before components of subsequent actions can be implemented.

WHERE: Primarily in the study area but up river as necessary.

WHO: The Estuary Program coordinates with appropriate federal, state, and local governments and entities, and private landowners.
The Estuary Program Role:



PRELIMINARY COST ESTIMATES: Non Estuary Program staffing costs need to be determined. After assessment, staff would develop a plan for acquisition and maintenance of biological reserves, and incentives for private landowners to protect wetland and riparian areas.
Other Costs: Wetland restoration $50.00 to $95,000 per acre; wetland rental $63.00 to $121.00 per acre per year; pasture and grazing land purchase $75.00 to $4,000 per acre.

FUNDING SOURCE: Funding sources for non Estuary Program staff need to be determined.

REGULATIONS REQUIRED: Rules and legislation may be needed to ensure appropriate habitat protection and enhancement and to modify rules, laws, and ordinances to encourage environmentally sensitive development.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)	Provides grants and technical assistance to implement the Salmon Recovery Act, the Steelhead Recovery Pilot Program, and the Watershed Management Act.	

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

2. ACTION: Protect, conserve and enhance identified habitats, particularly wetlands, on the mainstem of the lower Columbia River.

ENVIRONMENTAL SIGNIFICANCE: ***The limited amount of habitat left on the mainstem of the Columbia River must be protected and enhanced to halt further deterioration and to maintain the possibility of preserving the ecosystem. Protection and restoration will begin by institutionalizing habitat protection and providing incentives and tools for landowners and government bodies to act. Currently there are 64,200 acres of protected wetland habitat in the study area. The Oregon Wetlands Plan[2] has identified an additional 10,000 acres of wetland habitat that should be protected.***

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints, Public Awareness and Stewardship.*

HOW:

- Acquire and manage important wetland habitats and environmentally sensitive lands using the information developed in the habitat assessment in perpetuity.
- Establish and maintain additional biological preserves in perpetuity.
- Where designated lands are already publicly owned, implement management practices that will ensure these lands are allowed to function naturally.
- Eliminate provisions in existing local, state or federal rules that inhibit habitat restoration or enhancement by private landowners.
- Provide incentives (start up grants, tax breaks, etc.) and technical assistance to encourage local landowners, businesses, corporations and trustee agencies to improve and protect wetland and riparian areas. Include incentives for using best management practices (BMPs) to demonstrate appropriate techniques.
- Reclaim habitat by selectively using tools such as seasonally managing or breaching dikes, augmenting inadequate stream flows, decompacting wetland soil, lowering surface elevations of mainstream reservoirs, modifying dam operations, re-establishing sustained peak flows, installing fish-friendly tide gates, not disposing of dredge sediment in streams, restoring riparian floodplain connections, and removing or modifying structures that prevent natural flows.
- Support research on techniques for cost effective re-vegetation of areas such as dredge spoil islands.

ENVIRONMENTAL MEASUREMENT: By 2010, 10,000 additional acres of habitat are permanently enhanced, protected or reclaimed.

ACTION MEASUREMENT: By 2005, a strategy with appropriate standards to protect and acquire habitats is established; incentives, including the US Department of Agriculture Conservation Reserve and Enhancement Program, is in place; by 2005, provisions of rules, laws and ordinances that discourage environmentally sensitive development or allow loss of habitat have been identified; by 2008, rules, laws and ordinances have been modified to encourage environmentally sensitive development and to protect habitat.

[2]The recommendation for 10,000 acres is contained in "Oregon Wetlands Plan", prepared by the Oregon Department of Fish and Wildlife and the Oregon Wetland Joint Venture, which included parties in the states of Oregon and Washington.

3. **ACTION:** Adopt and implement consistent wetland, riparian, and aquatic habitat protection standards that result in an increase in quality and quantity of habitat.

ENVIRONMENTAL SIGNIFICANCE: *Currently the application of wetland, riparian, and aquatic protection standards tends to vary between jurisdictions. If the ecosystem is to be effectively protected and enhanced, consistent standards throughout the study area are needed to ensure that balanced decisions can be made and to prevent future losses. Consistent standards will ensure that the habitat protection process is institutionalized throughout the study area, and that protection and mitigation efforts are maintained into the future.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints.*

HOW:

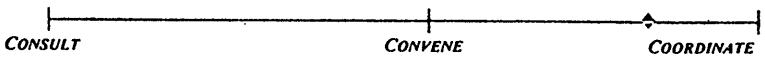
- Assess current habitat protection standards and implementation.
- Adopt habitat protection protocols, including standards for monitoring mitigation projects.
  - ✓ Assess the potential impacts of proposed development. Identify cumulative impacts and habitat attributes that might be lost. Present alternatives that minimize impacts.
  - ✓ The preferred alternative will have no adverse impacts.
  - ✓ If impacts are unavoidable, mitigation shall take one of five forms in order of preference:
    a) Restoration: returning a damaged habitat as close as possible to its condition prior to damage;
    b) Enhancement: making changes or improvements to habitat to replace functions or values lost or damaged;
    c) Preservation: protecting habitat in adjacent areas that is equivalent to the area damaged and that might otherwise be subject to unregulated activity;
    d) Creation: converting a non-functioning habitat area into one having all of the physical and biological characteristics of the area lost or damaged;
    e) Cash mitigation: providing cash compensation for lost habitat.

ENVIRONMENTAL MEASUREMENT: Development activity does not adversely affect or disturb existing habitat, or impacts are fully mitigated.

ACTION MEASUREMENT: All jurisdictions in the study area adopt consistent protection standards by 2007.

WHERE: Study area.

WHO: The Estuary Program works with federal and state natural resource agencies to develop the standards, implement adoption procedures and coordinate technical assistance.
The Estuary Program Role:



PRELIMINARY COST ESTIMATES: Estuary Program costs: FY1998: $25,000 to assess current standards and their implementation; Year 1 Implementation (1999): $25,000 to complete assessment and make recommendations and 0.05 FTE ($4,000) for oversight; Year 2: 0.05 FTE ($4,000) to coordinate the development of consistent standards. Non Estuary Program staffing costs need to be determined. Staff would review and facilitate agency adoption of wetland,

riparian, and aquatic standards, and agree on the consistent applications of standards, including mitigation standards where impacts are unavoidable.
Other costs: Unit costs of protection standards: Fencing $1.00 to $4.00 per foot; tree planting $100.00 to $500.00 per acre; riparian area lease/rental rates $63.00 to $121.00 per acre per year; pasture and grazing land purchase $75.00 to $4,000 per acre.

FUNDING SOURCE: Estuary Program staff and projects will come from base funds and a $50,000 EPA Grant (received in 1998-1999). Funding sources for non Estuary Program staff need to be determined.

REGULATIONS REQUIRED: This action would require legislation to establish standards.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		Wetland Water Quality Standards may be revised in the next triennial standards review
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

The Estuary Program Role:

PRELIMINARY COST ESTIMATES: Estuary Program costs: 0.25 FTE ($20,000) annually for coordination. Non Estuary Program staffing costs need to be determined. Staff would identify areas for protection and restoration, and develop preservation and restoration techniques. Other Costs: Unit costs for riparian protection/restoration: Fencing $1.00 to $4.00 per foot; tree planting $100.00 to $500.00 per acre; dike removal $2.50 to $3.50 per foot; riparian area lease/rental rates $63.00 to $121.00 per acre per year; pasture and grazing land purchase $75.00 to $4,000 per acre.

FUNDING SOURCE: Estuary Program base funds will support Estuary Program staff. Funding sources for non Estuary Program staff need to be determined.

REGULATIONS REQUIRED: Regulations may be needed to ensure adequate and appropriate buffer areas are maintained and restored.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)	Developing TMDLs for temperature that will include recommendations for shading.	
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

4. **ACTION:** Preserve and/or restore buffer areas in appropriate locations along tributaries and the mainstem to a condition that is adequate to maintain a healthy, functioning riparian zone for the lower river and estuary.

ENVIRONMENTAL SIGNIFICANCE: *Healthy riparian buffer zones are important for many reasons. They protect the spawning and rearing habitat critical to recover and sustain salmonids and other native threatened and endangered species of fish and wildlife. They reduce sediment intrusion and excessive runoff from human activities, such as development, construction, forestry, ranching, agriculture, farming and road building practices. Healthy riparian buffers also provide shade to maintain stream temperature, habitat and food sources for fish and wildlife, woody debris for streams and pollution attenuation. Additionally, they store water during high flows. To maintain these functions, it is critically important to identify key habitat for protection, and provide incentives and guidance to landowners and government bodies.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints, Public Awareness and Stewardship.*

HOW:

- Using the information developed during the habitat assessment (Action #1), identify possible buffer areas for protection and restoration. Characteristics such as slope, ground cover and soil type should be addressed.
- Identify urban and rural techniques for restoration and preservation. Develop new techniques, such as 'daylighting' urban streams (opening up streams that have been submerged in conduits); exploring dike removal and alternatives to dewatering wetlands; and discouraging the use of riprap.
- Acquire and manage key riparian areas and open space preserves for permanent protection.
- Where designated lands identified in the habitat assessment are already publicly owned, implement management practices that ensure those lands function naturally.
- Provide incentives such as start up grants, tax breaks, density bonuses and fewer inspections, and technical assistance to encourage local landowners, businesses, corporations, and trustee agencies to undertake riparian area improvements and protection measures.
- Establish a vegetation protection program that includes planting and fencing. Provide acquisition, operations and maintenance monies for planting or re-planting native species along tributaries. Encourage volunteer efforts.

ENVIRONMENTAL MEASUREMENT: Streams meet water quality standards. Indices and measurements are established by 2002 to evaluate habitat and riparian corridors.

ACTION MEASUREMENT: Specific areas and miles for buffer restoration have been identified by 2005 and a plan for preservation and restoration is in place.

WHERE: Study area.

WHO: The Estuary Program coordinates with the appropriate federal, state, and local governments and agencies, watershed councils, and private landowners.

REGULATIONS REQUIRED: None.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

5. ACTION: Restore 3000 acres of tidal wetlands along the lower 46 river miles to return tidal wetlands to 50% of the 1948 level.

ENVIRONMENTAL SIGNIFICANCE: *Tidal wetlands are one of the most critical habitats of the estuary, providing nursery and feeding grounds for numerous species including threatened and endangered ones (steelhead, chinook salmon, bald eagles, etc.). Much of this key habitat has been lost through the actions of humans. Restoring lost tidal wetlands is a key to the health of the ecosystem of the lower river. Restoring 3000 acres will ensure that significant progress is made toward returning the lower river, specifically the estuary itself, to a more natural condition. Restoring this critical habitat will be top priority in our habitat protection efforts.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints, Public Awareness and Stewardship.*

HOW:

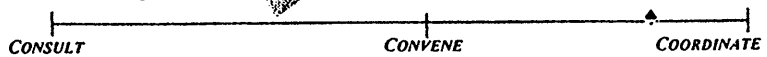
- Using the information developed during the habitat assessment, identify specific tidal wetlands areas that could be restored.
- Acquire, where possible, identified wetland areas and manage them to restore their natural functioning.
- Work with land owners and local diking districts to undertake tidal wetland improvement projects on private lands. These efforts could include removing tide gates or replacing tide gates with ones that allow greater water exchange, and breaching dikes.

ENVIRONMENTAL MEASUREMENT: 1500 acres are restored by 2010; 3000 are restored by 2020.

ACTION MEASUREMENT:

WHERE: The lower 46 miles of the study area.

WHO: The Estuary Program coordinates with federal, state, and local governments and agencies, and private landowners.
The Estuary Program Role:



PRELIMINARY COST ESTIMATES: Estuary Program costs: 0.25 FTE (Biologist) ($20,000) annually for oversight. Staffing costs for other agencies need to be determined. Staff would identify potential locations for tidal wetland restoration.
Other Costs: Unit costs for tidal wetland restoration: Dike removal $2.50 to $3.50 per foot; culvert replacement $80,000 to $243,000 "project cost" to re-establish fish passage; pasture and grazing land purchase $75.00 to $4,000 per acre; tidal fresh water wetland restoration $43,000 to $78,000 per acre; salt marsh restoration $18,000 to $49,000 per acre.

FUNDING SOURCE: Estuary Program base funds will support Estuary Program staff. Funding sources for non Estuary Program staff need to be determined. Potential Source: National Coastal Wetland Conservation grants for Restoration and Acquisition in partner with US Fish and Wildlife Service.

REGULATIONS REQUIRED: None.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

5. ACTION: Restore 3000 acres of tidal wetlands along the lower 46 river miles to return tidal wetlands to 50% of the 1948 level.

ENVIRONMENTAL SIGNIFICANCE: *Tidal wetlands are one of the most critical habitats of the estuary, providing nursery and feeding grounds for numerous species including threatened and endangered ones (steelhead, chinook salmon, bald eagles, etc.). Much of this key habitat has been lost through the actions of humans. Restoring lost tidal wetlands is a key to the health of the ecosystem of the lower river. Restoring 3000 acres will ensure that significant progress is made toward returning the lower river, specifically the estuary itself, to a more natural condition. Restoring this critical habitat will be top priority in our habitat protection efforts.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints, Public Awareness and Stewardship.*

HOW:

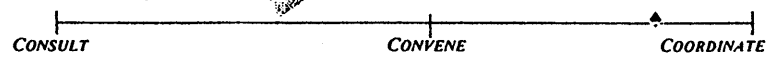
- Using the information developed during the habitat assessment, identify specific tidal wetlands areas that could be restored.
- Acquire, where possible, identified wetland areas and manage them to restore their natural functioning.
- Work with land owners and local diking districts to undertake tidal wetland improvement projects on private lands. These efforts could include removing tide gates or replacing tide gates with ones that allow greater water exchange, and breaching dikes.

ENVIRONMENTAL MEASUREMENT: 1500 acres are restored by 2010; 3000 are restored by 2020.

ACTION MEASUREMENT:

WHERE: The lower 46 miles of the study area.

WHO: The Estuary Program coordinates with federal, state, and local governments and agencies, and private landowners.
The Estuary Program Role:



PRELIMINARY COST ESTIMATES: Estuary Program costs: 0.25 FTE (Biologist) ($20,000) annually for oversight. Staffing costs for other agencies need to be determined. Staff would identify potential locations for tidal wetland restoration.
Other Costs: Unit costs for tidal wetland restoration: Dike removal $2.50 to $3.50 per foot; culvert replacement $80,000 to $243,000 "project cost" to re-establish fish passage; pasture and grazing land purchase $75.00 to $4,000 per acre; tidal fresh water wetland restoration $43,000 to $78,000 per acre; salt marsh restoration $18,000 to $49,000 per acre.

FUNDING SOURCE: Estuary Program base funds will support Estuary Program staff. Funding sources for non Estuary Program staff need to be determined. Potential Source: National Coastal Wetland Conservation grants for Restoration and Acquisition in partner with US Fish and Wildlife Service.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

6. ACTION: Monitor the effectiveness of habitat protection, restoration and mitigation projects.

ENVIRONMENTAL SIGNIFICANCE: *Currently there is no consistent oversight of habitat protection, restoration and mitigation projects. These projects must be maintained and evaluated if they are to be successful over the long run.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints.*

HOW:

- Establish a team responsible for ensuring that habitat projects are monitored for effectiveness and adequately maintained for long-term viability.
- Develop criteria (including indicator species and best assessment tools) for evaluating the effectiveness of habitat protection, restoration and mitigation projects.
- Where mitigation has been required, establish a team to work with regulatory agencies to ensure that any failed projects are corrected. At a minimum require developers using mitigation to provide financial security for a prescribed period of time to ensure successful operation and long-term maintenance of their mitigation.
- Link habitat monitoring to the Estuary Program long-term monitoring plan.

ENVIRONMENTAL MEASUREMENT: By the year 2007, mitigation for developments is required and habitat protection and restoration goals are fully met.

ACTION MEASUREMENT: After the mitigation program is in place, the team will be established in 2001.

WHERE: Study area.

WHO: The Estuary Program convenes a group of qualified individuals who could monitor habitat projects to ensure their proper functioning over time.

The Estuary Program Role:

PRELIMINARY COST ESTIMATES: Estuary Program costs: 0.25 FTE (Biologist) ($20,000) annually for oversight.

FUNDING SOURCE: Estuary Program base funds.

REGULATIONS REQUIRED: None.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		
US Environmental Protection Agency (EPA)		
Washington Department Of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

12. ACTION: Ensure that human-caused changes in the river morphology and sediment distribution within the river channel and estuary are managed so that native and desired species are not harmed.

ENVIRONMENTAL SIGNIFICANCE: *Human caused changes in the river morphology and sediment distribution within the river channel and estuary can harm populations of native and desired species. River morphology includes its physical structure, banks, channel, and channel bottom. Identifying these changes, monitoring impacts, and advocating for the interests of the species will help ensure that changes will not harm the species.*

PRIORITY ISSUE(S) ADDRESSED: *Habitat Loss and Modification, Institutional Constraints.*

HOW:

- Identify proposed and current activities that will cause significant changes in Columbia River morphology and sediment distribution within the river channel and estuary.
- Coordinate with other agencies and governments to ensure compliance with existing goals, rules, and regulations.
- In conjunction with the long-term monitoring plan, monitor the impacts of changes in the river's morphology and sediment distribution on native and desired species.

ENVIRONMENTAL MEASUREMENT: Native and desired species associated with the Columbia River and estuary are not harmed by changes to river morphology and sediment distribution.

ACTION MEASUREMENT:

WHERE: Study area.

WHO: The Estuary Program, state, federal, and local agencies, and industry.
The Estuary Program Role:

PRELIMINARY COST ESTIMATES: Estuary Program costs: 0.25 FTE ($20,000) annually to coordinate.

FUNDING SOURCE: Estuary Program base funds.

REGULATIONS REQUIRED: None.

PRELIMINARY COST ESTIMATES: Estuary Program costs: 0.10 FTE ($8,000) annually for assistance; $700,000 for one time Internet service.

FUNDING SOURCE: Funding for the Internet service would be sought from a corporation or foundation grant. Estuary Program base funds for staff support.

REGULATIONS REQUIRED: None.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)		
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)		

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

21. ACTION: Improve coordination among government agencies.

ENVIRONMENTAL SIGNIFICANCE: *Currently, over 160 parties have some jurisdiction or interest in management of the lower Columbia River, which creates significant challenges to effective management. One of the difficulties in managing a complex system like the Columbia River is the lack of information about which agencies are involved in a given issue. Identifying agencies and contact points within agencies provides interested entities with valuable information that can reduce confusion and loss of time. Improving intergovernmental coordination and responsiveness will facilitate the dissemination of information to interested parties in a timely manner, ultimately improving resource protection of the lower river and estuary.*

PRIORITY ISSUE(S) ADDRESSED: *Institutional Constraints, Public Awareness and Stewardship.*

HOW:

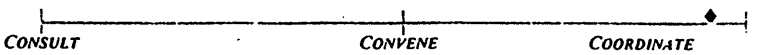
- Federal, state, local, and tribal leaders will direct coordination, collaboration, and a unified approach to species recovery and natural resource protection of the lower river and estuary.
- Convene agency leaders and/or technical staff teams regularly to focus on the lower river and estuary.
- Provide mechanisms for information flow and exchange among agencies and to the public.
- Develop and maintain a catalog of permit-issuing agencies to enable project proponents and other interested parties to contact agencies with permit-reviewing responsibility. Develop a list of other permits (federal, state, regional, or local) required for the activity in question. Make the list available at the local permitting agency. Create and maintain a system that identifies a point of contact in agencies involved in natural resource management.
- Develop and maintain processes that encourage and rely on local jurisdictions as the first contact for any developments that are planned. Assure that information about other agencies of interest is provided in written and electronic form to developers and interested parties.
- Develop a clearinghouse for information about the river and the federal, state and local regulatory review processes.
- Provide Internet hardware and software in every municipality for local government officials in the study area. Maintain a website that links data about the river, provides updates on laws, rules, etc., and provides technical assistance and information.

ENVIRONMENTAL MEASUREMENT:

ACTION MEASUREMENT: The initial forum was convened January 1999. Create and maintain a catalog of agencies and contact points for use by developers, agencies and interest groups by 2002. The clearinghouse will be in place by 2002. Internet access will be provided by 2002.

WHERE: Study area.

WHO: The Estuary Program.
The Estuary Program Role:



Conventional and Toxic Pollutants

29. ACTION: Monitor and evaluate potential effects of pollutants on human health and wildlife.

ENVIRONMENTAL SIGNIFICANCE: *At present, it is often difficult to relate measured levels of contaminants in sediments to environmental impacts and health effects. The lack of agreement on protocols at both the national and regional level hinders the effective collection, interpretation and sharing of data. Likewise for fish and wildlife, there are still many compounds for which the toxic effects are unknown. More research is needed to understand these complex relationships. Monitoring and evaluating potential effects of pollutants will help provide a better understanding of the impacts.*

PRIORITY ISSUE(S) ADDRESSED: *Toxic Contaminants, Public Awareness and Stewardship, Institutional Constraints.*

HOW:

- Conduct a comprehensive survey of fish and shellfish consumption for the lower Columbia and Willamette rivers, Multnomah Channel and Columbia Slough. Health risk evaluations should be based on the results of this survey, and should focus on both cancer and non-cancer endpoints, including the endocrine, immune, and reproductive systems and developmental processes. Ensure that the public, specifically those groups or individuals facing the highest risk, is informed of the findings and understands the potential risks.
- Actively promote fish consumption safety programs.
- Continue regional and national scientific efforts to develop, test and implement protocols for evaluating and monitoring sediment, water and tissue samples.
- Develop and adopt reference levels or standards for trace metals, PAHs, dioxins, furans, pesticides, radionuclides, and tributyltin in sediments, fish and wildlife.
- Implement the long-term monitoring plan to help develop the data needed to evaluate program effectiveness.
- Continue scientific studies into the effects on aquatic life of toxic contaminants in sediments to ensure that all toxic contaminants of concern are addressed. Use the results to develop standards specific to regional or local areas.

ENVIRONMENTAL MEASUREMENT: Human and wildlife health is not impaired by pollutants.

ACTION MEASUREMENT: By the year 2020, standards for concentrations of toxic contaminants in sediments and fish tissue are developed and adopted. Agreements between monitoring agencies are in place.

WHERE: Study area.

WHO: Scientific community, health agencies, and federal and state environmental agencies. The Estuary Program provides funding for the fish consumption survey and coordinates its implementation.

The Estuary Program Role:

PRELIMINARY COST ESTIMATES: Estuary Program costs: Year 1 and 2: $200,000 for the study; Year 3: 0.05 FTE ($4,000) to support the development of standards.

FUNDING SOURCE: Estuary Program Base funds and grant monies will be used for the fish consumption survey. Continued efforts and funds from the federal government will be used to address standards.

REGULATIONS REQUIRED: This action would require state rules or legislation if standards are to be adopted.

ENVIRONMENTAL AGENCY ACTIVITIES:

AGENCY	EXISTING ACTIVITIES	PROPOSED ACTIVITIES
Oregon Department of Environmental Quality (DEQ)	Maintains an ambient water quality monitoring network with 1 site on the Columbia, 37 sites in the Willamette Basin, and 1 site each on the Sandy, Clatskanie, Klaskanine, Youngs, and Lewis & Clark rivers. Sites are monitored six times or 12 twelve times per year and analyzed annually for trends and water quality standard exeedances. Nutrients, Bacteria and other conventional pollutants are monitored. Ten random sites per year will be monitored in lower Columbia ESU for fish, macroinvertebrates, water quality, and habitat as part of the Oregon Plan long-term monitoring. Special studies involving toxics, mixing zone studies, and TMDL assessments are conducted. Current work includes mercury assessments on the Willamette, a Willamette harbor toxics study, TMDLs are scheduled for the lower Columbia and tributaries.	(see #23 regarding standards development)
US Environmental Protection Agency (EPA)		
Washington Department of Ecology (Ecology)	Developing freshwater sediment standards.	

EPA information is being compiled for the final plan. Tribes and additional federal and state agencies will be included in the implementation strategy being developed in July, 1999.

C·R·C·F·A

COLUMBIA RIVER
CRAB FISHERMAN'S ASSOC.

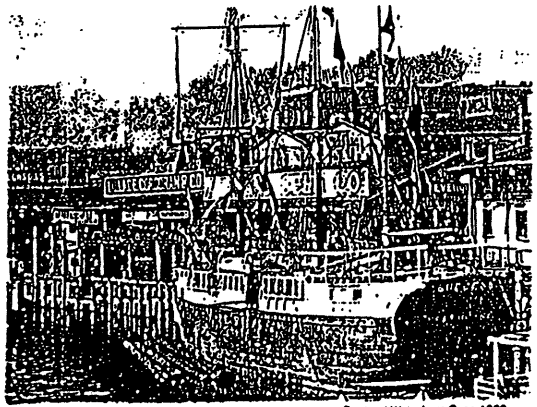
RESPONSE

TO

US Army Corps
of Engineers®
Portland District

Draft
Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement

Columbia & Lower Willamette River Federal Navigation Channel



Portland Waterfront Circa 1900
Photo Courtesy of Port of Portland

October 1998

2/5/99

Steve Stevens,

CRCFA questions the inclusion of Ocean Disposal in the Draft Integrated Feasibility Report for Channel Improvements & Environmental Impact Statement: Columbia & Lower Willamette River Federal Navigation Channel since Ocean Disposal was not mentioned in the Public Notices nor addressed as an EIS in the Report.

CRCFA requests a specific listing of all changes (additions or deletions) made to the Draft Report other than the addition of Public & Agency comments.

Thank you,
Dale Beasley, CRCFA

CRCFA
COLUMBIA RIVER CRAB FISHERMAN'S ASSOC.
PO Box 461
Ilwaco, WA 98624

CRCFA Commissioners:

Dale Beasley
PO Box 461
Ilwaco, WA 98624
(360) 642-3942
(360) 642-5454 FAX
crabby@gone.com

Jeff Davis
PO Box 580
Seaview, WA 98644
(360) 642-3371
lumpynmo@pacifier.com

Chris Doumit
PO Box 342
Cathlamet, WA 98612
(360) 795-0601

Dwight Eager
PO Box 141
Chinook, WA 98614
(360) 777-8727

Lance Gray
PO Box 80
Chinook, WA 98614
(360) 777-8740

Rob Greenfield
PO Box 84
Chinook, WA 98614
(360) 777-8242
green@transport.com

Bill Rhodes
PO Box 2215
Gearhart, OR 97138
(503) 717-1068
crabber@pacifier.com

U S Army Corps of Engineers
Portland District
CENWP-PE-E Attn: Steve Stevens
Colonel Slusar
P.O. Box 2946
Portland, Oregon 97208

5 February 1999

Colonel Slusar:

RE: Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement Columbia & Lower Willamette River Federal Navigation Channel - October, 1998

This review is prepared by CRCFA on behalf of:
Columbia River Crab Fisherman's Association (CRCFA)
Pacific Coast Federation of Fishermen's Associations (PCFFA)
Institute for Fisheries Resources (IFR)
Coast Alliance

The Columbia River Crab Fisherman's Association represents fishermen from Washington, Oregon, California, and Canada related to dredge disposal at the MCR. Many of these fishermen are displaced salmon fishermen. We represent the last small boat, commercial fishery capable of supporting coastal communities. The very lives and livelihoods of our fishermen are directly affected by Corps and EPA actions. **One of the greatest long-term threats to viability of our Nations' fisheries is the decline in the quantity and quality of our marine habitat.**

CRCFA would like to safeguard the entire Columbia River, but the job is so monumental we will restrict our comments to ocean disposal.

The Columbia River is the single largest influence outside of man on the entire Northeast Pacific. It sends more freshwater and nutrients into the ocean than all other streams and rivers from Cape Flattery to San Francisco combined. As such, we should all strive to be watchful environmental steward's of this magnificent river. Incremental degradation has caused the salmon's dramatic decline, which should serve as a warning for continued degradation of our environment. Today the fish and fishermen are facing extinction together. We must not destroy what we treasure most.

CRCFA has been part of the Corps' workgroup looking at options for ocean disposal for two years. Information needed to make informed decisions related to ocean dumping is inadequate to move ahead with the extensive North/South disposal sites at the MCR. This last year of the site selection process was one of diminished opportunity to openly discuss site options and information requirements. Ongoing meetings were denied and North/South site selection was done by the Corps and EPA without presentation, consideration, or review by the workgroup.

Corps of Engineers Response

Your comments on the draft EIS have been thoroughly reviewed. As a result of the numerous comments received on the proposed sites, the North and South sites have been eliminated. The final EIS and Appendix H, *Columbia River Ocean Dredged Material Disposal Sites*, have been revised to address the changes agreed to by the Ocean Disposal Working Group. We have agreed to convene a task force to provide input for site management and monitoring. We appreciate all of the time and effort that you have put into aiding the Ocean Disposal Working Group to come up with the currently proposed sites. The Corps, EPA, and the Ocean Disposal Working Group agreed that the current deep water site and management of Expanded Site E would minimize the impacts to crabs and the crab fishery to the extent practicable.

The Corps' current proposal to cap 75 square miles of productive crab habitat is a breach of obligation to stewardship of our environment, it allows unacceptable adverse impacts, resulting in irreparable harm to coastal communities; destruction of **unique and irreplaceable fishing grounds;** increased risk of marine casualty as many small vessels are forced to more distant grounds in mid-winter, and an undermining local economies. The laws, if followed, are in place to prevent wholesale alteration of our marine ecosystems.

Common sense dictates minimization of affected areas and avoidance of fishing areas. Yet, if heeded, it is the solution to resolve the problem of designating ocean disposal sites:

1) spend the resources necessary to adequately and precisely identify and quantify the impacts of dredge material disposal on crabs or
2) simply avoid fishing areas

As a 50 year plan, the DEIS on ocean disposal is INADEQUATE and does not address the following needs and concerns:

- Baseline data on Dungeness crab and other marine resources
- Identification of rearing, nursery, or spawning grounds for crab
- Thresholds need to be set by the state resource managing agencies
- Monitoring pre, during, and post disposal (short & long-term) of physical & biological impacts
- Mitigation (dredging & disposal)
- Unique marine habitats require a 2nm Buffer Zone
- Food-web dynamics and functional relationship requirements and response to changes in species composition
- Compliance analysis of federal, state, and local laws – consideration of upcoming changes
- Thin-layer – at sea analysis at the MCR
- RFA (Regulatory Flexibility Analysis)-economic data on effects to coastal communities
- Navigation safety
- Beneficial uses need full consideration and cost analysis (cost and savings) monitory, environmental, physical
- Sediment fate analysis – scientific determination
- Risk assessment of marine casualty (ships, tug & barge, commercial & recreational fishing vessels)
- Future regional growth demands need to be considered
- Comprehensive studies not completed
- Workgroup analysis was not given full disclosure, nor adequate data
- Research not completed
- Alternatives including realistic cost estimates must be determined to allow for informed appropriations decisions. The risks associated with wholesale habitat alteration needs to be considered.
- Astoria as a topping-off port consideration
- Agency and public concerns must be incorporated into the body of the EIS and not summarily dismissed at the end as in the recent DMMP

- Sediment grain size analysis - introduction of 2 to 3 times larger grain size into the nearshore marine ecosystem
- Aesthetic values
- Wave analysis associated with site E and Peacock Spit incomplete
- Site E & North Jetty site capacities must be considered
- Catastrophic natural / or man-made disaster emergency needs
- Hanford's leaching of radioactive materials
- Bioaccumulation of known existing contaminants and inadequate testing of undisturbed sediments that will be displaced in the deepening process
- Caspian tern situation and its impact on salmon needs thorough review
- Exotic species and development of a plan to address not only the species that have been introduced, but criteria set to control ship's ballast water must be initiated

The final EIS document should fully comply with EO 11514 and focus on real environmental issues and alternatives. **Insufficient information is available to make informed decisions regarding ocean disposal over 75 square miles of productive marine habitat.** The experimental shift from pinpoint to broad-based disposal is unproven. Unproven methods should not risk our nation's marine resources. The precedent that this will set for the rest of the nation is of grave concern.

NEPA regulations state that procedures are designed to ensure that high-quality, verifiable and complete information on environmental consequences relative to significant issues is available to public officials and private citizens before decisions are made , and before issuing the final EIS on selection of disposal sites. It is incumbent upon the corps and EPA to gather the necessary verifiable information to make informed decisions before issuing the final EIS on site selection.

The '98 DEIS does address navigational safety (mounding & wave intensification), but specific navigational safeguards in the DEIS need attention. The shallow water dumping, especially in site E (and not exclusive to site E) must have guarantees that depths of deposition will not interfere with navigation in the area of direct deposition or beyond. Acceptable limits must be established and regular bathymetric monitoring to prevent navigational hazards like at sites A & B. The monitoring associated with sites A & B was inadequate and must be changed. Monitoring must be established based on quantities of material disposal. Monitoring such as occurred at site E in the summer of 1998 was not adequate to prevent a mound that exceeded the 10% limit. However, it is recognized that the actions taken after the mound was detected helped prevent additional mounding. Hoping for dispersal in-between dredge seasons will not prevent mounding.

Section 2.3.5.2. Safe **wave analysis** is inadequate in that it does not extend beyond the edge of the main shipping channel and only concerns itself with large ship traffic. Wave data and bar closure must extend to other shipping interest. **Risk assessment** of tug and barge, especially petroleum barges can not continue to be overlooked. A petroleum barge grounded on Peacock Spit would be total disaster to the natural resources at MCR. Over the last few years near miss accidents have been a near annual event. Even this winter a tug and petroleum barge were detached off our coast. Dredge disposal sites A,B,& E have increased wave intensification in areas of historic small vessel navigation routes, cause increased risk of marine casualty, and excessive loss of fishing time to the crab fishing fleet. The level of risk for safe navigation has been increased

dramatically by disposal mounds. Safe wave condition defined as waves less than 10 feet should be associated to mounded conditions with sites A,B, E & Peacock Spit which is dramatically affected by Corps induced wave intensification of up to 1.7 times over 1985 levels. Five known lives have been lost associated with these mounds: F/V Sally Jane sunk; two dead, New Janet Ann sunk; three dead, plus many near death misses. The increased death potential must be recognized and corrected.

The **dedesignation of site B** must first deal with the wave intensification problem. The responsibility and liability will not go away until the height of the mound is lowered to a point that wave intensification is no longer a serious problem, that may cause marine casualties, oil spill, or increased erosion on Benson Beach. These mounds increase vessel traffic in the main ship channel reducing overall safety.

Section 4.5.1.3. to prevent **interference with crab fishing operations** is inadequate. The proposed North disposal site interference is magnified by **new state law** which restricts all crab fishing to inside 4 miles off the Washington coast after July 1 of each year until the end of the season, September 15. Are fishermen expected to pick up their gear and go home? If the Corps is persistent in using the North site, **compensatory mitigation** is a must. Sterilization of the fishing grounds will adversely affect the fisherman's incomes throughout the year.

Section 4.5.1.3. and ***Section 6.8.1.*** under **Socio-Economic Impacts** are inadequate in its description of monitoring procedures and navigational safeguards to prevent mounding. Past methodology at sites A,B, & F, including the experience at expanded site E in the summer of 1998 have not prevented mounding. Current and future disposal sites need serious attention and alteration of past procedures to insure navigational safety outside the main shipping channel. Use of quantities dumped, not time, must become the standard for review.

In the '98 DEIS on ocean disposal, the Corps has swung the pendulum from one extreme position (excessive mounding) to the complete other extreme (excessive marine habitat alteration and sterilization of commercial crab grounds). Seventy-five square miles of adverse habitat alteration is totally unacceptable and must be modified. Limited ocean disposal of upriver sediments may become an acceptable practice to accommodate upriver economic benefits if those benefits are not at the expense of excessive environmental losses at MCR. **The crab grounds at MCR are unique and irreplaceable.** Crab fishing occurs in mid-winter in an area of the world known as "Graveyard of the Pacific." Loss of these fishing grounds through sterilization by ocean disposal will dramatically increase the RISK of marine casualty. These crab grounds are so valuable as to be measured in increased mortality to the fishermen. This is not safeguarding the health of the ocean mariner. See ZCFF **(Zone of Crab Fishing Feasibility)** map enclosed. A full 75% of the crabbers income comes from the ZCFF. Not only are the north-south sites biological integrity a prime concern, site E raises concerns for impaired ecosystem dysfunction resulting from over-deposition at and beyond the site. This site and others may seriously impact crab migration routes into and out of the river. Disposal timing at these sites may become important and needs investigation as to the bisection of ecological integrity.

Section 4.4.3.2. states, " the average annual maintenance dredging of years 21-50 of the project can not be forecast with any degree of certainty." This is a valid exposure that emphasizes the need not to attempt to project excessive time periods into the future. Present shipping demands

for deeper channels will undoubtedly continue to escalate, placing more demands on ocean dumping.

The EIS on ocean disposal is unfortunately confusing and inadequate in its presentation of "valid" information to support experimental broad-based ocean disposal of dredged sediments over an area of 75 square miles of productive crab habitat. This **excessive habitat alteration is highly controversial.**
Section 4.4.3.8. of the sponsor's preferred disposal alternatives, bullet #3 states, " enhance feasibility by avoiding controversial sites." Sponsors are willing to incur some additional project cost to satisfy the above local guidelines. This draft is inadequate in not exploring fully this avenue to reduce controversy in the ocean disposal site selection. This action to reduce competing uses will greatly enhance the probability for success of the over all project. The Corps and EPA could have reasonably anticipated extreme controversy by selecting sites that effect 75 square miles of productive marine habitat especially with the resulting actions pursued to protect the 1997 expansion at site B. Alternatives to this controversy will be explored later.

CRCFA and agencies have requested **field investigations of thin-layer disposal practices** in areas off the Columbia River. Expanded site F could have been used for testing as early as mid-1997. Studies were promised and never produced ('97 EA). Adverse impacts are not just limited to direct crab mortality, but must include impacts to the ecosystem that supports a healthy and economically viable crab resource. Without this critical information this project has no basis for moving ahead. The Corps' definition of thin-layer must be redefined. The present definition of 12" causes high mortality to most marine ecosystems. Thin-layer, must find a depth the marine environment can deal with, probably measured in a very few millimeters.

The potential marine habitat loss is too great a loss for this nation to assume. Thirty years ago when ocean salmon fishermen were being severely curtailed the West Coast Troller's Association requested the managing agencies to look at ***preserving salmon habitat as the critical key to fish survival.*** In the past, dam construction and forest practices were allowed to progress unabated since mitigation appeared easy. Abusive hatchery practices allowed continued environmental degradation, eventually causing the extinction of the ocean salmon troll fleet in the state of Washington. Elimination of 75 square miles of productive crab fishing grounds is a large cumulative step that will contribute to the extinction of the crab habitat. Essential Fish (Crab) Habitat must be preserved. Today our nation, and especially the northwest states of Washington and Oregon are spending 400 millions dollars annually for salmon restoration. This nation can not afford to continually ignore important environmental lessons of the past. **Burial of 75 square miles of productive marine habitat is unconscionable.** CRCFA will continue to aggressively protect the marine environment and pursue all avenues available to minimize adverse impacts to the crab fishery.

CRCFA challenges the 1998 draft decision by the Corps / EPA to vastly expand two ocean disposal sites for dredge spoils Sites North & South off the MCR in areas where Dungeness crab and Dungeness crab fishing abound. The Corps made this decision **without acquiring adequate data** and even attempting to determine how their plan to dump dredged sediment in these areas will affect Dungeness crab populations, and without fully considering all reasonable alternatives to these disposal sites.

Section 4.5.1.2. is woefully inadequate in its statement on ocean disposal, **"impacts are not expected to be significant."** This statement must be scientifically supported or removed from the document. Deposition of 230,000,000 cy of sediments in rearing, spawning, and nursery areas of Dungeness crab is a highly substantial negative invasion of this productive marine environment. This invasion can not be dismissed with cursory subjective judgements of the Corps without reasonable substantiation of fact. Many commentors, as far back as the 1983 EIS on ocean dumping have stated that information on Dungeness crab is inadequate and that field investigations are necessary to make relevant conclusions (see attached letters in appendix for more recent requests). Statements of this nature must be removed from the draft EIS. *Section 4.5.1.2.and Section 6.6.1.3.* make similar statements, "Since they **[crab] are present over most of the coast, those from MCR are not critical to the overall coastal population,"** Non-critical analysis and blanket statements of this nature, which mean relatively nothing cause continual habitat destruction. This type of subjective judgement is totally inadequate and has no place in an EIS document, and must be removed. Statements of this nature are meant to mislead and do nothing but confuse the general public as to the true nature of the relevant facts, which are not presented.

Section 4.5.1.2. Corps analysis as to impacts on Dungeness crab is inadequate in its statement, " **None of these species will be impacted by the use of the proposed ocean sites."** This statement is untrue and must be removed from the draft. See Armstrong declaration from recent federal court case, Civil Case Number C98-0359D. Adverse impacts to species (not just Dungeness crab must be fully considered and quantified. **Life history needs and areas of use by crab especially breeding, spawning, rearing, and nursery areas must be addressed prior to any new ocean disposal.** Current crab information is limited to 6 ¼ " legal male crab, a very small section of the overall MCR crab population. Population dynamics associated with segregation of the sexes, YOY, and juveniles is largely unknown at MCR. Ecosystem requirements for sustained maintenance of the species including food, shelter, and reproductive requirements are unknown.
Section 5.2.4.7. indicates little is known about the interaction of **predator-prey relationships.** Example, the amphipod, Corophuim salmonis is a prey species that is nocturnal, migrating into the water column at night and burrowing back into the sediments during the day. What other daily habits of prey could effect most epibenthic populations? Without the facts, area of habitat alteration must be kept to a minimum to reduce adverse impacts to the marine ecosystem as a whole.

Section 4.5.1.3. and Section 6.8.1. associated with Corps avoidance of high income producing areas are inadequate. Table 4-9 is inadequate in its portrait of economic impacts to local crab fishing communities. The Corps has repeatedly ignored crab fisherman reports that ocean disposal of dredged sediments sterilizes the crab grounds for commercial purposes over extended periods of time. CRCFA has repeatedly expressed this concern for nearly 10 years.(Sheldon '92 letter) The Corps needs to seriously address commercial sterilization of crab grounds before massive destruction of fishing areas occurs. Refusal of the Corps to investigate through baseline studies on Dungeness crab population dynamics and follow up monitoring pre and post disposal is not acceptable. Loss of the crab grounds in the ZCF will increase the risk of mortality to the fishing fleet as a whole. In the conclusions the statement, " Ocean disposal, these impacts are not expected to be significant," must be removed from the EIS, for the reasons just sighted.

Based on the findings of a single 1978 laboratory study investigating the ability of adult hard-shell crabs to dig out of various depths of deposited sand, (Chang and Levings), the agencies proposed a mitigation measure in the '97 EA, which they claimed would "lessen and avoid if possible, negative impacts on fauna." Dredged material would be deposited at the new expanded sites by the "thin-layer disposal" method. According to the '97 EA, this method would release the dredged spoils over a large area and attempt to keep 90 percent of any mound thickness to 10 centimeters or less. Since the '97 EA on ocean disposal the Corps has realized that under current disposal methods, 10cm of deposition is impossible. **No ocean analysis of actual deposition depths has been accomplished.** This analysis has to include all the size dumping devices which are now available for ocean disposal and all size and configured dumps available over the life of the project, 50 years. Theoretical computer generated models indicate hopper dredge disposal of thirty or more centimeters from three thousand yard dumps. These models as well as this current draft EIS dated October 1998, does not account for modernization of dumping capacity over the next fifty years. The most modem hopper dredges in the world are now completed in the Netherlands with hopper capacity of 10,000 cubic yards. Barge capacity will not remain static, as demands on volumes increase, economic efficiency will drive disposal just as surely as a 43 foot channel will not suffice for the coming 50 years. Many ports around our nation and the Northwest currently have depths of 55 feet or more. To remain competitive the Columbia will continue to need deepening. This draft is inadequate in its analysis of disposal footprints over the life of the project and must be corrected. No ocean field verification of computer modeling is offered in this DEIS. Computer modeling is helpful but field tests are necessary.

Recently the Corps has attempted to study the effects of disposal on soft-shelled Dungeness crab. The study was to be done at Scripps Oceanographic Institute in Southern California. This study was to be designed and reviewed by selected members of the Corps' Ocean disposal work group, including a number of participating fishermen. This design phase became greatly abbreviated and half the design team was arbitrarily removed by the Corps. Design requirements were omitted. A draft design was to be written up and circulated to the group for review prior to commencement of the tests. Preliminary tests were to be conducted and reviewed for test modification prior to actual testing. This did not happen. Objectivity was lost. Scripps institute did not use soft-shelled crab at all, yet the conclusions were broadly applied to all crab. Crabs during a large portion of the dredging season are in the molt or soft-shelled condition.

The Corps must recognized the Scripps hard-shell study would not answer questions related to potential mortality of crabs in the molten and soft-shelled state therefore, commissioned Battelle Northwest to look as burial effects on soft-shelled crab. Battelle did a preliminary pilot study, which resulted in high rates of crab mortality. The Battelle preliminary study should have come back to the Original design group for review and modification for further design testing that would more closely replicate ocean conditions at the Mouth of the Columbia River. The test should have investigated a full range of conditions to alleviate as many uncertainties as possible. At this time that has not been accomplished. The preliminary test does however, find burial dead loss to dungeness crab about to enter the fishery as high as 80%. This draft EIS also failed to adequately acknowledge that crabs that were buried in at the time of deposition stayed buried and suffered near 100% mortality. Details of CRCFA suggestions that need consideration to the preliminary Battelle crab study are on page 11. CRCFA was not allowed to communicate these suggestions in the design phase of the soft-shelled crab study through selective omission by the Corps.

Section 6.6.1.3. The Corps' unsubstantiated conclusion that, "most crabs.....tested moved into the water column, consequently, the impacts to these organism is expected to be minimal." Must be removed from this EIS because the Corps fails to expose high rates of mortality in over 100 mm crabs that recently molted and buried crabs a common occurrence in the ocean had even higher mortality rates. High rates of mortality would not lend well for broad based disposal options. Selective omission seems to be a continual problem associated with study analysis. Further, in *Section 6.8.1*. the Corps' statement "that most of the crabs can survive disposal up to 10 inches (the maximum depth expected during any single disposal event)", must also be removed for the reasons sighted above. This is strictly a subjective conclusion based on selective omission of fact to make a point needed to support broad based disposal. Additional information is also inadequate in this draft to support a 10" maximum dump depth. *Section 6.2.3.4.* is inadequate in its assessment of hopper dumps of over 3000 cy. The 6000 cy is discussed but no burial depths associated with these volumes. No Corps or EPA field studies have verified dump depths and no consideration was given to increased hopper capacities being used in the future (refer to increased hopper capacities elsewhere in this document). Conclusions without all the relevant facts being presented (table of Battelle study selectively omitted) are an attempt to defeat the NEPA process of informed decision making. As of this writing a final version of the preliminary Battelle study is available and does not change the prior comments of CRCFA.

CRCFA, numerous state agency officials, and others voiced strong opposition to the expansion of sites B. USFW, ODLCD, ODFW, PFMC, WDFW, WDOE, WFWC, ODCC, ODEQ. These comments reflect a broad consensus that the expanded sites would cover areas that are particularly productive for Dungeness crab, that very little scientific study of the effects of dredged material disposal on crabs had been done, and that until more was known, such a broad expansion of the disposal sites should not be implemented. This opposition of a broad area was for eight square miles of very productive ocean environment, not 75 square miles as presently proposed. Despite this opposition, and lack of information, the Corps and the EPA expanded the sites. On 4 December 1997 the Corps announced its intention to use expanded site B during the 1998 dredge season despite its statement in the '97 EA that biological monitoring would be conducted before any dredged material was deposited in the '97 expansion of site B. CRCFA again requested of the Corps, please reconsider its position related to dumping in expanded site B. We reminded the Corps that the crab fishing fleet relied heavily on this area for a large portion of its annual crab production. That the area was the most productive area at MCR. The Corps refusal to reconsider their position on burial of prime crab grounds prompted a successful legal action to enforce the public's interest and protection of the marine environment by Earth Justice on behalf of the fishermen whose livelihoods depends upon quality and quantity of productive crab habitat. As a result of that suit, site B is no longer an option for ocean disposal. With the introduction of this draft EIS on ocean disposal, lessons of the past should guide us into the future. Quantity and Quality of the marine habitat is extremely important to maintaining the last viable small vessel ocean fishery capable of sustaining healthy coastal communities. This has be the guiding principle in establishing any ocean disposal site.

Life Cycle and habitat of the Dungeness Crab (Armstrong, and LaRiviere)
The Dungeness crab is the most valuable commercial species in both the states of Oregon and Washington. Millions of dollars worth of crab are harvested near the MCR each year, contributing tens of millions of dollars to the local economy. Dungeness crab lives primarily on

sandy and silty bottoms from the intertidal zone to depths of more than 600 feet.

Sexual reproduction in Dungeness crab be 'ns in April or May, when the female crabs molt. The hard-shelled male crab fertilizes the molten female in the gelatinous stage in a very short 24 hour window. The male often remains to guard the female until her shell has hardened sufficiently to fend for herself The female can retain the males sperm for up to six months. The female crab broods the eggs on her abdomen for 60-90 days with peak egg release in late January or February (LaRiviere, WDFW, 1998) Crab eggs are bright orange in early December and turn brown with black spot after fertilization by the female some weeks before release.

Dungeness crabs begin life in the water column as larvae transported primarily by ocean currents. After approximately three months they reach about seven millimeters in size and settle out of the water column onto the ocean or estuary bottom. **Survival rates are significantly higher for those that settle out on bottoms that contain woody debris, shells, eelgrass, or other detritus that offers shelter from predators, rather than on clean sandy sterile bottoms.** It should be here noted that the DEIS contains information about increased volumes of debris and marine growth in the north dump site area and that the DEIS is inadequate in its acknowledgement of the value of the debris to juvenile crab increased survival.

Throughout its life, as a crab grows, it continually outgrows and sheds its shell, in a process called "molting." For the first 24-48 hours after molting, the crab is extremely vulnerable. Its gelatinous shell has no rigidity. At this time in the crabs life cycle it is extremely susceptible to mortality. During this time, the crab remains sedentary, does not eat, **and often burrows into the bottom to protect itself.** After this initial period, it begins to feed again, and over the course of the next several months, its shell gradually hardens. The gelatinous shell condition is a prime concern of CRCFA, and untested by the Corps & EPA. The crab's habit of burying-in at time of molt is of extreme importance for consideration in connection to broad base disposal.

After initially settling to the bottom, crabs attain maturity after approximately ten to eleven molts over the course of two to three years. Male crab mature sexually prior to entering the fishery. This is unique to Dungeness crab, in that this has helped prevent the species from over harvested by the fishing industry. Mature adult crabs usually only molt once a year, males from mid-summer to early autumn and females in late spring or early summer. Mating occurs during a short 24-hour window of opportunity immediately following the female's molt, while her shell is still extremely soft. The hard-shelled male generally guards the soft-shelled female that he has just fertilized.

Dungeness crab population dynamics are largely unknown in the Pacific Ocean around the MCR. Information gathered from fishermen, by the Corps related to crab was restricted to legal male crab over 6 1/4inches in length during the crab season. Areas of juvenile and female populations are largely unknown at this time. Juvenile crab are known to congregate in huge numbers for protection. Ocean disposal on these pods of small crab could be devastating to the resource. In addition to the fine organic sediment that supports a rich food supply for the Dungeness crab, the bottom needs to be littered with larger debris, which offers shelter and protection to juvenile crabs.

Crab abundance, particularly of soft-shell crabs, increases markedly nearshore in and around expanded site E in late summer. In August and September in expanded site E and surrounding waters fishermen report catching 30 to 40 crabs per pot, mostly soft-shells, after leaving their pots

in for just a few hours.

Effects of dumping dredge spoils on crabs and crab habitat (Armstrong)
Dr. David Armstrong, an expert in the physiology and ecology of the Dungeness crab, has enumerated the many adverse effects that dredged material disposal in areas where crabs live is likely to have on this species. These adverse effects include:

1) **Mortality through direct burial:** Deposited sand can be too deep for a crab to escape and accordingly can smother and kill the crab. Although one frequently cited laboratory study (Chang and Levings, 1978) found that adult hard-shell crabs could escape from 10 centimeters or less of sediment, those results may not hold true even for adult hard-shell crabs in the wild. Moreover, Chang and Levings did not study molting, soft-shell, or juvenile crabs, which would be significantly more vulnerable to suffocation even from thinner layers of sediment. These tests did not examine other unacceptable adverse impacts to crab; effects of disposal on food web dynamics, habitat, life-cycle needs and behavior.

2) **Impaired respiration:** Sediment deposited on top of a crab or suspended near the bottom will settle into the gill chamber and may clog respiratory surfaces. Juvenile and soft-shell crabs would be especially vulnerable to such impacts because of the juveniles' higher metabolism rates and the soft-shells' extremely fragile gills and gill-rakers.

3) **Burial of food and protective habitat:** Deposition of sediment could kill or render inaccessible the benthic organisms and other high food web that form the main part of the crabs' diet and bury surface debris that provides important shelter from predators, especially for juvenile crabs.

4) **Impaired reproductive activity:** Male and female crabs have a 24-hour window of opportunity for mating each year immediately following the female's molt and rely on chemical cues to pair off during this time. Disposal could directly perturb the chemosensory location and behavioral communication between the sexes and thus impair reproduction. Over much of the year the sexes are found at distinct areas in the ocean, often separated. Large fragmented, sterile areas could interrupt successful mating.

The Corps and EPA have relied on studies with significant limitations. Siting results of Chang and Levings (1978) which did not accurately replicate conditions in the field, Durkin and Lipovsky 1977) no findings at all on impacts of dredging on crabs, Scripps (1998) which was to study molting crab, but did not, and Battelle (1998) which considered their test results preliminary, **must account for the limitations and treat conclusions as preliminary and tentative only.** According to Dr Armstrong, dredge material disposal is likely to have numerous adverse effects on crab. The impacts are not considered or explained in the DEIS in connection with designation of ocean disposal sites off the MCR. In addition to impacts, consideration of the portion of the local crab populations affected were not considered. . No studies have yet been done on molting crabs which are very likely to be suffocated by even thinner deposition of sediment. Furthermore, even to the extent that deposited sediment is thin enough to allow crabs to escape, they are likely to suffer indirect effects from gill-clogging, burial of food supply and protective habitat and impairment of mating. In sum, disposal of dredged material in areas of

Dungeness crab habitat "is likely to have numerous adverse effects on this species." Additional stress on the species will occur from over crowding surrounding habitat which is most assuredly fully utilized.

The findings of Chang and Levings notwithstanding, deposition of just 10 centimeters of sediment may, in fact, be directly lethal even for adult hard-shell crabs in the wild.

Many of Dr. Armstrong's remarks related to the Chang and Levings study and Dungeness crab habit can be applied to the Corps's current crab burial studies. Battelle's own preliminary report, Quote... "These tests should be considered preliminary for a variety of reasons:

- The sample size is relatively small
- The test tanks were relatively small
- Opaque tank walls and turbidity created by sand prohibited direct observation of crab behavior during dumps
- Type of sand, white, dry quartz sand was likely to have affected test results (hour glass type sand was used)
- Sand remained relatively fluid after a test dump and could easily be penetrated
- All crab that remained buried under accumulated sand were found dea

The preliminary Battelle soft-shelled study and Scripps hard-shell study can not be used to support unrestrained ocean disposal for the following reasons:

- The prime concern was not studied; gelatinous soft-shelled crab
- It is the nature of crab to bury in at the time of molt
- All crab, except one, buried in the bottom sediment at the time of disposal and died
- Larval stage crab just settling to the bottom was not considered
- Small juveniles tend to hide under debris & was not studied
- Temperatures should replicate sea bottom temperature at the sites
- No ocean field testing has been done to determine the % of crabs buried in at any one time
- Effects to egg bearing females were not tested
- Time and conditions was not allowed for crab to bury in all tests
- Many crab were tested while extremely agitated
- Effects of ocean bottom pressures were not considered
- Characteristics of the sand used was not representative of MCR sediments
- The clumping nature of the MCR sand was not studied
- Wet sand should be tested
- The mineralogy of the sand was not studied, magnetic sands have higher specific gravity and would be expected to increase rates of deposition
- Grain size and shape was different and would affect accumulation rates
- Actual bottom sediments are more compact than test tank sediments (harder for buried crab to dig out)
- Mortality effects of accumulative dumps needs additional analysis
- Effects of bright lights in Scripps study may affect agitation leading to increased survival
- Scripps crab study used hard-shelled crab & is not applicable to soft-shelled crab
- Selective omission of Battelle mortality tables defeats the NEPA informed decision making process
- The sites selected required an <u>acceptable levels of crab mortality</u> to move ahead

- No acceptable mortality thresholds for crab were ever established by agencies responsible for management of the crab, as done else where in the Northwest at Grays Harbor.

Observations related to crab at active ocean disposal areas find the sites are void of commercial concentrations of Dungeness crab, as reported repeatedly by numerous fishermen. Ocean disposal adversely alters productive crab habitat. That ocean disposal of dredge spoils alters the marine environment to the point of becoming a waste land. Recovery of this waste land for commercial purposes does not happen in 6 –12 months as the Corps purports in Hancock's, summary of benthic data (page9) "Recovery from disposal impacts for benthic invertebrates and Dungeness crabappears to begin after disposal and often exhibits higher densities within a year". His comments must be removed if not specifically cited (raw data source and page #).

In the winter of '97-'98 CRCFA again reaffirmed its assertion that recovery is much slower than the Corps would erroneously lead everyone to believe. CRAB gear was purposely fished over the top the ocean disposal site B, on top of Corps disposal activity in the summer of '97. Of the eight pots fished across the 6 – 8 months old spoils, 5 were lost to burial by soft bottom . Crab production out of the remaining pots was commercially non- existent. Lost pots, lost production, and lost time was the only result of that actual ocean test on current dredge spoils deposited in the ocean envirom-nent. Again in the winter of '98 – '99 CRCFA fished crab gear over the disposal area 19 months after the last spoils were deposited at the '92 expanded site B with the same result, No commercial quantities of crab (see Greenfield letter in Appendix). The area around site B is still highly productive and supports a large fishing effort. Over the years this is all fishermen have ever found.

At the recent public hearing held on 5 November 1998 in Astoria, Oregon, Jim Nichols, a fifty year crab fisherman out of the Columbia River gave the supreme example of excessive dumping in the open ocean. In 1956 the Corps dumped 14,000,000 cy of material on the crab grounds that Mr. Nichols traditionally fished. The resulting commercial crab production from that area was so poor it forced Mr. Nichols to move away and find another port to fish from for the next several years. The Corps' current EIS ocean disposal options is asking fishermen to quit fishing, abandon their homes and life time communities to which they contribute greatly. We as a nation, should question this option very seriously. Is this nation ready to abandon a large section of commercial crab grounds unnecessarily. Alternatives will be discussed later in this document.

STANDARD OF REVIEW

NEPA requires federal agencies to prepare an Environmental Impact Statement ("EIS") on any major federal action significantly affecting the quality of the human environment. An EIS is a "detailed statement" addressing "the environmental impact of the proposed action," any unavoidable adverse environmental effects, alternatives to the proposed action, consideration of short-term local uses and long-term productivity, and any irreversible and irretrievable commitments of resource.

The Ninth Circuit has repeatedly held that:
an EIS must be prepared if substantial questions are raised as to whether a project may cause significant degradation of some human environmental factor. To trigger this requirement individuals need not show that significant effects will in fact occur, raising substantial questions whether a project may have a significant effect is sufficient.

Moreover, it is "crucial" that the agency "'supply a convincing statement of reasons why potential effects are insignificant'" and its failure to do so renders a FONSI or EIS unreasonable.

Available evidence and comments by the relevant state and federal agencies, research scientist, and experienced crab fishermen indicate that dumping at North/South disposal sites of the MCR can be expected to have many significant adverse effects on Dungeness crab and the ecosystem. As detailed by Dr. Armstrong, dredged material disposal in areas where crabs live "is likely to have numerous adverse effects on this species," ranging from direct mortality through suffocation and impaired respiration to destruction of food supply and habitat. These concerns about the impact of disposal on Dungeness crab were expressed by every state and federal agency that commented on in the '97 expansion of site B and remain relevant. Moreover, the crabbers who have seen these impacts first hand, report that the area within the old '93 boundaries of site B, where the Corps has already dumped dredged material, is now "virtually void of crabs." As early as '92, CRCFA sent letters warning of sterilization of the fishing grounds by ocean disposal (Sheldon letter '92).

Even putting this evidence aside, one need not look beyond the Corps' own NEPA documentation to see that there are, at a minimum, "substantial questions" as to whether disposal of dredge spoils in North/South sites may cause significant degradation of the Dungeness crab resource. Yet the Corps has failed to acknowledge the existence of many of these potential effects and failed to supply a convincing statement of reasons as to why they are insignificant.

In the '83 EIS, the defendants frankly acknowledged that they had no idea what impact dredged material disposal would have on crabs. "the impacts of dumping on larval crabs are unknown". Fourteen years later, the '97 EA offered no additional evidence to warrant a change in that assessment. Indeed, the discussion of crab impacts in the '97 EA was largely cribbed from the '83 EIS. The only two studies cited in the '97 EA in connection with Dungeness crab were the exact same studies cited in the '83 EIS.. While the '83 EIS admitted that based on these studies the "effects of disposal on shellfish, particularly Dungeness crabs, are unclear, the '97 EA changed that sentence to read, "direct burial effects on shellfish, particularly Dungeness crabs, has been evaluated,".

In fact, neither study provides a basis for the Corps and EPA FONSI in '97. Durkin and Lipovsky ('77) drew no conclusions whatsoever about the effects of dredged material disposal on crabs. This study was based on field research at ocean sites off the mouth of the Columbia River and purported to examine changes occurring in finfish and shellfish communities as a result of dredged material disposal. Although the study found significantly more Dungeness crabs--including numerous juvenile crabs-at site B than at other sites south of the entrance channel, it's conclusions concerned finfish only. The other study cited, Chang and Levings ('78), found that adult hard-shell crabs could escape burial by up to 10 centimeters of sediments in the laboratory, but this study had numerous limitations that render its conclusions questionable, including the fact that it made no findings as to juvenile or soft-shell crabs. The Corps interpretation of more recent laboratory crab studies by Scripps Institute and Battelle Northwest would lead uninformed investigators to a subjective opinion that most crabs in the ocean survive burial. Most is a very subjective word and is not defined in the DEIS. The Scripps study was on hard shelled crab because the Corps did not do its homework and find a way to deliver crabs ready to molt to Scripps. The Battelle Northwest preliminary investigation found mortality rates as high as 80%. CRCFA would challenge the Corps' subjective opinion that most crabs survive and further request that further independent scientific review not directed, orchestrated, and filtered by the Corps be obtained before the future of the crab resource at MCR is put at risk.

Thus, the '98 DEIS on ocean disposal, the '97 EA, '93 EA, and the '83 EIS before it - cite no field studies investigating the effects of disposal on crabs, no studies of any kind investigating impacts on crab habitat and food supply via burial and/or changes in sediment texture, no studies on burial of woody debris and other detritus which supply protective cover, and no studies of any kind investigating effects on larval, or molt-stage soft-shell crab, egg-bearing female crabs, and interference with other reproductive functions. Indeed, the only thing that changed between the '83 EIS and the '98 DEIS was the amount of area that would be effected by the dumping.

In '83, it was the small size of the total crab fishing area affected by the disposal site designation (the corps estimated it was only 5 percent)[1] that provided the rationale for going forward with site designation despite the substantial and acknowledged scientific uncertainty about the effect that dumping would have on Dungeness crabs. Instead, it simply cribs the '83 EIS's discussion of crab impacts almost word for word, and glosses over the acknowledged uncertainty about the impact of dumping on crabs with the blithe and unsubstantiated assertion that "disposal at current rates have been occurring in the MCR offshore area for nearly 50 years and overall crab abundance at MCR remains high. This indicates that disposal impacts have not been significant." Without any historical or current population studies it is impossible to assert significance or insignificance of disposal impacts If the Corps is referring to commercial harvest rates of Dungeness crab in relation to historical information the Corps has not accounted for how this production has been maintained. The amount and size of vessels, gear, extreme weather, and area fished has greatly expanded over the years. In relation to the effort expended today the crab resource has shown extreme adverse effects, some most assuredly related to dredging operations.

As the above discussion shows, there can be no question that in '97, when the Corps and EPA proposed to expand site B to cover 8 square miles of prime Dungeness crab habitat despite objections from the crab fishermen and relevant state agencies, without a single study having been conducted on the effects of dumping on juvenile, larval or soft-shell crabs, "substantial questions" were raised as to whether that action would have significant environmental effects. In the face of these substantial questions, the Corps and the EPA failed to supply a convincing statement of reasons why the potential effects would be insignificant.

Then as now, there are certainly "substantial questions" with respect to thin-layer disposal. See Armstrong Discussion and letters from state agencies. The method is entirely experimental and untested with respect to Dungeness crab. The studies that forms the basis for the Corps' theory that crabs will not be harmed by disposal of thirty or more-centimeter layer of sand is questionable and has no basis in fact. The preliminary study done by Battelle Northwest may indicate that juvenile crab and sub-legal crab have different habits related to self-burial (needs further investigation) and that mortality rates of larger crabs are higher. This may also be related to the fact that the larger molt crabs are weaker as growth within the shell is expanded with increasing size. For better understanding this and other investigations need to be conducted, many questions about mortality by burial currently are left unanswered. The current studies by Scripps and Battelle fail to acknowledge the very important fact that **crabs that are buried in at the time of disposal remain buried and die.** This selective omission of fact consideration, must be corrected and acknowledged as extremely important. Field studies must be conducted to establish rates of burial associated with the marine environment. These and other defects in the analysis leave the conclusions that the corps has attempted to draw from the studies suspect and ineffective for relative ocean comparison. Peer review by the independent scientific community

also needs to be done to add credence to the studies.

As Dr. Armstrong details in his discussion, areas of study had many limitations and its conclusions are not reliable, even for adult hard-shell crabs let alone soft-shelled and molting crab. Furthermore, the Corps cited studies evaluating the ability of juvenile or soft-shell crabs to survive burial, even though their ability to dig out of a layer of sand is likely to be significantly less than that of adult hard-shell crabs rest solely on their subjective interpretation that most crabs in the water column survive burial. This subjective interpretation did not mention that crabs that were buried in prior to test dumping failed to survive. No field ocean investigations have been done to establish normal habits which include burial for substantial amounts of time. Nor did they cite studies evaluating adverse impacts to food supply or habitat. (Armstrong)

The Documents that were Prepared are Inadequate

The '98 ocean disposal EIS documents prepared in connection with the expansion decision fail to meet the full disclosure and informed decision making requirements of NEPA in at least the following ways:

1) fail to adequately discuss and disclose impacts of the proposed action on Dungeness crab,
2) fail to fully examine all viable alternatives;
3) fail to gather obtainable information,
4) fail to disclose how the site management plan would avoid fishing areas and preserve marine habitat,
5) fail to keep the size of the sites small as required by MRPSA,
6) fail to conduct a qualitative and quantitative assessment of potential effects on the marine environment and commercial fishing,
7) fail to consider that in the State of Washington after July I of each year it is illegal for fishermen to fish outside of 4 miles from shore and the current proposed north dump site is the only place they have to fish,
8) fail to provide full disclosure to the site selection workgroup
9) This document failed to recognize Pacific County Shoreline Master Program goals and provisions for meeting permit requirements,
10) compensation is not provided to mitigate adverse effects of ocean dumping (in fact this document does not indicate any adverse affects form ocean disposal at all),
11) The Ocean Dumping Act imposes an affirmative duty on the Corps & EPA to demonstrate that the statute's standards and criteria have been fully met. They may not simply wait for stakeholders and agencies to prove that their actions will cause adverse effects. Rather, the burden is on the government to determine what impacts will occur.

Environmental Laws

The twin aims of NEPA are to:

- Ensure that the agency, in reaching a decision, will have available and carefully consider detailed information concerning the significant environmental impacts of the proposed action,
- Guarantee that relevant information will be made available to a larger audience that may also play a role in both the decision making process and the implementation of the decision.

In order to accomplish these aims, the agency must provide a **"full and fair discussion of significant environmental impacts,"** which "shall be supported by evidence that the agency has made the necessary environmental analysis." "Accurate scientific analysis is essential to

implementing NEPA" 40 CFR 1500.1(b). Prior to release of the '98 DEIS the Corps never made it known that 50 year disposal options were necessary or that 230,000,000 million cubic yards of capacity would be needed for disposal. The largest requirements purported by the Corps at the workgroup meetings was 20 years and 100,000,000 million cubic yards. Had this expanded option been presented additional candidate sites would most assuredly been presented and looked at in an entirely different manner by the entire workgroup. Hopper sizes of over 3000cy were not discussed. Cost-benefit analysis of individual sites were not discussed. Site matrix analysis was not considered until the eleventh-hour and never in conjunction with candidate site-selection. Matrix analysis and the overlay process on completed overlays should have been analyzed in evaluating each individual candidate area before the area was given candidate status. Methods of accurately controlling burial depths were not analyzed. The soft-shelled study design was not openly discussed. Major stakeholders were removed from participating in design of the soft-shelled study by arbitrary & capricious action. Local economic losses were not studied. Final rule for site selection was never considered because more requirements would have to be met. No RFA has been considered in this process and final rule purposefully avoided. EO 12898 was summarily dismissed without adequate analysis or explanation. Large sites totaling 75 square miles were never contemplated by the site selection work group. Information requested was often not delivered. The Corps' library was never mentioned as a source of information. The repeated selective omission and unsubstantiated broad-brushed conclusions are in the opinion of CRCFA an ineffectual presentation of the facts, **and brings into question the entire EIS process.**

Thus, a NEPA analysis on the designation or expansion of an ocean disposal site must evaluate the ODA criteria. Additionally, conclusions must be explained and supported by reference to scientific studies or other relevant information. "A conclusory statement unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind not only fails to crystallize issues, but affords no basis for a comparison of the problems involved with the proposed project and the difficulties involved in the alternatives." Violation of NEPA occurred where FONSI, EA, and draft EIS failed to discuss any studies concerning potential effects of dumped sediment on marine ecosystem at ocean dump site. In recent field testing in the '90's only one sample of past disposal sites could be found out of the last 5 years testing.

The use of averages distorts the available information. This definitely must be addressed. A good example is the Corps sediment data in and around dump site B. The difference in sediment grain size (Corps data) between '92 and '96 shows that some coarse grain sediment placed in dump site B migrated to the SSW and covered and bisected finer grained sediments lowering biologic productivity in an area 6 to 8 times the size of the dump site.The Corps used the average of sediment size over the '92-'96 time frame in the '98 DEIS. Direction of transport, coverage area, and dissection of the sediments are distorted and not displayed. This is inconsistent with the NEPA process by keeping vital information from the public and agencies so that adequate responses are unable to be made, Other averages that need exposure and correction are the current information, sediment grain size and characterization including mineralogy. A large portion of the proposed dump sites has no grain size analysis readily apparent to the public, especially lacking in the overlays. Other information has been watered down including the wave amplification data presented in the draft. The 1.7 amplification has been removed and only 1.5 appears in the draft. This equates to a 12% reduction in wave height intensification information , a serious selective omission that compromises the integrity of the information presented and

understates the seriousness of the navigation hazard presented by disposal at dump-site B.

Additionally, CRCFA believes wave intensification analysis at site A should be re-evaluated as it appears to be considerably lower than actual field observation indicate. Sites A & B have claimed a number of lives and property and responsible actions must to taken to lessen their continued death potential. Further analysis in this area is warranted so that future sites will never present similar navigational hazards. Lessons learned in the past must be applied to expanded site E and surrounding areas, full responsibility for safe navigation must be guaranteed. Wave intensification patterns in the area south and west of buoy #3 appear greater than north and east of the buoy, further investigation may need attention in these areas also. Wave analysis over the extended area beyond expanded site E across Peacock Spit in areas out to 15 fathoms and 2 miles to the north have not been accomplished as agreed upon by the Corp. Without this baseline wave analysis (and on going analysis, at least on an annual basis, more frequently if conditions warrant), evaluation of expanded E as a viable disposal option is inadequate to guarantee continued safe navigation. Site E mounding could adversely impact historical navigation routes and cause additional crowding in the main shipping channel and further continue to reduce fishing time for the local crab fleet as site B continues to do. Wave intensification modeling displays wave amplification beyond the site in the direction of wave advancement. This model should be re-evaluated. In actual ocean conditions wave intensification begins in advance of the mound or shallow area. Wave break on top of sites A & B as well as in advance of the shallow hook area outside buoy #3. Modeling results do not show this.

Where there are no scientific studies, or those that exist are inadequate to support a conclusion about the nature or extent of potential environmental effects, agencies must disclose and address the existence of scientific uncertainty regarding the environmental effects of a proposed action. 40 CFR 1502.22. "When uncertainty exists, it must be exposed. "Conclusory statements which do not refer to scientific or objective data supporting them" are insufficient to satisfy NEPA. Here, the '98 DEIS, the '97 EA, '93 EA, as well as the '83 EIS to which it tiered, fails to discuss and disclose the significant impacts that dredged material disposal is likely to have on Dungeness crabs in expanded sites North and South of MCR, and specifically fails to acknowledge the considerable scientific uncertainty surrounding such impacts.

Based on what is known about the physiology and ecology of the Dungeness crab, dredged material disposal on areas where crab are living can be expected to have numerous adverse effects, including mortality through direct burial, impaired respiration, burial of food and protective habitat, and impaired reproductive activity. Additionally, most of these effects would be exacerbated for juvenile and soft-shell crabs. Despite the acknowledged importance of the Dungeness crab fishery in the vicinity of sites North and South of MCR, and the recognition that disposal of dredged material there "will have both direct and indirect effects on crabs," the corps failed to discuss any of these likely impacts, except direct burial. And that discussion was cursory at best. The only studies cited that actually examined any effects of dredged material disposal on crabs was Chang and Levings,, Scripps hard-shell and a preliminary pilot study by Battelle. The EIS made no acknowledgement of these studies substantial limitations. Since CRCFA was excluded from the design and interaction necessary the corps and EPA were unaware of CRCFA ocean disposal research finding 100% mortality of Dungeness crab within 1500 feet of the dredge spoils disposal activity near expanded site E. (See Section 6.3 discussion) It is certain that testing in the ocean will be more revealing of actual mortality rates than those

found in the laboratory. (Gray letter)

Concerns about the impact of dumping on Dungeness crabs were raised by every government agency that commented on the proposed expansion in '97. The Oregon Department of Fish and Wildlife objected that "no compelling evidence for the conclusion that thin-layer disposal will not result in biological impacts has been presented," and noted that "there remains a substantial degree of uncertainty as to the risk to crabs from disposal at expanded areas and the significance of that risk". The Oregon Department of Land Conservation and Development, in a strongly worded letter, initially withheld CZMA certification, expressing grave concerns about the impacts of thin-layer disposal on crabs:

> DLCD cannot conclude from the information provided by the CE to date that impacts to crabs, benthic habitat, and crab fishing operations resulting from disposal at site B will be minimal. . . . The EA does not explain whether the 10 cm. threshold applies to both adult crabs and soft-shell juveniles. The EA also does not evaluate the potential effects of substrate changes (i.e., sediment type and average grain size) on crabs and benthic communities. Without more specific evidence to the contrary, the state must conclude that disposal in the near-shore portion of site B has the potential to directly impact an economically important species and the habitat on which the species depends.

In a subsequent letter, the Department issued the CZMA certification, but for one year only. The certification was accompanied by the "strong recommendation" that the Corps avoid disposal at site B if at all possible.

This was not the first time the Corps and EPA had been criticized for inadequately evaluating the potential adverse impacts to crabs from disposal of dredged material in areas of prime Dungeness crab habitat off the mouth of the Columbia River. Comments submitted to the draft EIS in 1983 by the National Marine Fisheries Service ("NMFS") expressed concern about the potential adverse biological impacts of dumping at the proposed sites and stated the agency's belief that the EIS had failed to substantiate its conclusions that such impacts are nonexistent or minor:

> We question whether benthic populations will continue to replenish themselves at the sites on a regular basis, particularly at Sites A, B, and F. If material is deposited at these three sites on a regular basis (during the dredging season) and the material is not transported out of the areas, one could assume that recurring populations of benthic organisms would be smothered. Population losses, mounding effects, and sediment texture changes could combine to prevent recolonization at some point in time, at which time aquatic food chains in the area could be affected.

NMFS concluded that "the DEIS provides little basis for some of the conclusions put forth regarding the potential adverse environmental impacts of long-term dredged material disposal at the chosen sites." The U.S. Department of the Interior similarly warned: "The limited biological data available is not sufficient to support the conclusion that 20 years of dredging has caused only minor and reversible effects and did not even give a clear picture of what was happening at the time of the study."

Despite this chorus of voices raising concerns about the impacts of disposal on Dungeness crab, the '98 EIS failed to even acknowledge the scientific uncertainty surrounding this issue, asserting instead that no significant impact on crabs is "evident." This blatant failure to disclose and address the obvious risk and uncertainty surrounding the impact of dredged material disposal on crabs renders this current EIS patently inadequate. Moreover, this document failures to even

acknowledge the fact that the thin-layer disposal method is experimental and largely untested, especially in the ocean environment Here, the corps' failure to adequately disclose and address the potential environmental impacts of the proposed north – south sites and the scientific uncertainty regarding those impacts violates the purpose of ensuring informed government decision making, but also defeats the public participation process. (See CRCFA test results of Site E dumping where near 100% crab mortality occurred). Recent NMFS benthic and sediment studies of MCR ('92,'93,'94,'95,&'96) have a singular lack of samples at sites A,B,E,&F. Valuable opportunity for studying re-colonization over time is forever gone.

Further ***Section 6.6.1.3***. the statement, "The proposed ocean sites are located in areas that have generally lower densities and numbers of species of benthic infauna," is inadequate. See Hinton & Emmett '94. What factual data is the Corps using to draw this conclusion. Please include raw reference data, name of the study, and page number. According to NMFS study it appears that both the North & South sites have one of the highest numbers of infauna at MCR, refer to '92 NMFS study sample sites 10, 15, and 51. These large sampling were larval clams, potential future food source for crab and ocean disposal most assuredly would cause mortality to the larval.

Section 6.4.3. the Corps statement, "disposal in the proposed ocean sites is not expected to have a significant impact on the existing bottoms sediments." is inadequate and needs to be removed from the draft, (Hancock). Recognize as grain size increases dramatic decreases biologic productivity occur.

Section 5.2.4.7. The Corps needs to expose information at their disposal, "benthic invertebrate productivity is higher in areas of finer grained sediment than in coarse grained areas (McCabe, '96). The north site has grain sizes of 0.11mm the average upriver grain size that could be dumped in the North site has average grain sizes 200%-300% larger, see table in draft on grain sizes and recalculate according to averages weighted by volume. Also refer to Technical Report D-77-30. Insitu sediments at the North-South sites are more homogenous as opposed to barged in upriver sediments which have a much broader range of sizes. The individual grains in the beach sediments are rounded while those of upriver are more angular and irregular. Additionally, explanation and extent of the unique area known as the "Mudhole" must be expanded to include the area known to fishermen as the "Seaview Mudhole." This area comes in shallow in the area of North Head and may extends up to mid-Long Beach. See Corps overlay data of '77 sediment textures. This information is old and needs to be updated, but at least gives relevant information as to area that needs investigation. The "Seaview Mudhole" extends well into the Corps present proposed North disposal site option. This unique area needs to have at least a two mile buffer zone to protect it from predominant North current. This current flows to the south the majority of the year (300 days or more) which will deliver coarse grained sediment and reduce productivity of the fine grained sediment deposited by natural means at the edge of the tidal interface zone.

Estimates of how much sediment will be transported to the ocean may be unrealistic. It is proposed to close the current dump site at RM33.4 and use in lane disposal at this point. This means that additional upriver, large grained sediment will be taken out of beneficial use at the Skamokawa Vista Park and transported to the ocean, from how far up river this will happen is not clear in this document. This must be delineated to accurately determine over all volumes the may end up in the ocean. Current uses of sand at Skamokawa include a tourist attraction, filter bed sand for Astoria municipal water supply, fill material, and cement sand for many cement companies. The disposal site at RM33.4 should be reconsidered as a beneficial use site. Additional costs to down river communities are again assigned by removal of the shoreside site at

RM33.4.
Section 6.4.1. the Corps claims all sediments beaded for the ocean are clean sands, there is no need for testing, and will have no significant impact to the ocean is inadequate. Testing will be required. Analysis of sediments at site B indicate high concentrations of oils & grease. These carcinogens are known to cause high rates of mortality to YOY crabs, 1ppm kills half the YOY contacted. It can be assumed that dredge disposal concentrated these [lethal hydrocarbons. See Sea Grant circular. Oil and grease concentrations must be considered in any new ocean disposal site. There are contaminants in sediments in the river. Levels in themselves may not trigger newer, lowered standards but bioaccumulation has occurred in river species that may be consumed on a regular basis. No mention with concerns of radioactivity, even though the Columbia is known as the most radiated river in the world.
Section 5.1.7.3.says the lower Columbia River below Astoria Bridge regularly exceeds screening levels for metals, chlorinated hydrocarbons, volatile solids, pesticides, polychlorophenols and polynuclear aromatic hydrocarbons. Considering these accumulated irregularities some testing must be preformed to prevent bioaccumulation in the marine ecosystem. Without testing carcinogenic accumulations can occur undetected. Certainly a coverage area as large as 75 Square miles warrants at least a cursory testing.
Section 6.3 needs to be clarified in its assessment of water quality. "No significant....or suspended solids release is expected. CRCFA research in the vicinity of expanded site E, in the summer of '98, found off -site movement and accumulations of sediments in excess of 12" per day up to 1500' beyond the edge of the site boundary. Crab pots were buried to the point of losing them, further it should be noted that 100% mortality of crabs in the pots occurred in this 1500' area. This mortality of Dungeness crab from burial of dredge spoils substantially beyond the site boundaries is in need of assessment and must be addressed. -site migration of suspended solids may become an issue and needs further investigation.

The '98 DEIS is inadequate in its selective omission of mitigation for New disposal options near the MCR. ***Section 6.10 and Table 6-1*** , mitigation requirements are inadequate relative to ocean requirements. The NO mitigation required is based on the erroneous assumption, with no factual basis, that impacts to crab is insignificant. The effect of loss of use of 75 square miles of productive marine habitat for 50 years could cost the local economies up to $500,000,000 not adjusted for inflation, at the present value of $15.00 to $20.00 per crab to the local economy, assuming a 25% loss of productive fishing grounds. The displaced crab will reduce overall capacity of the surrounding habitat which is already utilized to capacity. This full utilization of capacity is evident on large resource years when the meat count never reaches normalcy, resulting in severe resource declines the following year. The current DEIS fails to disclose other adverse environmental impacts to the life cycle of Dungeness crab and is inadequate in this regard. . Those losses and others include: burial of established and mature food source, burial of debris which provides shelter from prey for YOY and small juvenile crab, added stress to surrounding habitat through displacement, potential effects to egg-bearing females, impaired sexual function, burial of spawning, rearing and nursery areas, decreased productivity through dramatic increase in sediment grain sizes, and overall stress placed on the species from disposal.
Section 6.11 admits adverse impacts to the marine resources but the assessment is inadequate, since nothing is quantified. The overall assessment and for mitigation must be based on the overall assessment of the proposed disposal of dredged material and of the alternatives to the proposed ocean disposal must be based on the effects on esthetic, recreational, and economic values, including enhancement of these values, when applicable. Whenever possible, results

should be expressed quantitatively, such as percentage of a resource lost, deduction in a use days of a recreational area, dollars lost in commercial fisheries profits, or profits of other commercial enterprises. A HEP team must be assembled to consider adequate necessities associated with any NEW ocean disposal sites. This HEP team must consider all cumulative effects, including, but not limited to, dredging entrainment losses. These losses must be exposed so that the public can adequately respond to the problem. It should also be explained why entrainment losses are so much greater at Grays Harbor than the Columbia on the same dredges.

Mitigation should extend to the erosion problem at Fort Canby State Park. ***Section 4.4.3.6.*** is inadequate in its presentation of beneficial use sites at Pacific Ocean beach sites, especially on the Washington shoreline. Local sponsors should not be need for beneficial beach nourishment. Severe erosion at Fort Canby is direct result of Corps historic activities and must be addressed for mitigation purposes:

- failure to maintain jetty lengths
- disruption of normal ocean circulation patterns adjacent to North Jetty
- increased wave intensification at dredge disposal sites B & E causing excessive erosion at the park
- failure to identify sand transportation analysis local to the park
- failure to examinee effects of artificial submarine canyon dredged to 55 feet
- failure to expose sediment supply reductions up river
- failure to expose dam construction sediment entrapment
- failure to expose pile jetty construction which entombed large sediment supplies in bays
- failure to expose dredging permits to depths of 80 feet near Portland
- failure to expose and other parameters which may exacerbate erosion at the park

There are viable ocean disposal alternatives

Informed and meaningful consideration of alternatives" is an "integral part" of the statutory scheme. Thus, an EIS must look at "every reasonable alternative in a fair and full manner. In the '98 DEIS, the Corps and the EPA considered some alternatives. Many alternatives were simply not considered or summarily dismissed by the '98 DEIS. These include:

1. Sites beyond the self-imposed "zone of siting feasibility"
2. Direct beach disposal - Benson Beach
3. Disposal of barged material to erosion hot spots on Washington/Oregon Coast
4. Use of sidecast technology (mm thick)
5. Relic beach sands deposits on the edge of the continental shelf (500-600')
6. Dredging and disposal by the "sidecasting" method, including sidecasting out of the hopper dredge and/or barge at remote sites
7. Punaise technology
8. Beneficial use in development of artificial sport fishing reef(s), Candidate site 8-rejected by capricious and arbitrary action, unsupported by scientific fact.
9. Astoria Canyon option needs thorough investigation
10. White or near white holes in the composite overlays need review.

Summary rejection of viable offshore sites, including Astoria Canyon and CRCFA's proposed site through invocation of an arbitrary and capricious has excluded reasonable alternatives that had met the requirements of the proposed action. Sand in the littoral drift maybe a desired result (and may be attainable) of disposal but is not a legal requirement like avoiding fishing areas.

Dr. Vladimir Shepsis, an expert in coastal engineering including dredged material disposal, demonstrates in his analysis that disposal at both Astoria Canyon and CRCFA's proposed site are viable alternatives that should be further evaluated by the Corps and EPA.

Section 5.1.1.1. calls the shale area, a unique area. This assertion is inadequate since, no definite identification of its existence or reliable boundaries are included in the '98 DEIS. The Corps' discussion or lack there of presents no characteristic or biota at the site and is void of any other relevant information. Further it should be noted that the majority of sediment transport in the area of site 8 is to the SSW, not north the direction of the "shale area". No reasonable attempt to find what natural resources commonly frequent the "shale area" were undertaken by the Corps. No biologic assessment, no boundary definition, no current study, no sediment transport study, no reasonable information at all, just arbitrary rejection of site 8. Site 8 is the only ocean site that has no known opposition from any user of the ocean. Additionally, it was suggested to the Corps that Candidate site 8 could be slightly enlarged and moved to the south to further insure no degradation of the "shale area". It should also be pointed out that the "shale area" referred to in this response to the '98 DEIS is not confused with the SHALE PILE that is SSW of Tillamook Head. Some confusion may already exist in the '98 DEIS document and process. The DEIS claims there is no bedrock outcrops north of Tillamook Head to be worried about concerning possible disposal options, something here in inadequate and needs addressing.

Direct Beach Nourishment Alternative

For years, the State of Washington has expressed concern to the Corps about severe erosion occurring on the beaches north of the Columbia River, and has urged the Corps to evaluate the possibility of disposing of materials dredged from the mouth of the Columbia River directly on those beaches to help counteract erosion. In 1998 the Corps deposited about 3.5 mcy of dredge spoils in site E, directly offshore of Fort Canby State Park. This massive quantity of sediment placed on the door step of Benson Beach has not abated that erosion. The area appears to be eroding at a faster rate than in the past few years. Near shore dumping is not solving the erosion problem and the primary dune is now gone. This has not been recognized or dealt with in the '98 DEIS. It should be further noted that transport of sediments deposited by current disposal methods remain where deposited with some shift offshore. For years CRCFA warned the Corps that sites A,F, &B were not dispersing as the Corps stated they would. Most ocean deposition by artificial means (dredges) tend to remain in the immediate vicinity of deposition. Old site E seems to be an exception to this rule. Site A (70') is a near shore site that mounded and did not contribute significantly to the littoral drift system. Past experience strongly indicates the majority of sediments will stay put. Further, the Corps' own coal study indicates strongly that the zone of interaction between the shore and the outer limits of potential for sediment to interact is 40 feet.

Through a study of grain size analysis and mineralogic composition of the Long Beach Peninsula including statistical analysis of sediment standard deviations including sediment transport as far north as Wash-a-way Beach and further analysis of areas of erosion and deposition offshore of the peninsula for 25 years it is this author's strong opinion that **the significant interactive zone** of

the littoral drift and the beach is 30 feet or less. This conclusion is further supported by preliminary data analysis of the USGS Bathymetric Exchange work done by Ann Gibbs of California. Sediment deposited greater than 50' in the nearshore will be hard-pressed to reach the shore in any meaningful time frame. Prolonged storm events with seas in excess of 30 feet are required to move any significant amount of sediment deeper than 40'. These types of events may occur 1 to 3 times per decade, and in general these prolonged severe storm events cause coastal erosion, not deposition, suggesting the lack of inshore movement.

In a '97 letter to the Washington Department of Ecology, the Washington Department of Fish and Wildlife expressed concern about the severe erosion occurring on beaches just north of the Columbia River and described in detail an alternative proposal for depositing dredged sand directly onto these beaches through a pipeline dredge in order to help alleviate the erosion problem. Direct beach disposal through a pipeline dredge is a viable alternative. Indeed, it is a method of disposal that the Corps has used in similar conditions at Grays Harbor, Washington. Moreover, it is apparently the policy of the Corps to seek out beneficial uses for dredged material in developing alternatives. The Corps never fully evaluated this alternative. Further, CRCFA suggested to the Corps that a pipeline and repump station could be placed above A-Jetty and end on Benson Beach. The pluses for this site are enormous and should be further considered. Current sediment starvation of the ocean beaches is directly related to Corps management of the Columbia River sediment budget. It is acknowledged within the Draft that 67% of all sediment entering the Pacific Ocean is transported beyond the littoral drift system. The Corps failed to mention the vast quantity of material it has allowed to be entombed in upland sites over the history of the river maintenance. Building dikes and jetties has channeled the sediment budget and filled in bays and back waters trapping more sediment and deteriorating historic estuarine environments. No mitigation has ever occurred to compensate and/or mitigate for these and other historic and continuing losses, including the loss of in excessive amounts of sediment from Peacock spit at the time of jetty construction. **Direct beach placement without a sponsor would be entirely reasonable to replace the sediment lost through past dredging practices**. This needs to be addressed in a significant and meaningful manner.

Near shore disposal of dredged material off the beach north of the Columbia River

Despite repeated requests by Washington agencies that material dredged from the Columbia River entrance channel be disposed of near shore so that it will remain in the littoral drift system and help to nourish the eroding beaches, the Corps and EPA have not considered how such a site would be highly dispersive, A very small area would suffice to dispose of large quantities of material, therefore minimizing biological impacts. . Disposal of dredged material within the proposed sites, just off the beach in 25 to 40 feet of water north of the north jetty may offers a viable alternative for disposing of dredged material while also providing beach nourishment. The Seattle Corps has dumped dredge spoils in shallow depths south of the South Jetty at Grays Harbor. I believe that some dumping has occurred as shallow as 25'. The 25' material disappeared over the winter, while material dumped at 40' depths did not disperse as well. This method needs further scientific investigation. Accretion rates onshore, as a result of near-shore spoils disposal must be quantified. Is the accretion rate high enough to justify any degradation of the marine environment. Thresholds must be established. Time frames should be associated with beach accretion rates that are deemed acceptable. If the accretion rates are measured in geologic time (not years), this must be considered. Removal of sand from the beaches by contractors using sand for fill (in excess of 100,000cy per year may well be more than the

accretion rate ever obtainable by placing sand in the littoral drift. Direct beach placement could give contractors an additional source of sand for local construction needs without jeopardizing coastal erosion. If all these speculations can be removed, then near-shore dumping can remain a viable alternative provided the area is restricted in size, depending on dispersion rates. Biologic and mounding criteria must be applied to any near shore sites. Overall habitat alteration has to be a paramount concern.

Disposal of additional material in original site E

The Corps and the EPA should consider disposal of dredged material in original site E as part of the capacity needed for ocean disposal over the next 50 years. A conservative estimate, original site E has a 1 mcy per year capacity. This is 22% of the capacity requirement for the duration of the '98 DEIS on ocean disposal and 50% of the capacity examined by the site selection work group. If 1.5 mcy per year can be dumped on a sustained basis in original site E, 33% of the capacity requirement of the '98 DEIS are met, thus questioning the site capacity requirements the Corps and EPA have set forth. Again, all information must be examined in order to make informed decisions.

Dredging and disposal by the "sidecasting" method

Sidecasting out of the hopper dredge at remote locations to control accumulation depths to a truly thin layer should be investigated as a biologically acceptable method. This method will need to redefine thin layer as something considerably less than 12".

Punaise dredging technology

The Punaise dredging technology is submerged dredging machinery placed on the bottom of the ocean and controlled from a remote station. This is being done in the Netherlands and was discussed at a site selection work group meeting. This alternative maybe viable for Benson Beach or even as far away as Wash-away beach near Tokeland, for barged materials Calculations should be done on the trench near Wash-a-way beach and consideration should be given to barged sediments being placed here. The holding capacity of the area maybe unlimited. The initial cost of acquiring Punaise could be offset by using it in conjunction with other erosion hotspots coast wide. This needs further consideration and evaluation.

Conclusion

Many viable alternatives exist to North/South sites at the MCR that have not been fairly and fully evaluated. Accurate cost estimations of each disposal option must be fully explored. Current costs associated with the proposed North/South sites are not fully exposed. Full and accurate baseline studies, pre, during, and post disposal monitoring, mitigation for adverse effects to the habitat and resource, thin layering verses dump & run, all this and more has to be figured into the cost per yard of the sites.

The Corps failed to gather obtainable information

NEPA

The purpose of NEPA is to "ensure that an agency has at its disposal all relevant information about environmental impacts of a project before the agency embarks on the project." Where information relevant to reasonably foreseeable significant adverse environmental effects is incomplete, a federal agency has a duty to obtain new information. An EIS is to be prepared for all actions that may significantly affect the environment so as to eliminate the need for

speculation by insuring that available data is gathered and fairly analyzed prior to the implementation of the proposed action.

Additionally, information must be collected and studies conducted early enough to allow the agencies to integrate consideration of environmental impacts into the decision making process at the earliest possible time. An assessment must be prepared early enough so that it can serve practically as an important contribution to the decision making process and will not be used to rationalize or justify decisions already made.

It certainly would be feasible for the Corps and the EPA to collect more accurate data on crab distribution in and around the mouth of the Columbia River, and, indeed, they have done so in other locations, including within the Columbia River estuary. (study of distribution and abundance of Dungeness crab in Columbia River estuary using trawl sampling); (letter from WDFW: "The use of scientific sampling as a tool to designate disposal sites is essential. We are appalled that the Portland Corps seems to feel that they can designate sites without any investigation of the productivity of the area proposed for disposal.... The Seattle Corps has for years used beam trawling to investigate sites proposed for proposal, and to monitor new sites where disposal is conducted." In the fall of '98 the Seattle Corps and the State of Washington entered into an agreement for mitigation based in part on field investigations of the crab resource. CRCFA detailed opportunities for biological data collection that the Corps recently passed up. Additional laboratory studies could also be finished at reasonable expense which would shed more light on the impacts of disposal on crabs, particularly in the YOY, juvenile, molten, and soft-shell stages.

Since at least 1983, the Corps and the EPA have been aware that further study and monitoring of the impacts of dredged material disposal on crabs was needed and yet, despite repeated requests for ocean site analysis by other agencies and repeated promises from the Corps and the EPA, to this day no further ocean analysis studies have been done. Nor has there been any attempt to monitor crab presence at the disposal sites to determine distribution or evaluate disposal impacts. In the lawsuit filed against the Corps and EPA in '98 they repeatedly refused to monitor for crab presence and or effects of burial, instead agreed not to dump after a specific date to minimize adverse impacts to soft-shelled crab in and around expanded dump site E. This provision of the federal court ordered agreement must become part the related to site E.

In '83, in comments submitted to the EIS, NMFS noted that further study of the long-term impacts of dumping was needed, and recommended that the final EIS include plans for a long-term monitoring program to assess potential adverse impacts to living marine resources at the disposal sites. In response, the Corps and EPA promised to develop and implement a monitoring program. However, in the section entitled "Guidelines for the Monitoring Plan," the final EIS simply stated that most parameters did not need monitoring because the effects of the dredging would be minimal. It vaguely stated that the Corps and EPA "may select appropriate species to monitor" but offered no further specifics. To date, no monitoring of the effects of dredged material disposal on ocean crabs has been conducted. Cumulative effects including entrainment of crab while dredging is not in this document.

Cumulative effects of the dredging operation on the marine environment have not been adequately considered. Entrainment, impacts on food-web dynamics, life-cycle needs, habitat

alteration, fragmentation of habitat, impacts on juvenile refuge areas, sexual dysfunction, and respiratory impacts, all of which will lower overall productivity of a valuable ecosystem Several government agencies commenting on the '97 EA urged the Corps and EPA to conduct further studies on crab impacts and monitor for crab distribution and abundance:

> We have requested in previous correspondence that the effects of thin-layer disposal be examined with objective scientific studies, these requests stand. We are particularly concerned about the potential impacts to Dungeness Crab especially in juvenile and molting stages that have a reduced ability to escape once buried by sediment.

In response to the suggestion of one commentor to the '97 EA that "a formal monitoring methodology examining biological effects of disposal in area B should be devised and implemented," the defendants were unwilling to commit to implementing any biological monitoring program. In the section discussing monitoring, the '97 EA provides only for bathymetric monitoring, not monitoring of biological effects. In another part of the document, however, it promises that "additional biological evaluation, which would include determining whether impacts to crab populations are measurable, will be initiated prior to disposal in expanded Site B." Despite this language, the Corps announced its intention to dispose of dredged material in the '97 expansion of site B during the '98 season without announcing any plans to initiate a biological monitoring program, once again prompting the relevant state agencies to voice objections.

In sum, the Corps and the EPA have been on notice since '83 that their data on the effects of disposal on crabs was deficient, and at least since '93 that mounding would make the designation of new disposal sites necessary.

ODA

The Ocean Dumping Act requires the Corps and the EPA to develop site management plans for all designated sites. Such plans must include a baseline assessment of conditions at the site, and a program for monitoring the site, In this instance, such a plan could provide a useful vehicle to collect the information necessary to prepare an adequate EIS that takes the requisite "hard look" at the impact of dumping dredged materials in/on crab habitat. The ninth Circuit has observed that "without establishing the baseline conditions which exist in the vicinity of the disposal site before ocean dumping begins, there is simply no way to determine what effect the proposed dumping ... will have on the environment and, consequently, no -way to comply."

However, not only has the government failed to meet its obligation under the ODA to develop such a plan with necessary crab information , it has violated public notice and comment provisions by this failure. Additionally, the Corps held many so called "Round Table" meetings where untold numbers of public comments were made. These comments are not included in the record for consideration of this draft EIS. What happened to all that body of information that has been solicited, but not adequately shared. It should be available for review and considered in this DEIS.

It should be noted that much information available was specifically withheld from CRCFA during the last two years which in turn has delayed and impeded the process:

- Contact with Battelle NW to discuss soft-shelled study
- Contact with OSU researchers to discuss current study
- Contact with Daniel Hancock to discuss benthic analysis
- Denied a video tape copy of the Battelle NW soft-shell study, which was noted in the meeting notes of 8/19/98 page 11.
- Request for quantified socio-economic data related to ocean disposal sites and it's effect on local communities and fishermen
- Request for a Regulatory Flexibility Analysis (RFA)
- Request for outside impartial council to review potential law conflicts during the work group process
- Request of oil spill risk analysis of potential sites (stemming from concerns with site B)
- Analysis of E.O. 12898 and its application to low income areas (Pacific County is the lowest median income county in the state of Washington)
- Request for additional biologic data collection (including baseline studies) on all commercial resources in and around proposed sites
- Request Tech guide manual for designation of ocean dredged material disposal sites
- Request a copy of the Green Book
- Request consideration of black box use to monitor all ocean disposal to track dumping of material
- Request of a feasibility study for dumping beyond the continental shelf
- Request of beneficial use analysis – Benson Beach
- Request of ocean field analysis of hopper dredge footprints
- Request for "at sea" broad-base ocean disposal analysis as early as July 1997
- Analysis of restoring the jetties to full length
- Site maps for sharing with Congressmen – told to use FOIA, yet did not respond
- Request of material and was never even informed that the Portland Corps had a library, whereby material could be checked out

For these reasons and others this EIS process is inadequate to meet NEPA requirements for full public disclosure and informed decision making.

Every government agency that commented on the '97 expansion decision raised concern about whether the site expansions would adversely affect Dungeness crab. These letters, in conjunction with Dr. Armstrong's declaration explaining and clarifying the scientific basis for this concern, amply demonstrate that there are, at a minimum, substantial questions as to whether the expansions of North/South sites may cause significant environmental degradation. Accordingly, the Corps and EPA are not insuring informed decision making and public disclosure. They have dismissed the issue of crab impacts as minimal. Crabs impacts are definitely unclear,"but the Corps and EPA refuse to acknowledge the considerable scientific risk and uncertainty surrounding crab impacts. The Corps' decision to Expand Sites North/South of MCR is clearly at odds with Federal, State, and Local laws.

The Ocean Dumping Act prohibits ocean dumping of any material except as authorized by permit, and designates the Secretary of the Army (in practice, the Corps) as the permitting entity for the dumping of dredged materials. Before issuing a permit, the Corps must insure that "the dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine

environment, ecological systems, or economic potentialities."

In making this determination, the Corps must apply specific criteria established by the EPA. These criteria require the Corps to:

1. **Select sites particularly to avoid areas of existing fisheries or shell fisheries** 40 CFR 228.5(a)
2. Conduct a **qualitative and quantitative assessment** of potential effects on the marine environment and commercial fishing, 40 CFR 227.17(a) (2), 227.19, 227.21
3. **Limit the size of sites** in order to localize any immediate adverse impacts 40CFR 228.5 (
4. Dump only at disposal sites and under conditions that will insure **no unacceptable interference with fishing** 40 CFR 227.10(a)
5. **Locate dumping sites beyond the edge of the continental shelf wherever feasible** 40 CFR 228.5(e).

Before a permit can be issued, the EPA also must be given an opportunity to review the application and relevant information, and if the EPA declines to concur in the Corps' finding, the permit cannot be issued.

The ODA imposes an affirmative duty on the Corps and EPA to demonstrate that the statute's standards and criteria have been met. They may not simply sit back and wait for the stakeholders to prove that their actions will cause adverse effects. Rather, the burden is on the government to determine what impact the dumping will have. The ODA "by its terms contemplates" that projects like this, involving the dumping of millions of cubic yards of dredge spoils in the ocean, "be carefully analyzed." In lieu of issuing a permit to itself, the Corps prepared a document entitled "Section 103 Evaluation" purporting to demonstrate compliance with the ODA criteria. Based on this document, the EPA concurred in the Corps' finding that the ODA criteria were met. On its face, this document demonstrates that the Corps failed to comply with the ODA, and the EPA should not issue a concurrence.

The Corps has violated the ODA's clear command to avoid areas of existing fisheries in selecting a site.

The ODA criteria makes several affirmative commands to the agencies to locate disposal sites in areas where they are not likely to interfere with living marine resources, particularly fisheries. The regulations are unequivocal in this regard: "The dumping of materials into the ocean will be permitted only at sites in areas selected to minimize the interference of disposal activities with other activities in the marine environment, **particularly avoiding areas of existing fisheries or shellfisheries .**

The admonition that sites be located away from existing fisheries is unqualified. Thus, regardless of whether an agency concludes that disposal in the area of a fishery will actually have an adverse impact on marine life, the regulations require the agency to locate the site outside the area of the fishery. This means that in this instance, the Corps and the EPA are required to locate the disposal sites for Columbia River dredge spoils outside the area of the existing Dungeness crab fishery regardless of their belief that thin-layer disposal will not adversely effect crabs.

Far from complying with this requirement, the Corps failed to avoid the location of fisheries or shell fisheries in the '98 DEIS. This omission is particularly glaring in light of the broad consensus among state agency officials, scientists, crab fishermen, and the

Corps themselves that sites North/South of the MCR are areas of productive Dungeness habitat and a productive crab fishing ground. The Corps' failure even to give lip-service to the explicit command that disposal sites be located "particularly" so as to avoid "areas of existing fisheries or shell fisheries," clearly violated the ODA.

At 40 CFR 227.10(a), the ODA criteria contain another affirmative command to protect fisheries. That section provides: "Wastes which may present a serious obstacle to fishing or navigation may be dumped only at disposal sites and under conditions which will insure no unacceptable interference with fishing or navigation.". This requirement is clearly not met in this '98 DEIS. Yet the Corps cannot contest that dumping even 10 centimeters of sediment may kill crabs, and thus the disposal of dredged materials at the North /South sites presents a substantial risk of harming the Dungeness crab population and the fishermen that depend on it. Accordingly, the only way for the Corps to "insure no unacceptable interference with fishing" is to avoid all dumping in any sites, which are acknowledged to be in a productive Dungeness crab fishery, and to limit disposal in site E to periods of low crab presence, generally acknowledged as mid-August, even this is the Corps' responsibility to investigate, monitor, and avoid.

As a further safeguard against the location of disposal sites in or near fisheries or other areas of high biological productivity, the ODA criteria also require that the size of the sites must be kept small." The ODA criteria requires the agencies to assess the "potential of the dumping for affecting the recreational and commercial values of living marine resources," specifically including the impact on commercial fishing. The'98 DEIS purports to demonstrate compliance with them simply by reciting a few conclusory sentences. Specifically, it states that "the proposed ocean disposal would have minimal impact on crab. This analysis is grossly inadequate in light of the acknowledged importance of the Dungeness crab fishery in this area, and the widely-shared concern of experts from state agencies and elsewhere that disposal of dredged material at expanded North/South sites is likely to have significant adverse effects on this species. The site selection criteria reiterate the need to assess potential impacts on fisheries and direct the Corps and the EPA to consider those impacts in selecting a site. Thus, the agencies must consider the site's "location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases." Extended discussion of impacts to Dungeness crab was clearly warranted here, especially since expanded North/South sites are in areas that offers valuable refuge habitat to juvenile crabs, and expanded site E is an area that becomes dense with soft-shell crabs in late summer. These considerations are particularly important in light of the fact that the impacts of dredged material disposal are likely to be especially severe for juvenile and soft-shell crabs and the deficiency of those documents do not adequately assess the site's location in relation to crab habitat.

The ODA's mandate to assess the impacts of dumping includes the requirement that the agencies conduct a site-specific survey of a disposal site before deciding to dump there. (requiring evaluation of "the impact of dumping on esthetic, recreational, and economic values ... on an individual basis"). Here, despite repeated requests from CRCFA, state agencies and others that the Corps and the EPA monitor the sites for crab before dumping, and despite the Corps' and EPAs'own promise to do so at least in site B, no such survey or monitoring has been conducted or planned in this '98 DEIS.

Not only do the ODA criteria repeatedly direct the agencies to evaluate the impact of the proposed dumping on the marine environment, but in two separate places, the regulations specifically require the agencies to express that assessment in quantitative as well as qualitative terms. Thus, the "potential of the dumping for affecting the recreational and commercial values of living marine resources," "will be expressed, where possible, on a quantitative basis, such as percentage of a resource lost ... or dollars lost in commercial fishery profits," Additionally, "a quantitative and qualitative evaluation will be made, where feasible, of the impact of the proposed dumping on each use including commercial fishing."

Yet the'98 DEIS is devoid of any quantitative analysis or any explanation for the failure to conduct such analysis, as are the '97 and '93 EAs and the '83 EIS. In his declaration, Dr. Armstrong describes studies that the Corps and the EPA could conduct that would provide far more accurate measures of crab distribution and disposal impacts than the information the agencies currently have. Indeed, the Corps itself has conducted some similar studies on Dungeness crabs in other locations including inside the confluence of the Columbia River Mouth.

<u>The Corps needs to develop a adequate Site Management Plan for new sites</u>
In the Water Resources Development Act of 1992, Congress amended the Ocean Dumping Act to require the EPA, in conjunction with the Corps, to develop a Site Management Plan for each site designated. Such plans must include a **baseline assessment of conditions at the site, a program for monitoring the site,** and **special management practices for each site** aimed at protecting the environment. No site designated after January 1, 1995 shall receive a final site designation without a plan; and sites designated prior to January 1, 1995 must have Site Management Plans no later than January 1, 1997.

In this instance, where so many unanswered questions remain about the effect of dredge spoil disposal on crabs and other marine organisms, the baseline assessment and monitoring required by such a plan would be a particularly important tool in collecting information critical to complying with the ODA's environmental protection mandates. The Corps, however, have not issued a Site Management Plan for North/South sites and that use of the sites are illegal without an adequate site management plan

In short, the Corps has blatantly disregarded the clear commands of the ODA that they avoid areas of existing fisheries and shell fisheries in designating sites, that they assess the potential impacts on living marine resources and fisheries before commencing use of an ocean disposal site, and that they develop a site management plan including plans for a baseline assessment and continued monitoring of biological resources. The comment letters submitted to the Corps and the EPA reveal a broad consensus among state agency officials, scientists, fishermen, and others that North/South sites cover areas of Dungeness crab habitat that are heavily used by crab fishermen and that the disposal of dredged material in these areas is likely to have significant adverse effects on this important marine resource. This view is confirmed by the declaration of Dungeness crab expert Dr. David Armstrong. Yet despite this chorus of voices expressing concern about the impacts of the Corps' & EPA's dredged material disposal plans on Dungeness crabs, the '98 DEIS dismisses adverse impacts as minimal.

Magnuson-Stevens Fishery Conservation and Mangement Act – EFH

New provisions of the Magnuson-Stevens Fishery Conservation and Management Act recently enacted by Congress have not been considered in the '98 DEIS. With implemention the States of Washington and Oregon will have full authority to manage the entire crab resource out to200 miles. This draft does not consider the new laws that will be enacted by the Coastal states that will have direct effect on the ocean disposal of sediments. In January, 1999 CRCFA will join with WDFW, and other state agencies to review, implement, and draft legislation to specifically address crab management into the area of its jurisdiction out to 200 miles. Current and future changes in the law will have to be considered in any 50 year plan. Today's environmental laws are quite different than in 1950. No one even suggests that society revert to that 1950 era. The draft plan falls to address future requirements being placed on the dredging process. The State of Washington currently has a Governor's Task Force established to evaluate and suggest courses of action to abate coastal erosion. This governor's task force will suggest specific legislation to deal with erosion. It has already been determined that the Columbia River is the prime source of sediment necessary to maintain a steady supply of sediment to the beaches. One of the primary recommendations of the Governor's Task Force on Coastal Erosion is that "coastal solutions and policies should not come at the expense of the state's natural resources, e.g. solutions must minimize interference with fishing areas and/or keep solution impacts to a minimum."

CZMA

Under the CZMA a federal agency must prepare a consistency determination for any agency activity if it either occurs inside the coastal zone or occurs outside the coastal zone but "affects any land or water use or natural resource of the coastal zone." Site E is clearly within the three-mile limit of the coastal zone. Although some of the North/South sites are outside the boundary of the coastal zone, dumping there will "affect" the coastal zone within the meaning of the Act. Crabs do not observe the coastal zone boundary. They live on both sides of it and move back and forth across it. Thus, a crab that is killed by dredged material disposal outside the coastal zone in the North/South sites, might otherwise have later moved inshore to be caught by fishermen in the coastal zone. Dumping in any portion of North/South sites, therefore, will affect a natural resource (Dungeness crab) and a water use (fishing) of the coastal zone. The Corps accordingly has a duty under the CZMA to ensure that dumping in North/South sites and in site E is consistent with the coastal zone management programs of Washington and Oregon.

Under **Washington's coastal zone management program,** the Corps must take "all reasonable steps ... to avoid and minimize adverse environmental impacts, with special protection provided for the marine life and resources of the Columbia River ... estuary" and to "avoid and minimize adverse social and economic impacts, including impacts to ... commercial . . . fishing." (Pacific County Master Shoreline Program 30.60.04 -.05); RCW 43.143.030(d),(e); WAC 173-16-064(d),(e). Additionally, the Corps must ensure that "there will be no likely long-term significant adverse impacts to coastal or marine resources or uses."

Ocean Uses

3.90.02 The **conservation and sustainable use of renewable ocean resources is given priority over nonrenewable ocean resource use.**

30.01 Ocean uses and associated on-shore facilities should be located, designed and operated to avoid and minimize adverse impacts on the following:

- environmentally critical or sensitive areas such as breeding, spawning, nursery and foraging areas
- areas of high productivity for marine and estuarine biota
- existing water dependent businesses; and
- transportation routes

17.06 Dredging and landfill operations should have the least possible detrimental effect on the existing character of shorelines, including associated wetlands. and the land underlying the water.

30.60.05 All reasonable steps are taken to avoid and minimize adverse social and economic impacts, including impacts to aquaculture, recreation, tourism, navigation, air quality, and recreational, commercial, and tribal fishing,

30.60.06 Compensation is provided to mitigate adverse impacts to coastal resources and uses;

30.60.07 Plans and sufficient bonding are provided to ensure that the site will be rehabilitated after the use or activity is completed; and

30.60.08 The use or activity complies with all applicable local, state, and federal laws and regulations

30.61 The proponent of an ocean use development or associated on-shore facility that could impact coastal waters or shorelines may be required to submit the following information, and any other information deemed necessary by the Shoreline Administrator, in the final permit application package:

30.61.01 An overall development scheme discussing the site plan and proposed management techniques;

30.61.03 Analysis of potential impacts identified in a SEPA environmental checklist;

30.61.04 Mitigation plans to address environmental, social and economic uses and resources;

30.61.05 Analysis of the visibility of the proposed facilities and a plan to minimize of eliminate such impacts;

30.61.11 Analysis demonstrating the proposed projects consistency with the Shoreline Master Program

30.62 All proposed activities and uses with potential to significantly affect any of the shoreline or waters user the jurisdiction of Pacific County may at the discretion of the Shoreline Administrator **require a socio-economic assessment and the development of mitigation measures to analyze and describe the long and short-term effects of the proposed action to directly stimulate or drain the local economy.** This assessment may include but not be limited to gains or losses of jobs and incomes, tourism, agricultural impacts, increased governmental planning and management loads, effects on construction and commercial activities, community support facilities (such as schools, hospitals, health and social services), tax structure, social changes in crime, mental health, crowding, sense of autonomy, and other quality of life indicators.

Under **Oregon's coastal zone management program,** the Corps must "develop inventory information necessary to understand the impacts and relationship of the proposed activity to continental shelf and nearshore ocean resources." This includes:

- Developing scientific information on the stocks and life histories of commercially, recreationally, and ecologically important species of fish [and] shellfish ...

- Developing scientific understanding of the effects of man's activities, including ... waste discharge, on the marine ecosystem ...

- Identifying and protecting areas of important biological habitat, including . . . areas of important fish, shellfish, and invertebrate concentration ...

- Providing for suitable sites and practices for the open sea discharge of dredged materials, which do not substantially interfere with or detract from the use of the continental shelf for fishing ... or from the long-term protection of renewable resources.

Statewide Planning Goal 19. ORS 196.425(l); OAR 660-015-0010. Additionally, the program "requires that actions affecting the nearshore ocean and continental shelf areas be based upon a sound understanding of the resources and potential impacts. . . . including the extent and significance of . . . fish and shellfish stocks and important habitat areas. . . . and present and projected uses, use patterns, and values associated with the ocean resource, including commercial fishing."

A federal agency's consistency determination under the CZMA must:

include a detailed description of the activity, its associated facilities, and their coastal zone effects, and comprehensive data and information sufficient to support the Federal agency's consistency statement. The amount of detail in the statement evaluation, activity description and supporting information shall be commensurate with the expected effects of the activity on the coastal zone.

The document does not even attempt to explain how the Corps has taken "all reasonable steps" to avoid or minimize adverse impacts to the environment or to commercial fishing, or to develop information necessary to understand the impacts of dredged material disposal on crabs. Nor is the fact that the document refers to the Section 103 Evaluation and the EA sufficient, because, as demonstrated in the previous two sections, these documents do not provide such information either. Thus, on its face, the Corps' consistency determination is inadequate to comply with 15 CFR 930.39 and/or demonstrate compliance with the CZMA programs of Washington and Oregon.

Conclusion

Fifty years from now we would like to be able to look back and know the right choices were made for future generations. In the future our nation should not be paying an exorbitant price for habitat neglect, as it is with the salmon. To achieve protection of our valuable resources we will what is necessary to preserve marine habitat for future generations. Preservation is far superior to restoration. We must get it RIGHT.

As previously stated, there are alternatives:

1) Spend the resources necessary to more precisely identify and quantify the impacts of dredged material ocean disposal on Dungeness crabs and the habitat that supports them.

2. Simply avoid fishing areas

Thank you for your consideration. We appreciate the extended period of time for comment and look forward to hearing from you in response to our concerns and recommendations.

Sincerely,

Dale Beasley

Dale Beasley
Columbia River Crab Fisherman's Assoc. (CRCFA)

On behalf of:

Pacific Coast Federation of Fishermen's Associations (PCFFA)
POB 29910
San Francisco, California
Phone: (415) 561-5080
Fax: (451) 561-5464

Institute for Fisheries Resources (IFR)
POB 11170
Eugene, Oregon 97440-3370
Phone: (541) 689-2000
Fax: (541) 689-2500
e-mail: fishlifr@aol.com

Coast Alliance
215 Pennsylvania Ave SE
Washington, DC 20003
Phone: (202) 546-9554
Fax: (202) 546-9609
e-mail: coast@igc.apc.org

We the undersigned concerned citizens find it unacceptable that the Corps of Engineers and the EPA propose Ocean Dredged Material Disposal Sites that cover approximately 75 square miles off Washington and Oregon. Not only will this action negatively impact important crab resources, and habitat, but also the commercial crab industry, and its socio-economic importance to coastal communities. We call on the Corps and EPA to consider more alternatives.

	Name	Address
1		Box 141 Chinook Wa. 98614
2		BOX 580 Seaview Wa 98644
3	Mark Petersen	Box 302 Chinook Wa. 98614
4		Box 331 Chinook WA 98614
5		Box 307 Chinook WA 98614
6		Box 121 Chinook Wa 98614
7		Box 516 Long Beach Wa. 98631
8		Box 721 Ilwaco WA 98624
9		2007 N. Wash. St Long Beach, 98631
10		Box 732 Ilwaco WA 98624
11		PO Box 733 Long Beach, WA 98631
12		P.O. Box 620 Ilwaco, WA 98624
13		PO Box 140 Seaview Wa 98644
14		PO Box 295 Long Beach, WA. 98631
15		P.O. Box 1087 Long Beach, WA. 98631
16		PO. Box 552 Ilwaco WA. 98624
17		3808 N Place Seaview WA. 98644
18		P.O. Box 317 Bay Center Wa 98517
19		PO Box 2215 Gearhart, OR 97138
20		PO Box 317 Bay Center Wa 98527
21		P.O. Box 77 - Chinook WA 98614
22		6111 V. Pl Long Beach Wa PT
23		P.O. Box 823 Ilwaco, WA 98624
24		Rt 1 Box 4 Astoria Oreg
25		P.O. Box 573 Ilwaco, Wa. 98624
26		PO Box 529 Ilwaco Wa 98624

We the undersigned concerned citizens find it unacceptable that the Corps of Engineers and the EPA propose Ocean Dredged Material Disposal Sites that cover approximately 75 square miles off Washington and Oregon. Not only will this action negatively impact important crab resources, and habitat, but also the commercial crab industry, and its socio-economic importance to coastal communities. We call on the Corps and EPA to consider more alternatives.

	Name	Address
1		8400 Fredrick N. Edmonds Wa 98026
2	Marilyn Leask	8400 Fredrick Pl Edmonds 98026
3	PAUL F WEBBER	14418-NE 64th ST. REDMOND 98052
4		3455 98th NW STANWOOD Wa 98292
5		PO Box 2145 Gig Harbor, Wa 98335
6	Rosemary Ross	P.O Box 2145 Gig Harbor, 98335
7		12722 35th Ave NE, SEATTLE 98125
8		1713 Mill Av. Bellingham
9		4405 20th Ave W No 207 Seattle
10		9E 400 N. Orem Ut. 84057
11		4005 Bel Air W No 66 Seattle
12		2402 NW Market ST. Box 25 Seattle
13		6536 S Mullen Tacoma
14		6165 W 33rd Federal Way 98023
15		3223 So 356th ST. Auburn 98001
16		3901 Chico Way Bremerton Wa 98312
17		P.O. 1427 Clatskanie 97016
18		32 Suddenvalley Bham WA 98226
19		27777 Lindsay Rd N.E., Kingston 98346
20		PO Box 9 Otter Rock, Or 97369
21		9362 NW Lark St Seal Rock Or 97376
22		4210 Shimby Road Olympia Wa 98506
23		6HL Lutz Rd Aberdeen Wa 98520
24		1120 N 31st Seattle Wa 98103
25		4032 35th Ave SW Seattle 98126
26	Samantha Greenwood	PO Box 2551 Cordova, AK 99574

We the undersigned concerned citizens find it unacceptable that the Corps of Engineers and the EPA propose Ocean Dredged Material Disposal Sites that cover approximately 75 square miles off Washington and Oregon. Not only will this action negatively impact important crab resources, and habitat, but also the commercial crab industry, and its socio-economic importance to coastal communities. We call on the Corps and EPA to consider more alternatives.

	Name	Address
1	JOE HUBBELL	P.O. BOX 603 WARRENTON OR 97146
2	ED MCNULTY	2874 HARRISON ASTORIA OR 97103
3	DAN VISSER	PO Box 2464 Gearhart Ore 97138
4	Richard L LYONS	9120 Col Hgts Rd LV. WA 98632
5	Kurt Englund	828 14th St – Astoria, OR 97103
6	Marty Landworthy	1882 5th St Astoria, OR 97103
7	John W. Howell	671 Florence #1 Astoria, OR 97103
8	Mark Olson	RT 1 Box 900 H Astoria OR 97103
9	Steve Hanbery	Rt. 6 Box 19A Astoria, OR. 97103
10	Richard Gray	P.O. Box 1066 Warrenton OR 97146
11	James Nichols	P.O. Bx 132 Warrenton, Ore
12	Corey Fox	Rt 3 Bx 245 Astoria Ore.
13	David Schmuland	Rt 1 Box 656-10 Astoria Or 97103
14	Gerald C Wright Sr	P.O. Box 2275 GEARHART, OR 97138
15	Ronald Hein	P.O. Box 1043 Warrenton Or. 97146
16	Ellsworth F Sherman	RT 1 Box 640-C Astoria 97103
17	Ed Land	1000 346th Place Ocean Park WA 98640
18	KENNETH A. NIEMI	552 ALAMEDA ASTORIA OR 97103
19	Lorraine Vandecoevering	PO Box 452 Garibaldi OR 97118
20	LAVERNE VAN MASTERT	Box 113 WARRENTON, OR. 97146
21	ROY A. SIGURDSON (Rds.)	250 8th Ave, SEASIDE, OREGON 97138
22	Joel Seymour	RT 1 Box 845 Astoria, Or 97103
23	MIKE BRUNMEIER fsg	9306 ARA Pl. ASTORIA, OR. 97103
24	Marvin Colvert	1586 9th St Astoria OR 97103
25	DON SCHACK	100 AUBURN ASTORIA OR 97103
26	Lyle T. Ballard Lorraine Street	808 Lewis Ave WARRENTON Or 1435 6th. Astoria, OR

We the undersigned concerned citizens find it unacceptable that the Corps of Engineers and the EPA propose Ocean Dredged Material Disposal Sites that cover approximately 75 square miles off Washington and Oregon. Not only will this action negatively impact important crab resources, and habitat, but also the commercial crab industry, and its socio-economic importance to coastal communities. We call on the Corps and EPA to consider more alternatives.

	Name	Address
1	RICHARD T. WATROUS	7111 ORTELIUS DR. ILWACO WASH. 98624
2	R.H. Bingham	RT 5 Box 857A Astoria OR 97103
3	Larry Rund	2065 Maple Seaside OR 97138
4	JOHN SVENSSON	1635 WHIPPLE PINES DR. SEASIDE 97138
5	Rick Newell	P.O. Box 1194 Astoria ore 97103
6	Lloyd Ludtke	RT 1 Box 671 WARRENTON
7	ROBERT SEITZ	2666 LINCOLN - ASTORIA, OR
8	Kent Moreland	RT 6 Box 1017 Astoria, OR
9	Paul A Takko	761 Jerome Astoria OR
10	Charles L. Neace	PO Box-583 Ilwaco, WA
11		POB 479 Astoria Ore
12		Rt 2 Box 136 Astoria ore 97103
13	Kathride L Bradshaw	76144 HWY 47 CLATSKANIE OR 97016
14		3838 29th Ave W Seattle WA 98199
15		P.O Box 129 St. Paul Or. 97060
16		RT 2 Box 153-C Astoria ore 97103
17	MICHAEL C BALDWIN	Box 541 WESTPORT, Wa 98595
18	Pat Hull	HCR 67 Seaside OR 97138
19	Tony Marincevich	198 Lexington Astoria, Oregon 97103
20		2264 Lucas Dr. Warrenton 97146
21	Stan Hurst	PO Box 175 Hammond, OR 97121
22		P.O. Box 306 RT 3 Astoria OR 97103
23	Stephen R Lahey	P.O. Box 383 Warrenton, OR 97146
24	Frank Terabachia	872 - 15th St astoria, ore 97103
25	Ronald C Coleman	34462 Wright Lane Warrenton, OR 97146
26	Richard Gutzler	C.O. Box 59 Hammond Ore 97121 404 W. Lexington Astoria OR 97103

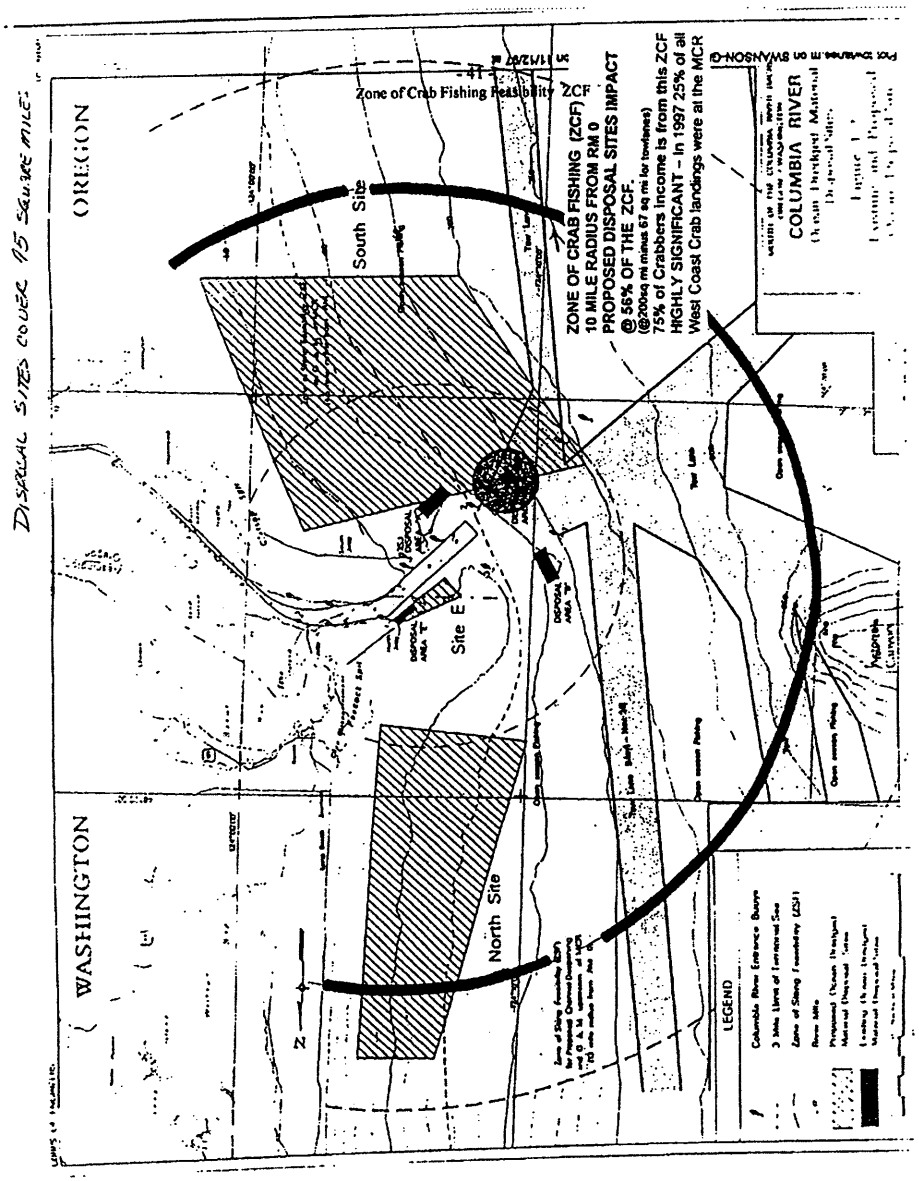
We the undersigned concerned citizens find it unacceptable that the Corps of Engineers and the EPA propose Ocean Dredged Material Disposal Sites that cover approximately 75 square miles off Washington and Oregon. Not only will this action negatively impact important crab resources, and habitat, but also the commercial crab industry, and its socio-economic importance to coastal communities. We call on the Corps and EPA to consider more alternatives.

	Name	Address
1	Quentin Seager	8714 54th Pl W Mukilteo Wash 98275
2	Nancy Seager	8714 54th PL W Mukilteo WA 98275
3	Monica Wright	12 Jones Creek Dr #4 Scarborough ME 04074
4	Dick Melo	Box 572, Bellingham, WA 98227
5	STEVE NOWELL	PO.B. 1268 OCEAN PARK WA 98640
6	Grant Sea	POB 2034 Port Townsend WA 98368
7	Joe Short	BOB 1224 Petersburg AK 99833
8	Paul Bortad	Box 183 Kake AK 99830
9	Dale Hughes	1111 Arckwood Dr SW #377 Olympia 98502
10	[illegible]	
11	Pat Ronahan	301 E 'O' ST Tumwater WA 98501
12	Jack Hays	Bx 153 METALINE FALLS, WA 99153
13	Dave Hatt	9111 236th St. SW #1/2 Edmonds Wa. 98020
14	Canal Marine Fire. ATT. [illegible]	Po Box 70522 SEATTLE WA. 98107
15	[illegible]	8123 Hillsboro Houston, TX 77029
16	Mildred Donnelly	P.O. Box 234, Crossville, TX 38557
17	John H. Donnelly	P.O. Box 234, Crossville, TX 38557
18	Robert M Barrett	18833 S Henrici Rd Oregon City OR 97045
19	John Goodhand	P.O. Box 218, Ester AK 99725
20	Jim SWANEY	Po Box 2191 VALDEZ AK 99686
21	DARRELL Smith	17926 CAMBRIDGE DR ARLINGTON 98223
22	Dale Beasley	P.O. Box 461 Ilwaco, Wa 98624
23	Edith Beasley	POB 461 ILWACO, WA 98624
24		
25		
26		

We the undersigned concerned citizens find it unacceptable that the Corps of Engineers and the EPA propose Ocean Dredged Material Disposal Sites that cover approximately 75 square miles off Washington and Oregon. Not only will this action negatively impact important crab resources, and habitat, but also the commercial crab industry, and its socio-economic importance to coastal communities. We call on the Corps and EPA to consider more alternatives.

	Name	Address
1	Richard Nyhus	P.O. Box 1987 WESTPORT WA 98595
2	Brady Engvall	3714 OYSTER PL. E ABERDEEN, WA. 98520
3	Dorothy H [illegible]	110 Valley Rd, Hoquiam, Wa. 98550
4	Bill Wade	Box 101 Westport, Wa. 98595
5	Ed Owens	5132 Donnelly Dr SE, Olympia 98501
6	Mike Manake	1664 View Ridge DR WESTPORT 98595
7	Ernie Summers	1007 SUMMERS LANE Grayland, Wa. 98547
8	Tom Kelley	PO. Box 776, Westport, WA. 98595
9	MARK CEDERGREEN	PO BOX 546, WESTPORT, WA 98595
10	Robert E. Jake	Po Box 26 GRAYLAND, WA. 98547
11	Allen K. [illegible]	39 Johns River BR. Rd Aberdeen, WA 98520
12	[illegible]	P.O. Box 88 Ocean Shores, WA. 98569
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

DISPOSAL SITES COVER 15 SQUARE MILES



C·R·C·F·A
COLUMBIA RIVER
CRAB FISHERMAN'S ASSOC.
P.O. BOX ~~7185 ILWACO, WA 98624~~

Bx 365 Ocean Park Wa.
98640

10 September 1992

Department of Environmental Quality
Water Quality Division
811 S.W. 6th Ave.
Portland, Oregon 97204

Re: Expansion of ocean disposal sites, A, B, F,
Mouth of Columbia River

Dear Sirs,

I received a late notification of this project by phone from your department, and received the project description on 9/9/92 by mail. Having been in contact with the Corps concerning the sites over the past two years I welcome this opportunity to respond on behalf of our Association.

I will not restate our safety concerns on the mounding on the dredge sites as they are addressed in both the Public Notice CENPP-PE-RP-92-05 and the Section 103 Evaluation.

Several other concerns that have a substantial impact on our industry's safety and economics have not been adequately addressed or have been ignored.

All of the sites proposed for "temporary expansion" are also evidently being considered for long term expansion. These sites are all in prime crab grounds, historically fished by the Columbia River fleets. However, no economic impact on the crab fishery by this proposal is included in the material I received for review; and the statement "The proposed action is not expected to adversely affect---economic values" (Pg 9 Sec 103 Evaluation) is most certainly not true.

The brief consideration of disposal effects on the onsite crab ignore the impact of potentially <u>sterilizing</u> the expanded sites as our fishing experience bears out, and totally ignores the impact of the dredging activity in itself. While dredging is not a direct issue, an increase or continuance of the activity has been shown to have a severe impact on crab populations in estuaries (Grays Harbor).

The maps and description of the sites were incomplete as to the total increased area of the proposal. Using the scale and information furnished, it seems that the total proposed expansion would cover approximately 4.08 square miles of sea bottom, or about a 325% increase. If this does not signal a significant impact on our fisheries, I can't imagine what would.

References to the continental shelf being an unacceptable dump site are unclear. Is the shelf the 1000 fathom curve or the Columbia Canyon? The canyon certainly is within reach as a disposal site. It seems the primary driver of this proposal is the cost to the Corps of transporting the dredged material.

The support study for the project ignores or downplays a number of factors, such as the economic impact on other than Corps priorities, dismissal of alternatives, and misleading conclusions as to impacts. A suspicion that conclusions came first, followed by support material is unavoidable.

I understand the Corps economic considerations, and the problems with disposal cite certification. The so called temporary dump sites may be temporary to the Corps, but permanent to the crab and drag fleets. Displacement of thousands of crab pots is no small impact on an already stressed industry and local economy.

The safety issue, considering the local fleet is mostly small boats operating out of the most trecherous winter bar in the continental United States on tidal schedules, is no small matter. The farther these boats must travel the more chances they are forced to take

The building out of the present berms would seem to tend to stabilize the existing conditions, which are admittedly dangerous. The Corps past projections were found to be inaccurate as to dispersal rates in the areas, and no information I have changes this factor.

In conclusion:

1. We do not consider five more years disposal as temporary.

2. We do not consider the magnitude of this expansion inconsequential or necessary.

3. The impact on safety has not been addressed.

4. The findings supporting the project are biased and incomplete.

5 Economic impacts must address all affected - not just the Corps.

Thank you for the opportunity to respond.

Sincerely,
Dick Sheldon
President CRCFA

Do. · 493 · DLCD 3155

Oregon

LAND CONSERVATION AND DEVELOPMENT COMMISSION

March 31, 1998

Mr. Thomas E. Savidge, Chief
Construction-Operations Division
U.S. Army Corps of Engineers
Portland District
P.O. Box 2946
Portland, OR 97208-2946

Attn: Eric Braun

Dear Mr. Savidge,

SUBJECT: DREDGED MATERIAL DISPOSAL - MCR 1998

The Department of Land Conservation and Development (DLCD) has considered the Corps of Engineers' plans for maintenance dredging of the mouth of the Columbia River (MCR) and dredged material disposal during the 1998 season as described in your February 13, 1998 submittal. DLCD is responding to the Corps' request for an extension of the coastal zone concurrence issued for the 1997 season, pursuant to coordination procedures agreed to by the Corps and DLCD last year.

In the development of MCR 98 plans, the Corps has made efforts to address concerns raised by DLCD in the 1997 review of site B and E expansions. Specifically, the Corps agrees to maximize, to the extent possible without further contributing to navigational hazards, the use of site E. Site F will be used with material placement controlled to avoid mounding. Any use of expanded site B would be restricted to the southwest corner, as was requested by DLCD and others in 1997. Physical monitoring data from MCR 97 and revised modeling predictions of site capacities have been provided. The Corps is also planning a laboratory study to investigate disposal impacts on crabs and flatfish and continues to work with DLCD and others to find new disposal sites to address capacity, environmental, and user conflicts associated with the use of sites B, E, and F.

Given the Corps efforts to address DLCD's concerns in its MCR 1998 plans, the need to maintain the entrance to the Columbia River navigation channel, and the current unavailability of alternative ocean sites, DLCD generally agrees with the Corps that the 1998 disposal plans remain consistent to the maximum extent practicable with the Oregon Coastal Management Program. However, the Department believes that the Corps can and should make a stronger commitment to avoiding the use of site B for the 1998 season. We also continue to stress the importance of efforts to find alternative ocean disposal sites. The following comments and recommendations serve to clarify the Department's position.

Site E:
Considering site expansion in 1997, the known dispersive nature of the area, and disposal data provided by the Corps, site E can likely accommodate disposal of 1.5 to 2 mcy and perhaps up to 3 or 4 mcy. The maximum use of site E is

1175 Court Street NE
Salem, OR 97310

important because material deposited here is most likely to remain in the littoral system when compared to sites B & F, and increased disposal at site E reduces and perhaps eliminates any need for disposal at site B.

The Corps plans to proceed cautiously at site E given the importance of not exacerbating navigational difficulties across the site and in the area offshore of Peacock Spit. DLCD agrees that caution is necessary. Thin-layer disposal methods must be employed, with individual disposal locations spread out across the expanded site. Pre- and post-disposal surveys of bathymetry at and around site E are required as are frequent surveys (at least monthly but more often as disposal volumes increase) during disposal. Ongoing analysis of survey results and modeling of remaining capacity will be necessary to determine if and where material is moving and where any additional materials should be placed. The Corps must maintain the ability to respond quickly with appropriate management actions given any sign of accumulation at or near site E that could result in unacceptable wave conditions if disposal actions were not altered.

Site F:
The Corps predicts that the southern half of site F can handle around 2.5 to 3 mcy of additional dredged materials while the northern half of site F is estimated to have a 10 mcy capacity. The remaining capacity appears to be more than sufficient for the 1998 season, particularly when considering the Corps ongoing efforts to locate new disposal sites for use by 1999 and the availability of expanded site E.

The Corps has mentioned the need to avoid navigational impacts at site F given its location directly offshore of the navigation channel. The Department agrees that navigation impacts must be minimized, however, it seems that this can be accomplished through the use of thin-layer disposal and with coordination between dredge operators and the bar pilots.

Site B:
No use of site B must be the Corps goal for 1998. DLCD contends that a no use policy for site B is justified based on the availability of sites E and F, recognition of the biological productivity and fishing effort and catch in the area, unresolved questions about disposal impacts on crab and other commercially-important species, and the ongoing efforts to locate new disposal sites. The laboratory study of thin-layer disposal impacts on crab and flatfish has not been designed or completed, and it is unclear if or how the findings of the study might be linked back to the 1998 disposal plans. DLCD also notes that no biological monitoring specifically looking at crab and flatfish presence and impacts of past disposal at site B has occurred. Furthermore, the MCR 98 plans do not include any pre- or post-disposal biological monitoring at site B as was recommended in 1997.

In the event the Corps determines, based on pre-disposal surveys or monitoring of disposal at site E and F, that this years disposal needs cannot be safely accommodated in sites E and F, then the following restrictions on the use of site B are recommended. First, as the Corps proposes,

disposal would be restricted to the southwest section of site B. The southwest section is greater than 200 ft. in depth and is thought to be generally outside of flat fish nurseries and areas of highest crab concentrations. Spillover effects to the "mudhole" feature should be avoided. Second, disposal should be by point dumping to minimize the total area impacted by dredged material disposal considering the lack of information on disposal impacts to crabs and flatfish. Third, if the Corps knows up-front that site B must be utilized, then disposal should occur prior to July 1 to minimize impacts to any molting and soft shell crabs present in the area. Otherwise, we continue to ask the Corps to maximize the use of site E and F, avoiding disposal in site B as long as is possible. Fourth, options for biological monitoring (pre- and post-disposal) should be investigated and employed if any significant volume of material will be placed in site B.

Coordination/Monitoring Report:
We continue to request that the Corps notify DLCD and other interested parties of developing disposal information and events in a timely manner. This would include notification of survey completion dates, the availability of survey results, and any major changes in site management, such as discontinuing use of Site E or using site B. For site management changes, the Corps also must explain the reason(s) for its decision.

DLCD requests that the Corps provide a final monitoring report that details disposal locations and volumes, dredges used, disposal thickness, other survey and modeling data gathered throughout the dredging season, and discussion of any major changes in site use and management that occurred. The final report should be provided after the dredging season but prior to the end of the year.

Scour Hole Alternative:
Your staff advised DLCD of the possibility of using a scour hole that has formed along the south side of the northern jetty as a disposal site for 1998. The site is located east of site E in Washington waters and would not be considered an ocean disposal site, instead falling under the Corps Section 404 authority. We encourage the Corps to explore this option as use of this site could offer another way of avoiding disposal in site B this year. Of course, the environmental impacts of using the scour hole site would have to be determined and minimized, and the Corps needs to conduct a public interest review of the scour hole proposal before making a final decision.

Site Selection and Designation Process:
When reviewing MCR plans for last year and the expansion of sites B & E, DLCD stressed the need to find long-term solutions to the problems associated with continued dredged material disposal confined to existing sites B, E, and F. A year later, the Corps is closer to but still a ways from having candidate sites and being able to proceed with the studies and procedural steps necessary for final site designations. DLCD asks that the Corps consider the following ideas for aiding the site selection committee in moving forward with the site selection process: (1) ASAP complete the thin-layer study design, initiate the study, and provide findings explaining any

- 43 a
DLCD 3/98

lethal and sublethal impacts of disposal on crabs and flat fish, (2) provide a written explanation of how the Corps believes the thin-layer technique would work offshore of the Columbia River addressing differences between here and the Gulf for variables such as water depths, wave climate/bottom disturbance, water temperatures, benthic species, and so forth, i.e. ensure the committee understands why the Corps believes the method can readily be adapted to the Pacific Northwest without having impacts appreciably different than in the Gulf, (3) schedule a meeting of committee members where the available time is devoted to discussion of overlays and the pros and cons of various candidate sites for meeting management measures, allowing the group as a whole to suggest and debate candidate sites instead of asking individuals to propose sites, and (4) ensure that all committee members understand and consider all potential disposal needs (MCR, channel maintenance, and channel deepening) as discussed in our previous comments on the draft Columbia River DMMS/SEIS.

Closing
The Department recognizes the Corps' efforts to address Oregon's concerns about dredged material disposal at sites B, E, and F, as expressed in DLCD's 1997 coastal zone response. We appreciate the continuing coordination efforts of your staff regarding ocean disposal issues. But DLCD continues to be concerned about disposal at site B and urges the Corps to restrict disposal to sites E and F for 1998 for the reasons stated in this letter. The Corps appears to have opportunities to manage MCR disposal such that no disposal or very limited disposal at site B occurs in 1998. Finally, the Department stresses the importance of continuing the work of the site selection committee and aiding committee members in addressing ocean disposal concerns and finding new ocean disposal sites. Much work remains if new sites are to be available for the 1999 dredging season.

Thank you for your continuing coordination with the Oregon Coastal Management Program. Please contact Christine Valentine at (503)-373-0093 if you have would like to discuss DLCD's comments and recommendations.

Sincerely,

Eldon Hout, Manager
Oregon Coastal Management Program

cc. Tom Rosetta, DEQ
Arlene Merems, ODFW-Newport
Neil Richmond, ODFW-Charleston
Kim Trimpert, CREST
Gilbert Gramson, City of Warrenton
Alan Willis, Port of Portland
Dale & Edie Beasley, CRCFA
Rick Vining, WDOE
Bob Burkle, WDFW

Oregon

DEPARTMENT OF
FISH AND
WILDLIFE

FISH DIVISION

May 8, 1998

Mr. Thomas E. Savidge, Chief
Construction-Operations Division
Portland District, Corps of Engineers
P.O. Box 2946
Portland, OR 97208-2946

Re: Dredged Material Disposal Off The Mouth Of The Columbia River (MCR).

Dear Mr. Savidge:

The Oregon Department of Fish and Wildlife (ODFW) has been participating in the Corps' inter-agency working group for finding new offshore disposal sites for MCR dredged material.

ODFW submitted comments to DLCD regarding disposal options for the 1998 season. These comments are largely reflected in DLCD's March 31 letter to the Corps of Engineers, Portland District regarding disposal site options at MCR for the 1998 dredging season. The purpose of this letter is to reiterate our Department's position on disposal options for 1998 and to further comment on other issues related to dredged material disposal.

1998 Disposal Options:
Based on the information presented and discussions in the MCR site selection working group meetings, expanded Site E is the best disposal option of the available sites for 1998. The site has the capacity for 2 million cubic yards (mcy) and perhaps up to 4 mcy. The high energy characteristics of this site and the potential for providing beach nourishment to Long Beach peninsula maximizes the benefits of disposing the material in Site E. Thin-layer disposal techniques should be employed to minimize mounding as well as to test the effectiveness of the thin-layer method in a shallow, highly erosive area. Bathymetric surveys should be conducted frequently to monitor the behavior of the material.

If bathymetric surveys demonstrate that Site E is reaching its capacity, Site F should be used for the remainder of the disposal material. With the existing capacity of more than 10 mcy there is sufficient room to accommodate all disposal material beyond Site E's capacity. Disposal methods in Site F should be thin-layer only, as there is potential for mounding which would result in serious navigational hazards.

ODFW strongly discourages use of Site B. Disposal of dredged material in this location is incompatible with the sensitivity of this area. This area is habitat for several species in vulnerable life history stages. This area is known to crabbers as having high densities of softshell crab and is a nursery area for some species of

John A. Kitzhaber
Governor

2501 SW First Avenue
PO Box 59
Portland, OR 97207
(503) 872-5252
FAX (503) 872-5632
TDD (503) 872-5259
Internet WWW http
//www.dfw.state.or.us/

juvenile flatfish. It is also an important commercial fishing area for Dungeness crab. With Sites E and F available for disposal and with enough capacity to hold the 4-5 mcy expected for the 1998 dredge season, there should be no need to use Site B this year. It is strongly recommended that Site B be considered a last alternative; to be used only if the other two sites exhibit sufficient mounding as to jeopardize vessel safety. If Site B must be used, ODFW agrees with the Corps decision to limit disposal to the southwest corner of the expanded site. ODFW strongly recommends that disposal practices be pin-point dumping only, and that the area be no larger than the required area needed for the dredges to maneuver, which the Corps states is 2,000 x 4,000 feet. Disposal in this area should occur before July 1, prior to when crabs molt. No dumping should occur in Site B, unless the Corp conducts a pre-disposal survey to determine the abundance and condition of crabs in the disposal site.

In keeping with Oregon's Goal 19, critical habitats must be protected. This includes factors that define critical habitat, such as "areas important in the life history stages of ... important species" and the "vulnerability of species to habitat alteration." Goal 19 requires that specific proposed actions by a Government be supported by inventories in order to describe the long-term impacts of the proposed activity on resources and uses of Oregon's nearshore ocean. ODFW is not aware of any such resource assessment that specifically addresses disposal impacts to softshell crabs or economic impacts to the crab fishery. The frequently referenced EIA by Durkin and Lipovsky (1977) did not examine impacts to softshell crab and affects on juvenile flatfish are not clear. An updated, and comprehensive impact study is needed considering current concerns about the species and area in question.

The Corps has not committed to any biological monitoring for the 1998 disposal season and has indicated that there are no plans for biological monitoring or impact assessments for offshore disposal in the foreseeable future. Until such studies are conducted, ODFW cannot support long-term use of Site B.

MCR and Channel Deepening Projects
The disposal needs for both the MCR maintenance dredging project and the channel deepening project are being addressed through the site selection process. While the need to find long-term disposal sites exists for both projects it should be made clear that they are separate disposal projects. The sediment from the portion of the channel that is proposed in the channel deepening project will have different characteristics from the MCR. Mixing sediment type may result in unsuitable habitat for benthic organisms and fish. We recognize that this may not be as much of a concern if the material is placed in a shallow, highly dispersive area, compared to deeper areas that have a more stable bottom composition. The Corps should consider the effects of mixing sediment types or grain sizes to determine if this would disrupt existing habitats.

Thin-layer Disposal Method
The Corps is considering employing thin-layer disposal methods for 1998 and in the future. Because this practice requires a much larger surface area than what has been required with "pin-point" disposal practices, any biological impacts from this method will be experienced over a much broader area than has occurred to date off the Columbia River. The impacts of thin-layer disposal to resources off Oregon are not known and no pilot study has been proposed by the Corps. The Corps should conduct an impact assessment for this methodology prior to use in any new or existing (expanded) sites following the 1998 dredge/disposal season, regardless of the

outcome of the Scripps studies on crab and flatfish impacts. Although the Corps, Mobile District, has conducted an impact analysis for thin-layer methods in the Mississippi Sound, the results are not necessarily applicable to Oregon. The Sound is a warm water, very shallow (10-11 feet), highly dispersive, estuary-type body of water with a silt-clay bottom. Fish and invertebrates in this environment are likely to respond differently to habitat alterations and stresses than animals in the cold Pacific Ocean, particularly in deeper water. Thin layer placement in the Sound was between 6 and 12 inches. This is at least 2 inches thicker than what was determined to be the thickness at which adult, hardshell crabs are smothered, based on Chang and Levings study. The Corps should demonstrate at sea and with both the *Newport* and *Essayons* dredges that it can maintain the thickness necessary to minimize lethal impacts to softshell and juvenile crabs and juvenile flatfish. The computer simulation models provide a good estimate of disposal characteristics, but at-sea trials are still needed.

The Gulfport study determined that coarser grained material was much more difficult to place in a thin-layer application than fine-grained silt-clay material. In the Columbia, the channel deepening operation may produce coarser material than the MCR maintenance dredging operation. ODFW recommends that both sediment types be tested at sea for thin-layer application.

The 1998 season can provide a good opportunity to practice thin-layer disposal. Efforts should be made to conduct pre, during, and post disposal surveys. The Corps should consider exploring survey options that can provide more accurate and detailed information beyond what is capable with bathymetric surveys alone. Sediment Profile Photography, used in the Gulfport Study, gives more precise measurements of disposal material than bathymetry surveys. It also provides detailed information on many physical and biological parameters and can be used to monitor changes to the benthic and epibenthic community. The Corps in New England has also tested Laserline Scanning which can quantify fish, shellfish and benthic invertebrate burrows at disposal mounds.

Disposal Impact Study at Scripps
ODFW believes that the impact study to be conducted at Scripps this summer should provide some baseline information about lethal and sublethal effects of disposal on softshell and juvenile crabs and juvenile flatfish. However, ODFW does not assume that the results of this laboratory study are conclusive. Many natural variables that cannot be duplicated in the lab may have compounding effects on animals who may be weakened by disposal. Sublethal effects may seem benign in the lab but may result in more serious consequences in the ocean environment, such as increased vulnerability to predation and disease. ODFW views the Scripps study as providing additional information about impacts to these animals which can be used in conjunction with other data to provide guidelines for disposal management. ODFW does not believe that the results of this study will provide the decision on whether or not to adopt thin-layer techniques for Oregon. As stated earlier in this letter, at-sea biological and thin-layer test surveys are needed to determine if this methodology is practicable for Oregon.

Site Selection
ODFW agrees with DLCD that candidate sites require more discussion by the Site Selection Working Group and that the group not be pressured into proposing new sites. Much of the hesitation in the selection process is due to unknowns about the degree of biological productivity in a

Thomas E. Savidge
May 8, 1998
Page 4

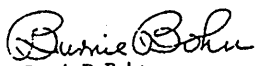
potential site. The group should have the option of rejecting previously proposed candidate sites if further discussions or information render these sites unfavorable.

ODFW feels strongly about the need for biological surveys in any new site. ODFW cannot make informed biological decisions about sites without these surveys. The Corps needs to commit to conducting biological surveys of new sites in addition to the bathymetric surveys.

ODFW recommends that the littoral drift cell both to the north and south off the Columbia be seriously considered as a potential disposal site. Disposal material may disperse fairly rapidly here, and impacts to organisms in this area may be minimal because of their adaptation to a highly dynamic environment. Disposal in the littoral cell also mimics the natural migration of sediment flowing from the MCR which ultimately returns to the littoral drift system. Disposal in the littoral system has the added benefit of providing beach nourishment to eroding beaches. State and university geologists believe that this is a practical mechanism for disposal and should be seriously considered.

ODFW appreciates the Corps' efforts thus far in working with other agencies and stakeholders to find new disposal options that will ultimately minimize impacts to the resources

Sincerely,



Burnie B. Bohn
Assistant Chief of Fisheries

c: Doug DeHart
Neal Coenen
Jim Golden
Dave Fox
Neil Richmond
Kim Larson, COE
Eric Braun, COE
Christine Valentine, DLCD
Eldon Hout, DLCD
Dale Beasley, CRCFA
Steve Barry, WDFW
Bob Burkle, WDFW
Rick Vining, WDOE
Susan Hinton, NMFS
Ben Meyer, NMFS

The May 8, 1998 ODFW letter to the Corps definitely is not reflected in the '98 DEIS on ocean disposal. The following concerns have been expressed and summarily dismissed in the '98 DEIS:

1. *Biological susrvey with inventories are needed to make informed decisions about any new disposal sites*
2. *Need pre-disposal survey to determine crab abundance*
3. *Need inventories to assess economic impacts to fishery*
4. *Need to study sediment grain size changes on habitat*
5. *Need an updated and comprehensive soft-shell study*
6. *Need at-sea trials to determine ability to control thin-layer disposal with MCR and upriver sediments for all disposal devices used*
7. *Should use sediment profile photography*
8. *Need at-sea tests to determine at what depth crab mortality occurs*
9. *Lab studies need at-sea verification*
10. *Candidates sites need further evaluation and some may need rejection with further information*
11. *Requested ongoing workgroup meetings*

ODFW letter also refers to the DLCD letter of March 31, 1998 which states the following:

1. *Requested more meetings to discuss overlays*
2. *Debate candidate sites*
3. *Consider potential disposal needs*
4. *Request for more information*
5. *Establish lethal and sub-lethal impacts to crab & flatfish*
6. *Investigate thin-layer in the Pacific Northwest*
7. *Conduct a public interest review*
8. *Require pre & post disposal biological monitoring*
9. *Determine the fate of material placed in site E*
10. *Avoid mounding at sites and maintain navigational safety*
11. *Address user conflicts*

Most of the requests by these state agencies are requirements of federal, state and local laws which have not been met.

2/5/97

CRCFA
COLUMBIA RIVER CRAB FISHERMAN'S ASSOC.

23 July 1997

Kim Larson
U S Army Corps of Engineers
P O Box 2946
Portland, Or. 97208-2946

These items still need to be considered 1½ years later.

RE: Subgroup 1 & 2 meeting 7/23/97 in Portland

Kim:

CRCFA would like to thank the Corps for including the crab fishermen in this latest attempt at finding disposal sites which are least disruptive to safety and environmental concerns at the Mouth of the Columbia River (MCR). Our goal has not been to block projects, but to introduce information on the value of threatened resources and offer reasonable, non-destructive alternatives.

CRCFA realizes that dredging will continue at the rate of 4-5 million cy/yr. The benefits of dredging actions should NOT be placed on the back of the local economy. Presently, the Corps' dredging operation costs the local economy several million dollars per year, through lost habitat, resource potential and lost fishing time because of mounding.

After the first meeting on 10 July 1997 I have several observations that can aid in finding the safest, most environmentally friendly, and most acceptable location(s) for dredge disposal

1. Information Manual
   - All legislation , standards, policies and guides
   - All relevant facts
   - All biological and physical data
   - Sediment analysis for carcinogenic materials - test results & date (dioxins, PCBs, heavy metals, fertilizers, hydrocarbons, etc.) (Green Book)

2. More outside personnel

3. Focus on protecting marine ecosystems
   - what ecosystem management principles or tools are being used in the site selection process?

4. Re-examine Zone of Site Feasibility
   - environmental concerns
   - resource concentrations
   - effects on the local economy and the State of Oregon and Washington
   - Beneficial use and use of Site E lessens dredging time and decreases costs
   - Using the Essayons & Newport the current 4 ½ million cy can be dredged in less than 60 days, which is 1/3 of the dredging season from mid-April to mid-October

5. Collect and compile information on Crab and Bottomfish
   A. Examine environmental impacts and harms
      - consideration of bottom habitat / ecosystem - "wood zone" a *unique feature* must to preserved
      - effects of alteration and fragmentation
      - are we forcing crab out of normal areas of concentration and forcing them into smaller areas
      - are we stressing the environment and or other species

   B Bottomfish and Crab Survey
      - depth sensitivity of the bottom fish is reflected (see CRCFA letter to Steve Stevens in Jan '97)
      - obtain ODFW information

CRCFA Commissioners:

Dale Beasley
PO Box 461
Ilwaco, WA 98624
(360)642-3942
Fax (360) 642-5454
crabbr @ seone com

Chris Doumit
PO Box 342
Cathlamet, WA 98612
(360) 795-0601

Rob Greenfield
PO Box 84
Chinook, WA 98614
(360) 777-8242

Dwight Eager
PO Box 141
Chinook, WA 98614
(360) 777-8727

Bill Rhodes
3646 Cedarbrook Dr
Longview, WA 98612
(360) 636-3552

2/5/97

C. Crab data (as put forth by ODFW)
   - direct and indirect impacts of broad based dispersal on various sizes and conditions of crab? (ODFW)
   - densities, distribution, and timing of various sizes and stages of crab at the MCR (ODFW)
   - what numbers of crab will be impacted by each disposal option. (ODFW)
   - identify the primary crab and bottomfish commercial fishing areas. (ODFW)
   - baseline crab and bottomfish studies - do we have a model for understanding these populations to ensure sustainability?

D. In-depth study of crab mortality
   - during the entire dredging process
   - Entrainment (sucking them up)
   - Disposal plume (dumping them out)
   - Burial (covering them up)

E. Data to understand ways to minimize this mortality in all phases of the dredging operation
   - timing - avoid when YOY are present
   - avoid largest concentrations both juvenile and adult
   - avoid when and where crabs molt

6. Mitigation Costs & Efforts

7. Regulatory Flexibility Analysis
   - Must start immediately to determine the effects on small businesses

8. Consideration of O & M alternatives for 1998
   - Must be part of the process
   - De-designation of Site B

9. Determine actual rate of deposition
   - A process to determine the actual rate of deposition for each hopper dredge dump, possibly a 1 yard collection device on the sea floor to collect the sediment after the dump

10. Consideration of new laws prior to '98 dredge season
    - Essential Fish Habitat - Reauthorization of the Magnuson Act
    - Pacific County Shorelines Management Act, Ocean uses
    - Shellfish Protection District

11. Evaluate restoring North & South jetties to full lengths
    - may decrease annual dredging requirements
    - may bring Benson Beach erosion under control
    - may provide a larger on shore disposal site.
    - is sand coming through jetty?

12. Evaluate broad -based dispersal - '97 season.
    - Direct and indirect impacts on various sizes and conditions of crab. (ODFW)
    - What numbers of crab will be impacted by each disposal option ?
      pinpoint
      broad-based
    - Effect on habitat / ecosystem alteration (smaller area vs larger area)

13 New Site requirements
    - Outline of process
    - Tech Guide for Designation of Ocean Dredged Material Disposal Sites

-47d-

2/5/99

14. Workplan timeline

15. Review current EIS

16. Review current DMRP

Supplemental Environmental Assessment Questions:

1. " The Corps and the EPA have initiated the necessary studies to develop a long-term dredged material management plan with expected completion in 1999." - SEA p.1
   * Supply studies or parameters

2. Monitoring of contract dredge
   [Optimum is broad-based dispersal.] "To achieve that result, the dump areas need to be adequately sized so that the relatively-small area utilized by a single dredge dump would not be used again in the immediate term [define?]. To be effective, the technique must incorporate accurate dump vessel positioning and vessel speed." (SEA p.3)
   * Need supporting data

3. Site E coordinates in SEA ? Different from Public Notice
   * Correct coordinates

4. "Biological evaluation, which would include determining whether impacts to crab populations are measurable, will be initiated prior to disposal in expanded Site B." (SEA p5)
   * Parameters of the this biological evaluation? When? By whom? How?

5. "Both agencies [EPA/Corps] have reviewed recently collected monitoring information at sites A. B. and F and have jointly concluded that this information is sufficient to support expansion of these sites...." (SEA p 7)
   * Specifically state what monitoring information was used to make this determination.

6. "...deposition at Sites B & F in prior years revealed no apparent lasting effect on the diversity and number of finfish." Do we know if there is a lasting effect on the diversity and number of crabs? (SEA p13)
   * Specify data.

Regards,

Dale Beasley

Dale Beasley
CRCFA
WFOA

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Region 6 Office: 48 Devonshire Road - Montesano, Washington 98563-9618 - (360) 249-4628

March 20, 1998

Washington Department of Ecology
ATTENTION: Rick Vining
Post Office Box 47600
Olympia, Washington 98504-7600

Dear Mr. Vining:

SUBJECT: Public Notice - Extension of CZM Consistency Concurrence for Disposal at Sites E, F, and B - Mouth of Columbia River, Tributary to Pacific Ocean, Pacific County, Corps Log No. PE-E9609-03, WRIA 24.MARI

Dear Mr. Vining:

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above-referenced extension request dated February 13, 1998 and received on February 24, 1998; Public Notice Number CENPP-PE-E-96-09 received on December 30, 1996; attended several meetings on this subject with the Corps and other interested parties; reviewed crab fishery sampling data collected from 1981 through 1996; and last talked with you on March 3, 1998 to help develop this response.

WDFW remains opposed to the expansion of Site B, and remains opposed to the use of Site B for the disposal of dredged material now and in the future. This area is at the waterward edge of the littoral zone, where depths are sufficient to protect the bed from wave action, making this one of the most productive areas for fish life. Detritus necessary for productivity, especially for Dungeness Crab, falls to the bottom in this area, as evidenced by sediment data showing abrupt increase in fines on the bottom. This results in excellent fishing and heavy utilization by crab fishermen, as evidenced by catch statistics, shipboard sampling data, and the testimony of commercial crabbers. This is also a productive area for bottomfish, as landing reports and testimony from commercial trawlers indicates, and has been identified as a nursery area for juvenile flatfish. Disposing in this area would reduce productivity, perhaps permanently, for both fish and shellfish resources by covering benthic organisms and converting productive, fine grain beds to those coarser and less productive.

Disposal in Area B may also result in direct mortality of Dungeness Crabs. Crabs beneath the path of the dredge would be covered by more that 10 cm of spoils and may suffocate. Crabs molt in deep, stable areas that are protected from wave energy. Shipboard sampling data from the commercial crab fishery monitoring program consistently identifies higher ratios of soft shelled

crabs in the catch from this area than in any other statewide. The crabs that are buried during molting would likely be killed by only a few centimeters of material, as they are unable to escape suffocation in their soft shelled condition.

The degradation of productive crabbing grounds, and the loss of crabs from disposal impacts, needs to be minimized. In addition, the issues of prevention of mounding in areas navigated by fishermen, and retention of sand in the littoral drift system also need to be addressed. To these ends we strongly support the disposal of sand in Site E, and the expansion and full utilization of this site. We feel that if several million cubic yards of sand has been successfully disposed annually at the original site in the past, and if the site appears to be capable of being expanded 300 to 400 percent, that additional sand, up to at least 2 million cubic yards (mcy) and as many as 4 mcy or more, should be able to be disposed in the expanded site successfully, particularly in an El Nino year, when it is likely that northwest winds and corresponding currents that push sediment disposed at Site E back into the navigation channel will not develop. This area is known to be erosive and is not particularly productive, and so productive capacity of fish and shellfish habitat should not be impacted as a result of disposal. As the area is near shore and has been shown to be dispersive in the past, it is likely that a significant portion of this sand enters the littoral drift system, although research will need to be conducted to prove this. Monitoring of sand disposed in the Peacock Spit area is also essential to identify if disposal in E exacerbates navigation difficulties, both in the maintained channel and in the area offshore of Peacock Spit between the dangerous mound created by disposal in original Site B and the shallows of the spit, that must be navigated by commercial fishermen in order to reach the fishing grounds in a timely and economical manner.

We realize that there needs to be an alternative to site E, and feel that there is sufficient capacity in recently expanded Site F to accommodate the remainder of the Corps needs for this year. Site F is considerably coarser than Site B, and sand disposed in Site F would not have the dramatic impact to seabed composition that would be caused by disposal in B. Disposing "like on like" material makes good biological sense. Consequently, we recommend that the Corps be required to dispose in Site E and Site F only. While we realize that Site F cannot be used in this manner for long term disposal without threatening navigation, and that sediment disposed in Site F will likely mound up and be lost to the littoral system, this is still likely the least impacting option for this year.

In the event that the Department of Ecology still wishes to allow the Corps to dispose of a very limited amount of sand in B this year, we offer the following guidance. These provisions may be applied to disposal in 1998 only.

Time Limitations: Immediately through December 31, 1998.

Provisions as follows:

1. This project is approved as illustrated in plans dated February 11, 1998 attached to the referenced consistency concurrence letter, subject to the following provisions.

2. If a hydraulic hopper dredge is used, it shall only be operated with the intake at or below the surface of the material being removed. The intake shall only be raised a maximum of three 3 feet above the bed for brief periods of purging or flushing the intake system. During in-water disposal of dredged material, water shall not be drawn through the dragheads to flush out the hopper unless the dragheads are lowered to 20 feet or more below the surface.

3. Dredged material shall not be stockpiled below the ordinary high water line.

4. Dredged materials shall be deposited at expanded Site E to the greatest extent possible. We recommend disposal of at least 2 mcy to as many as 4 mcy in Site E in 1998. The following requirements apply to disposal at Site E:

   A. Sufficient material should be placed to create a bedform that can be monitored and tracked using depth sounding equipment. Depths of Site E should be monitored at least monthly, along with depths of adjacent areas, including the navigation channel next to Site E and Peacock Spit, Peacock Spit to the north of Site E for up to 2 miles, and Peacock Spit waterward to original Site B.

   B. A report shall be prepared that details monthly surveys and tracks the movement of the Site E bedform and submitted to WDFW for review prior to the end of 1998. The report should include an analysis of the fate of disposed sand and an estimate of the amount that entered the navigation channel, travels north across Peacock Spit, and travels waterward to Site B.

5. The remainder of the material dredged should be disposed in Site F. The following requirements apply to disposal at Site F:

   A. Thin layer disposal should be utilized.

   B. Prior to disposal, sediment samples should be taken and analyzed for percent fines. Benthic invertebrate samples should be taken prior to disposal. Crabs should also be sampled, using either standard commercial gear or commercial gear modified to trap smaller crabs. Depths should also be taken. A portion of

the site that is projected to be typical of the designed disposal depth and that has been minimally impacted by disposal activities in the past should be selected for sampling.

C After disposal on Site F is finished, samples as outlined above should be replicated. The samples should again be replicated prior to disposal the following year, if any. The Corps should attempt to keep the study area free of future disposal, and monitor sediment composition, benthic invertebrates, depths, and crab abundance as above for several years, to track the recovery of the site.

D. Preliminary reports should be presented to WDFW prior to the end of 1998 and subsequent reports presented in a timely manner.

6. Disposal in Site B is strongly discouraged, but if absolutely necessary, is acceptable in 1998 only, and only under the following conditions:

A. Disposal shall be confined to the southwestern corner of the offshore portion of expanded Site B as identified in the plans attached to the referenced letter.

B Disposal shall be by point dumping only, thin layer disposal over the remainder of Site B shall be prohibited.

C To avoid molting and soft shelled crabs, disposal shall be prohibited after July 1 of any year.

D Sampling and reporting of data shall be as provisioned for Site F in Provisions 5B, 5C, and 5D above. No disposal shall be done until this sampling, which is required according to the 1997 Environmental Assessment for site B expansion, is completed.

7. Dredging shall be conducted to minimize siltation of the beach area and bed.

8. If a fish kill occurs or fish are observed in distress, the project activity shall immediately cease and WDFW Habitat Program shall be notified immediately.

9. Debris or deleterious material resulting from construction shall be removed from the beach area and project site and shall not be allowed to enter waters of the state

10. No petroleum products or other deleterious materials shall enter surface waters.

11. Water quality is not to be degraded to the detriment of fish life as a result of this project.

In the future, an area to place sand that avoids productive fish and shellfish beds, while ensuring that the sand will enter the littoral system, needs to be found. Progress has been made in identifying such areas, but more work needs to be done. The selection of this area needs to incorporate input from resource agencies and user groups. Disposal sites need to avoid productive fishing areas. Disposal needs to be "like on like" to the extent possible, and be done in areas that analysis of bottom contours over the years shows to be erosive. Most importantly, beneficial uses need to be found for Columbia River sand, and the Corps needs to move away from disposal and towards beneficial use. No where else in the country is sand allowed to be wasted.

The potential damage caused by offshore disposal of sand, rather than nearshore beneficial use, is becoming increasingly significant in the light of new information presented at the recent Coastal Erosion Workshop on March 5 and 6, 1998. An estimated 7 million metric tons (approximately 5 mcy) of sand per year enter the Columbia littoral system, and the Corps dredges and disposes of essentially all of this sand. The placement of this sand in the nearshore littoral system, where it can accrete on to Washington's beaches, rather than wasting it into deep water, could make a significant difference in reversing the recent erosional tendencies of portions of the coast.

In working with agencies and user groups, WDFW has an opportunity to utilize sand to correct the significant erosion problems at Fort Canby State Park, and to retain all of the sand now disposed in deep water in the littoral system, where it has an opportunity to continue to nourish the beaches of the State of Washington to the north. Benson Beach at Fort Canby has eroded so severely this last winter that the restrooms, parking area, and road to the parking area has all been lost, and ocean waves are presently entering the sewage treatment lagoon that serves the park. All use of the Park may need to be curtailed this year as a result.

The most feasible way to do this without significantly increasing impacts to benthic animals and their habitat would be to pump sand directly from the dredge on to the beach. A pier, dolphin system, or other structure could be installed from the south jetty to an area deep enough to accommodate the dredge in the sheltered bay behind the jetty. The pump out line could be run from this structure over the jetty and to Benson Beach. There are likely other locations or scenarios under which this could be accomplished, and all should be entertained. We need this sand on the beach.

Obviously, there are additional costs associated with this operation. A similar scenario in Grays Harbor, where sand pumped from a hopper dredge was used to fill a breach between the south jetty and adjacent uplands, wound up doubling the cost per yard over that of disposal. However,

the savings in hopper dredge hauling time for offshore disposal in the MCR would be considerable, compared to the situation in Grays Harbor where spoils were typically disposed adjacent to the jetty very near to the area dredged. Add in economy of scale, all the savings to the resource and to the Corps from not having to monitor and mitigate resource damages from disposal, plus the benefits to mariners from not having spoil mounds and dredges to navigate around, plus the benefits from avoiding lawsuits by user groups, plus the benefits of getting 100% of the sand on to the beach where it will help ensure that Long Beach and points north do not wash away in the next century and result in calls for federal disaster aid, and you have a net cost that is probably less than what is now being incurred. There are dredge capability concerns also, and these would need to be examined by dredge equipment experts. However, the idea does not seem at this point to be impractical.

Biologically, the potential nourishment area at Benson Beach is insignificant as a producer of resources, as it is so erosive. WDFW surveys indicate insignificant populations of razor clams in this area. The opinion of our razor clam manager is that building up the beach with sand would be a benefit to area clam populations, particularly as the sand accreted to northern beaches. Salmonids do not utilize the surf zone on the open coast in the same way that they utilize the shallow water migration corridor in the estuary, as by the time they leave the Columbia they have attained enough size to feed and rear pelagically. Crab fishermen do not fish or navigate there, nor do crabs or other important fish species utilize the area to any where near the significant extent that they utilize existing disposal areas. Other species that utilize beaches in their life cycle, such as surf smelt, have never been observed spawning here. All other uses of the beach, by all species including humans, would likely be enhanced by nourishing it.

The one drawback biologically is that re-handling of dredged material will likely result in additional mortality of crabs entrained in the hopper dredge and transported to the site. All of the crabs entrained by the hopper dredge would likely be buried and killed in the beach nourishment operation. The significance of this additional loss would need to be investigated, and balanced against the gains made in protecting crabs and crab habitat from offshore disposal impacts. Our feeling, lacking hard data, is that the additional direct mortality would be offset by increases in productivity offshore, and would be an acceptable trade-off, but we would need to see the numbers of crabs entrained studied before we could determine this. We understand that this study, conducted in conjunction with draghead excluder design experiments, is in the works, so this question should soon be answered.

Regulatory constraints on expansion of disposal sites would be considerably lessened, as would the political pressure generated by continuing proposals for expansion. The beach is not an ocean disposal site, and so would not need to be designated as such by the EPA. The project certainly qualifies for consideration as a beneficial use site, and as one that is replacing land that

was formerly natural uplands and beach, and in a State Park to boot, the project may qualify as habitat restoration. This opens the door for significant additional funding opportunities

There are likely other beneficial uses of sand that could be identified, such as building beach nourishing berms in nearshore Washington and Oregon waters, as has been done offshore of Grays Harbor and is currently being done in Half Moon Bay, a tributary to Grays Harbor, at no additional cost to the Corps. A concerted effort by the Corps needs to be made to research all beneficial uses. By next year we need to be ready to utilize sufficient sand beneficially to prevent disposal in Site B, and possibly in Site F also. We need the Corps to diligently work towards this goal.

We appreciate your cooperation in our efforts to protect, perpetuate, and manage the fish resources of the State of Washington.

Thank you for the opportunity to provide this information. If you have any questions, please contact me at (360) 249-1217.

Sincerely,

Robert Burkle
Area Habitat Biologist

RB:rb:9

cc: Dan Guy
Sara LaBorde
Steve Barry
Ed Manary
Ken Mohoric
WRIA File
Kim Trimpert, CREST
Arlene Merems, ODFW
Dale Beasley, CRCFA
Chris Regan, WSPRC
Susan Hinton, Ben Meyer, NMFS Portland
Kathi Larson, USFWS Portland
Eric Braun, Rod Moritz, Kim Larson, COE Portland
John Malek, EPA

This letter encourages avoidance of fishing areas, direct beach placement of sediments, identification of near-shore erosive areas for use of disposal area, and need for test results on entrainment.

HABITAT HAPPENINGS
PFMC COUNCIL NEWS
MARCH 1997
PAGE 5

The U.S. Army Corps of Engineers and the Environmental Protection Agency soon will issue a temporary permit (to last up to years) for the disposal of dredge spoils off the mouth of Columbia River. Four to five million cubic yards of sediments will be disposed in two sites ("B" and "E"). This decision is controversial, because the Corps plans to significantly expand two current dredge ocean disposal sites. Local crab fishers, led by the Columbia River Crab Fishennan's Association (CRCFA), are Fighting the site expansions which they say will harm crab and bottomfish habitat. Based on these concerns, the Habitat Committee invited Mr. Steve Stevens of the U.S. Army Corps of Engineers, Portland office, and Mr. Dale Beasley of the CRCFA to discuss the disposal site expansion.

Mr. Stevens stated that the Corps must keep the navigation channel clean to accommodate $12 billion in commerce. Also, past dredge spoils (since 1957) have "mounded", resulting in the need to disperse spoils over a wider area in expanded sites. However, members of the CRCFA expressed concern that the proposed expansion will result in "excessive damage to the marine environment" A final decision by EPA on the site expansions will be made in late March. The Corps and the EPA have also initiated the "necessary studies to develop a long-term dredged material management plan, with expected completion in late 1999." In response to the potential impact of this dredging project on fish resources, the Council expressed its concern in a letter to Mr. John Malek of the EPA. key excerpts from the letter are provided below.

MALEK LETTER

On March 3,1997, the Council's Habitat Committee met in Portland, Oregon, and discussed the proposed expansion of ocean disposal sites "B" and "E" off the mouth of the Columbia River (CENPP-PE-E-96-09).

The Council has not developed a position with regard to the proposed expansion. However, we are concerned with the potential negative impacts on Dungeness crab and fisheries resources. We base our concerns on issues discussed below by the Oregon Department of Land Conservation and Development, and the Washington Department of Fish and wildlife.

In a February 7, 1997 letter to the Corps of Engineers, the Oregon Department of Land Conservation and Development said.

Without more specific evidence to the contrary, the state must conclude that the disposal in the nearshore portion of site B has the potential to directly impact an economically important species [crabs] and the habitat on which the species depends. Furthermore, the state cannot conclude that disposal at site B, particularly in the nearshore portion, would not be consistent with Goal 19 requirements for the long-term protection of renewable ocean resources (habitat and shellfish) and the protection of commercial fish and shellfish areas.

WDFW, in an October 28,1997 letter to the Corps of Engineers, expressed their concerns with disposal at Site B:
We do not, however, support the use of site B. Almost no sand (less than 10%) will enter the littoral system if disposed offshore.

This area is at the westward edge of the littoral zone, where depths are sufficient to protect the bed from wave action, making this one of the most productive areas for fish life, emphasis added. Detritus necessary for productivity, especially for Dungeness crab, falls to the bottom in this area. This results in excellent fishing and heavy utilization by crab fishermen. This is also a productive area for bottomfish. Disposing in this area would both reduce productivity and waste sand.

Another concern the Habitat Committee has with the site designation process is the paucity of distribution and production data fisheries resources around the mouth of the Columbia River. Without an improvement in the precision of the data currently being used, we fear that convincing fishers that you are taking necessary steps to ensure minimal impacts to crab and fishery resources will continue to be a point of contention.

Therefore, we encourage you to take the necessary steps to increase the baseline data on fish and crab abundance in and around the disposal sites. We suggest that you develop methods to obtain real time monitoring data. Perhaps this could be accomplished in cooperation with the fishing industry.

We realize that dredging and disposal of dredge spoils are a necessary part of keeping the Columbia River a functioning economic arterial. Our request is that decisions regarding the location of disposal sites be made with sufficient biological information to minimize impacts to crab and fish resources. If sufficient data does not exist, it is incumbent that steps be taken to get that data

Between the resources of the Environmental Protection Agency, U.S. Army Corps of Engineers, and NMFS, as well as state natural resource agencies and the fishing industry, there must be a vehicle to obtain better biological information.

We also hope that the "temporary" status of this rulemaking will be resolved quickly and that studies needed are undertaken Promptly to finalize locations of disposal sites so as to minimize impacts to fisheries resources.

Pacific Fishery Management Council recognized Corps/EPA was working from a lacking data base in early 1997. Nothing has changed, still no resource baseline data.

CRCFA
COLUMBIA RIVER CRAB FISHERMAN'S ASSOC.
PO Box 461
Ilwaco, WA 98624

CRCFA Commissioners:

Dale Beasley
PO Box 461
Ilwaco, WA 98624
(360) 642-3942
(360) 642-5454 FAX
crabby@nonc.com

Jeff Davis
PO Box 580
Seaview, WA 98644
(360) 642-3371

Chris Doumit
PO Box 342
Cathlamet, WA 98612
(360) 795-0601

Dwight Eager
PO Box 141
Chinook, WA 98614
(360) 777-8727

Lance Gray
PO Box 80
Chinook, WA 98614
(360) 777-8740

Rob Greenfield
PO Box 84
Chinook, WA 98614
(360) 777-8242
green@transport.com

Bill Rhodes
PO Box 2215
Gearhart, OR 97138
(503) 717-1068
crabben@pacifier.com

U S Army Corps of Engineers
Portland District
P O Box 2946
Portland, Oregon 97208-294

3 July 1998

RE: Out of Court Settlement Agreement

Dear Colonel Slusar:

Recently CRCFA and PCFFA negotiated in good faith with the United States Army Corps of Engineers, Portland District through the Justice Department and Earth Justice. Our agreement had two parts;

1) The formal agreement for 1998 O & M at MCR before the Federal District Court stated:
   a) There would be no ocean disposal in expanded site B in 1998, except in case of a very large dredging volume (in excess of 6,000,000 cubic yards, a figure not reached in this decade)
   b) Ocean disposal would cease in expanded site E after August 22, 1998, to accommodate a biological timing window that avoids burying large numbers of adult dungeness crab
   c) The U S Army Corps of Engineers would immediately commence bathymetric monitoring of Peacock Spit out to 15 fathoms and North of expanded site E for a minimum of two miles on 750 foot transects.
   d) In conjunction with Peacock Spit monitoring the Corps would computer simulate wave modeling in the area
   e) If at any time Peacock Spit showed a 10% increase in wave intensification, dumping in Site E would be terminated until wave intensification decreased to the point where dumping could be resumed without infringing upon the 10% intensification level
   f) This 10% increase in intensification was independent of the cause
   g) These wave modeling would be run frequently enough to recognize the 10% increase in 1998 and in May of each year
2) The informal verbal agreement included immediate resumption of the MCR New Site Selection Work Group as early as July of 1998.
   a) The Work Group was to re-evaluate and refine the current set of overlays

   b) The Work Group was to re-evaluate and refine the candidate sites at MCR
   c) The Work Group was to look at possibly adding additional candidate sites
   d) The Work Group was to look at possible new methods of sediment disposal, other than by conventional belly dump
   e) The work Group should also look at cost-benefit analysis of the sites, including beneficial use potential
   f) Some field observations still need to be done, by October another year will be lost
   g) US Army Corps of Engineers was informed that CRCFA would not be available for Work Group meetings from late July through early October and mid-November until the End of January

At this time the US Army Corps of Engineers is not in accord with this agreement of at least two aspects:

1) At this time no baseline bathymetric monitoring and wave modeling has been accomplished and shared on a timely basis with CRCFA and the rest of the Work Group
2) At this time the New Sites Work Group meetings have not been resumed

It should be further noted that CRCFA has dealt in good faith with the Corps and expects the Corps to respond accordingly. CRCFA was a member of the Scripps soft-shelled study developmental team. To my knowledge only one conference call has been held and no formal draft write up has been put together for review by the team. Could you please formally acknowledge why CRCFA, as a member of the soft-shelled study developmental team was not included in the conference call and why the study appears to be stalled. What is the reason for delaying the resumption of the Work Group when there is so much work that needs attention?

You must also realize that this settlement is only directly related to O & M. The case involving the 1997 expansions of B & E could and probably will invalidate those expansions, further limiting the Corps disposal options at MCR. It is not CRCFA's intention to put a stop to dredging at MCR. The intention is to find and establish, as soon as possible new, more environmentally friendly, and economically feasible disposal options with beneficial uses that could abate beach erosion or added to sport fishing enhancement. These sediments should be used for beneficial projects even if disposal costs are increased.

Respectfully,

Dale Beasley

Dale Beasley
CRCFA

As of this time no wave analysis has been done. One 11th hour meeting has been held. The site selection work group did not anticipate the 75 square miles would be selected for disposal, especially without thin layer tests. Critical meetings were scheduled when the Corps knew CRCFA attendance would be limited.

CRCFA
COLUMBIA RIVER CRAB FISHERMAN'S ASSOC.
PO Box 461
Ilwaco, WA 98624

CRCFA Commissioners.

Dale Beasley
PO Box 461
Ilwaco, WA 98624
(360) 642-3942
(360) 642-5454 FAX
crabby@pacifier.com

Jeff Davis
PO Box 580
Seaview, WA 98644
(360) 642-3371

Chris Doumit
PO Box 342
Cathlamet, WA 98612
(360) 795-0601

Dwight Eager
PO Box 141
Chinook, WA 98614
(360) 777-8727

Lance Gray
PO Box 80
Chinook, WA 98614
(360) 777-8740

Rob Greenfield
PO Box 84
Chinook, WA 98614
(360) 777-8242
green@transport.com

Bill Rhodes
1038 Skyline
Gearhart, OR 97138
(503) 717-1068

U S Army Corps of Engineers
Portland District
Construction – Operations Division
P O Box 2946
Portland, Oregon 97208-294

18 June 1998

RE: NWP-CO-CRA-FY98-005

Dear Colonel Slusar

Thank you for providing CRCFA with timely opportunity to review and comment on activating a disposal site at the end of the North Jetty, Columbia River Mouth.

Your concern for preservation of the North Jetty is welcomed and encouraged. The North Jetty disposal site may prove to be one of the better site choices available today. CRCFA has two areas of concern: ***navigational safety*** and ***environmental safeguards.***

1) Maintain navigational safety through adequate bathymetric monitoring. Consider 55' as a prudent depth for safety. ***Avoid any wave amplification*** in the main channel as a result of dumping in the North Jetty site. Apply the suspension of dumping criteria of 10% wave amplification to areas outside the channel. Maintenance of small vessel traffic routes keeps traffic levels in the main ship channel at lower levels and adds to the over all safety of the Columbia River transportation system. It is routine for fishermen to use this area as a traffic route to get out of excessive ebb tide while transiting inbound.

2) ***Utilize timing*** of dumping to minimize mortality to crabs of all life stages that use the area for transit in and out of the estuary. Your investigations and use of biological timing should include the possibility of dumping on large minus tides and the relationship to crab presence. This site can be useful to help relieve pressures on other areas of high marine resource abundance. It is possible that the timing closure window in expanded site E can be increased at least two weeks earlier in August when the North Jetty site becomes available and should be highly considered as such.

3) The North Jetty disposal site should be evaluated as a potential permanent, shore-based pumping station for direct beach placement of sediments on Benson Beach. Crab entrainment may or may not be acceptable depending on quantities present at various times. This is a beneficial use that could be used for erosion abatement to save the sewer lagoon used by Fort

Canby State Park and the USCG National Motor Lifeboat School. Excess sediments could be used for local contractor construction needs and/or building a dune field for tourist dune buggy activities. Other creative beneficial uses may result from the activation of the North Jetty site. Additional direct beach placement could dramatically increase the sites capacity and aid in future ocean disposal requirements.

CRCFA's concern for the North Jetty site is the same as for all disposal sites. **Minimize adverse biological affects**, especially related to crab and monitor for biological influxes throughout the dredging season. In Lou of monitoring, historic information related to timing should be more restrictive, in favor of the resource.

Maintain adequate numbers of disposal sites that are managed to minimize adverse affects to natural resources. Suspend disposal if, a site becomes biologically active, to maximize the use of sites biologic monitoring becomes a necessity. Switch to another site that is less active. Expanded site E is a good example. In 1997, large numbers of crab moved into the area as they usually do in August. At that time, dumping should have been suspended and moved to another less active area. Contracts with dredge companies should reflect rapid changes in dump location and be tied to monitoring when timing is necessary to avoid natural resource concentration.

Other ***environmental safeguards*** should be employed. Use the **primary principle of resource avoidance**. Establish site management plans that specify quantifiable resource thresholds which cannot be exceeded. These thresholds will be sanctioned by the area's resource managing agencies: NMFS, State Fisheries, State Department of Natural Resources, or other qualified resource managing agencies and put into place prior to deposition. Once natural resource concentration levels are triggered, switching disposal sites should be automatic. Remember, pressures from other priorities must not supersede responsible obligations to habitat.

Respectfully,
Dale Beasley
Dale Beasley
CRCFA

CRCFA
COLUMBIA RIVER CRAB FISHERMAN'S ASSOC.
PO Box 461
Ilwaco, WA 98624

CRCFA Commissioners:

Dale Beasley
PO Box 461
Ilwaco, WA 98624
(360) 642-3942
(360) 642-5454 FAX
crabby@apone.com

Jeff Davis
PO Box 580
Seaview, WA 98644
(360) 642-3371

Chris Doumit
PO Box 342
Cathlamet, WA 98612
(360) 795-0601

Dwight Eager
PO Box 141
Chinook, WA 98614
(360) 777-8727

Lance Gray
PO Box 80
Chinook, WA 98614
(360) 777-8740

Rob Greenfield
PO Box 84
Chinook, WA 98614
(360) 777-8242
green@transport.com

Bill Rhodes
PO Box 2215
Gearhart, OR 97138
(503) 717-1068

US Army Corps of Engineers
Portland District
New Site Selection Work Group
PO Box 2946
Portland, Oregon 97208

11 August 1998

RE: August 19-20 Workgroup meeting

Dear Work Group:

CRCFA is glad to see the resumption of the Work Group meetings. This is long overdue.

In considering a new site selection, the workgroup should look closely at this year's dredge dumping activity in expanded site E. Expanded E was divided into about 50 dump areas. The majority of the sediment ended up in a mound within a very few number of cells. ***Critical navigation routes*** run through Expanded site E. The Corps' current monitoring intervals did not prevent the mound. Monitoring should be done based on the amounts being dumped rather than by time (ie once a month). Tracking of material offsite is mandatory to see if navigation and/or biologic integrates are being maintained. ***Biologic thresholds*** must also be established. If large quantities of crab or other resources move into an area, dumping should be discontinued or moved to another available site. Multiple sites for dumping should be available to the Corps. New sites should have a life expectancy of at least twenty years.

In reviewing the overlays:

1) The Shale area needs correct placement
2) The bottomfish overlay needs differential graying to more accurately depict total volumes of fish (numbers of sand sole in close on the South side of the Columbia River are only a fraction of the English sole by site B, yet have the same amount of gray)
3) The crab data should be grayed according to the crab survey showing differences in populations.
4) The soft-shelled areas should be refined and show that in August large numbers of crab are in and around expanded site E, there are plenty there right now and verification can be arranged if need be.
5) An additional overlay will be needed to show areas of juvenile crab that CRCFA is developing through their efforts with modified crab traps, in researching different year classes present in and around MCR This data is still in the developmental stage.
6.) Actual costs of maintaining the individual sites should also be displayed, including the direct beach placement on Benson Beach and weigh the benefit of saving a sewer lagoon into the process.

Site selection should also look at potential for increasing accident potential. Site B wave intensification and associated wave amplification has significantly increased the potential for the death of small vessel operators and increased the potential for an oil spill in the area. The majority of oil transported at MCR is by tug and barge and in recent years a number of near miss accidents have occurred. An oil spill will be very costly in terms of clean up and biologic consequences could be disastrous. Any wave intensification in the main channel will increase the accident potential. The Corps should have their wave analysis of Peacock Spit ready for review by the Work Group meeting date.

The overriding goal CRCFA is working for is ***Navigational Safety and to minimize damage to the crab resource.*** Navigational safety extends to all the small vessel routes in and out of the main shipping channel with special emphasis for prevention of mound building. CRCFA feels the best way to minimize damage to the crab resource is to ***avoid dumping on the resource.*** Find the area(s) of least concentration and develop that as a site. The CRCFA proposal in the center of the towboat lane is but one option that should be considered, a better offshore site maybe found through the overlay process and further investigation. Beneficial uses, such as an offshore sport fishing reef should be considered. Direct beach placement for abatement of coastal erosion is also a beneficial use that needs consideration.
Nearshore berms cannot be placed close enough to shore to significantly contribute to abatement of coastal erosion. USGS bathymetric change maps indicate 30' or closer is needed to contribute to beach accretion, probably closer than the Corps would like to get with a hopper dredge.

Thank you for your considerations in this matter.

Regards

Dale Beasley

Dale Beasley
CRCFA

I would like to be at the meeting, and will be if at all possible. It is a very difficult time of year for me to attend the meeting as the Corps is well aware

CRCFA
COLUMBIA RIVER CRAB FISHERMAN'S ASSOC.
PO Box 461
Ilwaco, WA 98624

CRCFA Commissioners:

Dale Beasley
PO Box 461
Ilwaco, WA 98624
(360) 642-3942
(360) 642-5454 FAX

Jeff Davis
PO Box 580
Seaview, WA 98644
(360) 642-3371

Chris Doumit
PO Box 342
Cathlamet, WA 98612
(360) 795-0601

Dwight Eager
PO Box 141
Chinook, WA 98614
(360) 777-8727

Lance Gray
PO Box 80
Chinook, WA 98614
(360) 777-8740

Rob Greenfield
PO Box 84
Chinook, WA 98614
(360) 777-8242
green@transport.com

Bill Rhodes
1038 Skyline
Gearhart, OR 97138
(503) 717-1068

U S Army Corps of Engineers
Portland District
Planning & Engineering Division
P O Box 2946
Portland, Oregon 97208-294

3 July 1998

RE: CENWP-PE-E

Dear Sir:

Thank you for providing CRCFA with timely opportunity to review and comment on alternative measures to improve dredged material management practice for the existing Columbia River Federal Navigation 40-foot Channel. We will confine our comments to the dredging activities that are bound for ocean disposal.

CRCFA has two areas of concern: ***navigational safety*** and ***environmental safeguards.***

3) Maintain navigational safety through adequate bathymetric monitoring. This monitoring should be routinely carried out and wave amplification models evaluated where ever dumping activity could impact small vessel navigation routes. Consider 55' as a prudent depth for safety. ***Avoid any wave amplification*** in the main channel as a result of disposal activity. Apply the suspension of dumping criteria of 10% wave amplification to areas outside the channel. At this time the tongue area, just inside buoy #3 that has depths of 45 feet in May of 1998 is of particular concern and needs special attention to prevent further mounding. Navigation in the area is currently dangerous and life threatening much of the winter, any more deposition is not prudent. Maintenance of small vessel traffic routes keeps traffic levels in the main ship channel at lower levels and adds to the over all safety of the Columbia River transportation system.

2) CRCFA concern for environmental safeguards extends to all disposal sites. **Minimize adverse biological affects,** especially related to crab and monitor for biological influxes throughout the dredging season.

Utilize timing of dumping at ocean disposal sites to minimize mortality to crabs of all life stages that use the dump areas at different times of the year. Biological monitoring has to become part of the Dredged Material Management Plan. . Suspend disposal if, a site becomes biologically active, to maximize the use of sites biologic monitoring becomes a necessity. Expanded site E is a good example. In 1997, large numbers of crab moved into the area as they usually do in August. At that time, dumping should have been suspended and moved to another less active area.

Maintain adequate numbers of disposal sites that are managed to minimize adverse affects to natural resources Contracts with dredge companies should reflect rapid changes in dump location and be tied to monitoring when timing is necessary to avoid natural resource concentration.

Other ***environmental safeguards*** should be employed. Use the **primary principle of resource avoidance.** Establish site management plans that specify quantifiable resource thresholds which cannot be exceeded. These thresholds will be sanctioned by the area's resource managing agencies: NMFS, State Fisheries, State Department of Natural Resources, or other qualified resource managing agencies and put into place prior to deposition. Once natural resource concentration levels are triggered, switching disposal sites should be automatic.

Respectfully,

Dale Beasley

Dale Beasley
CRCFA

NORTHERN OYSTER COMPANY

P.O. Box 165 Ocean Park, WA 98640 206/665-4886

January 15, 1999

Mr Steve Stevens
U S. Army
Corps of Engineers
PO Box 2946
Portland, OR 97208

Subject: Comments on final draft dredge disposal areas for Lower Columbia River maintenance and and channel deepening project.

Dear Mr. Stevens:

I have been involved in this Corps process since it opened for public input in 1996. At that time I was President of the Columbia River Crab Fishermen's Association based in Ilwaco, Washington. After resigning that position in 1997 our board requested that I continue because of my several years involvement with the Corps on the disposal issues.

In initial meetings with the Corps I asked if conclusions reached toward building a final document were going to be based on factual information, or if this exercise was simply to satisfy the process required by law. I was emphatically assured by the Corps representatives that science and facts would determine finding leading to a final decision. In many of our primary areas of concern this has not happened. As originally feared, satisfying process has been the primary driver toward a predetermined outcome for this project.

The prior 1980's impact statement prepared for the present dumping areas was one of the worst cases of Tinker Toy engineering that I have read. The Corps expanded the old sites to fit their agenda with little or no regard for extreme safety problems caused to all classes of shipping, the destruction of fishing grounds and a large negative economic impact to general fisheries. The Dungeness Crab fleet bore the majority of this impact.

The final page of this prior impact statement, signed by the Corps person in charge, states that based upon the Corps finding no adverse impacts of expanding those sites would occur. After the grounding of the log ship Green Cedar and its' subsequent scraping, the suspected drowning(s) at the sites, the extreme safety problems created and the miles of soured fishing grounds, we were hoping the Corps approach had changed. In this case, this has not happened.

It took several meetings to convince the Corps that their failed policy of expanding existing sites for their future needs was illogical and dangerous. These sessions brought about a reluctant admission from the Corps that cost of transporting disposal was the main driver in site selection, not environmental or safety concerns. Surprisingly, the EPA representative was supportive of the Corps position during these discussions. Other representatives, the U.S.C.G. Bar Pilots, Western Boat Owners Assoc., charter boat reps and our own organization were not.

Continued - Page two

The present "process" is flawed, in that it is questionably, not a document based on substantial fact. Unfortunately, the Corps is having some of the same creditability lapses they had in the previous E.I.S. To date, the Corps' process has:

I. Withheld information

- A. on the documents legal requirements.
- B. the true span of the proposal
  1. it started as a temporary 5 year project, became a 10 year proposal, evolved in the final draft into a 50 year plan which was a complete shock to the committee

II. Misrepresented crab information

- A. manipulated incomplete preliminary mortality work to justify decision making
- B. used a laboratory tank study to duplicate ocean conditions on dumping without any follow up
- C. used only the information that would support their position (and even that back-fired) from the study.

III. Refused professional assistance in obtaining documentation

- A. C.R.C.F.A. crab information
  1. area population and pot mortality
  2. other

IV. Set up study committees on research projects then unilaterally excluded crab representatives without notice.

V. Refused to explore preferred alternatives

- A. direct or re-pumped disposal on Benson Beach, WA.
  1. claimed it was outside Corps jurisdiction, etc. (this was the one choice all entities except the Corps preferred)
- B. others

VI. Used unsubstantiated claims to base findings upon

- A. Corps and private dredges are capable of thin disposal dumping
- B. crab mortalities will be minor in disposal area
- C. economic impact will be minor on crab industry
- D. Etc., etc. etc.

Continued - Page 3

January 15. 1999

Mr. Steve Stevens
U.S. Army
Corps of Engineers

VII. Used incompatible information for justification

A. Gulf Coast inshore dumping study - with author presentation

1. totally unrelated to Columbia situation

In summary, the Corps has acted as predicted. They made a decision in the beginning and set up their facts along the "process" to justify it.

The proposed offshore dump site will basically destroy any opportunity for Crab harvest during the summer season because of dredge traffic across the ground. The Corps has not provided accurate information on true crab mortalities associated with dredge deposits or their effect on other aspects of the fishery. The Corps chosen site has no support from fishing interest because of the huge impact on prime grounds and nursery areas.

There is no questions that the Port of Portland is calling the shots with the Corps. There also is no question that as future ships get deeper that this is a wasteful temporary fix. Finally, there also is no question that the Columbia area crab and fishing interest are being set up to be sacrificed in the "process". This existing document, as it pertains to offshore dumping impacts, absolutely does not satisfy the true criteria demanded by law to allow the Corps to proceed.

Respectfully,

Richard N. Sheldon
Past President C.R.C.F.A.

RNS/j

Date: January 11, 1999

To: Army Corp of Engineers

From: Daniel Oja, Commercial Fisherman

Subject: Navigation Hazards created by Army Corp of Engineer

Re: Dumping of Dredge Spoils

I've written this letter out of concern for the safety of fishermen while navigating the Columbia River Bar. I've noticed that it is no longer safe in the channel. The "humps" or dump sites created by the Corp of Engineers now cause the waves to break over the top of buoy number three and ricochet into the channel. We are no longer safe "just being in the channel". The waves also break on the inside of the channel between numbers six and eight buoys. When you enter the channel, you can not even use the ship ranges on Cape Disappointment. Where do we go now? Your dump sites are getting more dangerous every year to our boats and lives. The fishermen are aware of the dangers created by your agency, but this hazard will eventually kill some unsuspecting boaters. We have made your agency aware of these problems, but you have chosen to ignore us. Your boats are here only in the summer when monitoring the river and ocean bottoms. I suggest you come in the winter and try... only then will you notice the impact of your dump sites. The weather is very severe in winter, but we must fish in these conditions, and it does no good for you to show during fair weather and then insist that the dump sites have "little or no impact on navigation".

The Corp of Engineer has a big ocean to dispose of the dredge spoils, but the agency continues to dump on prime crab fishing grounds. Even worse, the agency intends to expand these dump sites along the Long Beach Peninsula and around the mouth of the Columbia River, despite the fact that the commercial fishermen have vigorously opposed this decision. The Corp has continually ignored all suggestions and has refused to consider the impact of their decisions on the people living near the mouth of the Columbia River. We are disappointed by the Corps continued refusal to cooperate with the communities that they impact, however, it is not surprising given the past history that we have personally experienced with the Corp of Engineers.

Sincerely,

Daniel Oja

Date: January 11, 1999

To: Senator Slade Gorton

From: Daniel Oja

Subject: Army Corp of Engineer

Re: Dredge Dumping in the Pacific Ocean off the mouth of the Columbia River

Dear Senator Gorton,

I am a resident of Pacific County and my husband makes his living as a commercial fisherman harvesting dungeness crab in the Pacific Ocean north and south of the Columbia River. I recently attended a meeting by the Corp of Engineers in Astoria, OR regarding the deepening of the Columbia River channel for the benefit of ship traffic. I understand that there are great economic benefits to the citizens living in the Portland area, the Port of Portland, barge workers, wheat farmers, etc., however, I cannot understand why the economic needs of those living at the mouth of the Columbia River are completely ignored in this process. The Corp of Engineers plans to dump approximately 230 million cubic yards of dredge spoils in prime fishing and crabbing grounds over the next 50 years (copy of proposed dump sites enclosed). Of course, this will destroy our fishing habitat and not only economically harm the fishermen, but also the community that still derives a great deal of their financial resources from this industry.

Sincerely,

Daniel Oja

C.R.C.F.A Columbia River Crab Fisherman's Assoc.

Greenfield 1/99

Po. box, 84
Chinook Washington 98614
U.S.A.

Phone (360) 777 - 8242

January 10, 1999

U.S. Army Corps of Engineers
Portland District
P.O. Box 2946
Portland, Oregon 97208-294

Dear Colonel Slusar,

This letter is in regards to site B at the mouth of the Columbia River. and the effect that dredge spoil dumping in that area has made on our crab fishing waters.

Most fishermen do not fish that area any more, including myself,but this year I put some crab pots on the mound in site B just to see if there were any crab there.

As expected, I found that there were very few crab in that area. I would get one to two crab per pot on the dredge hump, and eight to ten crab per pot just north of that area. It is now very clear to me that this area is no longer the productive crab ground that it once was before the corps started dumping dredge spoils there.

Because this area is no longer fishable, it has caused me to fish further north, and has forced me to fish the soft bottom area called the mud-hole. Now our pots get stuck every year because we were forced out of our old fishing grounds.

It has been 19 months since the last dredge spoils were deposited in site B, and there are fewer crab there than I have ever seen. It is very clear that this area is no longer the rich crab waters that it once was.

Please do not destroy any more of our fishing grounds. Take the dredge spoils somewhere else!

Sincerely,

Rob Greenfield

Rob Greenfield
CRCFA