

UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

National Marine Fisheries Service P.O. Box 21668 Juneau, Alaska 99802-1668 December 3, 2003

Van Sundberg Environmental Coordinator DOT&PF Southeast Region 6860 Glacier Highway Juneau, AK 99801

RE: Juneau- Douglas Second Crossing EIS Project Number 68540

Dear Mr. Sundberg:

The National Marine Fisheries Service (NMFS) has reviewed the above referenced scoping letter and the materials provided at the November 4, 2003 agency scoping meeting. The proposed project would involve a second crossing of Gastineau Channel to connect mainland Juneau with North Douglas Island. The primary needs identified for the project are economic development and public safety. NMFS has been asked to serve as a cooperating agency for the preparation of this Environmental Impact Statement (EIS).

NMFS agrees to be a cooperating agency in the preparation of the EIS. We envision our role as follows:

- Providing information on essential fish habitat (EFH), marine mammal populations, and other living marine resources in the project area. This information will include identifying known sensitive areas, providing results of research conducted by NMFS in the project area, providing data on marine mammal populations and use of the project area, and identifying additional studies that are needed to adequately assess the impacts of the project on living marine resources.
- Reviewing drafts of EIS sections
- Attending appropriate meetings and providing input into the development of alternatives.

The enclosed document provides information on recommended additional research, known hot spots for fish and invertebrates within the project impact area, and additional references as requested by the Alaska Department of Transportation and Public Facilities (ADOT&PF). In addition, NMFS has the following general comments with respect to the proposed project:

Essential Fish Habitat

The EFH regulations require Federal agencies to evaluate the effects of proposed actions on



EFH and associated species of fish. This information is necessary for NMFS to fulfill its statutory responsibility to provide EFH Conservation Recommendations to minimize the adverse effects of the proposed action. A Federal agency must prepare an EFH assessment for any Federal action that may adversely affect EFH. The EFH regulations, 50 CFR 600.920 (e)(3), describe mandatory contents that must be provided in all EFH assessments. This information should be incorporated into the EIS.

Scope

The Juneau-Douglas Second Crossing EIS is being tied specifically to the development of Douglas Island as discussed in the West Douglas Conceptual Plan (Goldbelt, Inc. 1997) and, to a lesser extent, in the Comprehensive Plan of the City and Borough of Juneau (1995). These plans envision extensive development of West Douglas that would include residential, commercial and industrial activities. Because of the stated direct relationship between a second crossing of Gastineau Channel and the proposed development on Douglas Island that this crossing would facilitate, including an evaluation of the impacts of the proposed Douglas Island development within the scope of the Juneau-Douglas Second Crossing EIS is appropriate. Among the activities that should be evaluated are:

- Increased traffic on existing roads and/or effect of any proposed road expansion/development on natural resources
- Development in absence of extension of infrastructure (e.g. sewer, water) and the potential impact of infrastructure development
- Proposed port facilities, commercial zones and construction/development near shoreline and offshore

Study Area

The study area should be expanded to include the west side of Douglas Island from Outer Point to Point Hilda including Hilda Creek and Bay. Fritz Cove and the marine areas adjacent to West Douglas Island have significant EFH (see enclosed list of "Known Hotspots for Fish/Invertebrates"). Fritz Çove is an important overwintering area for herring which are prey for a number of fish and marine mammal species. The north side of Douglas Island to Skull Island is an overwintering area for humpback whales. The west side of Douglas Island supports commercial and recreational fishing for several marine fish species as well as Dungeness and King crab. The EFH in Fritz Cove and the areas adjacent to West Douglas Island may be negatively impacted by proposed development that would be facilitated by the Second Crossing.

Cumulative Impacts

The Juneau-Douglas Second Crossing needs to be evaluated in the context of past, present and potential future impacts to the project area. At a minimum, these impacts should include: the proposed expansion of the Juneau Airport, the proposed Sunny Point Intersection improvements, and the proposed DOT Transportation Plan for southeast Alaska. All of these projects would involve construction and fill in intertidal wetlands with effects on anadromous streams and EFH in the vicinity of the proposed second crossing.

Linda Shaw is the point of contact for NMFS' involvement in this project. All requests for assistance and participation should be made through her. She can be reached by calling (907) 586-7510 or via email at linda.shaw@noaa.gov.

Sincerely,

James W. Balsiger
Administrator, Alaska Region

Enclosure

K. Koski, ABL cc:

K. Miller, HCD

Information Requested by ADOT&PF Juneau-Douglas Second Crossing EIS Scoping

Needed Research in Study Area

- 1. Determine location, characteristics and seasonal use of spawning habitats in Gastineau Channel and adjacent areas for important forage fish species, particularly capelin, sand lance, herring, and eulachon.
- 2. Determine location, characteristics and seasonal use of intertidal/subtidal rearing habitat for juvenile Dungeness crab and other crab species in Fritz Cove, Gastineau Channel and west side of Douglas Island.
- 3. Establish a baseline to characterize the seasonal range of tidal conditions as they relate to freshwater mixing and drainage patterns from the Mendenhall River and numerous streams draining into the area in Gastineau Channel and Mendenhall Wetlands. This baseline should include current speed and volume and salinity, flow direction, and sediment transport.
- 4. Model the effects of different crossing structures (e.g., floating bridges, bridges with piers, fill, tunnels, etc) on tidal currents, flow and sediment transport in relation to fish and wildlife habitat including emergent vegetated wetlands, mudflats, tidal sloughs, and substrate composition.
- 5. Determine the seasonal utilization of nearshore marine habitats on the west side of Douglas Island by marine and anadromous fish and marine mammals.
- 6. Estimate the impacts from the 2^{nd} Crossing and the proposed development modules on the west side of Douglas Island on the commercial and recreational fisheries that occur there.
- 7. Determine/model the effects of a structure across Gastineau Channel on the migration of juvenile and adult salmon.
- 8. Establish a baseline of water quality characteristics for Gastineau Channel before, during and following completion of the project that includes natural and contaminant parameters .
- 10. Determine the marine/brackish shallow water fish and invertebrate fauna between Salmon Creek and Fritz Cove.
- 11. Determine spawning grounds, summer and winter adult distribution, and distribution of juvenile starry flounder from the Fritz Cove spawning stock.
- 12. Determine seasonal distribution and habitat requirements of pink shrimp (*Pandalus eous*) and sidestripe shrimp (*Pandalopsis dispar*) in Fritz Cove.

Known Hot Spots for Fish/Invertebrates

- 1. The mouth and intertidal area of all streams (about 20) and tidal sloughs encompassed by the Study Area and Mendenhall Wetlands provide rearing habitat and migratory habitat for anadromous and marine species of fish.
- 2. Fritz Cove is an important wintering area for herring and is used extensively throughout year by marine mammals and commercially important fish and shellfish species, particularly Dungeness, King, and Tanners crabs
- 3. Fritz Cove and the adjacent tideflats provide rearing and spawning areas for important flatfish.
- 4. The mouth of Fish Creek and Gastineau Channel support important recreational fisheries for trout and salmon that use these habitats as a migratory corridor.
- 5. The mouth of Fish Creek and Gastineau Channel support an important recreational fishery for trout and salmon that use these habitats as a migratory corridor.
- 6. Gastineau Channel from about 9-mile Creek to the 1st navigational marker in Fritz Cove is used by capelin and sand lance for spawning.
- 7. The intertidal area at the end of the Mendenhall Peninsula near the mouth of the Mendenhall River is a highly productive area, as evidenced by high catches of marine and anadromous fish in NMFS EFH wetland surveys.
- 8. Picnic Cove near Outer Point is a prime recreational fishery location for King salmon as is Fritz Cove from the North Douglas boat launch to the entrance of Gastineau Channel.
- 9. The emergent vegetation in the wetlands is a major source of carbon and nutrients for the estuary and its organisms.
- 10. Wetlands within the Refuge provide secondory and tertiary treatment of regulated pollutants generated by sources such as municipal sewage treatment systems, Juneau International Airport, and non-point urban runoff. Control of such pollutants is critical to fish habitat quality and safe consumption of seafood from local sport and commercial fisheries.

References/Publications

- Adamus, P., D. Beers, K. Bosworth, R. Carstensen, and K. Munk. 1987. Juneau wetlands: Functions and values. Adamus Resource Assessment, Inc. Available from: CBJ, Dept. of Community Development, 155 S. Seward St., Juneau, AK 99801. 216 p.
- Barnwell, W.W. and C.W. Boning. 1968. Water resources and surficial geology of the Mendenhall Valley, Alaska. U.S. Geological Survey Hydrologic Investigations Atlas HA-259. USDI Geological Survey, Water Resources Div., P.O. Box 21568, Juneau, AK. 99802.
- Bethers, M., K. Munk, and C. Seifert. 1993. Juneau fish habitat assessment. Alaska Dept. of Fish and Game, SE Region Office, Div. of Sport Fish, 802 Third St., Douglas, AK 99824. 130 p.
- Bishop, D. 1979. Draft environmental assessment of the Mendenhall Valley drainage study. Attachment to EMPS 1979. 20 p.
- Boesch, D.F. and R.E. Turner. 1984. Dependence of fisheries species on salt marshes: a question of food or refuge. Estuaries 7, 460-468.
- Bruce, H. E., D. R. McLain, and B. L. Wing. 1977. Annual physical and chemical oceanographic cycles of Auke Bay, southeastern Alaska. U.S. Dep. Commer., NOAA Tech. Rep. NMFS SSRF-712, 11 p.
- City and Borough of Juneau. 1997. Juneau Wetlands Management Plan. Community Development Department. Juneau, Alaska, February, 1997, 60 pp.
- Crowe, J.H. 1976. Salt Marshes of the Alaska Pacific Coast. *In* Proceedings of the Symposium on Terrestrial and Aquatic Ecological Studies of the Northwest. Eastern Washington State College, Cheney, Washington, March 26-27, 1976, pp103-110.
- Calvin, N. I. 1977. A qualitative description of the intertidal plants and animals of Berners Bay, southeastern Alaska. Ceases 10:11-24.
- Carlson, H. R., 1980. Seasonal distribution and environment of Pacific herring near Auke Bay, Lynn Canal, southeastern Alaska. Trans. Am. Fish. Soc. 109(1):71-78.
- Celewycz, A. G., A. C. Wertheimer, J. A. Orsi, and J. L. Lum. 1994. Nearshore distribution and residency of pink salmon (*Oncorhynchus gorbuscha*) and chum salmon (*O. keta*) fry and their predators in Auke Bay and Gastineau Channel, southeast Alaska. U.S. Dep. Commer., AFSC Proc. Rep. 94-05, 39 p.
- DIPAC. 2001. Chum survival rates studied. DIPAC Network News. Summer 2001, pp3-4.

- Environmental Concern, Inc. 1972. Gastineau Channel Wetlands: Reconnaissance and Recommendation Report. Juneau, Alaska. 54 pp, JUN DOC 352.94232.
- Freese, J. L. and M. M. Babcock. 1990. The utility of artificial substrate collection devices to determine time and location of red king crab (*Paralithodes camtschatica*) glaucothoe settling in Auke Bay, Alaska.
- Gerke, Brandee, Mitch Lorenz, and K V. Koski. 1999. Distribution of Pink and Chum Salmon Fry in Estuaries near Juneau. *In* Proceedings of the Northeast Pacific Pink and Chum Salmon Workshop, Juneau Alaska, June 1, 1999, NMFS, 11305 Glacier Hwy, Juneau, pp73-79.
- Glass, Roy L. 199? National Water Summary Wetland Resources: Alaska, U.S. Geological Survey Water- Supply Paper 2425, U.S. Geological Survey, 4230 University Drive, Suite 201, Anchorage, AK 99508, pp107-114.
- Heinle, Donald R., David A. Flemer, and Joseph F. Ustach. 1976. Contribution of Tidal Marshlands to Mid-Atlantic Estuarine Food Chains. Estuarine Processes, Vol. 1, Academic Press, pp 309-320.
- Hoopes, D.T. 1978. An ecological reconnaissance of lands associated with the Juneau International Airport: Including an evaluation of the environmental impact of proposed development alternatives. Hoopes Environmental Consulting, P.O. Box 373, Clark Fork, Idaho 83811. Available from: CBJ, Dept. of Community Development, 155 S. Seward St., Juneau, AK 99801. 51 p.
- Horner, R. R. 1989. Long-term effects of urban runoff on wetlands. *In:* L. A. Roesner, B. Urbonas, and M. B. Sonnen (eds.), Design of Urban Runoff Controls, American Society of Civil Engineers, New York, NY.
- Horner, R. R., S. S. Cooke, K. O. Richter, A. L. Azous, L. E. Reinelt, B. L. Taylor, K. A. Ludwa, and M. Valentine. 1996. Wetlands and urbanization, implications for the future. Puget Sound Wetlands and Stormwater Management Research Program, Engineering Professional Programs, University of Washington, Seattle, WA.
- Jaenicke, H. W., and A. G. Celewycz. 1994. Marine distribution and size of juvenile Pacific salmon in Southeast Alaska and northern British Columbia. Fish. Bull., U.S. 92:79-90.
- Johnson, S. W., M. L. Murphy, D. J. Csepp, P. M. Harris, and J. F. Thedinga. 2003. A survey of fish assemblages in eelgrass and kelp habitats of southeastern Alaska. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-139, 39 p.
- Karinen, J. G. 1985. Occurrence of juvenile king crabs, *Paralithodes camtschatica* (Tilesius), in Auke Bay, Alaska, on sediments with relatively high concentrations of aromatic hydrocarbons. Pages

- 377-387 in Proceedings of the international King Crab Symposium, January 1985, Anchorage, AK.
- Krieger, K. J., and B. L. Wing. 1984. Hydroacoustic surveys and identification of humpback whale forage in Glacier Bay, Stephens Passage, and Frederick Sound, southeastern Alaska, summer 1983. U.S. Dep. Commer., NOAA Tech. Memo. NMFS/NSC-66. 60 p.
- Krieger, K. J. 1987. Acoustic assessment of euphausiids in Auke Bay. In APPRISE: Association of primary production and recruitment in the subarctic ecosystem. Annual Report.
 Summary of 1986 APPRISE Research Program. Vol. I: Tech. Rep., 1 January 1986-31 December 1986, p. 236-256.
- Landingham, J. H., and P. D. Mothershead. 1988. Feeding habits of juvenile pink salmon in nearshore and offshore areas of Auke Bay. *In* Vol. I. APPRISE Annual Report, SFOS APP 87-100. School of Fisheries and Ocean Sciences, Univ. of Alaska, Fairbanks, p. 449-469.
- L.C. Lee and Associates, Inc. 1995. Report to the City of Pacifica on the 75% design for restoring Lower Calera Creek and adjacent wetlands: Pacifica wastewater treatment plant project. *Prepared for:* City of Pacifica, 170 Santa Maria Ave., Pacifica, CA 94044.
- Lum, J. L., S. G. Taylor, and J. D Jones. 2002. Dolly Varden and cutthroat trout populations in Auke Lake, Southeast Alaska, during 2001. Fishery Data Series No. 02-21. Alaska Dept. Fish and Game, Div. Sport Fish, P.O. Box 240020, Douglas, AK 99824-0020
- Merrell, Jr., Theodore R., and K V. Koski. 1978. Habitat Values of Coastal Wetlands for Pacific Coast Salmonids. *In* Proceedings of the National Symposium on Wetlands, Wetland Functions and Values: The State of our Understanding. American Water Resources Association, Minneapolis, Minnesota, pp 256-266.
- Merrell, T.R., Jr. 1987. Assessment of effects on anadromous fish habitat of development projects recommended in the Master Plan for the Juneau International Airport, with suggested mitigation and enhancement measures. Prepared for Coffman Associates—Airport Consultants. Available from: CBJ, Dept. of Community Development, 155 S. Seward St., Juneau, AK 99801. 53 p.
- Mortensen, D. G., and A. C. Wertheimer. 1988. Residency and growth of juvenile pink salmon (*Oncorhynchus gorbuscha*) in Auke Bay. *In* Vol. I. APPRISE Annual Report, SFOS APP 87-100. School of Fisheries and Ocean Sciences, University of Alaska, Fairbanks, p. 501-544.
- Nelson, B., T.J. Quinn, and B.R. Melteff. 1987. Population parameters for rougheye rockfish (*Sebastes aleutianus*). Lowell Wakefield Fisheries Symposium: Proceedings of the International Rockfish Symposium, Anchorage, Alaska, USA, October 20-22, 1986, pp 209-228, Alaska Sea Grant Rep No. 87-2.

- Orsi, J. A., and J. H. Landingham. 1985. Numbers, species, and maturity stages of fish captured with beach seines during spring 1981 and 1982 in some nearshore marine waters of southeastern Alaska. U.S. Dep. Commer., NOAA Tech. Memo. NMFS F/NWC-86. 33 p.
- Orsi, J., M. Sturdevant, J. Murphy, D. Mortensen, and B. Wing. 2000. Seasonal habitat use and early marine ecology of juvenile Pacific salmon in southeastern Alaska. NPAFC Bull. 2: 111-122. Pages 119-130 *in* Proc. Int. Symp. King and Tanner Crabs, Nov. 1989, Anchorage, Alaska.
- Phillips, et al. 1993. Summary of literature describing the functional ability of wetlands to enhance wastewater quality. Wetlands Research Program Technical Report WRP-CP-2.
- Quast, J. C. 1986. Annual production of eviscerated body weight, fat, and gonads by Pacific herring, Clupea *harengus pallasi*, near Auke Bay, Alaska, southeastern, Alaska. Fish. Bull., U.S. 84:705-721.
- Rounds, P. M., C. C. Brodersen, and M. M. Babcock. 1990. Effects of cohort density and habitat on survival and growth of juvenile red king crab, (*Paralithodes camtschatica*). Pages 209-217 *in* Proc. Int. Symp. King and Tanner Crabs, Nov. 1989, Anchorage, Alaska (Juvenile collection sites available from Pat Rounds, ABL).
- Stevens, Bradley G. And David A. Armstrong. 1984. Distribution, Abundance, and Growth of Juvenile Dungeness Crabs, *Cancer magister*, in Grays Harbor Estuary, Washington. Fishery Bulletin: Vol. 82, No. # 3, 469-483.
- Sturdevant, M. V., and J. H. Landingham. 1993. Temperature, salinity, and zooplankton as indicators of environmental suitability for release of hatchery-reared juvenile salmonids near Juneau, Alaska. U.S. Dep. Commer. AFSC Proc. Rep. 93-10. 27 p.
- Stone, R. P., and C. E. O'Clair. 2001. Seasonal movements and distribution of Dungeness crabs *Cancer magister* in a glacial southeastern Alaska estuary. Mar. Ecol. Progr. Seri. 214: 167–176.
- Stone, R. P. and C. E. O'Clair. 2002. Behavior of female Dungeness crabs, *Cancer magister*, in a glacial southeast Alaska estuary: homing, brooding-site fidelity, seasonal movements, and habitat use. J. Crust. Biol. 22(2): 481-492.
- Stone, R. P., M. M. Masuda, and J. Clark. In press. Growth of male Tanner crabs (Chionoecetes bairdi), in a SoutheastAlaska estuary. Alaska Fishery Research Bulletin.
- Stone, R. P. 1999. Mass molting of Tanner crabs *Chionoecetes bairdi* in a southeast Alaska estuary. Alaska Fish. Res. Bull. 6:19–28.

- Taylor, S. G. 1980. Marine survival of pink salmon fry from early and late spawners. Trans. Am. Fish. Soc. 109(1):79-82
- Taylor, S. G., J. C. Landingham, D. G. Mortensen, and A. C. Wertheimer. 1987. Pink salmon early life history in Auke Bay: residence, growth, diet, and survival. In APPRISE: Association of primary production and recruitment in the subarctic ecosystem. Annual Report. Summary of 1986 APPRISE Research Program. Vol. I: Tech. Rep., 1 January 1986-31 December 1986, p. 273-318.
- Taylor, S. G., and J. L. Lum. 2002. Auke Creek weir 2001 annual report, operations, fish counts, and historical summaries. Unpubl. manuscr., 30 p. Alaska Fish. Sci. Cent., Auke Bay Lab., 11305 Glacier Highway, Juneau, AK 99801-8626.
- Willson, Mary F., Robert H. Armstrong and Marjorie C. Hermans. 2003. Eulachon: A Review of Biology and Annotated Bibliography. Final Report, National Marine Fisheries Service Auke Bay Laboratory, Juneau, Alaska, Contract No. 40HCNF200420.
- Wing, B. L., and J. J. Pella. 1998. Time series analyses of climatological records from Auke Bay, Alaska. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-91, 90 p.
- Wing, B. L., and K. J. Krieger. 1984. Humpback whale prey studies in Glacier Bay and nearby areas. (Abstract) Page 41 in J. D. Wood, Jr., M. Gladziszewski, I. A. Worley, and G. Vequist (editors), Proceedings of the First Glacier Bay Science Symposium, Glacier Bay National Park and Preserve, September 23-26, 1983. U.S. Dep. Int., National Park Service

Additional Contacts

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