

## APPENDIX B

### FULL LIST OF PROJECT REFERENCES

This appendix contains the full list of references used in model development, broken into broad categories. These categories are further subdivided in the EndNote database delivered to NOAA as part of this project.

#### ***Literature Review References – Annotated***

Alaska Bureau of Land Management. 2006. Oil Spill Risk Analysis for the Kobuk-Seward Peninsula Planning Area. Alaska Bureau of Land Management, Alaska State Office, Branch of Energy. Anchorage, Alaska. 25 pp.

*Environmental impact analysis for the Kobuk-Seward Peninsula area for onshore oil and gas development. Included analyses of spill risk.*

Arctic Council. 2009. Arctic Marine Shipping Assessment 2009 Report. Arctic Council Protection of the Marine Environment (PAME) Working Group. Arkureyri, Iceland. 194 pp.

*Comprehensive Arctic marine shipping assessment. Included assessment of Arctic marine geography, climate, and sea ice.*

Arctic Monitoring and Assessment Programme (AMAP). 1997. Arctic Pollution Issues: A State of the Arctic Environment Report. Arctic Monitoring and Assessment Programme. Oslo, Norway. 188 pp.

*Estimated oil spillage rates over the production period of specific Arctic petroleum reserves. These estimates were based on spillage rates from areas outside of the Arctic and do not take into consideration the special conditions in the Arctic.*

Bartolo, R., R., van Dam, and P. Bayliss. 2008. Semi-quantitative risk assessments—The Relative Risk Model. Pp. 162-270 in: Ecological Risk Assessment for Australia's Northern Tropical Rivers. Sub-project 2 of Australia's Tropical Rivers—An Integrated Data Assessment and Analysis (DET 18), A report to Land & Water Australia.

*Project tested the utility of a semi-quantitative Relative Risk Model (at a regional scale) in assessing the impact of multiple pressures/threats on multiple ecological assets for the tropical rivers of northern Australia.*

Bercha, F.G. 2011. Alternative Oil Spill Occurrence Estimators – Fault Tree Method. Prepared by Bercha Group for the Bureau of Ocean Energy Management, Regulation, and Enforcement, Alaska Outer Continental Shelf Region, Anchorage, Alaska. Contract No. M05PC00037. 48 p.

*A study conducted for the Bureau of Ocean Energy Management Regulation and Enforcement that developed probabilistic estimates of oil spill occurrences in the U.S. Chukchi and Beaufort Seas based on hypothetical oil and gas development. This study was an update of a similar one (Bercha, 2002) based on more recent data.*

Christensen, F.T., T. Isaji, and E.L. Anderson. 1996. Oil spill risks for Copper River Delta in Alaska. Pp. 833-846 in: Proceedings of the 19th Arctic and Marine Oilspill Program (AMOP) Technical Seminar.

*Risk analysis study of the likelihood of spills reaching the Copper River Delta from the shipping lane to Valdez. "Likely" spill sites, as identified by Alaska Department of Environmental Conservation, were selected for trajectory, fate, and effects modeling simulations.*

Clement, J.P., J.L. Bengtson, and B.P. Kelly. 2013. Managing for the Future in a Rapidly Changing Arctic: A Report to the President. Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska (D.J. Hayes, Chair). Washington, D.C. 59 p.

*An interagency working group (Department of Interior, NOAA, and White House Office of Science and Technology Policy) prepared a report that outlined the issues related to energy development and permitting in Alaska, as well as other environmental and economic issues facing the state of Alaska.*

Coastal Response Research Center. 2009. Opening the Arctic Seas: Envisioning Disasters and Framing Solutions. University of New Hampshire, Durham, New Hampshire. 88 pp.

*Conducted a workshop "Opening Arctic Seas: Envisioning Disasters and Framing Solutions" in March 2008. The participants discussed five plausible marine incident scenarios that involved cruise ships, drill ships, and fishing vessels. Key workshop findings and recommendations are presented.*

Cooke, A., and A. McMath. 2001. Sensitivity and mapping of inshore marine biotopes in the southern Irish Sea (SensMap): Development of a protocol for assessing and mapping the sensitivity of marine species and benthos to maritime activities. Maritime Ireland/Wales INTERREG Reference No. 21014001. 122 pp.

*The sensitivity of species in the Southern Irish Sea to a range of maritime activities (including oil and gas development) is assessed based on initial tolerance to a perturbation and the ability to recover. The sensitivity of larger areas of marine benthic life is assessed at the biotope, biotope complex, or lifeform level.*

De Lange, H.J., S. Sala, M. Vighi, and J.H. Faber. 2010. Ecological vulnerability in risk assessment—a review and perspectives. *Science of the Total Environment*, 408(18): 3871-3879.

*This paper provides a literature review of the application of ecological vulnerability analysis in risk assessment and describes new developments in methodology. Different vulnerability analysis methods developed for populations (of a single species), communities (consisting of different populations of species), and ecosystems (community and habitat combined) are discussed. Aspects that all methods share are the use of expert judgment, the input of stakeholders, ranking and mapping of the results, and the qualitative nature of the results. This article provides a glossary of working terms used in vulnerability/risk assessment. This paper reviews the application*

*of ecological vulnerability analysis in risk assessment. Additionally, the paper outlines the use of expert judgment in assessing ecological risk.*

DeCola, E., and S. Fletcher. 2006. An Assessment of the Role of Human Factors in Oil Spills from Vessels. Report to Prince William Sound Regional Citizens' Advisory Council. Nuka Research & Planning Group LLC. Seldovia, Alaska. 53 pp.

*Study on the role of human factors in oil spills from vessels in Prince William Sound.*

Derous, S., T. Agardy, H. Hillewaert, K. Hostens, and J.M. Weslawski. 2007. A concept for biological valuation in the marine environment. *Oceanologia*, 49(1): 99-128.

*This paper overviews the concept of biological valuation, a methodology that attempts to map the inherent biological worth of an area based on the underlying ecology. Several of the valuation criteria used within this methodology are directly applicable to the vulnerability metrics used in the Alaska risk model.*

Det Norske Veritas and ERM-West, Inc. 2010. Aleutian Islands Risk Assessment: Phase A Preliminary Risk Assessment. Task 1: Semi-Quantitative Traffic Study Report. Prepared for National Fish and Wildlife Foundation, U.S. Coast Guard, and Alaska Department of Environmental Conservation. 98 p.

*An assessment of oil spill risk from vessel traffic in the Aleutian Islands. Vessel traffic by vessel type is forecasted for the years through 2035.*

Dinovitzer, A., G. Comfort, R. Lazor, and D. Hinnah. 2004. Offshore Arctic oil spill risk assessment. Proceedings of the Offshore Mechanics and Arctic Engineering Conference 2004. Vancouver, British Columbia, Canada. 10 pp.

*Spill risk assessment study for the proposed Liberty Pipeline in the Beaufort Sea (which included offshore and onshore segments).*

Environmental Protection Agency (EPA). 1998. Guidelines for Ecological Risk Assessment. EPA/630/R-95/002F. Risk Assessment Forum. Washington, D.C.

*A published guidebook from the U.S. EPA designed to help improve the quality and consistency of ecological risk assessments. Publication provides a general overview of risk assessment protocol and a foundation upon which to build the information needed to support the decision-making process. Because the Guidelines are designed for all potential risk assessment situations (e.g., terrestrial, marine, ecotoxicology, storms), the protocols are generally very broad in definition.*

Etkin, D. 2012. Cook Inlet Maritime Risk Assessment: Spill Baseline and Accident Casualty Study. Available at:  
[http://www.cookinletriskassessment.com/documents/Attachment1fromCIRC\\_Task4RiskAssessmentRptRev-29June2012-2.pdf](http://www.cookinletriskassessment.com/documents/Attachment1fromCIRC_Task4RiskAssessmentRptRev-29June2012-2.pdf)

*Incorporated historical data on vessel spills to characterize and forecast potential future spills (probability, oil type, volume). Also assessed potential environmental impact based*

*on probability of contact with biological resources by season, geographic region, and relative sensitivity to oiling. (Step 2 of 5 of the Cook Inlet Risk Assessment).*

Etkin, D. 2009. Oil Spill Risk Review: NOAA Office of Response & Restoration Arctic Spill Damage Assessment Initiative. Prepared by Environmental Research Consulting and Research Planning, Inc. for NOAA Office of Restoration and Response, Seattle, WA. 48 pp.

*Examines the probability of different types of spills based on review of several previously-conducted spill risk studies in Alaska and the Arctic.*

Fock, H. 2011. Integrating multiple pressures at different spatial and temporal scales: a concept for relative ecological risk assessment in the European marine environment. *Human and Ecological Risk Assessment*, 17(1): 187-211.

*A regional relative risk model for the North Sea is presented in this article with an emphasis on risk calculation and risk characterization. The example presented explores the risk of marine organisms (benthos, marine mammals, birds) to various fishery gear types. A spatially-explicit calculation is performed relating species abundances to risk factors. Though this study is fisheries-based, many of the concepts presented in the paper are useful to consider for regional risk/sensitivity assessments.*

French McCay, D., D. Reich, E. Graham, M. Schroeder, and E. Shumchenia. 2012. Report on the Framework for Cumulative Impact Evaluation (Task 2.3). Pp 485-622 in: *Developing Environmental Protocols and Modeling Tools to Support Ocean Renewable Energy and Stewardship*. J. McCann. National Oceanographic Partnership Program. OCS Study BOEM 2012-082. U.S. Department of the Interior. Herndon, VA. 632 pp.

*Developed a siting evaluation model framework that considers ecological values, human uses, and the relative potential impacts of offshore energy development. Ecological valuation is based on mapping of the distribution of natural resources (marine mammals, sea turtles, fish and invertebrates, birds, benthic environment, pelagic environment) and various weighting schemes reflecting ecological importance and regulatory protection status. This information is layered with the relative potential impact of development to produce composite maps.*

French McCay, D., C.J. Beegle-Krause, J. Rowe, D.S. Etkin, C. Moore, and K. Michel. 2008. Final report: Oil spill risk analysis review. Prepared by Applied Science Associates, Inc., Environmental Research Consulting, and Herbert Engineering Corp. for State of Washington Joint Legislative Audit and Review Committee, Olympia, Washington. 169 p.

*Study of the relative risk of oil spills, considering spill probability, relative environmental vulnerability, and oil effects for Washington State's inland and marine waters. Relative probability of each spill type was multiplied by the relative impact rating (based on location, season, and oil type) to establish a "relative risk quotient" for each sector.*

French-McCay, D. 2009. State-of-the-art and research needs for oil spill impact assessment modeling. Pp. 601-653 in: *Proceedings of the 32nd Arctic and Marine Oilspill Program (AMOP) Technical Seminar*.

*This paper reviews the biological effects model within the RPS-ASA oil spill modeling program, SIMAP. This paper describes the state-of-the-art of biological effects model that evaluates dose and resulting impact of oil hydrocarbons on aquatic biota including birds, mammals, reptiles, fish, invertebrates, and plants. The biological effects model is coupled to an oil trajectory and fates model that supplies required spatial and temporal quantification of oil distributions and hydrocarbon component concentrations. Probability of overlap with oil for various bird and mammal behavior groups are provided.*

Garthe, S., and O. Hüppop. 2004. Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index. *Journal of Applied Ecology*, 41(4): 724-734.

*This article details a methodology for ranking the vulnerability of various bird species from Denmark and Sweden to wind farms. A vulnerability index is developed and applied. Various data on marine bird species are presented. An overall sensitivity index is then mapped based on bird presence.*

Gentile, J.H., and M.A. Harwell. 1998. The issue of significance in ecological risk assessments. *Human and Ecological Risk Assessment*, 4(4): 815-828.

*Discussion of the elements that need to be considered when addressing the topic of ecological significance, including identification of ecological endpoints, and the use of criteria to interpret the significance of changes in ecological endpoints.*

Geselbracht, L. and R. Logan. 1993. Washington's marine oil spill compensation schedule-Simplified resource damage assessment. Proceedings, 1993 International Oil Spill Conference. American Petroleum Institute, Washington, DC.

*Describes the development of the Washington State Preassessment Screening and Oil Spill Compensation Schedule Rule (Chapter 173-183 Washington Administrative Code), which is an approach for determining damages for oil spills in state waters. The compensation schedule generates a dollar-per-gallon damage estimate based on the sensitivity of affected resources, the oil type(s) involved, and the actions taken by the responsible party. Consists of two main components: resource vulnerability rankings and oil effects rankings. Resource vulnerability rankings rate the sensitivity to spilled oil for habitats, fish, birds, fisheries, shellfish, salmon, marine mammals and recreation. The oil effects rankings are based on acute toxicity, mechanical injury, and environmental persistence of the spilled oil. Both sets of rankings were constructed relying heavily on expert opinion.*

Halpern, B.S., K.A. Selkoe, F. Micheli, and C.V. Kappel. 2007. Evaluating and ranking the vulnerability of global marine ecosystems to anthropogenic threats. *Conservation Biology*, 21(5): 1301-1315.

*Article presents a transparent, repeatable, and modifiable method for collecting expert opinion regarding how threats affect marine ecosystems. Experts were asked to assess the functional impact, scale, and frequency of a threat to an ecosystem; the resistance and recovery time of an ecosystem to a threat; and the certainty of these estimates. Oil spills are not considered.*

Hart Crowser, Inc. 2000. Estimation of Oil Spill Risk from Alaska North Slope, Trans-Alaska Pipeline, and Arctic Canada Oil Spill Data Sets. OCS Study MMS 2000-007. Prepared by Hart Crowser, Inc. for the Minerals Management Service. Anchorage, Alaska. 153 pp.

*Study estimated oil spill risk from Trans-Alaska Pipeline System (TAPS), Alaska North Slope, and Arctic Canada oil industry activities.*

Harwell, M.A., J.H. Gentile, K.W. Cummins, R.C. Highsmith, R. Hilborn, C.P. McRoy, J. Parrish, and T. Weingartner. 2010. A conceptual model of natural and anthropogenic drivers and their influence on Prince William Sound, Alaska. *Ecosystem, Human and Ecological Risk Assessment*, 16(4): 672-726.

*Describes a Conceptual Ecosystem Model (CEM) for Prince William Sound that represents (a) the stressor (exposure) regime, where a stressor is any physical, chemical, or biological agent that could adversely affect an ecological system; and (b) ecological effects from environmental stressors. The effects are evaluated on a set of ecological attributes, termed valued ecosystem components (VECs), which are chosen to represent ecosystem attributes that are important ecologically and/or societally. The magnitude of potential ecological effects from stressors on each VEC were evaluated within the framework of the CEM. The assessment was done based on an expert-judgment process and assigning relative values.*

Hayes, E.H., and W.G. Landis. 2004. Regional ecological risk assessment of a near shore marine environment: Cherry Point, WA. *Human and Ecological Risk Assessment*, 10(2): 299-325.

*Paper presents a semi-quantitative regional ecological risk assessment for the nearshore marine environment in northwestern Washington state. The risk model presented is fairly straightforward and follows general concepts presented in Landis and Wieggers (1997). However, this study also incorporates Monte Carlo analysis to determine probability distributions in risk predictions as well as the use of natural breaks in assigning ranks to ecological sensitivity.*

HELCOM and NORDEN. 2013. Risks of Oil and Chemical Pollution in the Baltic Sea: Results and recommendations from HELCOM's BRISK and BRISK-RU projects. 28 pp. Available at: [http://www.helcom.fi/stc/files/shipping/BRISK-BRISK-RU\\_SummaryPublication\\_spill\\_of\\_oil\\_10.pdf](http://www.helcom.fi/stc/files/shipping/BRISK-BRISK-RU_SummaryPublication_spill_of_oil_10.pdf).

*The overall aim of this project was to increase the preparedness of all Baltic Sea countries to respond to major spills of oil and hazardous substances from shipping. The project calculated risks for different types of accidents and spill sizes based on existing maritime traffic data and estimated risks of different accident and spill scenarios. The project translated these scenarios into maps that define high risk areas in the region. Additionally, this project mapped environmentally-sensitive areas throughout the region.*

Hiscock, K., and H. Tyler-Walters. 2006. Assessing the sensitivity of seabed species and biotopes—the Marine Life Information Network (MarLIN). *Hydrobiologia*, 555(1): 309-320.

*The MarLIN project is designed to assess the inherent environmental sensitivity of marine "biotopes" (ecologically relevant assemblages of a habitat and the species that*

*utilize it) in the United Kingdom. The project has assembled a large database of biotopes and ranked their sensitivity based on a systematic method for determining sensitivity. A stated goal of this sensitivity analysis is the conservation of sensitive areas. The sensitivity methodology accounts for the intolerance of biotopes to various stressors.*

International Petroleum Industry Environmental Conservation Association (IPIECA). 2008. Oil spill preparedness and response: report series summary. London, UK. Available at: <http://www.ipieca.org>.

*This document collects reports that have been produced over a number of years for IPIECA regarding the biological impacts of spills on sensitive environments. Each report highlights the environmental sensitivity of various ecological components (e.g., corals, mangroves, sandy beach) to oil spills. This information is qualitative and generalized.*

Ippolito, A., S. Sala, J.H. Faber, and M. Vighi. 2010. Ecological vulnerability analysis: a river basin case study. *Science of the Total Environment*, 408(18): 3880-3890.

*This study assesses and quantifies the vulnerability of the macrobenthos in two river ecosystems in Northern Italy to pressures from multiple stressors. A qualitative method is used to determine the susceptibility of the macrobenthos to various stressors. Vulnerability is determined based on a reference ecosystem for comparison of conditions.*

Johnson, W.R., C.F. Marshall, and E.M. Lear. 2002. Oil Spill Risk Analysis: Cook Inlet Planning Area, OCS Lease Sales Areas 191 and 1999. OCS Report MMS 2002-074. Minerals Management Service, Herndon, Virginia. 76 pp.

*Study considered probability of oil spill occurrence and trajectories of oil spills to estimate the overall oil spill risk related to oil and gas development. Compared trajectory results to mapping of 31 environmental resources (biological, physical, and socioeconomic) to assess probability of contact.*

King, J.G., and G.A. Sanger. 1979. Oil vulnerability index for marine oriented birds. In: Conservation of Marine Birds of Northern North America. Wildlife Research Report 11. Bartonek, J.C., and Nettleship, D.N. (eds). United States Department of the Interior, Washington, D.C. 334 pp.

*Developed an Oil Vulnerability Index for the avifauna of the Northeast Pacific. Nearly 200 species of birds that use marine habitats were graded based on 20 factors affecting their survival. A score of 0, 1, 3, or 5, representing no, low, medium, or high significance is assigned for each factor. The total score is the Oil Vulnerability Index, which ranges from 1 to 100.*

Kirtley, E.K.N., D.L. Gray, and D.S. Etkin. 2012. Cook Inlet Maritime Risk Assessment: Spill Baseline and Accident Causality Study. Prepared by The Glostien Associates and Environmental Research Consulting. 163 p.

*A risk assessment for vessel accidents and spills in Cook Inlet for the years 2010 through 2025.*

Lahr, J., B. Munier, H.J. De Lange, J.F. Faber, and P.B. Sorensen. 2010. Wildlife vulnerability and risk maps for combined pollutants. *Science of the Total Environment*, 408: 3891-3898.

*Conducted a wildlife vulnerability analysis to map overall vulnerability of habitats in Denmark to various metals and one insecticide. These maps were combined with maps of estimated soil concentrations for the same compounds to yield relative risk maps that can be used to assess where the highest risk conditions to wildlife from these individual pollutants in Denmark occur (hot spot identification).*

Landis, W.G., and J.A. Wieggers. 1997. Design considerations and a suggested approach for regional and comparative ecological risk assessment. *Human and Ecological Risk Assessment*, 3(3): 287-297.

*Article overviews design considerations to keep in mind when conducting regional scale ecological risk assessments. Article provides some concrete suggestions for "scoring" risk, but on the whole remains conceptual. Many of the more useful concepts from this publication have been implemented in other regional risk (or sensitivity) assessments reviewed for this project.*

Landis, W.G., V. Chen, A. Pfungst, and G. Kushima. 2006. Androscoggin River Watershed Ecological Risk Assessment. Final Report. National Council for Air and Stream Improvement Grant 1-56189. 178 pp.

*Regional-scale risk assessment for the Androscoggin River Watershed (Maine) using a Relative Risk Model (RRM). The three main objectives were: 1) Expanding the RRM method to a complex site with a rich industrialization history, multiple pulp and paper mills, long-range transport, multiple dams and the introduction of non-native fish species; 2) compiling and cataloging current information and identifying data gaps on the effects of sources and stressors on the endpoints in various habitats for the watershed; and 3) calculating risks and uncertainty so that testable hypotheses are generated where possible.*

Loughnane, D., B. Judson, and J. Reid. 1995. Arctic tanker risk analysis project. *Maritime Policy & Management*, 22 (1): 3-12.

*Study of the risks for oil shipment by tankers to determine hazards most likely to produce an oil spill in the eastern Canadian Arctic.*

Manuwal, D.A., T.R. Wahl, and S.M. Speich. 1979. The seasonal distribution and abundance of marine bird populations in the Strait of Juan de Fuca and Northern Puget Sound in 1978. U.S. Department of Commerce, NOAA Technical Memorandum ERL MESA-44.

*Census of marine bird populations in the Strait of Juan de Fuca and Northern Puget Sound that included the application of a "Bird Oil Index" to assess vulnerability to oil based on three major components: behavioral vulnerability to oil (e.g., escape behavior, nesting concentration), population vulnerability to oil (e.g., population size, reproductive capacity, dispersion), and significance of the regional population for the total population. Scores range from 0 to 1,000.*



McMath, A., A. Cooke, M. Jones, C.S. Emblow, G. Wyn, S. Roberts, M.J. Costello, B. Cook, and E.M. Sides. 2000. Sensitivity and mapping of inshore marine biotopes in the southern Irish Sea (SensMap): Final Report. Maritime Ireland/Wales INTERREG Reference No. 21014001. 22 pp.

*Project involved survey and mapping of biotopes in the southern Irish Sea in both the marine intertidal and subtidal zones and the development of a protocol to assess the sensitivity of marine species and areas of benthic marine life to a broad range of maritime activities.*

Merrick, J.R.W., J.R. van Dorp, T. Mazzuchi, J.R. Harrald, J.E. Spahn, and M. Grabowski. 2002. The Prince William Sound Risk Assessment. *Interfaces* 32(6): 25-40.

*Article provides an overview of risk assessment conducted on shipping traffic in Prince William Sound in the wake of the Exxon Valdez incident. Risk-simulation modeling was conducted to determine the probabilities of vessel-related spills based on numerous conditions (e.g., vessel type, wind speed). Expert opinion and historical data were used to inform the risk model.*

Moraes, R., and S. Molander. 2004. A procedure for ecological tiered assessment of risks (PETAR). *Human and Ecological Risk Assessment*, 10(2): 349-371.

*This paper presents a three-tiered procedure for retrospective evaluation of risks in regions with limited resources and scarce background information. The tiers require successively more detailed investigations. Most relevant is the description of the second tier, which is a semi-quantitative evaluation of ecological risks over large geographical areas. This results in a ranking of sources and stressors having the greatest potential for ecological impact and ranking of subareas inside the study area more likely to be impacted.*

National Research Council Polar Research Board. 2003. Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope. NRC Board on Environmental Studies and Toxicology, Polar Research Board, National Academy Press, Washington, D.C. 288 pp.

*Evaluated the environmental impacts, including oil spill impacts and environmental and social impacts, of oil exploration and production infrastructure and activities on the North Slope.*

Nuka Research Planning, Inc. 2013. Consequence Analysis. Report to the Cook Inlet Risk Assessment Advisory Panel. 86 pp. Available at:  
[http://www.cookinletriskassessment.com/documents/130222\\_CIRA\\_CAWS\\_v1\\_Ir.pdf](http://www.cookinletriskassessment.com/documents/130222_CIRA_CAWS_v1_Ir.pdf).

*Qualitative assessment of potential vessel oil spill impacts to Cook Inlet's marine and coastal environments. Consequence analysis was conducted as the third step (of five) of the Cook Inlet Risk Assessment and is based on expert input provided at a workshop. Subject matter experts used a scale from 1-5 to characterize the potential impacts of seven hypothetical spills on environmental and socioeconomic receptors.*

Nuka Research & Planning Group, LLC, and Cape International, Inc. 2006. Vessel Traffic in the Aleutians Subarea. Updated Report to the Alaska Department of Environmental Conservation. 55 pp.

*Analyzed available data on vessel traffic and casualties within and through the Aleutian Islands.*

Olsen, G.H., M.G. Smit, J. Carroll, I. Jæger, T. Smith, and L. Camus. 2011. Arctic versus temperate comparison of risk assessment metrics for 2-methyl-naphthalene. *Marine Environmental Research*, 72(4): 179-187.

*This article presents results of toxicity tests performed on Arctic and temperate species exposed to 2-methyl naphthalene (a narcotic-acting oil component). These results were used to calculate LC50s. Additionally, LC50s for communities of organisms were determined using sensitivity distribution curves. No regional differences were found in tolerances to naphthalene at the species or community level between ecosystems, suggesting survival metrics for temperate species may be applicable to Arctic species.*

Owens, E.H., J.R. Harper, C.R. Foget, and W. Robson. 1983. Shoreliner experiments and the persistence of oil on Arctic beaches. Pp. 261-268 in: *Proceedings of the 1983 Oil Spill Conference (Prevention, Behavior, Control, Cleanup)*, American Petroleum Institute, San Antonio, Texas.

*Paper overviews experimental results associated with the oiling of beaches in an Arctic environment (Baffin Bay). Results are summarized based on shoreline type, exposure, fetch and persistence.*

Park, L.P., L.A. Beresford, and M. R. Anderson. 2010. Characterization and analysis of risks to key ecosystem components and properties. *Oceans, Habitat and Species at Risk Publication Series, Newfoundland and Labrador Region, 0003,1-19*. Available at: <http://www.dfo-mpo.gc.ca/library/340905.pdf>

*This report characterizes risk to key ecosystem components (habitats and species) in eastern Canada using a three phase system. Phase I provides a systematic way to identify a unique list of high risk activities or stressors for each ecosystem component. In Phase II, the risk of harm associated with each key activity or stressor is calculated for each ecosystem component, based on a determination of the magnitude of the interaction and sensitivity. In Phase III, the cumulative scores are calculated for each ecosystem component by combining the scores for each key activity or stressor, and the ecosystem components are ranked based on the cumulative scores. These cumulative scores are influenced by both the severity of harm and number of key activities and stressors, and the final ranking of the ecosystem component reflects the relative risk of harm.*

Ports and Waterways Safety Assessment Workshop. 2006. *Ports and Waterways Safety Assessment Workshop Report: Aleutian Islands*. 24-25 July 2006. 41 pp.

*This workshop obtained expert judgments on the level of spill risk in the Aleutian Islands based on waterway risk factors.*

Prince William Sound Steering Committee. 1996. Prince William Sound Risk Assessment Final Report.

*The Prince William Sound Steering Committee created a detailed model of Prince William Sound that could be used to assess current risk of oil tanker spills and evaluate spill prevention measures. Several concerns were raised about the study, including the use of limited data, the validity of results, the use of “expert judgments”, the lack of transferability to other areas, and the difficulty interpreting results.*

Robertson, T., E. DeCola, L. Pearson, T. Miller, B. Higman, and L.K. Campbell. 2010. North Slope Spills Analysis: Final Report on North Slope Spills Analysis and Expert Panel Recommendations on Mitigation Measures. Prepared by Nuka Research and Planning Group for Alaska Department of Environmental Conservation, Anchorage, Alaska. 260 p.

*Study of spillage in the North Slope focused primarily on onshore spillage rather than marine spills. A major finding of the report is that valve/seal failure was the most frequent cause of spills in oil exploration and production infrastructure and facilities, but that corrosion was the most frequent cause of spills over 10,000 gallons. Their model predicted, for example, that a five-year-old pipeline had a 3.3% probability of having a spill, whereas a 30-year-old pipeline had a 31% probability of having a spill.*

Santos, C.F., and F. Andrade. 2009. Environmental sensitivity of the Portuguese coast in the scope of oil spill events – comparing different assessment approaches. Journal of Coastal Research, Special Issue 56: 885-889.

*Article presents two methodologies (sensitivity maps and an algorithm-based sensitivity model) to be used as a approach for coastal sensitivity assessment of oil spills in Portugal. The sensitivity maps proposed are based on ESI maps, with a few additional parameters added. The algorithm-based model is discussed theoretically with no concrete suggestions for its design or implementation.*

Santos, C.F., R. Carvalho, and F. Andrade. 2013. Quantitative assessment of the differential coastal vulnerability associated to oil spills. Journal of Coastal Conservation, 17(1): 25-36.

*This article presents a semi-quantitative assessment of the vulnerability of coastal Portugal to oil spills. This study is a general risk analysis that includes both ecological and socioeconomic components in the analysis. No novel methodologies are presented. Presentation of the model and final risk scores are well constructed and informational.*

Sorgard, E., K. Jodestol, E. Hoell, and B. Fredheim. 1997. A stepwise methodology for quantitative environmental risk analysis of offshore petroleum activities. In: SPE/UKOOA European Environment Conference.

*This paper presents an ecological risk assessment methodology that introduces algorithms for quantification of environmental damage that can be directly evaluated against well-defined acceptance criteria. This methodology is limited to assessments of acute oil discharges in relation to ecological components (i.e., socioeconomic components are not included).*

Stelzenmüller, V., J.R. Ellis, and S.I. Rogers. 2010. Towards a spatially explicit risk assessment for marine management: assessing the vulnerability of fish to aggregate extraction. *Biological Conservation*, 143(1): 230-238.

*Describes a marine spatial risk assessment framework for the U.K. continental shelf that assesses the vulnerability of 11 fish and shellfish species to aggregate extraction. A spatially-explicit sensitivity index was calculated based on life history characteristics of taxon and species distributions. Sensitivity was then calculated by merging sensitivity indices and predicted species distributions.*

Transportation Research Board of the National Academies. 2008. Risk of vessel accidents and spills in the Aleutian Islands: designing a comprehensive risk assessment. Special Report 293. Washington D.C. Available at: <http://onlinepubs.trb.org/onlinepubs/sr/sr293.pdf>.

*Report provides recommendations to be utilized in the development and completion of a risk assessment of shipping-related oil spills in the Aleutian Islands. This included identifying available data and evidence of spill risk for vessels transiting the Aleutians, determining the information needed for a comprehensive risk assessments, recommending a framework for the most appropriate and scientifically-sound approach given available data and modeling capability, and identifying the logical sequence of steps for the assessment. The committee recommended that the risk assessment include quantitative fate and effects consequence analysis to yield an understanding of the damage to natural resources and socioeconomic impacts associated with different hazards, spill volumes, and accident locations. Limited specific recommendations are made for the consequence portion of the analysis.*

Wieggers, J.K., H.M. Feder, L.S. Mortensen, D.G. Shaw, V.J. Wilson, and W.G. Landis. 1998. A regional multiple-stressor rank-based ecological risk assessment for the fjord of Port Valdez, Alaska. *Human and Ecological Risk Assessment*, 4(5): 1125-1173.

*A qualitative risk assessment (Relative Risk Model) was developed to explore the risk of numerous stressors (e.g., treated discharge, accidental spills) on habitats (e.g., marsh, mudflat) within subregions of Port Valdez. Each source and habitat was ranked for each subarea to indicate high, moderate, low, or no risk within the context of the Port. Ranks were assigned using criteria specific to Port Valdez. Criteria were based on the size and frequency of the source and the amount of available habitat. Ranks were assigned to each source and habitat type on a 2-point scale from 0 to 6. Risk scores incorporated the magnitude of the stressor, the area of the habitat, and the vulnerability of the habitat to the stressor. A rank-based uncertainty analysis is also included in this analysis.*

Wolniakowski, K.U., J. Wright, G. Folley, and M.R. Franklin. 2011. Aleutian Islands Risk Assessment Project. Phase A Summary Report. 58 pp. Available at: [http://www.aleutiansriskassessment.com/documents/110826AIRA\\_SummaryReportvFINALlr.pdf](http://www.aleutiansriskassessment.com/documents/110826AIRA_SummaryReportvFINALlr.pdf)

*A consequence analysis was conducted as the fourth phase (of eight) of the Aleutian Islands Risk Assessment. This consisted of a qualitative assessment of potential vessel oil spill impacts to the marine and coastal environments, including socioeconomic resources. COSIM was used to model specific spill events in each region of interest and*

*consequences were qualitatively assessed based on these theoretical spill situations for five receptor groups: habitat, mammals, seabirds, fish, and socioeconomic resources.*

Zacharias, M.A., and E.J. Gregr. 2005. Sensitivity and vulnerability in marine environments: an approach to identifying vulnerable marine areas. *Conservation Biology*, 19(1): 86-97.

*Discussion of a quantitative methodology for identifying vulnerable marine areas based on valued ecological features. Vulnerability is a function of sensitivity to a particular stressor and the probability of exposure to that stressor. To demonstrate the concept, the authors conducted a vulnerability assessment for two groups of whale species based on a predictive habitat model and maps of acoustic stress.*

Zillioux, E.J., J.R. Newman, G.G. Lampman, M.R. Watson, and C.M. Newman. 2011. Using stakeholder input to develop a comparative risk assessment for wildlife from the life cycles of six electrical generation fuels. Pp. 337-365 in: *Stakeholders and Scientists*. Springer, New York.

*A qualitative risk assessment of various ecological components (birds, mammals, habitat) to coal, oil, natural gas, nuclear, hydro, and wind energy production methods. Assignment of risk ranks is very broad and completed based on literature review. This study presents no new methodology.*

**Environmental Vulnerability References**

- Alaska Department of Environmental Conservation. 2005. Prince William Sound subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2009. Aleutian's subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2010a. Cook Inlet subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2010b. Kodiak Island subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2012a. North Slope subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2012b. Northwest Arctic subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2012c. Southeast Alaska subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2013a. Bristol Bay subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Environmental Conservation. 2013b. Western Alaska subarea contingency plan. For oil and hazardous substance discharges/releases. A subarea plan of the unified plan for the State of Alaska. Juneau, Alaska. Available at: [http://dec.alaska.gov/spar/perp/plans/scp\\_al.htm](http://dec.alaska.gov/spar/perp/plans/scp_al.htm).
- Alaska Department of Fish and Game (ADFG). 2001a. Oil Spill Contingency Planning: Most Environmentally Sensitive Areas (MESAs) along the Coast of Alaska. Habitat and

- Restoration Division. Anchorage, Alaska. Volume 1. Available at:  
[http://www.adfg.alaska.gov/static/lands/maps\\_gis/pdfs/mesa\\_vol1\\_text.pdf](http://www.adfg.alaska.gov/static/lands/maps_gis/pdfs/mesa_vol1_text.pdf).
- Alaska Department of Fish and Game (ADFG). 2001b. MESA Project (Most Environmentally Sensitive Areas) Species Shapefiles: Kelp. Geospatial Data. Habitat and Restoration Division. Anchorage, Alaska. Available at:  
<http://www.adfg.alaska.gov/index.cfm?adfg=maps.mesamaps>
- Alaska Department of Fish and Game (ADFG). 2003. Phalaropes species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/static/education/wns/phalaropes.pdf>. (Accessed: June 10, 2013.)
- Alaska Department of Fish and Game (ADFG). 2007. Harlequin duck species profile. Juneau, AK. Available at: [http://www.adfg.alaska.gov/static/education/wns/harlequin\\_duck.pdf](http://www.adfg.alaska.gov/static/education/wns/harlequin_duck.pdf). (Accessed: June 11, 2013.)
- Alaska Department of Fish and Game (ADFG). 2008a. Northern fur seal species profile. Juneau, AK. Available at: [http://www.adfg.alaska.gov/static/education/wns/northern\\_fur\\_seal.pdf](http://www.adfg.alaska.gov/static/education/wns/northern_fur_seal.pdf). (Accessed: June 18, 2013.)
- Alaska Department of Fish and Game (ADFG). 2008b. Bowhead whale species profile. Juneau, AK. Available at: [http://www.adfg.alaska.gov/static/education/wns/bowhead\\_whale.pdf](http://www.adfg.alaska.gov/static/education/wns/bowhead_whale.pdf). (Accessed: June 11, 2013.)
- Alaska Department of Fish and Game (ADFG). 2008c. Humpback whale species profile. Juneau, AK. Available at: [http://www.adfg.alaska.gov/static/education/wns/humpback\\_whale.pdf](http://www.adfg.alaska.gov/static/education/wns/humpback_whale.pdf). (Accessed: June 12, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013a. Steller's eider species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=stellerseider.main>. (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013b. Marbled murrelet species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=marbledmurrelet.main>. (Accessed June 10, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013c. Short-tailed albatross species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=shorttailedalbatross.main>. (Accessed June 11, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013d. North Pacific right whale species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=rightwhale.main>. (Accessed: June 10, 2013.)

- Alaska Department of Fish and Game (ADFG). 2013e. Polar bear species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=polarbear.main>. (Accessed: June 13, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013f. Beluga whale species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=beluga.main>. (Accessed: June 11, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013g. Leatherback sea turtle species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=leatherbackseaturtle.main>. (Accessed: June 10, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013h. Atka mackerel species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=atkamackerel.main>. (Accessed: June 13, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013j. Pacific halibut species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=halibut.main>. (Accessed: July 8, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013k. Pink salmon species profile. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=pinksalmon.main>. (Accessed June 24, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013l. Commercial Fisheries Alaska Commercial Salmon Harvests and Exvessel Values. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=CommercialByFisherySalmon.exvesselquery>. (Accessed: June 24, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013m. Tanner crab (*Chionoecetes bairdi* and *C. opilio*) species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=tannercrab.main>. (Accessed: July 9, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013n. Weathervane scallop species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=weathervanescallop.main>. (Accessed: July 16, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013o. Bald eagle species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=baldeagle.main>. (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013p. Steller sea lion species profile. Juneau, AK. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=stellersealion.main>. (Accessed: June 18, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013q. Northern sea otter species profile. Juneau, Alaska. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=seaotter.main>. (Accessed: June 6, 2013.)



- Alaska Department of Fish and Game (ADFG). 2013r. Walleye pollock species profile. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=walleypollock.main>. (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013s. Pacific walrus species profile. Juneau, Alaska. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=walrus.main>. (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013t. Peeps and related sandpipers. Available at: [http://www.adfg.alaska.gov/static/education/wns/peeps\\_and\\_related\\_sandpipers.pdf](http://www.adfg.alaska.gov/static/education/wns/peeps_and_related_sandpipers.pdf). (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013u. Ringed seal species profile. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=ringedseal.main>. (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013v. Sperm whale species profile. Juneau, AK. Available at: [http://www.adfg.alaska.gov/static/education/wns/sperm\\_whale.pdf](http://www.adfg.alaska.gov/static/education/wns/sperm_whale.pdf). (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013w. Arctic cisco species profile. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=arcticcisco.main>. (Accessed: June 6, 2013.)
- Alaska Department of Fish and Game (ADFG). 2013x. Refuges, Sanctuaries, Critical Habitat Areas and Wildlife Ranges KMLs. Geospatial Data. Juneau, Alaska. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=maps.refugeboundaries>.
- Alaska Fisheries Science Center (AFSC). 2010. AFSC/NMML: Marine mammal aerial surveys in the Bering, Chukchi and Beaufort Seas – 1979-2010. Geospatial data. Available at: <http://www.afsc.noaa.gov/nmml/cetacean/bwasp/index.php>. (Accessed: May 13, 2013.)
- Alaska Fisheries Science Center (AFSC). 2013. Data collected by groundfish observers. Geospatial data. Available at: [http://www.afsc.noaa.gov/fma/spatial\\_data.htm](http://www.afsc.noaa.gov/fma/spatial_data.htm). (Accessed: May 13, 2013.)
- Allen, B. M., and R. P. Angliss. 2013. Alaska marine mammal stock assessments, 2012. U.S. Department of Commerce, NOAA Technical Memorandum. NMFS-AFSC-245, 282 pp.
- Amante, C. and B.W. Eakins. 2009. ETOPO1 1 Arc-Minute Global Relief Model: Procedures, Data Sources and Analysis. NOAA Technical Memorandum NESDIS NGDC-24. 19 pp.
- Amstrup, S.C. 1989. Ethylene glycol (anti-freeze) poisoning in a free-ranging polar bear. *Veterinary and Human Toxicology*, 31:317-319.
- Animal Diversity Web. 2013a. *Anas acuta*- northern pintail. Available at: [http://animaldiversity.ummz.umich.edu/site/accounts/information/Anas\\_acuta.html](http://animaldiversity.ummz.umich.edu/site/accounts/information/Anas_acuta.html). (Accessed: June 6, 2013.)
- Animal Diversity Web. 2013b. *Histrionicus histrionicus*- harlequin duck. Available at: [http://animaldiversity.ummz.umich.edu/accounts/Histrionicus\\_histrionicus/](http://animaldiversity.ummz.umich.edu/accounts/Histrionicus_histrionicus/). (Accessed: June 6, 2013.)

- Animal Diversity Web. 2013c. *Uria aalge*- common murre. Available at: [http://animaldiversity.ummz.umich.edu/accounts/Uria\\_aalge/](http://animaldiversity.ummz.umich.edu/accounts/Uria_aalge/). (Accessed: June 6, 2013.)
- Armstrong, D. A., L.S. Incze, D.L., Wencker, and J.L. Armstrong. 1986. Distribution and abundance of decapod crustacean larvae in the southeastern Bering Sea with emphasis on commercial species. Outer Continental Shelf Environmental Assessment Program, 53: 479-856.
- Bailey, K. M., and S.J. Picquelle. 2002. Larval distribution of offshore spawning flatfish in the Gulf of Alaska: potential transport pathways and enhanced onshore transport during ENSO events. Marine Ecology Progress Series, 236: 205-217.
- Baird, P.H. 1994. Black-legged Kittiwake (*Rissa tridactyla*). The Birds of North America. No. 92: American Ornithologists' Union. The Academy of Natural Sciences of Philadelphia.
- Balcom, B.J., D.C. Biggs, C. Hu, P. Montagna, and D.A. Stockwell. 2011. A comparison of marine productivity among Outer Continental Shelf planning areas. Prepared by CSA International, Inc. for the U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Regulation and Enforcement, Herndon, VA. OCS Study BOEMRE 2011-019. 195 pp. + appendices.
- Barbeaux, S. J. Ianelli, and W. Palsson. 2012. Assessment of the pollock stock in the Aleutian Islands. Chapter 1A: in Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- BirdLife International 2012a. *Anas acuta*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed June 10, 2013.)
- BirdLife International 2012b. *Calidris alpina*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed June 11, 2013.)
- BirdLife International 2012c. *Haliaeetus leucocephalus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: June 10, 2013.)
- BirdLife International 2012d. *Histrionicus histrionicus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed June 11, 2013.)
- BirdLife International 2012e. *Phalaropus lobatus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: June 11, 2013.)
- BirdLife International 2012f. *Phoebastria albatrus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: June 11, 2013.)
- BirdLife International 2012g. *Uria aalge*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: June 11, 2013.)

- BirdLife International. 2012h. *Calidris mauri*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.1. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: June 6, 2013.)
- Bradley, J.S., I.J., Skira, and R.D. Wooller. 1991. A long-term study of short-tailed shearwaters *Puffinus tenuirostris* on Fisher Island, Australia. *Ibis*, 133(s1): 55-61.
- Brown, R. G., and D.E. Gaskin. 1988. The pelagic ecology of the grey and red-necked phalaropes *Phalaropus fulicarius* and *P. lobatus* in the Bay of Fundy, eastern Canada. *Ibis*, 130(2): 234-250.
- Brownell, R.L., P.J. Clapham, T. Miyashita, and T. Kasuya. 2001. Conservation status of North Pacific right whales. *Journal of Cetacean Research and Management*, 2: 269-286.
- Calambokidis, J., E.A. Falcone, T.J. Quinn, A.M. Burdin, P.J. Clapham, J.K.B. Ford, C.M. Gabriele, R. LeDuc, D. Mattila, L. Rojas-Bracho, J.M. Straley, B.L. Taylor, J. Urbán R., D. Weller, B.H. Witteveen, M. Yamaguchi, A. Bendlin, D. Camacho, K. Flynn, A. Havron, J. Huggins, and N. Maloney. 2008. SPLASH: Structure of Populations, Levels of Abundance and Status of Humpback Whales in the North Pacific. Final report for contract AB133F-03-RP-00078 U.S. Dept. of Commerce Western Administrative Center, Seattle, Washington. Available at: <http://www.cascadiaresearch.org/SPLASH/SPLASH-contract-Report-May08.pdf>.
- Cavalieri, D.J., C.L. Parkinson, P. Gloersen, and H. Zwally. 1996, updated yearly. Sea Ice Concentrations from Nimbus-7 SMMR and DMSP SSM/I-SSMIS Passive Microwave Data, January 2002 to December 2012. Boulder, Colorado USA: NASA DAAC at the National Snow and Ice Data Center. Available at: <http://nsidc.org/data/nsidc-0051.html>.
- Chapman, BR. 1984. Seasonal abundance and habitat-use patterns of coastal bird populations on Padre and Mustang Island barrier beaches [following the Ixtoc I oil spill]. U.S. Fish and Wildlife Service. FWS/OBS-83/31. 73 pp.
- Coad, B.W. and J.D. Reist, 2004. Annotated list of the arctic marine fishes of Canada. Canadian Manuscript Report of Fisheries and Aquatic Sciences, 2674:iv:+112 p.
- Cohen, D.M., T. Lnada, T. Lwamoto, and N. Scialabba. 1990. FAO species catalogue: Vol. 10. Gadiform fishes of the world (order Gadiformes). An annotated and illustrated catalogue of cods, hakes, grenadiers and other gadiform fishes known to date. FAO Fisheries Synopsis, 125(10).
- Derocher, A.E. and I. Stirling. 1991. Oil contamination of two polar bears. *Polar Record*, 27:56-57.
- Dorn, M., K. Aydin, S. Barbeaux, D. Jones, K. Spalinger, and W. Palsson. 2012. Assessment of the walleye pollock stock in the Gulf of Alaska. Chapter 1 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- Drobny, S.P. 2008. Life history characteristics of the gonatid squid *Berrytheuthis magister* in the Eastern Bering Sea. Doctoral dissertation, University of Alaska Fairbanks.

- Drobny, S.P., B.L. Norcross, B.A. Holladay, and N. Bickford. 2008. Identifying life history characteristics of squid in the Bering Sea. North Pacific Research Board Final Report 627, 73 pp.
- eBird. 2013. eBird: An online database of bird distribution and abundance. Ithaca, New York. Available at: <http://www.ebird.org>. (Accessed: June 6, 2013.)
- Eggers, DM, C Tide, and AM Carroll, editors. 2013. Run forecasts and harvest projections for 2013 Alaska fisheries and review of 2012 season. Alaska Department of Fish and Game, Special Publication No. 13-03. Anchorage, Alaska.
- Evans, K.R., P.R. Carlson, M.A. Hampton, M.S. Marlow, and P.W. Barnes. 2000. Map of distribution of bottom sediment on the continental shelf, Gulf of Alaska. U.S. Geological Survey. Miscellaneous Field Studies MF-2335. Available at: <http://pubs.usgs.gov/mf/2000/2335/>.
- Fechhelm, R.G., L.R. Martin, B.J. Gallaway, W.J. Wilson, and W.B. Griffiths. 1999. Prudhoe Bay causeways and the summer coastal movements of Arctic cisco and least cisco. *Arctic*, 52(2): 139-151.
- Federal Register. 2001. Endangered and threatened wildlife and plants; final determination of critical habitat for the Alaska-breeding population of the Steller's eider. 66 Federal Register 8850. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2001-02-02/pdf/01-1334.pdf#page=1>.
- Federal Register. 2008. Endangered and threatened species; designation of critical habitat for North Pacific right whale. 73 Federal Register 19000. Available at: <http://www.nmfs.noaa.gov/pr/pdfs/fr/fr73-19000.pdf>.
- Fernández, G., N. Warnock, D. L. Lank, and J. B. Buchanan. 2006. Conservation Plan for the Western Sandpiper, version 1.0. Manomet Center for Conservation Science. Manomet, Massachusetts. Available at: [http://www.whsrn.org/sites/default/files/Western\\_Sandpiper\\_ConservationPlan\\_v1\\_0\\_06\\_06-28.pdf](http://www.whsrn.org/sites/default/files/Western_Sandpiper_ConservationPlan_v1_0_06_06-28.pdf).
- Fishbase. 2013a. *Atheresthes stomias* - Arrow-tooth flounder. Available at: <http://www.fishbase.org/Summary/speciesSummary.php?ID=517&AT=arrowtooth+flounder>. (Accessed: June 6, 2013.)
- Fishbase. 2013b. *Boreogadus saida*- Polar cod. Available at: <http://www.fishbase.org/summary/Boreogadus-saida.html>. (Accessed: June 6, 2013.)
- Fishbase. 2013c. *Clupea pallasii pallasii*- Pacific herring. Available at: <http://www.fishbase.org/summary/1520>. (Accessed: June 6, 2013.)
- Fishbase. 2013d. *Coregonus autumnalis* - Arctic Cisco. Available at: <http://www.fishbase.org/summary/Coregonus-autumnalis.html>. (Accessed: June 6, 2013.)

- Fishbase. 2013e. *Hippoglossus stenolepis* - Pacific Halibut. Available at: <http://www.fishbase.org/summary/Hippoglossus-stenolepis.html>. (Accessed: June 6, 2013.)
- Fishbase. 2013f. *Oncorhynchus gorbusha*- Pink Salmon. Available at: <http://www.fishbase.org/summary/Oncorhynchus-gorbusha.html>. (Accessed: June 6, 2013.)
- Fishbase. 2013g. *Theragra chalcogramma* - Alaska pollock. Available at: <http://www.fishbase.org/summary/318>. (Accessed: June 6, 2013.)
- Food and Agriculture Organization of the United Nations: Fisheries and Aquaculture Department. 2013a. Species Fact Sheets- *Boreogadus saida*. Available at: <http://www.fao.org/fishery/species/2233/en>. (Accessed: June 6, 2013.)
- Food and Agriculture Organization of the United Nations: Fisheries and Aquaculture Department. 2013b. Species Fact Sheets- *Atheresthes stomias*. Available at: <http://www.fao.org/fishery/species/3356/en>. (Accessed: June 6, 2013.)
- French McCay, D., C.J. Beegle-Krause, J. Rowe, D.S. Etkin, C. Moore, and K. Michel. 2008. Final report: Oil spill risk analysis review. Prepared by Applied Science Associates, Inc., Environmental Research Consulting, and Herbert Engineering Corp. for State of Washington Joint Legislative Audit and Review Committee, Olympia, Washington. 169 p.
- French, D., M. Reed, K. Jayko, S. Feng, H. Rines, S. Pavignano, T. Isaji, S. Puckett, A. Keller, F.W. French III, D. Gifford, J. McCue, G. Brown, E. MacDonald, J. Quirk, S. Natzke, R. Bishop, M. Welsh, M. Phillips and B.S. Ingram. 1996. The CERCLA type A natural resource damage assessment model for coastal and marine environments (NRDAM/CME), Technical Documentation, Vol. I-V. Final Report, submitted to the Office of Environmental Policy and Compliance, U.S. Dept. of the Interior, Washington, DC.
- Graham, M., and H. Hop. 1995. Aspects of reproduction and larval biology of Arctic cod (*Boreogadus saida*). *Arctic*, 48(2):130-135.
- Gretsch, D. 2005. Kodiak Management Area annual herring fisheries management report, 2001. Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services.
- Groot, C., and L. Margolis. 1991. Pacific salmon life histories. UBC press. Vancouver, BC. 393 pp.
- Harney, J.N., M. Morris, and J.R. Harper. 2008. ShoreZone Coastal Habitat Mapping Protocol for the Gulf of Alaska. CORI Project 08-01. 157 pp. Available at: [https://alaskafisheries.noaa.gov/shorezone/goa\\_protocol.pdf](https://alaskafisheries.noaa.gov/shorezone/goa_protocol.pdf).
- Hart, J.L. 1973. Pacific fishes of Canada. Fisheries Research Board of Canada, Bulletin 180. 740 pp.

- Holmes, R.T. 1971. Density, habitat, and the mating system of the Western sandpiper (*Calidris mauri*). *Oecologia*, 7(2): 191-208.
- Hooge, P.N. and S.J. Taggart. 2013. Pacific Halibut in Glacier Bay National Park, Alaska. Available at: <http://www.inforain.org/glacierbay/CATALOG/HTM/HALIBUT.HTM>. (Accessed: June 6, 2013.)
- Ianelli, J.N., T. Honkalehto, S. Barbeaux, S. Kotwicki, K. Aydin, and N. Williamson. 2012a. Assessment of the walleye pollock stock in the Eastern Bering Sea. Chapter 1 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- Ianelli, J.N., S.J. Barbeaux, D. McKelvey, and T. Honkalehto. 2012b. Assessment of walleye pollock in the Bogoslof Island Region. Chapter 1B in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- Jay, C.V., A.S. Fishbach, and A.A. Kochnev. 2012. Walrus areas of use in the Chukchi Sea during sparse sea ice cover. *Marine Ecology Progress Series*, 468:1-13.
- Jay, C.V., B.G. Marcot, and D.C. Douglas. 2011. Projected status of the Pacific walrus (*Odobenus rosmarus divergens*) in the twenty-first century. *Polar Biology*, 34: 1065-1084.
- Kaschner, K., J. Rius-Barile, K. Kesner-Reyes, C. Garilao, S.O. Kullander, T. Rees and R. Froese. 2010. AquaMaps: Predicted range maps for aquatic species. Available online at: [www.aquamaps.org](http://www.aquamaps.org), Version 08/2010.
- Katona, S.K., V. Rough and D.T. Richardson. 1993. *Field Guide to Whales, Porpoises, and Seals from Cape Cod to Newfoundland* (4th ed.). Smithsonian Institution Press. 336 pp.
- Kelly, B.P., O.H. Badajos, M. Kunasranta, J.R. Moran, M. Martinez-Bakker, D. Wartzok, and P. Boveng. 2010. Seasonal home ranges and fidelity to breeding sites among ringed seals. *Polar Biology*, 33:1095-1109.
- King, J.G., and G.A. Sanger. 1979. Oil vulnerability index for marine oriented birds. In: *Conservation of Marine Birds of Northern North America*. Wildlife Research Report 11. Bartonek, J.C., and Nettleship, D.N. (eds). United States Department of the Interior, Washington, D.C. 334 pp.
- Landino, S.W., S.D. Treacy, S.A. Zerwick, and J.B. Dunlap. 1994. A large aggregation of bowhead whales (*Balaena mysticetus*) feeding near Point Barrow, Alaska, in late October 1992. *Arctic*, 47(3): 232-235. Available at: <http://pubs.aina.ucalgary.ca/arctic/Arctic47-3-232.pdf>.
- Lauth, R.R. 2011. Results of the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey of groundfish and invertebrate fauna. NOAA Technical Memorandum NMFS-AFSC-227.

- Leschine, T.M., R. Carpenter, and E. Gideon. 1991. Petroleum toxicity relationships for the Washington Compensation Schedule. College of Ocean and Fishery Sciences, University of Washington. Seattle, WA.
- Love, M. 1996. California Halibut (*Paralichthys californicus*). Pg. 328-331 in: Probably More Than You Want to Know About the Fishes of the Pacific Coast. Really Big Press. Santa Barbara, CA.
- Lowe, S. 2011. Assessment of the Atka mackerel stock in the Gulf of Alaska. Chapter 17 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: [http://www.afsc.noaa.gov/refm/stocks/2011\\_assessments.htm](http://www.afsc.noaa.gov/refm/stocks/2011_assessments.htm).
- Lowe, S., J. Ianelli, and W. Palsson. 2012. Assessment of the Atka mackerel stock in the Bering Sea/Aleutian Islands. Chapter 17 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- Lowe, S.A., M. Wilkins, and R. Lauth. 2005. Assessment of Gulf of Alaska Atka mackerel. Chapter 15 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/docs/2005/GOAatka.pdf>.
- Manuwal, D.A., T.R. Wahl, and S.M. Speich. 1979. The seasonal distribution and abundance of marine bird populations in the Strait of Juan de Fuca and Northern Puget Sound in 1978. U.S. Department of Commerce, NOAA Technical Memorandum ERL MESA-44.
- Marshall, D.B. 1988. Status of the marbled murrelet in North America: with special emphasis on populations in California, Oregon, and Washington. U.S. Fish and Wildlife Service Biological Report 88(30). 28 pp.
- Mizroch, S. and D.W. Rice. Ocean nomads: distribution and movements of sperm whales in the North Pacific shown by whaling data and Discovery marks. *Marine Mammal Science*, 29(2): E136-E165.
- Morrow, J.E., 1980. The freshwater fishes of Alaska. University of B.C. Animal Resources Ecology Library. 248pp.
- National Marine Fisheries Service (NMFS). 2012a. Pacific Herring (*Clupea pallasii*). Available at: <http://www.nmfs.noaa.gov/pr/species/fish/pacificherring.htm>. (Accessed: July 17, 2013.)
- National Marine Fisheries Service (NMFS). 2012b. Steller Sea Lion (*Eumetopias jubatus*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/stellersealion.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013a. Leatherback Turtle (*Dermochelys coriacea*). Available at: <http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013b. Beluga Whale (*Dephinapterus leucas*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/belugawhale.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013c. Bowhead Whale (*Balaena mysticetus*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/bowheadwhale.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013d. Humpback Whale (*Megaptera novaeangliae*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/humpbackwhale.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013e. North Pacific Right Whale (*Eubalaena japonica*). Available at: [http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/rightwhale\\_northpacific.htm](http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/rightwhale_northpacific.htm). (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013f. Northern Fur Seal (*Callorhinus ursinus*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/northernfurseal.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013h. Ringed Seal (*Phoca hispida*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/ringedseal.htm>. (Accessed: June 6, 2013.)

National Marine Fisheries Service (NMFS). 2013i. Sperm Whale (*Physeter macrocephalus*). Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/spermwhale.htm>. (Accessed: June 6, 2013.)

National Oceanic and Atmospheric Administration (NOAA). 2005. Alaska coastal resources inventory and environmental sensitivity maps (ESI). Prepared by Research Planning, Inc., Columbia, South Carolina for the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Office of Response and Restoration, Hazardous Materials Response Division, Seattle, Washington.

National Oceanic and Atmospheric Administration (NOAA). 2006. Alaska EFH Species Shapefiles (updated 2010). Geospatial Data. Alaska Regional Office, NOAA Fisheries. Juneau, Alaska. Available at: <http://alaskafisheries.noaa.gov/habitat/efh/efhshp/default.htm>.



- National Oceanic and Atmospheric Administration (NOAA). 2010. Steller Sea Lion Protection Measures (SSLPM) charts. Geospatial Data. Alaska Regional Office, NOAA Fisheries. Juneau, Alaska. Available at: <http://alaskafisheries.noaa.gov/maps/sslmapviewer.htm>.
- National Oceanic and Atmospheric Administration (NOAA). 2012. The Marine Protected Areas Inventory (March 2012). Geospatial Data. National Marine Protected Areas Center. Silver Spring, Maryland. Available at: <http://marineprotectedareas.noaa.gov/dataanalysis/mpainventory/>.
- National Oceanic and Atmospheric Administration (NOAA). 2013a. Alaska ShoreZone: Environmental Sensitivity Index (ESI). Geospatial Data. National Marine Fisheries Service. Alaska Regional Office. Juneau, Alaska. Available at: <https://alaskafisheries.noaa.gov/shorezone/>
- National Oceanic and Atmospheric Administration (NOAA). 2013b. Essential Fish Habitat Mapper. Available at: <http://www.habitat.noaa.gov/protection/efh/efhmapper/>. (Accessed: June 13, 2013.)
- National Oceanic and Atmospheric Administration (NOAA). 2013c. FishWatch U.S. Seafood Facts: Chionoecetes opilio - Alaska Snow Crab. Available at: [http://www.fishwatch.gov/seafood\\_profiles/species/crab/species\\_pages/alaska\\_snow\\_crab.htm](http://www.fishwatch.gov/seafood_profiles/species/crab/species_pages/alaska_snow_crab.htm). (Accessed: June 6, 2013.)
- National Park Service (NPS). 2012. Alaska National Park Boundary Outlines 20120829 (August 2012). Geospatial Data. Alaska Regional Office, Land Resources Program Center. Anchorage, Alaska.
- North Pacific Fishery Management Council (NPFMC). 2006. Fishery management plan for the scallop fishery off Alaska. Anchorage, Alaska.
- North Pacific Fishery Management Council (NPFMC). 2009. Fishery management plan for fish resources of the Arctic Management Area. Anchorage, Alaska.
- North Pacific Fishery Management Council (NPFMC). 2011. Stock Assessment and Fishery Evaluation Report for the Weathervane Scallops Fishery off Alaska. Available at: <http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/resources/SAFE/ScallopSAFE/ScallopSAFE2011.pdf>.
- North Pacific Fishery Management Council (NPFMC). 2012. Stock assessment and fishery evaluation report for the weathervane scallop fishery off Alaska. Anchorage, Alaska.
- North Pacific Fishery Management Council (NPFMC). 2013. Stock assessment and fishery evaluation report for the weathervane scallop fishery off Alaska. Anchorage, Alaska.
- Olla, B.L., and M.W., Davis. 1990. Effects of physical factors on the vertical distribution of larval walleye pollock *Theragra chalcogramma* under controlled laboratory conditions. Marine Ecology Progress Series, 63: 105-112.
- Ormseth, O.A. 2012a. Assessment of the squid stock complex in the Bering Sea and Aleutian Islands. Chapter 21 in: Stock Assessment and Fishery Evaluation Report for the

- Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- Ormseth, O.A. 2012b. Assessment of the squid stock complex in the Gulf of Alaska. Chapter 21 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.
- Otis, E.O. and J.L. Cope. 2004. Abundance, age, sex, and size statistics for Pacific herring in Lower Cook Inlet, 2000-2003. Alaska Department of Fish and Game, Division of Commercial Fisheries. Regional Information Report 2A04-04. Anchorage, Alaska.
- Pinchuk, A.I., and R.R. Hopcroft. 2006. Egg production and early development of *Thysanoessa inermis* and *Euphausia pacifica* (Crustacea: Euphausiacea) in the northern Gulf of Alaska. *Journal of Experimental Marine Biology and Ecology*, 332(2): 206-215.
- Pinchuk, A.I., K.O. Coyle, and R.R Hopcroft. 2008. Climate-related variability in abundance and reproduction of euphausiids in the northern Gulf of Alaska in 1998–2003. *Progress in Oceanography*, 77(2): 203-216.
- Reich, D.A., R. Balouskus, D. French McCay, D.S. Etkin, J. Michel, and J. Lehto. 2014. An environmental vulnerability model for oil spill risk analyses: examples from an assessment for the State of Alaska. Proceedings of the 37<sup>th</sup> Arctic and Marine Oilspill Program (AMOP) Technical Seminar. Canmore, AB.
- Sarti Martinez, A.L. (Marine Turtle Specialist Group). 2000. *Dermochelys coriacea*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: July 1, 2013).
- Scott, W.B. and E.J. Crossman. 1973. Freshwater fishes of Canada. Fisheries Research Board of Canada, Bulletin 184. 966 pp.
- Senner, S.E., G.C. West, and D.W. Norton. 1981. The spring migration of Western Sandpipers and Dunlins in south-central Alaska: numbers, timing, and sex ratios. *Journal of Field Ornithology*, 52(4): 271-284.
- Sibley, D.A. The Sibley Guide to Birds. 2000. New York: Alfred A. Knopf.
- Smith, M.A. 2010. Arctic Marine Synthesis: Atlas of the Chukchi and Beaufort Seas. Audubon Alaska and Oceana. Anchorage, Alaska. Available at: <http://ak.audubon.org/arctic-marine-synthesis-atlas-chukchi-and-beaufort-seas>.
- Spies, I., T.K. Wilderbuer, D.G. Nichol, and K. Aydin. 2012. Arrowtooth flounder. Chapter 6 in: Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <http://www.afsc.noaa.gov/refm/stocks/assessments.htm>.

- Sterling, J.T. and R.R. Ream. 2004. At-sea behavior of juvenile male northern fur seals (*Callorhinus ursinus*). *Canadian Journal of Zoology*, 82(10): 1621-1637.
- Stevens, B.G. 2003. Timing of aggregation and larval release by Tanner crabs, *Chionoecetes bairdi*, in relation to tidal current patterns. *Fisheries Research*, 65(1): 201-216.
- Stewart, I.J., B.M. Leaman, S. Martell, and R.A. Webster. 2013. Assessment of the Pacific halibut stock at the end of 2012. *International Pacific Halibut Commission Report of Assessment and Research Activities 2012*, pp. 93-186. Available at: [http://www.iphc.int/publications/rara/2012/rara2012093\\_assessment.pdf](http://www.iphc.int/publications/rara/2012/rara2012093_assessment.pdf).
- Sullivan, B.L., C.L. Wood, M.J. Iloff, R.E. Bonney, D. Fink, and S. Kelling. 2009. eBird: a citizen-based bird observation network in the biological sciences. *Biological Conservation*, 142: 2282-2292.
- Svetovidov, A.N. 1984. Salmonidae. Pg. 373-385 in: P.J.P. Whitehead, M.-L. Bauchot, J.-C. Hureau, J. Nielsen and E. Tortonese (eds.), *Fishes of the north-eastern Atlantic and the Mediterranean*. UNESCO, Paris. Vol. 1.
- Tesky, J.L. 1993. *Anas acuta*. Fire Effects Information System. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available at: <http://www.fs.fed.us/database/feis/>. (Accessed June 10, 2013.)
- Turnock, B.J., and T.K. Wilderbuer. 2011. Assessment of the arrowtooth flounder stock in the Gulf of Alaska. Chapter 7 in: *Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska*. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: [http://www.afsc.noaa.gov/refm/stocks/2011\\_assessments.htm](http://www.afsc.noaa.gov/refm/stocks/2011_assessments.htm).
- U.S. Fish and Wildlife Service (USFWS). 2004. Beringian Seabird Colony Catalog--computer database and Colony Status Record archives. Anchorage, Alaska. Available online at: <http://seamap.env.duke.edu/dataset/270>. (Accessed May 13, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2006a. Alaska Seabird Information Series: Black-Legged Kittiwake. Anchorage, Alaska. Available at: <http://alaska.fws.gov/mbsp/mbm/seabirds/pdf/blki.pdf>. (Accessed June 10, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2006b. Alaska Seabird Information Series: Common Murre. Anchorage, Alaska. Available at: <http://alaska.fws.gov/mbsp/mbm/seabirds/pdf/comu.pdf>. (Accessed June 11, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2006c. Alaska Seabird Information Series: Marbled Murrelet. Anchorage, Alaska. <http://alaska.fws.gov/mbsp/mbm/seabirds/pdf/mamu.pdf>. (Accessed June 10, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2006d. Alaska Seabird Information Series: Short-Tailed Albatross. Anchorage, Alaska. Available at: <http://alaska.fws.gov/mbsp/mbm/seabirds/pdf/stal.pdf>. (Accessed June 11, 2013.)

- U.S. Fish and Wildlife Service (USFWS). 2006e. Alaska Seabird Information Series: Short-Tailed Shearwater. Available at: <http://alaska.fws.gov/mbsp/mbm/seabirds/pdf/stsh.pdf>. (Accessed: June 10, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2008a. Programmatic Biological Opinion for Polar Bear (*Ursus maritimus*) on Beaufort Sea Incidental Take Regulations. Fairbanks, Alaska. 65 pp.
- U.S. Fish and Wildlife Service (USFWS). 2008b. Walrus. Available at: <http://alaska.fws.gov/fisheries/mmm/walrus/nhistory.htm>. (Accessed: June 6, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2011a. Threatened and Endangered Species: Steller's Eider (*Polysticta stelleri*). Available at: [http://alaska.fws.gov/fisheries/fieldoffice/anchorage/endangered/pdf/factsheet\\_stei.pdf](http://alaska.fws.gov/fisheries/fieldoffice/anchorage/endangered/pdf/factsheet_stei.pdf). (Accessed: June 6, 2013).
- U.S. Fish and Wildlife Service (USFWS). 2011b. Walrus and the Endangered Species Act. Available at: <http://alaska.fws.gov/fisheries/mmm/walrus/esa.htm>. (Accessed June 6, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2013a. Draft revised northern sea otter (*Enhydra lutris kenyoni*) stock assessment report: southwest Alaska stock. Available at: <http://alaska.fws.gov/fisheries/mmm/seaotters/pdf/Draft%20Southwest%20Alaska%20Sea%20Otter%20April%202013.For%20Surname.pdf>.
- U.S. Fish and Wildlife Service (USFWS). 2013b. Draft revised northern sea otter (*Enhydra lutris kenyoni*) stock assessment report: southcentral Alaska stock. Available at: <http://alaska.fws.gov/fisheries/mmm/seaotters/pdf/Draft%20Southcentral%20Alaska%20Sea%20Otter%20SAR%20April%202013.pdf>.
- U.S. Fish and Wildlife Service (USFWS). 2013c. Draft revised northern sea otter (*Enhydra lutris kenyoni*) stock assessment report: southeast Alaska stock. Available at: <http://alaska.fws.gov/fisheries/mmm/seaotters/pdf/Draft%20Southeast%20Alaska%20Sea%20Otter%20SAR%20April%202013.pdf>.
- U.S. Fish and Wildlife Service (USFWS). 2013d. Draft revised Pacific walrus (*Odobenus rosmarus divergens*) stock assessment report: Alaska stock. Available at: <http://alaska.fws.gov/fisheries/mmm/walrus/pdf/Draft%20Pacific%20Walrus%20SAR%20April%202013.pdf>.
- U.S. Fish and Wildlife Service (USFWS). 2013e. Northern Sea Otter (*Enhydra lutris kenyoni*): Southwest DPS. Available at: [http://alaska.fws.gov/fisheries/endangered/species/southwest\\_sea\\_otter.htm](http://alaska.fws.gov/fisheries/endangered/species/southwest_sea_otter.htm). (Accessed: June 6, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2013f. Polar Bear (*Ursus maritimus*). Available at: [http://alaska.fws.gov/fisheries/endangered/species/polar\\_bear.htm](http://alaska.fws.gov/fisheries/endangered/species/polar_bear.htm). (Accessed: June 6, 2013.)

- U.S. Fish and Wildlife Service (USFWS). 2013g. Short-tailed albatross (*Phoebastria* (=Diomedea) albatrus) Species Profile. Available at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B00Y>. (Accessed: June 6, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2013h. Steller's Eider (*Polysticta stelleri*) Species Profile. Available at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B090>. (Accessed: June 6, 2013.)
- U.S. Fish and Wildlife Service (USFWS). 2013i. USFWS Simplified Boundaries, Alaska only – KMZ (May 2013 Data). Geospatial Data. Geospatial Services, U.S. Fish and Wildlife Service. Soldotna, Alaska. Available at: <http://www.fws.gov/GIS/data/CadastralDB/index.htm>.
- U.S. Minerals Management Service. 1989. Gulf of Mexico sales 123 and 125, central and western planning areas: final environmental impact statement. U.S. Dept. of the Interior, Minerals Management Service, Gulf of Mexico OCS Regional Office.
- Walton, K., T. Gotthardt, and T. Fields. 2012. Alaska Species Ranking System summary report – Leatherback. Alaska Natural Heritage Program. Anchorage, Alaska. Available at: [http://aknhp.uaa.alaska.edu/wp-content/uploads/2013/05/Dermochelys\\_coriacea\\_report.pdf](http://aknhp.uaa.alaska.edu/wp-content/uploads/2013/05/Dermochelys_coriacea_report.pdf).
- Whitehead, J.P. 1985. Clupeoid fishes of the world. FAO species catalogue Vol 7. An annotated and illustrated catalogue of the herrings, sardines, pilchards, sprats, anchovies and wolf herrings. Part 1: Chirocentridae, Clupeidae and Pristigasteridae. FAO Fisheries Synopsis, 125(7).
- Wright, B.A. and P.F. Schempf, eds. 2008. Bald Eagles in Alaska. Bald Eagle Research Institute, University of Alaska Southeast. Juneau, Alaska. Available at: [http://www.uas.alaska.edu/arts\\_sciences/docs/bald-eagles-ak12-07.pdf](http://www.uas.alaska.edu/arts_sciences/docs/bald-eagles-ak12-07.pdf)
- Zimmermann, M., M.M. Prescott, and C.N. Rooper. 2013. Smooth Sheet Bathymetry of the Aleutian Islands. Geospatial Data. U.S. Department of Commerce. NOAA Technical Memorandum NMFS-AFSC-250. 43 pp. Available at: <http://www.afsc.noaa.gov/RACE/groundfish/Bathymetry/default.htm>.

***Spill Incidents and Volumes References***

- Advisory Committee on Protection of the Sea (ACOPS) and Inter-Agency Commission on Arctic and Antarctic Affairs of the Russian Federation. 2000. National Plan of Action for the Protection of the Marine Environment from Anthropogenic Pollution in the Arctic Region of the Russian Federation. 23 pp. plus Appendices.
- Alaska Bureau of Land Management. 2006. Oil Spill Risk Analysis for the Kobuk-Seward Peninsula Planning Area. Alaska Bureau of Land Management, Alaska State Office, Branch of Energy. Anchorage, Alaska. 25 pp.
- Anderson, C.M, and R.P. LaBelle. 1994. Comparative occurrence rates for offshore oil spills. *Spill Science and Technology Bulletin*, 1(2): 131-141.
- Arctic Council. 2002. Arctic Offshore Oil and Gas Guidelines. Arctic Council Protection of the Marine Environment Working Group. Arkureyri, Iceland. 82 pp.
- Arctic Council. 2009a. Arctic Marine Shipping Assessment 2009 Report. Arctic Council Protection of the Marine Environment (PAME) Working Group. Arkureyri, Iceland. 194 pp.
- Arctic Council. 2009b. Arctic Offshore Oil and Gas Guidelines. Arctic Council Protection of the Marine Environment Working Group. Arkureyri, Iceland. 98 pp.
- Arctic Monitoring and Assessment Programme (AMAP). 1997. Arctic Pollution Issues: A State of the Arctic Environment Report. Arctic Monitoring and Assessment Programme. Oslo, Norway. 188 pp.
- Bercha, F.G. 2002. Alternative Oil Spill Occurrence Estimators – Fault Tree Method. Prepared by Bercha Group for the Minerals Management Service, Anchorage, Alaska. Contract No. MMS 01-00-PO-17199. OCS Study MMS 2002-047. 124 p.
- Bercha, F.G. 2011. Alternative Oil Spill Occurrence Estimators – Fault Tree Method. Prepared by Bercha Group for the Bureau of Ocean Energy Management, Regulation, and Enforcement, Alaska Outer Continental Shelf Region, Anchorage, Alaska. Contract No. M05PC00037. 48 p.
- Bureau of Ocean Energy Management (BOEM). 2012. Outer Continental Shelf Oil and Gas Leasing Program: 2012-2017 Final Programmatic Environmental Impact Assessment. US Department of the Interior, Bureau of Ocean Energy Management. OCS EIS/EA BOEM 2012-030. July 2012. 2,057 pp.
- Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE). 2011. Chukchi Sea Planning Area, Oil and Gas Lease Sale 193 in the Chukchi Sea, Alaska. Final Supplemental Environmental Impact Statement, OCS EIS/EA. BOEMRE 2011-041. August 2011.
- Christensen, F.T., T. Isaji, and E.L. Anderson. 1996. Oil spill risks for Copper River Delta in Alaska. Pp. 833-846 in: Proceedings of the 19th Arctic and Marine Oilspill Program (AMOP) Technical Seminar.

- Clement, J.P., J.L. Bengtson, and B.P. Kelly. 2013. Managing for the Future in a Rapidly Changing Arctic: A Report to the President. Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska (D.J. Hayes, Chair). Washington, D.C. 59 p.
- Coastal Response Research Center. 2009. Opening the Arctic Seas: Envisioning Disasters and Framing Solutions. University of New Hampshire, Durham, New Hampshire. 88 pp.
- DeCola, E., and S. Fletcher. 2006. An Assessment of the Role of Human Factors in Oil Spills from Vessels. Report to Prince William Sound Regional Citizens' Advisory Council. Nuka Research & Planning Group LLC. Seldovia, Alaska. 53 pp.
- Det Norske Veritas and ERM-West, Inc. 2010a. Aleutian Islands Risk Assessment: Phase A Preliminary Risk Assessment. Task 1: Semi-Quantitative Traffic Study Report. Prepared for National Fish and Wildlife Foundation, U.S. Coast Guard, and Alaska Department of Environmental Conservation. 98 p.
- Det Norske Veritas and ERM-West, Inc. 2010b. Aleutian Islands Risk Assessment: Phase A Preliminary Risk Assessment. Task 2A: Marine Spill Frequency and Size Report. Prepared for National Fish and Wildlife Foundation, U.S. Coast Guard, and Alaska Department of Environmental Conservation. 103 p.
- Dickins, D. 1992. Arctic Tanker Risk Analysis Project: Task 6 Casualty Potential and Risk Profile. Prepared for Canarctic Shipping Co., Ltd. by DF Dickins Associates, Ltd., Vancouver, British Columbia, Canada. 46 pp.
- Dinovitzer, A., G. Comfort, R. Lazor, and D. Hinnah. 2004. Offshore Arctic oil spill risk assessment. Proceedings of the Offshore Mechanics and Arctic Engineering Conference 2004. Vancouver, British Columbia, Canada. 10 pp.
- Eley, W.D. 2012. Cook Inlet Vessel Traffic Study: A Report to the Cook Inlet Risk Assessment Advisory Panel. Prepared by Cape International, Inc., Juneau, AK. 86 p.
- Etkin, D.S. 1999. Oil Spill Response Reference Guide. Cutter Information Corp., Arlington, MA, 70 p.
- Etkin, D.S. 2001. Analysis of oil spill trends US and worldwide. Pp. 1,291–1,300 in: Proceedings of the 2001 International Oil Spill Conference.
- Etkin, D.S. 2002. Analysis of past marine oil spill rates and trends for future contingency planning. Pp. 227–252 in: Proceedings of the 25th Arctic and Marine Oilspill Program (AMOP) Technical Seminar.
- Etkin, D.S. 2003. Analysis of US oil spill trends to develop scenarios for contingency planning. Pp. 47-61 in: Proceedings of the 2003 International Oil Spill Conference.
- Etkin, D.S. 2004a. Modeling oil spill response and damage costs. Proceedings of the 5th Biennial Freshwater Spills Symposium.

- Etkin, D.S. 2004b. Twenty-year trend analysis of oil spills in EPA jurisdiction. Proceedings of the 5th Biennial Freshwater Spills Symposium.
- Etkin, D.S. 2006. Risk assessment of oil spills to US inland waterways. Proceedings of the 2006 Freshwater Spills Symposium.
- Etkin, D.S. 2009a. Analysis of US Oil Spillage. Prepared by Environmental Research Consulting for American Petroleum Institute, Washington, D.C. API Publication 356. 86 p.
- Etkin, D.S. 2009b. Oil Spill Risk in Industry Sectors Regulated by Washington State Department of Ecology Spills Program for Oil Spill Prevention and Preparedness. Prepared by Environmental Research Consulting, for Washington Department of Ecology, Olympia, Washington. 28 p.
- Etkin, D. 2009. Oil Spill Risk Review: NOAA Office of Response & Restoration Arctic Spill Damage Assessment Initiative. Prepared by Environmental Research Consulting and Research Planning, Inc. for NOAA Office of Restoration and Response, Seattle, WA. 48 pp.
- Etkin, D.S. 2010. Forty-year analysis of US oil spillage rates. Proceedings of the 33rd Arctic & Marine Oilspill Program Technical Seminar, 505–528.
- Etkin, D.S. 2013. Gateway Pacific Terminal Vessel Traffic and Risk Assessment Study: Characterization of Casualty Consequences – Draft Report. Prepared by Environmental Research Consulting for Pacific International Terminals, Inc., Bellingham, WA. 36 p.
- Etkin, D.S., and K. Michel. 2003. Bio-Economic Modeling of Oil Spills from Tanker/Freighter Groundings on Rock Pinnacles in San Francisco Bay. Vol. II: Spill Volume Report. Prepared for U.S. Army Corps of Engineers, Sacramento District. Contract DACW07-01-C-0018). 42 p.
- Etkin, D.S., D. French-McCay, C. Moore, and K. Michel. 2009. Oil spill risk assessment – Probability and impact analyses with future projections. Pp. 683-704 in: Proceedings of the 32<sup>nd</sup> Arctic and Marine Oilspill Program (AMOP) Technical Seminar.
- Fitch, W.A., K.E. Kirby, J.J. Dragna, D.D. Kuchler, D.K. Haycraft, R.C. Godfrey, J.A. Langan, B.E. Fields, H. Karis, M.T. Regan, and R.C. Brock. 2013. BP and Anadarko's Phase 2 Pre-Trial Memorandum Quantification Segment. Document Submitted in the U.S. District Court for the Eastern District of Louisiana MDL No. 2179 Section J. In Re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010. Document 11266, Filed 5 Sept 2013. 14 pp.
- Francis, J.A., and S. J.Vavrus. 2012. Evidence linking Arctic amplification to extreme weather in mid-latitudes. *Geophysical Research Letters* 39, L06801, 6 p., doi:10.1029/2012GL051000.
- French McCay, D., C.J. Beegle-Krause, J. Rowe, D.S. Etkin, C. Moore, and K. Michel. 2008. Final report: Oil spill risk analysis review. Prepared by Applied Science Associates, Inc., Environmental Research Consulting, and Herbert Engineering Corp. for State of Washington Joint Legislative Audit and Review Committee, Olympia, Washington. 169 p.



- Grabowski, M. 2005. Prince William Sound Risk Assessment Overview. Prepared by LeMoyne College and Rensselaer Polytechnic Institute for Prince William Sound Regional Citizens' Advisory Council, Anchorage, Alaska. Contract No. 810.05.01. 32 pp.
- Harrald, J.R., T. Mazzuchi, J.R. Merrick, J.E. Spahn, and J.R. van Dorp. 1997. System simulation: a risk management tool for Prince William Sound. Pp. 545-550 in: Proceedings of the 1997 International Oil Spill Conference.
- Harrald, J.R., T.A. Mazzuchi, J.R. Merrick, J.R. van Dorp, S.K. Shrestha, J.E. Spahn, and M. Grabowski. 1996. Prince William Sound Risk Assessment Final Report. Submitted to Prince William Sound Steering Committee.
- Hart Crowser, Inc. 2000. Estimation of Oil Spill Risk from Alaska North Slope, Trans-Alaska Pipeline, and Arctic Canada Oil Spill Data Sets. OCS Study MMS 2000-007. Prepared by Hart Crowser, Inc. for the Minerals Management Service. Anchorage, Alaska. 153 pp.
- Hauck, B., P. Frost, S.G. Flynn, S. Shutler, L. Mayberry, M. Lawrence, R.G. Dreher, S. Himmelhoch, N. Flickinger, S. Cernich, R. Gladstein, A.N. Chakeres, A. Cross, B. Engel, J. Harvey, R. King, E. Pencak, R.M. Underhill, D.J. Boente, S.D. Smith, and S. O'Rourke. 2013. United States of America's Pre-Trial Statement for Phase Two: Number of Barrels of Oil Discharged and BP's Statements and Actions Related to Quantification and Source Control. Document Submitted in the U.S. District Court for the Eastern District of Louisiana MDL No. 2179 Section J. In Re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010. Document 11265, Filed 5 Sept 2013. 14 pp.
- Hee, D.D., B.D. Pickrell, R.G. Bea, K.H. Roberts, and R.B. Williamson. 1999. Safety Management Assessment System (SMAS): A process for identifying and evaluating human and organization factors in marine system operations with field test results. Reliability Engineering and System Safety 65: 125-140.
- Holand, P. 2013. Blowout and Well Release Characteristics and Frequencies, 2013. SINTEF Report F25705. SINTEF Technology and Society. Trondheim, Norway. 114 pp.
- Homan, A.C. and T. Steiner. 2008. OPA 90's impact at reducing oil spills. Marine Policy 32(4): 711-718.
- Humpert, M. 2011. The Future of the Northern Sea Route—A "Golden Waterway" or a Niche Trade Route. The Arctic Institute, Center for Circumpolar Security, Washington, D.C.
- International Maritime Organization (IMO). 2006. International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI. Implemented in the U.S. as the MARPOL Annex VI Implementation Act of 2006.
- Johnson, W.R., C.F. Marshall, and E.M. Lear. 2002. Oil Spill Risk Analysis: Cook Inlet Planning Area, OCS Lease Sales Areas 191 and 1999. OCS Report MMS 2002-074. Minerals Management Service, Herndon, Virginia. 76 pp.

- Kirtley, E.K.N., D.L. Gray, and D.S. Etkin. 2012. Cook Inlet Maritime Risk Assessment: Spill Baseline and Accident Causality Study. Prepared by The Glostien Associates and Environmental Research Consulting. 163 p.
- Kwok, R., and N. Untersteiner. 2011. The thinning of Arctic sea ice. *Physics Today*, 64(April):36-41, <http://dx.doi.org/10.1063/1.3580491>.
- LaBelle, R.P. and W.R. Johnson. 1993. Stochastic oil-spill analysis for Cook Inlet/Shelikof Strait. Pp. 573-585 in: Proceedings of the 16<sup>th</sup> Arctic and Marine Oilspill Program (AMOP) Technical Seminar.
- Loughnane, D., B. Judson, and J. Reid. 1995. Arctic tanker risk analysis project. *Maritime Policy & Management*, 22 (1): 3-12.
- Maslowski, W., J.C. Kinney, M. Higgins, and A. Roberts. 2012. The future of Arctic sea ice. *Annual Review of Earth and Planetary Sciences*, 40:625-654.
- McNutt, M.K., R. Camilli, T.J. Crone, G.D. Guthrie, P.A. Hsieh, T.B. Ryerson, O. Savas, and F. Shaffer. 2012a. Review of flow rate estimates of the Deepwater Horizon spill. *PNAS, Proceedings of National Academies of Science*, 109(50): 20,260–20,267.
- McNutt, M.K., S. Chu, J. Lubchenco, T. Hunter, G. Dreyfus, S.A. Murawski, and D.M. Kennedy. 2012(b). Applications of science and engineering to quantify and control the Deepwater Horizon oil spill. *PNAS, Proceedings of National Academies of Science*, 109(50): 20,222–20,228.
- Merrick, J.R.W., J.R. van Dorp, T. Mazzuchi, J.R. Harrauld, J.E. Spahn, and M. Grabowski. 2002. The Prince William Sound Risk Assessment. *Interfaces*, 32(6): 25-40.
- Michel, K. and T. Winslow. 2000. Cargo ship bunker tanks: Designing to mitigate oil spills. *SNAME Marine Technology*, October 2000.
- Minerals Management Service (MMS). 2006. Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf, 2006. US Department of the Interior, Minerals Management Service, MMS Fact Sheet RED-2006-01b, 6 p.
- National Research Council (NRC). 1991. Tanker Spills: Prevention by Design. National Academy Press, Washington, D.C. 350 p.
- National Research Council (NRC). 1998a. Double-Hull Tanker Legislation: An Assessment of the Oil Pollution Act of 1990. National Academy Press, Washington, D.C. 266 p.
- National Research Council (NRC) Marine Board. 1998b. Review of the Prince William Sound, Alaska, Risk Assessment Study. National Academy Press, Washington, D.C. 78 pp.
- National Research Council (NRC). 2003. Oil in the Sea III: Inputs, Fates, and Effects. National Research Council Ocean Studies Board and Marine Board Divisions of Earth and Life Studies and Transportation Research Board, National Academy Press, Washington, D.C. 265 pp.

- National Research Council Polar Research Board. 2003. Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope. NRC Board on Environmental Studies and Toxicology, Polar Research Board, National Academy Press, Washington, D.C. 288 pp.
- Nuka Research & Planning Group, LLC, and Cape International, Inc. 2006. Vessel Traffic in the Aleutians Subarea. Updated Report to the Alaska Department of Environmental Conservation. 55 pp.
- OGP (International Association of Oil & Gas Producers). 2010. Blowout Frequencies. OGP Report No. 434-2. March 2010. 20 pp.
- Oldenburg, C.M., B.M. Freifeld, K. Pruess, L. Pan, S. Finsterle, and G.J. Moridis. 2011. Numerical simulations of the Macondo well blowout reveal strong control of oil flow by reservoir permeability and exsolution of gas. PNAS, Proceedings of National Academies of Science, 109(50): 20,254–20,259.
- Perovich, D., W. Meier, M. Tschudi, S. Gerland, and J. Richter-Menge. 2012. Sea Ice. NOAA Arctic Report Card: Update for 2012. Available online: [http://www.arctic.noaa.gov/reportcard/sea\\_ice.html](http://www.arctic.noaa.gov/reportcard/sea_ice.html)
- Ports and Waterways Safety Assessment Workshop. 2006. Ports and Waterways Safety Assessment Workshop Report: Aleutian Islands. 24-25 July 2006. 41 pp.
- Rawson, C. 1998. Assessing the environmental performance of tankers in accidental grounding and collision. SNAME Transactions, 1998.
- Robertson, T., E. DeCola, L. Pearson, T. Miller, B. Higman, and L.K. Campbell. 2010. North Slope Spills Analysis: Final Report on North Slope Spills Analysis and Expert Panel Recommendations on Mitigation Measures. Prepared by Nuka Research and Planning Group for Alaska Department of Environmental Conservation, Anchorage, Alaska. 260 p.
- Rothblum, A.M. 2006. Human error and marine safety. U.S. Coast Guard Risk-Based Decision-Making Guidelines. U.S. Coast Guard Research and Development Center, Groton, CT.
- Scandpower Risk Management AS. 2006. Blowout and Well Release Frequencies. Report No. 90.005.001/R2.
- Shell. 2010. Shell Gulf of Mexico Exploration Plan OCS-G 26252. Submitted to U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement, New Orleans, LA. 182 pp.
- Shell. 2011. Revised Outer Continental Shelf Lease Exploration Plan, Chukchi Sea, Alaska. Burger Prospect: Posey Area Blocks 6714, 6762, 6764, 6812, 6912, 6915. Chukchi Sea Lease Sale 193. Submitted to U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement, Alaska OCS Region. May 2011. 132 pp.
- State of Washington Joint Legislative Audit and Review Committee (JLARC). 2009. Review of Oil Spill Risk and Comparison to Funding Mechanism. Report 09-2. JLARC, Olympia, WA, 125 p.

- Stroeve, J., V. Kattsov, A. Barrett, M. Serreze, T. Pavlova, M. Holland, and W.N. Meier. 2012. Trends in Arctic sea ice extent from CMIP5, CMIP3 and observations. *Geophysical Research Letters*, 39, L16502, 7 p., doi:10.1029/2012GL052676.
- Transportation Research Board of the National Academies. 2008. Risk of vessel accidents and spills in the Aleutian Islands: designing a comprehensive risk assessment. Special Report 293. Washington D.C. Available at: <http://onlinepubs.trb.org/onlinepubs/sr/sr293.pdf>.
- Tustin, R. 2013. Arctic tankers: structural dimensioning considerations. Proceedings of TSCF Shipbuilders Meeting 2013. 11 pp.
- U.S. Coast Guard. 2013. US Coast Guard Arctic Strategy. Document CG-DCO-X. US Coast Guard Headquarters, Washington, D.C. 48 p.
- Wang, M., and J. E. Overland. 2012. A sea ice free summer Arctic within 30 years: an update from CMIP5 models. *Geophysical Research Letters*, 39, L18501, 6 p., doi:10.1029/2012GL052868.
- Wells, P.G., J. Campbell, D.S. Etkin, J.S. Gray, C. Grey, P. Johnston, J. Koefoed, T.A. Meyer, F. Molloy, and T. Wilkins. 2007. Estimates of Oil Entering the Marine Environment from Sea-Based Activities. Prepared for United Nations Joint Group of Experts on the Scientific Aspects of Marine Protection (GESAMP), London, UK. GESAMP Report No. 75. 83 p.
- Yip, T.L., W.K. Talley, and D. Jin. 2011. The effectiveness of double hulls in reducing vessel-accident oil spillage. *Marine Pollution Bulletin*, 62(11): 2,427-2,432.
- Yu, H. 2012. Icebreaker designs using Polar Class structural requirements. Proceedings of the Society of Naval Architects and Marine Engineers (SNAME) UK Collegium. 45 pp.