



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Seattle, Washington 98115-6349

September 27, 2016

Dan Hull
Council Chair
North Pacific Fishery Management Council
605 West 4th Avenue
Anchorage, AK

Dear Dan:

I am writing to recommend the appointment of Dr. Kirstin Holsman, Alaska Fisheries Science Center (AFSC), Research Fisheries Scientist, to the Bering Sea/Aleutian Islands (BSAI) Groundfish Plan Team. Dr. Holsman would replace Dr. Kerim Aydin, who is leaving the BSAI Plan Team in October 2016 to focus on the development of the Bering Sea Fisheries Ecosystem Plan.

Dr. Holsman's CV is attached. She has 16 years of experience as a fisheries scientist, including 6 years with AFSC with expertise in stock assessment, multispecies stock assessments, and the development of AFSC's Integrated Ecosystem Assessment (IEA) Program. This year, she is a coauthor on the Bering Sea walleye pollock stock assessment. Further, she has sat in on public September and October Plan Team meetings for the past few years, and she attended the full September 2016 BSAI Plan team meeting in preparation for November, so she is up to date on the current issues.

I believe her experience and expertise will make her a welcome addition to the team.

Sincerely,

Douglas DeMaster, Ph.D.
Science and Research Director



KIRSTIN K. HOLSMAN, PHD

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7600 Sand Point Way N.E., Building 4 , Seattle, Washington 98115
Phone: (206) 526-4691, Email: kirstin.holsman@noaa.gov

POSITIONS HELD:

2015- *present* **Research Fishery Biologist** (NOAA AFSC)
2012 - 2015 **Research Scientist** (UW JISAO / NOAA AFSC)
2010 - 2012 **Postdoctoral Research Associate** (UW JISAO/ NOAA AFSC)
2007 - 2010 **National Research Council Fellow** (NRC / NOAA NWFSC)
2006 - 2007 **Director of Science** (People for Puget Sound)
2000 - 2006 **Graduate Research / Teaching Assistant** (UW SAFS)
1999 - 2000 **Research Technician** (UW Fisheries)

EDUCATION:

2006 Doctor of Philosophy (Aquatic & Fishery Sciences): Autogenic ecosystem engineers and the influence of habitat complexity on patterns of intertidal migration and habitat use by subadult Dungeness crab, *Cancer magister*. University of Washington, School of Aquatic & Fishery Sciences, Seattle, WA.

2005 Scientific Illustration Certificate: University of Washington, Seattle WA.

2000 Bachelor of Science (Fisheries): University of Washington, Seattle, WA.

AREAS OF EXPERTISE:

Climate change & fisheries, Bering Sea Trophic Ecology, Ecological and Individual-based Bioenergetics Modeling, Multi-species Stock Assessment Modeling, Statistical Analysis, Information Criterion Model Selection, Trophic Food Web Dynamics, Salmon Ecology, Restoration and Conservation Ecology, Estuarine and Intertidal Ecology, Invasive Species Ecology, Marine Invertebrate Taxonomy, Experimental Design, Acoustic Telemetry, AD Model Builder, R, Matlab, Visual Basic, & WinBUGS, ArcGis and GIS Analysis, Access Database Design and Scientific Illustration.

PUBLICATIONS and REPORTS:

Holsman, KK, J Samhuri, J, Cook, G, Hazen, E, Olsen, E, Dillard, M, Kasperski, S, Gaichas, S, Kelble, CR, Fogarty, M, Andrews, K. (*submitted*). An ecosystem-based approach to risk assessment. Ecosystem Health and Sustainability.

Tommasi, D. C. A. Stock, A. J. Hobday, R. Methot, I. Kaplan, J. P. Eveson, **K. Holsman**, +29. (*submitted*) Managing living marine resources in a dynamic environment: the role of seasonal to decadal climate forecasts. Progress in Oceanography

Reum, J. C. P., **K. Holsman**, **K. K.** Aydin, A. Hollowed. (*submitted*). Energetically relevant predator to prey body mass ratios are influenced by predator body mass and phylogeny. Ecosphere.

Zador, S, **Holsman, KK**, Aydin, KA, Gaichas, S. (*Accepted*). Ecosystem Considerations in Alaska: the Value of Qualitative Assessments. ICES J Mar Sci.

Kruse, G, Sullivan, J, Martell, S, **Holsman, KK**, Leaman, B, Aydin, K, Miller, B (2016). Fishery, Climate, and Ecological Effects on Pacific Halibut Size-at-age (SAA), NPRB Project 1309 Final Report.

Holsman, KK and E Danner. (2016). Numerical integration of temperature dependent functions in bioenergetics models to avoid overestimation of fish growth. Trans Am Fish. 145:2, 334-347, DOI: 10.1080/00028487.2015.1094129

Spencer, PD, **KK Holsman**, S Zador, NA Bond, FJ Mueter, AB Hollowed1, and JN Ianelli. (2016). Modelling spatially dependent predation mortality of eastern Bering Sea walleye pollock, and its implications for stock dynamics under future climate scenarios. ICES Journal of Marine Science; doi:10.1093/icesjms/fsw040

Holsman, KK, J Ianelli, K Aydin, AE Punt, EA Moffitt (2015). Comparative biological reference points estimated from temperature-specific multispecies and single species stock assessment models. Deep Sea Res II. doi:10.1016/j.dsr2.2015.08.001.

KK Holsman CV

- Ianelli, J **KK Holsman**, AE Punt, K Aydin (2015). Multi-model inference for incorporating trophic and climate uncertainty into stock assessment estimates of fishery biological reference points. *Deep Sea Res II*. DOI: 10.1016/j.dsr2.2015.04.002
- Moffitt, E, AE Punt, **KK Holsman**, KY Aydin, JN Ianelli, I Ortiz (2015). Moving towards Ecosystem Based Fisheries Management: options for parameterizing multi-species harvest control rules. *Deep Sea Res II*. doi:10.1016/j.dsr2.2015.08.002
- Holsman, KK** and K Aydin. (2015). Comparative methods for evaluating climate change impacts on the foraging ecology of Alaskan groundfish. *Mar Ecol Prog Ser* doi: 521:217-23510.3354/ meps11102
- Levin, PS, CR Kelble, RL Shuford, C Ainsworth, Y deReynier, R Dunsmore, MJ Fogarty, **KK Holsman**, EA Howell, ME Monaco, SA Oakes, F Werner (2014) Guidance for implementation of integrated ecosystem assessments: a US perspective. *ICES Journal of Marine Science* 71(5), 1198–1204. doi:10.1093/icesjms/fst112
- Siddon, EC, T Kristiansen, F Mueter, **KK Holsman**, RA Heintz, EV Farley (2013) Spatial Match-Mismatch between Juvenile Fish and Prey Provides a Mechanism for Recruitment Variability across Contrasting Climate Conditions in the Eastern Bering Sea. *PLOS ONE* 8(12): Article #: e84526.
- Holsman KK**, T Essington, TJ Miller, M Koen-Alonso, WJ Stockhausen. (2012). Comparative analysis of cod and herring production dynamics across 13 northern marine ecosystems. *Marine Ecology Progress Series* 459:231-246 DOI: 10.3354/meps09765
- Holsman KK**, Scheuerell MD, Buhle ER, Emmett R (2012). Varying effects of environmental conditions and management practices on the marine survival of Chinook salmon. *Conservation Biology* DOI: 10.1111/j.1523-1739.2012.01895.x
- Holsman KK**, McDonald PS, BarreYRO PA, Armstrong DA. (2010) Restoration through eradication? Removal of an invasive bioengineering macrophyte (*Spartina alterniflora*) restores some habitat function for a native mobile predator (*Cancer magister*). *Ecological Applications* 20 (8): 2249-2262.
- Harvey, CJ, KK Bartz, J Davies, TB Francis, TP Good, AD Guerry, B Hanson, **K.K. Holsman**, J Miller, ML Plummer, JCP Reum, LD Rhodes, CA Rice, JF Samhoury, GD Williams, N Yoder, PS Levin, and MH Ruckelshaus (2010). A mass-balance model for evaluating food web structure and community-scale indicators in the central basin of Puget Sound. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-106, 180 p.
- Buhle, ER, **KK Holsman**, MD Scheuerell, and A Albaugh. (2009) Using an unplanned experiment to evaluate the effects of hatcheries and environmental variation on threatened populations of wild coho salmon (*Oncorhynchus kisutch*). *Biological Conservation* 142 (11): 2449-2455.
- Holsman, KK**, PS McDonald, and DA Armstrong. (2006) Intertidal migration and habitat use by subadult Dungeness crab *Cancer magister* in a coastal NE Pacific estuary. *Marine Ecology Progress Series*. 308:183-196.
- McDonald, PS, **KK Holsman**, DA Beauchamp, BR Dumbauld, and DA Armstrong. (2006) Bioenergetics modeling to investigate habitat use by the nonindigenous crab, *Carcinus maenas*, in Willapa Bay, Washington. *Estuaries and Coasts*. Vol. 29 No 6B. pp 1132-1149.
- Holsman, KK**, DA Armstrong, DA Beauchamp, and JR Ruesink. (2003) The necessity for intertidal foraging by estuarine populations of subadult Dungeness crab, *Caner magister*: Evidence from a bioenergetics model. *Estuaries* 26 (4B): 1155-1173.

WORK IN PREPARATION:

- Sigler, M, Hollowed, A, **Holsman, KK**, Zador, S, Haynie, A, Himes-Cornell, A, Mundy, P, Davis, S, Duffy-Anderson, J, Gelatt, T, Gerke, B, Staben, P. (in prep) Alaska Regional Action Plan for Southeastern Bering Sea Climate Science. NOAA report #
- Holsman KK** and K Aydin (*In prep*). A bioenergetics model for Pacific halibut reveals the potential for bottom-up controls on growth and size-at-age. *J Fish Res*
- Holsman KK**, E Hazen, A Hollowed, K Aydin (*In prep*). Evolution not Revolution in implementing “climate-ready” marine management. *Nature Climate Change*
- Holsman KK**, A Hollowed, K Aydin, J Ianelli, A Punt, A Hermann. (*In prep*). Evidence for trophic amplification and attenuation of potential climate change impacts on groundfish productivity in the Bering Sea, AK. *Climate change*.
- Kaplan, IC, TB Francis, AE Punt, L Koehn, E Curchitser, F Hurtado, K Johnson, SL Cota, W Sydeman, TE Essington, N Taylor, **KK Holsman**, A MacCall, and PS Levin. In prep. A multi-model approach to understanding the role of Pacific sardine in the California Current food web. *Fish and Fisheries*

COLLABORATORS (past 4 yrs)

A. Hermann (UW JISAO), W Cheung (UW JISAO), J Reum (UW SAFS), McDonald (UW POE), K Aydin (NOAA AFSC), A Hollowed (NOAA AFSC), P Spencer (NOAA AFSC), I Ortiz (UW JISAO), S Zador (NOAA AFSC), J Ianelli (NOAA AFSC). I Oritiz (UW JISAO), A Punt (UW SAFS), M Scheuerell (NOAA NWFSC), M Danner (NOAA SWFSC), P Levin (NOAA, NWFSC), E Siddin (UAF), F Mueter (UAF)