UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

March 18, 2005

Van Sunberg, Environmental Coordinator
Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801-7999

RE: Wrangell Airport Runway Overlay/RSA
and Seaplane Pullout Replacement
State Project 68167

Dear Mr. Sundberg:

The National Marine Fisheries Service (NMFS) reviewed the Alaska Department of Transportation and Public Facilities (DOT&PF) February 25, 2005, request for scoping comments on the Wrangell Airport Project. NMFS also reviewed the US DOT Federal Aviation Administration's (FAA) March 8, 2005, request for information regarding species protected under the Endangered Species Act (ESA) and Essential Fish Habitat (EFH) on the Wrangell Airport Project. We offer these scoping comments specific to the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), the Marine Mammal Protection Act (MMPA) and the ESA.

Project Background/Proposed Work

DOT&PF in conjunction with the Federal Aviation Administration (FAA), intends to rehabilitate and enhance multiple components of the Wrangell Airport in Wrangell, Alaska. Wrangell Airport is a regional airport with a single 6,000 foot long by 150 foot wide grooved asphalt runway oriented east to west. The proposed work would include expansion of the runway safety area (RSA), relocation and reconstruction of the seaplane pullout ramp, construction of an aircraft turnaround, and installation of new signing and navaids for the airport. Improvements would be made to the runway surface, apron surface, and airfield drainage systems. Airway obstruction hazards would be partially mitigated. An Environmental Assessment (EA) is being completed for the proposed project.

Expanding the RSA to meet FAA criteria would require 500 foot by 800 foot extensions on both ends of the runway and an additional 20 feet to 130 feet of breadth beyond the sides of the existing RSA to achieve the required width. Runway expansion would require approximately 1.8 million cubic yards of embankment, with most being placed into intertidal and subtidal marine areas. The RSA expansion on Runway (RW) 10 requires embankment construction mainly in subtidal marine waters, extending from an elevation of +28 to –60 feet Mean Lower Low Water (MLLW). The RSA expansion on RW 28 requires embankment construction mainly in the intertidal area, approximately 70 feet deep, extending from an elevation of +50 to –2 MLLW.

To extend and widen the RSA, approximately 14.2 acres of estuarine intertidal, 11.5 acres of other intertidal, and 15 acres of subtidal marine waters would be filled. The seaplane pullout would affect 0.3 acre of marine waters. In total the airport and seaplane proposed projects would fill approximately 40 acres of estuarine intertidal, intertidal, and subtidal marine waters. In addition, approximately 30 acres of wetlands would be disturbed by the proposed projects. Wetland disturbance includes 0.1 acres of muskeg, 22.6 acres of scrub forest wetland, and 7.3 acres of unclassified wetlands. Two waterways, one considered a stream and one considered a drainage ditch would be rerouted for the RSA expansion. Both of these waterways have rearing anadromous fish.

The project would use alternate construction materials (wood waste) for portions of the embankment. The DOT& PF proposes to use wood waste above the extreme high water level (elevation +21.5 MLLW or +13.7 mean sea level (MSL) on the RW 10 RSA end, resulting in a layer of wood waste approximately 4 to 10 feet deep and totaling 75,000 cubic yards. On the RW 28 end, the DOT&PF proposes to use wood waste above elevation +2MLLW or –6.3 MSL, which would result in the use of approximately 425,000 cubic yards with fill depths between 30 and 50 feet.

Essential Fish Habitat Consultation Process

The environmental analysis for the project must address the EFH requirements of the MSFCMA. Section 305 (b) of the MSFCMA requires Federal agencies to consult with NMFS on all actions that may adversely affect EFH. For such actions, a written EFH Assessment must contain:

1. A description of the proposed action.
2. An analysis of the potential adverse effects of the action on EFH and the managed species.
3. The Federal agency's conclusions regarding the effects of the action on EFH.
4. Proposed mitigation, if applicable.

If appropriate the assessment should also include:

a) The results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.
b) The views of recognized experts on the habitat or species that may be affected.
c) A review of pertinent literature and related information.
d) An analysis of alternatives to the action, including alternatives that could avoid or minimize adverse effects on EFH.
e) Other relevant information.

For information on federally managed species and EFH, NMFS directs you to the following web sites:
http://www.fakr.noaa.gov/habitat/efh.htm , http://www.fakr.noaa.gov/maps/default.htm , and
http://www.fakr.noaa.gov/efh/download/efhshp.htm .

Anadromous Fish

Two waterways within the airport property were identified in site investigations conducted by the U.S. Department of Agriculture and by Pentec Environmental. Both streams were found to contain rearing salmon. Significant anadromous fish streams in the Wrangell area include the Stikine River, Crittenden Creek and Mill Creek/Virginia Lake. All five species of Pacific salmon (Chinook, coho, chum, sockeye and pink) use the nearshore waters along the airport property at some time of the year. Nearshore habitats are particularly important to juvenile salmon migrating from fresh water to salt water in the late spring and early summer.

Groundfish

The inshore area of the project location provides important habitat for several marine species. Groundfish species with EFH in the project area include: Pacific cod, Pacific Ocean perch, walleye pollock, dusky rockfish, shortraker/ rougheye rockfish, yelloweye rockfish, sablefish, arrowtooth flounder, sculpin, skate, flathead sole, rex sole and various forage fish. Other rockfish expected to be in the project area include: black rockfish, quillback rockfish, copper rockfish and yellowtail rockfish.

Habitat Investigations

NMFS scientists have conducted fish sampling work in southeast Alaska. However, no investigations were conducted in the immediate vicinity of the airport property. Nearshore beach seining done by NMFS scientists in three locations near Wrangell (Anita Bay, Steamer Bay, and Kah Sheets Bay) sampled the following species: shiner perch, Pacific sandlance, threespine stickleback, crescent gunnel, bay pipefish, coho salmon, tubesnout, northern sculpin, Pacific staghorn sculpin, great sculpin, surf smelt, buffalo sculpin, starry flounder, Pacific sanddab, cutthroat trout, copper rockfish, Dolly Varden char, blackeye goby, snake prickleback, silverspotted sculpin, tubenose poacher, rock sole, kelp greenling and starry flounder (Johnson, et al. unpublished).

A reference that may be of use is a report titled: *Species composition and relative abundance of demersal marine life in waters of Southeastern Alaska, 1969-81,* written by Carlson, Haight, and Krieger. This is available at the Auke Bay Laboratory library.

Recommendations

NMFS offers the following Scoping comments and recommendations:

1. Wood Waste Issues

NMFS recommends against using wood waste as fill material when less damaging alternatives exist (see enclosed August 7, 2001 letter from James W. Balsiger to Colonel Steven T. Perrenot). Wood waste can have substantial detrimental effects on fish habitats and populations. Toxic leachate originating within wood waste fills can contaminate downstream waters and harm nearby fish and invertebrate populations. For a list of references related to the effects of wood waste see the enclosed US Fish and Wildlife Service letter from Teresa Woods to Colonel Sheldon L. Jahn dated July 28, 2001.

2. EFH Assessment

Page A-3 of the "Preliminary Research Results" enclosed with your February 25, 2005 letter, states "Extension of the runway safety area would requite the placement of fill material into 14.2 acres of estuarine wetlands and marine waters of Eastern Passage resulting in the direct loss of EFH." This conflicts with the information on the bottom of page A-2 in the Wetlands and Waters Section. NMFS recommends that you revise the acreage amount in the EFH Assessment to include: 14.2 acres of estuarine intertidal, 11.5 acres of other intertidal, and 15 acres of subtidal marine waters that are proposed to be filled for the RSA, and the 0.3 acres of marine waters expected to be affected by the seaplane pullout. In addition, indirect effects to EFH from disturbing 30 acres of muskeg and scrub forest wetlands should be analyzed in the EFH Assessment.

3. Anadromous Fish Streams

NMFS recommends incorporation of habitat improvement structures into the stream (located on the east end of the runway) that will be rerouted for RSA expansion. The information provided indicates that the stream is used for refuge by yearling or older salmonids and may provide over wintering habitat for anadromous fish. Structures should be designed into the rerouted stream to provide rearing and potentially spawning habitat (riffles and pools). Stream bank vegetation should also be incorporated into the design. Low growing trees and shrubs, i.e. willows could be planted along the stream bank to provide overhead cover and not adversely impact runway safety.

4. Wetlands Mitigation

Compensatory mitigation for unavoidable wetland impacts is appropriate for this action and should be addressed in the assessment. The Clean Water Act 404 (B)(1) guidelines direct agencies first to avoid impacting wetlands, second to minimize any impacts to wetlands and last to compensate for unavoidable adverse impacts. We recommend that you coordinate mitigation plans with NMFS and other resource agencies. NMFS does not have specific recommendations for compensatory mitigation at this time, but we are willing to work with DOT&PF to identify potential projects.

5. Timing Restrictions

NMFS recommends that construction activities not be conducted during periods of peak use by juvenile salmonids and herring. No in-water work should be permitted from March 15 through June 15 to protect out migrating juvenile salmon and rearing salmonid smolts and to reduce potential impacts to migrating and schooling herring.

6. ESA/MMPA

The project is within the range of endangered humpback whales and threatened Steller sea lions, as well as harbor porpoises, harbor seals and killer whales, which are protected under the MMPA. Noise from in-water construction activities or from operational procedures can negatively impact marine mammals. NMFS has set

MMPA Level A harassment at 180 dB (root-mean-squared) for cetaceans and 190 dB (rms) for pinnipeds for underwater levels. Noise produced above these levels may result in auditory injury to marine mammals. Noise impacts to marine mammals from construction operations should be analyzed in the assessment. Precautions may need to be implemented to prevent injury, harm or harassment. NMFS recommends that in-water construction activities, such as dredging, be suspended when marine mammals are observed within 1,000 feet. Contact Aleria Jensen at (907) 586-7248 to determine whether consultation under section 7 of the ESA is necessary given the overlap of the proposed development with listed species.

7. EA or Environmental Impact Statement (EIS)
NMFS recommends that DOT&PF and FAA consider completing an EIS for the proposed project. The project would impact over 70 acres of wetlands and reroute two streams with anadromous fish. The proposed use of wood waste as fill could significantly impact water quality and fish habitat. The FAA is preparing an EIS for a similar airport expansion project in Sitka, Alaska. An EIS would provide an in-depth review of the environmental impacts for the proposed actions, alternatives, and mitigation. NMFS recommends that you evaluate whether the Wrangell Airport project as proposed may significantly impact the environment pursuant to 40 CFR 1502, and thus warrants an EIS.

NMFS may offer additional recommendations as more detailed project information becomes available. If you have any questions regarding our general comments and conservation recommendations for this project, please contact Cindy Hartmann at 907-586-7585.

Sincerely,

James W. Balsiger
Administrator, Alaska Region

Enclosures (2)

cc: ADNR, Petersburg, Jim Cariello, jim_cariello@dnr.state.ak.us
USFWS, Juneau, Ed Grossman, edward_grossman@fws.gov
EPA, Juneau, Chris Meade, meade.chris@epa.gov
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References

Johnson, S.W., A. Darcie Neff and John F. Thedinga. *An atlas of the distribution and habitat of common fishes in shallow nearshore waters of southeastern Alaska.* Unpublished.

Carlson, H.R, R.E. Haight, and K.J. Krieger. 1982. *Species composition and relative abundance of demersal marine life in waters of Southeastern Alaska, 1969-81.* NWAFC Processed Report 82-16. 106 p.

Cindy Hartmann
March 16, 2005

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Enclosures are available as pdf files.
They can be found at: F:\DOT\2005 DOT\

F:\DOT\2005 DOT\August 2001 NMFS Comments to COE on Woodwaste Special Public Notice-attachment to Wrangell Airport Scoping Letter

F:\DOT\2005 DOT\July 2001 USFWS comments to COE on Woodwaste Special Public Notice-attachment to March Wrangell Airport Scoping Letter

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

August 7, 2001

Colonel Steven T. Perrenot
District Engineer, Alaska District
Corps of Engineers
P.O. Box 898
Anchorage, AK 99506-0898

RE: SPN 01-05
4-960304

Attn: Dr. Jan Stuart

Dear Colonel Perrenot:

The National Marine Fisheries Service (NMFS) has reviewed the referenced Special Public Notice (SPN), which seeks written scoping comments regarding the use of woodwaste as primary fill material to be placed in waters of the United States, including wetlands. The U.S. Army Corps of Engineers (Corps), is considering written guidance, and possible development of policy to address the use of woodwaste products as fill material. Woodwaste is defined as sawdust, woodchips, bark dust, bark chips, hog fuel or any other woodwaste product generated from the milling of timber.

The SPN notes that interest in the use of woodwaste as fill is particularly high in southeast Alaska, where its use as building material for foundation pads or other wetland fills appears to be stimulated by the need to dispose of an industrial waste product, common to this region. Woodwaste is also attractive as a fill material in southeast Alaska because it is considered inexpensive.

NMFS believes that, in most cases, woodwaste is not an appropriate fill material and questions how its use could meet the Corps' own definition and intent of the term "clean fill". While woodwaste may be considered a natural byproduct, woodwaste can pollute the environment, and cause adverse affects to resources of NMFS concern. Any guidance or policy that the Corps promulgates will need to take into account the applicable environmental laws which the NMFS Alaska Region administers specific to Section 7 of the Endangered Species Act, the Marine Mammal Protection Act, and the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act.

Southeast Alaska is characterized by heavy rainfall, which increases the leaching of woodwaste constituents to surrounding waters. Environmental concerns related to woodwaste leachate include adverse impacts to water quality and aquatic organism, including species of recreational and commercial importance, such as salmonids. Woodwaste leachate is defined as a complex mixture of water soluble wood extractives that are often highly colored, offensive smelling, form foaming and oil-like sheens on water surfaces and contribute to both chemical and biological oxygen demands that degrade receiving waters ability to support aquatic life. The SPN also notes that woodwaste landfills have been known to produce flammable gas, presumably methane or hydrogen sulfide, under anaerobic conditions, and that leachate may also contain tanins, organic acids such as lignins, tropolenes and phenolic compounds. Leachates are less toxic when filtered through soils and gravel, with clay being the most effective particle size. Concentrations of leachate tend to peak the first weeks after contact with rain and then diminish to lower levels thereafter, although concentrations of chemicals in leachate may persistent for many years.

The SPN seeks comment on ways to avoid and/or minimize these effects. These include the following suggested options.

1. Placing an impervious liner under the woodwaste fill material, thereby preventing the movement of leachate away from the fill site.

2. Placing a layer of an impervious material over the top of the fill material, thereby preventing rainwater and other surface water from contacting the woodwaste fill.

3. Install within the fill material, perforated collection pipes to collect the leachate, thereby directing the leachate to a location where it will not have an adverse effect on adjacent or down slope waters.

The NMFS is concerned that the first option, use of an impervious liner would leak, overtop and/or render the fill material unstable for its intended use. NMFS is further concerned that the second option, over topping the fill with an impervious liner, would result in the anaerobic conditions mentioned in the SPN that produce undesirable gases. Finally, NMFS is concerned that the last option, while it may be feasible, will require considerable effort and resources on the part of applicants and the Corps for proper design, construction and monitoring purposes, in order to be successful.

Consequently, the NMFS continues to believe that woodwaste is not an acceptable fill material and has recommended denial of permit applications seeking to authorize its use. NMFS opposition is based on the unacceptable toxic risks to aquatic life of commercial, recreational and cultural importance, from leachate contamination. NMFS also believes that producers of woodwaste will have greater incentive to develop alternative uses of this byproduct if it is clear that use of woodwaste as fill material is not allowed. Consequently, NMFS offers the following recommendations, in order of our preference, for a Corps policy on woodwaste.

1. The Corps should not allow any use of woodwaste as a fill material based on the known qualities that place it in a category that does not include "clean" fill and the threat it poses to the aquatic environment and natural resources of national importance.

2. The Corps could place a moratorium on the use of woodwaste as fill to allow time to fully examine known woodwaste fill sites that have been in place for many years to provide more documented information on the feasibility of containing woodwaste by the methods proposed above.

3. The Corps could permit the above options, on an experimental basis, if the applicant and Corps agreed to fully monitor the fate and effects of leachate from the project and agreed to remove the fill should any contamination be detected over the life of the fill. Such experimental projects should not in any case be located near sensitive waterbodies or aquatic resources of national importance, including EFH.

Finally, should the Corps decide to develop guidance over our objection, for the use of woodwaste as fill, then we recommend the following condition be incorporated into this guidance or policy.

4. Wood waste should be layered with shot rock or sand to allow for percolation of leachate. Runoff should be directed to a sediment pond or other waste water treatment device, and a buffer of 150 feet should be required near sensitive waterbodies, or other aquatic resources of national importance, including EFH.

Thank you for the opportunity to comment. We look forward to continued coordination on the SPN, and suggest that an interagency meeting be held to discuss the issue. If you have any questions please contact Ms. Linda Shaw of my staff, at (907) 586-7510.

Sincerely,

James W. Balsiger
Administrator, Alaska Region

cc: EPA Anchorage (Mark Jen)
ADEC, AADGC, ADNR, USFWS, Juneau
ADF&G, Klawock

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Juneau Field Office
3000 Vintage Blvd., Suite 201
Juneau, Alaska 99801-7100
(907) 586-7240

July 28, 2001

Colonel Sheldon L. Jahn
District Engineer, Alaska District
Army Corps of Engineers
P.O. Box 898
Anchorage, Alaska 99506-0898

Re: Special Public Notice 01-05
Discharge of woodwaste into waters of the U.S.

Attn: Dr. Jan Stuart

Dear Colonel Jahn:

The U.S. Fish and Wildlife Service has reviewed Special Public Notice 01-05, which solicits comments on the use of woodwaste as fill material to be placed in waters of the United States, including wetlands. The Corps is currently considering written guidance and possible development of policy to address the use of woodwaste as fill. The Service has reviewed and commented on several proposals to use woodwaste or other wood byproducts (e.g. sawdust, bark, wood chips, root wads, etc.) as fill, and we have provided assistance to the Corps in resolving issues associated with unauthorized placement of such material. We remain concerned that woodwaste, if improperly handled, can have substantial detrimental effects on fish and wildlife habitats and local populations. We are hopeful that your analysis will clarify the issues raised by woodwaste fills, discover appropriate solutions, and encourage responsible handling of the material. The following comments are intended to assist you in all three of these endeavors.

Impacts Associated with Woodwaste Fills

Filling wetlands and other waters, by definition, changes the character of the aquatic habitat within the footprint of the fill, usually by completely and permanently eliminating the aquatic habitat. The significance (to fish and wildlife) of such direct losses depends largely on what habitats are filled. No fill of woodwaste or other materials should be permitted in sensitive or otherwise important habitat when less damaging, practicable alternatives exist. In many cases, alternative locations (e.g. uplands or less-productive wetlands) or techniques (e.g. construction of piling-supported structures or alternative uses of waste materials) are available that allow accomplishment of an applicant's objectives while minimizing impacts to fish and wildlife. We recommend that written guidance specific to woodwaste fill clearly state that alternatives to any

proposed fill must be evaluated (by the Corps, with or without the assistance of the applicant). Where less damaging, practicable alternatives exist, we would expect the Corps to deny requests to use woodwaste (or any other material) for fill.

Woodwaste can cause greater impacts than rock or earthen fill because water percolating through the material mobilizes a variety of soluble wood-cell constituents (Sproul and Sharpe 1968, Graham and Schaumburg 1969, Atkinson 1971, Benedict and McKeown 1971, Frankowski 1998, Frankowski 2000, Johnson et al, undated). Many of these compounds are toxic themselves, or result in depletion of dissolved oxygen (which can cause mortality of aquatic organisms). Toxicity of wood leachate to aquatic organisms has been documented by many investigators (e.g. Holland et al. 1960, Tabata 1965, Henrickson and Samdal 1966, Servisi et al. 1970, Servisi 1971, Atkinson 1971, Schaumberg 1973, Pease 1973, Peters 1974, Peters et al. 1976, Buchanan et al. 1976, Goudey and Taylor 1992, Butala et al. 1994, Taylor 1994, Taylor et al. 1996, Hall and Haley 2000, Johnson et al., undated [a and b]). Chemical and biological oxygen demand of bark leachate typically matches that of domestic sewage (Robinson-Wilson and Jackson 1986). Discharge of this toxic effluent to water that otherwise support fish, wildlife, or human uses is inappropriate unless the effluent is properly treated to ensure that water quality standards are attained and that downstream uses are protected.

While we understand that enforcement of water quality standards is largely outside the jurisdiction of the Corps, we do not believe that the Corps should permit placement of fills that are certain (or highly likely) to impact water quality and the various uses of that water. The Corps does, therefore, bear a responsibility to ensure that leachate produced by any permitted fills is properly managed.

Potential Solutions

Alternatives to Woodwaste Fills: Because of the toxicity threats posed by concentrated wood wastes, routine use of woodwaste for fill should be discouraged, unless it is carefully controlled and compliance with necessary conditions is well monitored. Where woodwaste is proposed as a base for a building pad, parking area, or road base, reasonable alternatives may include less-damaging construction techniques (such as piling-supported structures) or alternative inert fill materials, such as rock. The use of alternative sites, such as uplands or less-productive waters or wetlands, can reduce the direct impacts within the footprint of a fill; management of leachate to prevent contamination of nearby waters would be necessary wherever a woodwaste fill is placed.

Alternative uses and disposal techniques should be evaluated if woodwaste disposal is a specific, stated objective of the applicant. Among the possible alternatives we are aware of are production of compost, as is currently being evaluated in Sitka and elsewhere (e.g. Ross 1998). Landscaping mulch is another value-added product that could be marketed. Sawdust and chips can be sold and manufactured into particle and chip board laminates, compressed fireplace logs, and pelletized wood fuel. A relatively new process, called "airless drying" has successfully been used in Ireland, France, and Canada to produce "torrified wood," a smokeless, compact wood fuel from various wood waste products (see www.techtp.com/torrefied_wood.htm).

Facilities that can process Alaskan woodwastes into useful products are limited at this time. In many cases, it is likely that shipping woodwastes to facilities that can use the material in a productive manner would be cost-prohibitive. We believe, however, that repeated analysis of the issues from different perspectives is the best way to encourage development of productive solutions. Workable solutions seem most likely to come from the individual producers of woodwaste who have a direct interest in solving the waste disposal problem, and who also have an interest in maximizing income and employment from the wood they handle. We believe that Corps guidance should direct project managers to actively engage applicants who propose woodwaste fills, encouraging applicants to assist with analyses of alternatives.

Minimizing impacts from permitted woodwaste fills: The Corps has identified three potential protective measures that could be used if woodwaste were allowed as fill material. These include (1) placing an impervious liner under the woodwaste fill, to prevent movement of leachate from the fill site, (2) placing an impervious layer over the fill to prevent rainwater and other surface water from contacting the fill, and (3) installation of perforated collection pipes to collect leachate and direct it to a location where it will not have an adverse effect on adjacent or downslope waters. The Service believes that while these measures, in combination, would help isolate the leachate and facilitate proper effluent management, they are incomplete concerning what should be done with the leachate produced.

Several possibilities exist for treatment of leachate. Most landfill treatment regimes include aeration to reduce oxygen demand, and convert ammonia to nitrate (Sear et al. 2000). A small-scale aeration operation was installed to treat woodwaste leachate at a formerly unauthorized site, originally envisioned as a golf driving range, above D-1 Loop Road in Ketchikan, in approximately 1995. The Corps was a participant in the effort to bring this facility into compliance, and may, along with Alaska Department of Environmental Quality, have information on the efficacy of the aeration effort.

Constructed wetlands have also been evaluated for treating woodwaste leachate (e.g. Zenaitis 1998, Frankowski 2000, Microbial Technologies 2001). Experience with constructed wetlands for leachate treatment in Southeast Alaska includes sites in Thorne Bay (at the KPC log sortyard landfill) and in Ketchikan (at KPC's Ward Cove pulp mill landfill). Service biologists have inspected these constructed wetlands, but we have no information on the effectiveness or limitations of the facilities. We recommend that the Corps work with EPA and ADEC to evaluate the suitability of these methods for reducing toxicity of woodwaste leachate. Constructed wetlands may be an environmentally effective and cost-effective method for reducing the impacts that might otherwise result from woodwaste fills.

To be effective, any leachate treatment system must be adequately sized to handle the quantity and concentration of leachate produced. The volume of leachate produced by a given fill is dependant on the amounts of precipitation, runoff, evapotranspiration, in-fill water storage capacity, and groundwater infiltration. Pollutant concentrations vary depending upon fill constituents, age of the fill, and depth of fill. Various models have been developed to allow prediction of leachate volume and concentration, but most provide only crude approximations

(Farquhar 1989). In practice, estimates based on previous experience in similar conditions elsewhere have proven to be most reliable. We strongly recommend that the Corps contact Jim Powell at the Alaska Department of Environmental Conservation (907-465-5321). We understand that Mr. Powell has worked with U. S. Forest Service hydrologists in Petersburg and Wrangell to monitor woodwaste landfill and construction projects, and may have information on the quantities and concentration of leachates produced under the high-rainfall conditions of Southeast Alaska.

In summary, we are optimistic that the current effort to provide guidance on woodwaste as fill will result in better analysis and more consistent handling of applications for the use of woodwaste as fill. We recognize the challenges posed by this industrial waste, but remain convinced that in most cases, woodwaste is not an appropriate material to use for structural fills. Without close regulation and monitoring, toxic leachate originating within such fills could easily contaminate downstream waters and dramatically harm nearby fish and invertebrate populations. We believe that the focus of the Corps' guidance should be on encouraging applicants to think creatively about how to solve an existing wastestream problem without creating a new one. Any resulting policy should not make it easier for applicants to receive a permit to use woodwaste as fill. Instead, we believe that Corps policy should require a full analysis of alternatives and responsible handling and treatment of leachates as an integral part of any woodwaste fills that are ultimately permitted. Written guidance to this effect could make permitting more predictable for both the Corps and for the regulated public.

These comments are submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 USC, 661 et seq.) and constitute the report of the Department of the Interior. These comments also are for use in your determination of 404 (b)(1) Guidelines compliance (40 CFR 230) and your public interest review (33 CFR 320.4) relating to protection of fish and wildlife resources. We would welcome an opportunity to discuss further the issues discussed above. If you have any questions, please contact Steve Brockmann, Assistant Field Supervisor at (907) 586-7487.

Sincerely,

Teresa A. N. Woods
Field Supervisor

cc: ADFG, Ketchikan, Douglas, Craig
NMFS, Juneau
EPA, Anchorage, Juneau
ADEC, Juneau
ADGC, Juneau

Literature Cited

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