GREGORY E. CHALLENGER, M.S.

Marine Scientist / Principal

EDUCATION

Master of Science, 1990, Florida Institute of Technology, Science Education/Marine Ecology
Bachelor of Science, 1985, Florida Atlantic University, Marine Biology

MEMBERSHIPS

Maritime Law Association of the United States
National Association of Underwater Instructors (NAUI) SCUBA Instructor
Society of Wetland Scientists, Professional Wetland Scientist
Society for Ecological Restoration

EXPERIENCE

POLARIS APPLIED SCIENCES, INC., 1998 to present.

Mr. Challenger is a marine scientist with 30 years of experience in environmental resource management and marine and freshwater habitat assessment and restoration. Mr. Challenger has responded to over 70 oil and chemical spills, vessel casualties with Hazardous and Noxious Substances (HNS) and vessel groundings on coral reefs worldwide. In addition to scientific support for Natural Resource Damage Assessment under OPA and other international pollution regulations, Mr., Challenger has experience in a number of CERCLA cases including Portland Harbor, Oregon and The Passaic River, New Jersey.

Mr. Challenger helped form Polaris Applied Sciences in 1998 and is currently on the board of directors. He was the lead investigator for the Shoreline Natural Resource Damage Assessment for BP during the Deepwater Horizon Oil Spill in the Gulf of Mexico in 2010. Prior to forming Polaris, Greg taught marine resource management and coral reef ecology at the Center for Marine Resource Conservation in the Turks and Caicos, BWI, the Newfound Harbor Marine Institute in the Florida Keys, and aboard the SSV Westward in the Eastern Caribbean for the Semester at Sea program accredited by Boston University.

Selected Oil and Chemical Spill Experience

- **Project Manager,** Train Derailment, Alma Wisconsin. Planning and Environmental Unit Section Lead for response to an approximate 18,000-gallon ethanol spill in the upper Mississippi River.

- **RP Incident Commander/EU Lead** M/V MARATHASSA oil spill. English Bay, Vancouver, B.C., 2015. Responsible Party (Standard Club) representative for spill response, third party claims, seafood safety and environmental assessment for a 3 tonne spill of IFO-380 in English Bay, Vancouver BC. Assessed seafood contamination, uptake, source allocation and depuration in mussels, finfish, crabs and other biota.

- **Technical Lead** - Shoreline NRDA Injury Assessment - Deepwater Horizon Oil Spill. 2012-2015. Gulf Coast Restoration Organization, British Petroleum, Houma, Louisiana, Mobile Alabama.

May/December 2010. Technical lead for assessing over 60,000 data observations on shoreline resources for possible injury and recovery.

- **Project Scientist,** Kinder Morgan Canada, May 2013. On-site Scientific Manager for Fate and Behavior Studies. Gainford, Alberta, Canada. Chemical and physical studies of oil and water interactions, oil weathering, in-situ burning, dispersant effectiveness and shoreline cleaning agent effectiveness on two diluted bitumen products.

- **Shoreline Cleanup Assessment Coordinator, Deepwater Horizon.** Houma, Lousiana, Mobile Alabama. May/December 2010-2014. Shoreline Cleanup Assessment coordinator for the MC252 Deepwater Horizon oil spill in the Gulf of Mexico, U.S.A. Assess and develop shoreline cleanup techniques and inform operations of cleanup and sign-off protocol. Conducted SCAT training programs.

- **Shoreline Cleanup Assessment Coordinator**, 2011. Billings Montana, Shoreline Cleanup Assessment Technique coordinator for an Exxon pipeline spill in Yellowstone River.

- **Shoreline Cleanup Assessment Coordinator/NRDA.** 2010. Port Arthur Texas, January 2010. Shoreline Cleanup Assessment coordinator and Natural Resource Damage Assessment Coordinator for a 462,000 gallon crude oil spill in Port Arthur Texas, U.S.A. from the T/V EAGLE OTOME.

- **Project Manager,** Diesel Fuel Spill, Adak Alaska, January 2010. Cleanup support and NRDA for a 100-400 barrel spill of diesel fuel into a salmon stream and adjacent Sweeper Cove in Adak, Alaska.

- **Project Manager,** Portland Harbor NRDA, Portland, Oregon. 2009. Confidential Client. Assessment of NRDA liability for a PRP involved in the Portland Harbor NRD under CERCLA.

- **Project Manager,** Mississippi Canyon, Gulf of Mexico, 2008. Assessment of possible damages from a hypothetical catastrophic well blowout. Confidential Client.

- **Project Manager,** Passaic River NRDA, New Jersey. Confidential Client. Assessment of NRDA liability for a PRP involved in the Passaic River NRD under CERCLA.

- **Project Scientist,** San Francisco, California, November 2007. COSCO BUSAN Oil Spill. Scientific support for Natural Resource Damage Assessment and Fishery impacts associated with a 58,000 gallon spill of IFO 380 in San Francisco Bay, Gulf of the Farallones and Monterrey National Marine Sanctuaries, California.

- **Project Manager,** Burnaby, British Columbia, August 2007. Kinder Morgan Pipeline. Scientific support for spill response technologies and environmental assessment for a 224,000 liter No. 6 Fuel Oil spill in Burrard Inlet, B.C. Canada.

- **Project Manager,** Shearwater, British Columbia, March 2007. Tug Vessel SEA VOYAGER oil spill. Scientific support for spill response for a Marine Diesel Oil spill in Llama Passage, B.C. Canada. Evaluated subsistence fishery biota uptake and depuration.

- **Project Manager,** Squamish, British Columbia, August 2006. WESTWOOD ANETTE oil spill. Scientific support for spill response for a No. 6 Fuel Oil spill in Howe Sound. Conducted sediment

attenuation and wetland vegetation recovery studies in different oil spill treatment groups in an affected Carex marsh. Prepared Final EIS.

- **Project Scientist,** Unalaska, Alaska, December 2004. SELENDANG AYU oil spill, Aleutians National Maritime Refuge. Scientific support for Natural Resource Damage Assessment and spill response for a 400,000 Venezuelan crude oil spill in the Bering Sea.

- **Project Manager,** Delaware River and Bay, December 2004. ATHOS I oil spill. Scientific support for spill response and Natural Resource Damage Assessment for a 265,000 gallon Venezuelan crude oil spill in the Delaware River and Bay affecting coastlines of three states.

- **Project Manager,** Tampa Bay, Florida, September 2004. Mosaic, Inc. Scientific support for a 65 million-gallon phosphoric acid spill into Hillsborough Bay, Florida. Currently providing technical support for third party fisheries litigation (2015),

- **Project Scientist,** Port Neches, Texas. August 2004. TORM MARY oil spill. Scientific support for a 60,000-gallon No. 6 fuel oil spill in the Neches River in Texas. Conducted cleanup assessment and Natural Resource Damage Assessment to habitat and fisheries.

- **Project Scientist**, Galicia, Spain, 2003. T/V PRESTIGE oil spill. Shoreline Assessment of the Spanish Coast following the spill of 20 million gallons of heavy fuel oil.

- **Project Scientist**, Venice, Louisiana. WESTCHESTER oil spill, 2001. Scientific support and Natural Resource Damage Assessment for a No. 6 fuel oil spill of 500,000 gallons in the Mississippi River. November 2001. Restoration planning for wetland creation to compensate for shoreline injuries.

- **Project Manager**, Lungkeng, Taiwan. AMORGOS, Evaluated fisheries impacts, third party claims and coral reef injury and restoration plans for the grounding of the AMORGOS and subsequent spill of approximately 1,000 tonnes of IFO-180. March 2003

- **Project Manager**, Sint Eustatius, N.A. Scientific support for oil spill response at Statia Terminals in Sint Eustatius, N.A. January 2003. Assessed potential effects of spill on nearshore fisheries and coral communities.

- **Project Manager,** The Dalles Oregon. 2001 Scientific Technical Advisor for a pesticide spill in Fifteenmile Creek and the Columbia River Oregon. Conducted Natural Resource Damage Assessment studies of lamprey and salmonids.

- **Project Scientist,** Bellingham Pipeline Explosion.1999. Conduced salmonid studies and NRDA for the release and subsequent fire of over 350,000 gallons of gasoline into Whatcom Creek, Bellingham.

- **Project Scientist**, New Carissa Oil Spill, Coos Bay, Oregon. Scientific support for response and NRDA coordinator for the responsible party conducting fish and shellfish assessment for NRDA and in support of third party claims.

Selected Nearshore Wreck Removal and Environmental Assessment Experience

- **Project Manager,** Anchor Chain Damage Claim Evaluation, Grand Cayman, Cayman Island. February 2016

- **Project Manager,** LOS LLANITOS Wreck Removal Environmental Alternatives Analysis, Barra de Navidad Mexico. February 2016

- **Project Manager,** M/V Tammo Vessel Grounding Damage Claim Evaluation, Republic of the Marshall Islands. August 2015. Assessed coral damage and recovery at a large vessel grounding sites near Ebeye, Republic of the Marshall Islands.

- **Project Manager**, Environmental Injury Assessment for the grounding of the USN Cargo Carrier Lt Macej in Okinawa Japan. 2015 Assessed coral cover and recovery and prepared an assessment of injuries.

- **Project Manager**, Vessel Grounding Damage Claim Evaluation for the Court of the Kingdom of Saudi Arabia. August 2014. Assessed coral cover and recovery at two large vessel grounding sites near Jeddah, Islamic Port of Saudi Arabia; M/V Sagar Kiran and M/V Holland Klipper. Prepared an assessment of damage claims for the Court to resolve a settlement dispute.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Tortola, USVI, November 2012. Technical support for assessment of coral injury caused by the grounding and removal of a cargo vessel in the Wreck of the Rhone National Park, Tortola USVI. Developed and executed the coral restoration for the site.

- **Project Manager**, Vessel Chain Damage Restoration. Ft. Lauderdale, Florida, January 2013. Technical support for assessment of coral injury caused by the anchor chain of the M/V UAL GABON cargo vessel Ft. Lauderdale, Florida. Developed and executed the restoration plan to re-attach coral and stabilize substrate.

- **Project Manager**, Vessel Grounding Assessment. Batam, Indonesia. 2012. Assessment of damage from the grounding of the cargo carrier Al Rawda in the Singapore Straits near Batam Indonesia.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Yap Micronesia, March 2011. Technical support for assessment of coral injury caused by the grounding and removal of a cargo near Colonia, Yap, Micronesia.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Sulawesi, Indonesia, October 2010. Technical support for assessment of coral injury caused by the grounding and removal of a tanker vessel near Kapoposang National Park. Developed restoration and provided training in coral reef restoration techniques to the local park authorities.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Guayanilla, Puerto Rico. 2010, Technical support for assessment of coral injury caused by the grounding and removal of A 900 foot LNG carrier SUEZ MATTHEW. Developed restoration plan and repaired the reef and developed a coral nursery for additional transplanting of endangered *Acropora cervicornis*. Identified by NOAA as one of the most successful vessel grounding restoration case histories on record.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Yabucoa, Puerto Rico. 2010, Technical support for assessment of coral injury caused by the grounding of a tanker vessel M/V PORT STEWART. Developed restoration plan and repaired the reef and developed a coral nursery for additional transplanting of endangered *Acropora cervicornis*.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Tuxpan, Mexico, July 2010. Technical support for assessment of coral injury caused by the grounding and removal of a tanker vessel near Arrecife Enmedio, Tuxpan, Mexico. Developed restoration and provided training in coral reef restoration techniques to the local park authorities (CONANP). Restoration manager.

- **Project Manager**, M/V Anglen. Injury assessment of sunken vessel oil spill and removal actions. Vieux Fort, St. Lucia. March, 2010. Response support and environmental assessment of wreck removal options for a sunken cargo vessel off southern St. Lucia.

- **Project Manager**, Coral Grounding Assessment, Dominican Republic. August 2009-2013. Project Manager for assessment of coral injuries from the grounding of a fertilizer ship on the Silver Banks.

- **Lead Project Scientist.** Wreck Removal Assessment, Gibraltar. Wreck of the M/V New Flame. Assessed the potential effects of wreck removal alternatives under the EU Environmental Liability Directive on behalf of the Government of Gibraltar. Assessed potential injuries to biota, carbon footprint and other economic and cultural effects of wreck removal alternatives.

- **Project Manager**, Vessel Grounding Assessment and Restoration. St. Croix USVI. February 2009. Technical support and assessment of coral injury caused by the grounding and removal of a cargo vessel near Fredriksted, USVI. Assessed coral injury with NOAA and St. Croix DPNR, developed and implemented emergency and compensatory restoration within one month of impact assessment. Managed restoration contractors for the Responsible Party and successfully re-attached over 300 large corals and replaced lost structure at the grounding site.

- **Project Manager**, Vessel Grounding, Port Eschuvial Jamaica, 2009. M/V Breithorn Technical support for emergency response to the grounding and subsequent removal of a cargo vessel on the coral reef 35 near Kingston, Jamaica.

- **Project Manager**, Vessel Grounding, Belize City, Belize. January 2009. M/V Westerhaven Technical support for emergency response to the grounding and subsequent removal of a cargo vessel on the barrier coral reef 35 miles offshore Belize City, Belize.

- **Project Manager**, Vessel Grounding Assessment, Xcaret, Mexico, Quintana Roo. 2008 Technical support and assessment of coral injury caused by the grounding of a cement carrier near Xcaret, Mexico. Developed vessel removal environmental sensitivities plan, restoration plan and cost assessment for settlement purposes.

- **Project Manager**, M/V FICUS Oil Tanker Grounding Assessment and Restoration, Nassau, New Providence The Bahamas, February 2008. Technical support for vessel removal and assessment of coral injury caused by the grounding of a tanker near Goulding Cay, New Providence. Developed primary restoration plan.

- **Project Manager**, Vessel Dredging Damage Assessment. Key West, Florida, July 2007. B+B Dredging. Technical support for NRDA of coral injury caused by dredging activities outside the

navigation channel in Key West, Florida. Developed and managed compensatory mitigation contractors for the Responsible Party.

- **Project Manager**, Vessel Grounding Assessment and Restoration. Cancun, Mexico. June 2007. Technical support for vessel removal and coral injury assessment from the grounding of a tour vessel, barge, and dredge near Punta Nizuc Cancun, Mexico. Performed relocation of *Acropora* sp. threatened by salvage efforts.

- **Project Manager**, Vessel Grounding Assessment and Restoration, Guayanilla, Puerto Rico. February 2006. Technical support for coral injury assessment from the grounding of the tank vessel MARGARA near the entrance to Guayanilla Harbor. Developed alternative compensatory plans involving funding of a pilot vessel that may reduce future groundings.

- **Project Manager**, Vessel Grounding Assessment and Restoration, Ft. Lauderdale, Florida, October 2006. Conducted coral reef injury assessment with underwater acoustic mapping following the grounding of the vessel CLIPPER LASCO in Broward County Florida. Developed and implemented the coral restoration plan involving coral re-attachment and rubble stabilization.

- **Project Manager**, Vessel Grounding Assessment, Pearl and Hermes Atoll, Northwest Hawaiian Islands Maritime Refuge. M/V CASITAS grounding. July 2005. Conducted coral reef injury assessments with underwater acoustic mapping to the atoll reef crest. Also conducted chemical analytical analyses for evidence of oil and antifouling paint injuries to marine invertebrates.

- **Project Manager**, Vessel Grounding Assessment and Restoration, Oahu, Hawaii, February 2005. M/V CAPE FLATTERY. Conducted coral reef injury assessments with underwater acoustic mapping for coral damage at Barbers Point, Oahu from the grounding of a large cement ship. Injury included hull and cable damage, as well as smothering by cement. Currently working with state and federal trustees to scale injury and develop restoration to compensate for loss of coral.

- **Marine Scientist**, Coral Assessment and Restoration, Yap, Federated States of Micronesia. M/V KYOWA VIOLET, March 2004. Conducted coral reef injury assessment sustained from a vessel grounding and oil spill in Yap. Used acoustic mapping to determine damage boundaries. Prepared expert report. March 2004.

- **Project Manager**, Coral Assessment, San Juan, Puerto Rico. M/V KENT RELIANT, Conducted coral reef grounding injury assessment for a vessel aground off San Juan, Puerto Rico. November 2003

SPILL RESPONSE PREPAREDNESS

Conduct routine drill and exercise oil spill preparedness for a number of response cooperatives including WSMC in Washington State, WCMRC in British Columbia and numerous industry clients.

- ### *EXPERT TECHNICAL DOCUMENTATION / TESTIMONY / DEPOSITION / MEDIATION TESTIMONY*

In addition to technical report preparation in anticipation of potential litigation for numerous cases, the following projects involve expert technical reporting and/or deposition for litigation or courtroom testimony:

Matson Hawaii. Molasses Spill Mediation. *Hawaii versus Matson Shipping*. 2014. Testimony in mediation for damage to corals and fishes in Honolulu Harbor from a 250,000 gallon molasses spill.

Ft. Lauderdale Florida. Testimony in mediation of vessel damages to coral reefs. Three separate incidents. 2013-2014. *State of Florida DEP versus M/V CLIPPER LASCO, State of Florida DEP versus M/V SPAR ORION, State of Florida DEP versus M/V UAL GABON.*

Oahu Hawaii. 2009. Expert Witness -Deposition. *M/V CAPE FLATTERY versus Titan Salvage*. Testimony relative to injuries from the vessel hull versus response damage to corals from the grounding of the CAPE FLATTERY, Oahu, Hawaii.

San Francisco, California. 2008. Expert testimony in mediation. *State of Hawaii versus M/V CASITAS*. Injury to coral and endemic island species from the grounding and diesel fuel release from the M/V Casitas on Pearl and Hermes Atoll, July 2005, Northwest Hawaiian Islands Maritime Refuge.

Charleston, South Carolina. 2007. *Clam mariculture operators versus Evergreen Shipping*. Testimony relative to oil spill response and injuries to commercial bivalves from the M/V EVER REACH oil spill in Charleston in 2002.

Yap, Federated States of Micronesia. M/V KYOWA VIOLET. 2004. *People of Tomil versus M/V KYOWA VIOLET*. Prepared expert technical report and provided expert testimony relative to oil spill injuries on corals and mangroves following a grounding and oil spill in Yap Micronesia. March 2004.

Coos Bay Oregon. *Clausen Oysters versus M/V NEW CARISSA*. Prepared an expert technical report relative to injuries to mariculture facilities following the M/V NEW CARISSA oil spill. Provided courtroom testimony relative to the magnitude of the loss. 2001/2002.

Florida Keys National Marine Sanctuary. *UNITED STATES v. GREAT LAKES DREDGE & DOCK COMPANY*. CAPTAIN JOE/MISS NECIE grounding events. Prepared expert technical report relative to restoration for injuries to seagrass and coral in the Florida Keys National Marine Sanctuary and the use of Habitat Equivalency Analysis, accepted by the court as valid at trial. 2000.

CERTIFICATIONS

National Association of Underwater Instructors (NAUI) SCUBA Instructor
First Aid, CPR, DAN Oxygen Provider, Nitrox Diving
Professional Wetland Scientist
Wetland Delineator (U.S. Army Corps of Engineers)
HAZWOPER
TWIC –Transportation Worker Identification
E-Rail Safe

WORK HISTORY

BEAK CONSULTANTS, INC. 1990-1997. Developed and managed construction of more than 20 habitat restoration projects for impacts to streams, wetlands, and other special aquatic sites, including coral reefs. Project Manager for Oregon Department of Transportation Staff Training Services.

SCHOOL FOR FIELD STUDIES CENTER FOR MARINE RESEARCH, South Caicos, Turks and Caicos, B.W.I. 1993. Resident Faculty. Taught Marine Resource Management for the School for Field Studies Caribbean Center for Marine Resource Management, an affiliate program accredited by Boston University. Developed coursework in the application of practical scientific knowledge towards environmental assessment and economic evaluation of local practices such as fisheries, aquaculture, harbor dredging, and solid waste disposal. Directed student individual research projects in consultation with the British Overseas Development Agency.

SEA EDUCATION ASSOCIATION, Woods Hole, Massachusetts, 1991. Marine Scientist/Faculty. Sailed aboard the R/V Westward in the Eastern Caribbean. Responsible for oceanographic equipment deployment, classroom-style lecture, and research oversight.

SALTWATER INCORPORATED, Anchorage, Alaska, 1990. Fisheries Biologist in False Pass and Prince William Sound, Alaska gillnet fisheries. NMFS studies of population and interaction information on marine mammal and bird species encountered as a means of evaluating Marine Mammal Protection Act enforcement.

FLORIDA INSTITUTE OF TECHNOLOGY, Melbourne, Florida, 1988-1989. Graduate Research Assistant. Taught general chemistry laboratory. Conducted cross-cultural studies on experiences related to environmental knowledge and attitude between secondary students in the United States and Canada in partial fulfillment for the Master of Science degree.

NEWFOUND HARBOR MARINE INSTITUTE, Big Pine Key, Florida, 1985-1989. Marine Biologist. Developed and taught extensive field programs in coral, mangrove, seagrass, and reef fish ecology to secondary and university level students and teachers. Conducted Department of Natural Resources research involving habitat assessment and water quality analysis of Coupon Bight Aquatic Preserve. Worked daily with a wide variety of oceanographic and fisheries sampling equipment.

FRANK ORTH AND ASSOCIATES, Seattle, Washington, 1985, 1986. National Marine Fisheries Service Observer. Spent over six months aboard Japanese and Korean fishing trawlers in the Bering Sea and Gulf of Alaska. Collected catch data for management purposes and performed age and growth analyses of target species.

- ***SELECTED PUBLICATIONS AND PRESENTATIONS***

Challenger, G. Taylor. E and T. Farrar. 2015 The Development, Use and Integration of Snorkel SCAT as a Tool for Locating and Recovering Submerged and Buried Oil in Nearshore Environments. Interspill, Amsterdam. April 26-28, 2015

Taylor, E., G. Challenger, J. Rios, J. Morris, M.W. McCarthy, and C. Brown, 2014. Dilbit Crude Oil Weathering on Brackish Water: Meso-scale Tests of Behavior and Spill Countermeasures. Proc. of the 35th Arctic Marine Oilspill Program (AMOP) Technical Seminar on Environmental Contamination and Response: June 3-5, 2014: Canmore (Alberta), Canada.

Michel J, Owens EH, Zengel S, Graham A, Nixon Z,. Andrew Graham, Zachary Nixon, Teresa Allard, William Holton1, P. Doug Reimer, Alain Lamarche, Mark White, Nicolle Rutherford, Carl Childs, Gary Mauseth, Greg Challenger, Elliott Taylor 2013. Extent and Degree of Shoreline Oiling: Deepwater Horizon Oil Spill, Gulf of Mexico, USA. PLoS ONE 8(6): e65087. doi:10.1371/journal.pone.0065087

Challenger, G.E., 2014. Damage Claims for Injuries to Coral Habitats from Large Vessel Groundings. GARD News.

G. Challenger and G. Mauseth. 2010 Seafood Safety following Oil Spills. In: Oil Spill Handbook: A Practical Guide. Edited by Merv Fingas. Environment Canada.

G. Mauseth, G. Challenger, G. Douglas, K. McCarthy. The Advantages of Quantitative versus Qualitative Oil Fingerprinting Methods For Complex Oil Spill Investigations. Proceedings of the Society of Environmental Toxicology and Chemistry, November 16-20, 2008, Tampa, Florida.

Challenger, G.E., and G, Sergy. 2007. Sediment attenuation and vegetation recovery following a fuel oil spill in a Carex lyngbyei marsh in southern British Columbia. Proceedings of the International Oil Spill Conference, Savannah, Georgia. June 2007.

Challenger, G.E. 2006. Mitgating claims for damage to coral reefs from vessel groundings, salvage and wreck removal in the US. GARD News, Issue 182 May/July 2006, Pg. 4-8. Arendal, Norway.

Challenger, G.E. 2006. International Trends in (Coral Reef) Injury Assessment and Restoration. Chapter 12 In; Coral Reef Restoration. Edited by William F. Precht. CRC Press.

Challenger, G.E. 2004. Natural Resource Injury Assessment for Injuries to Coral Reefs from Large Vessel Groundings: Determining Appropriate Restoration. Proceedings of the 2nd National Conference on Coastal and Estuarine Habitat Restoration, September 12-15, 2004, Seattle, Washington

Challenger, G.E. 2004 Uptake and Depuration of Polycyclic Aromatic Hydrocarbons in Steelhead Trout (*Oncorhychus mykiss*), Chinook Salmon (*Oncorhychus tshawytshca*), Mountain Whitefish (*Prosopium williamsoni)*, and Sucker (*Catostomus* sp.) in the Clearwater River Idaho following a Diesel No. 2 Fuel Spill. Proceedings of the Arctic and Marine Oilspill Technical Seminar. Edmonton, Alberta, Canada, 2004. In press. Proceedings of the International Oil Spill Conference, Miami, Florida 2005.

Mauseth, G.S., G.E. Challenger, E.H. Owens, R. Campbell, D. Doty, M. Macrander, 2003. Integration of Response, Planning, and Restoration Enhancements following a Gasoline Spill in a Pacific Northwest Stream. Proceedings of the International Oil Spill Conference, Vancouver, British Columbia. March 2003.

Mauseth, G.S. and G.E. Challenger. 2001. Trends in Rescinding Seafood Harvest Closures Following Oil Spills. Proceedings of the Arctic and Marine Oilspill Technical Seminar. Edmonton, Alberta, Canada, 2001. Proceedings of the International Oil Spill Conference, Tampa, Florida. March 2001.

Owens, E.H., G.A. Reiter and G.E. Challenger. 2000. Whatcom Creek Stream Remediation Following a Gasoline Spill. Proceedings of the International Oil Spill Conference, Tampa, FL. March 2001.

Challenger, G.E., G.S. Mauseth and I. Rhodes. 2000. Residual Gasoline in a Turbulent Pacific Northwest Stream Following Ignition. Proceedings of the International Oil Spill Conference, Tampa, FL. March 2001.

Mauseth, G.S., G.E. Challenger, J. Catena and J. DeAlteris. 2000. Restoration and Compensation of the Rhode Island Lobster Fishery Following the NORTH CAPE Oil Spill. Proceedings of the International Oil Spill Conference, Tampa, FL. March 2001.

Owens, E.H, G.A. Reiter and G.E. Challenger. 2000. Stream Remediation Following a Gasoline Spill. Proceedings 23rd Arctic and Marine Oilspill Program (AMOP) Technical Seminar, Environment Canada, Vancouver, BC. p. 923-944.

Challenger, G.E. 1999. Injury Assessment and Restoration of Large Vessel Groundings in Coral Environments. University Program for the Environment Annual Program " Coral Reefs: Threatened Marine Richness". Cancun, Quintana Roo, Mexico, October 1999.

Challenger, G.E. 1999. Fisheries Closures, Openings, and Chemical Mysteries in the NEW CARISSA Incident. The Twenty-second Arctic Marine Oilspill Technical Seminar. June 2-4, 1999, Calgary, Alberta, Canada.

Mora, D. and G. Challenger. 1999. Resolving conflict in applying the Washington State Natural Resource Damage Assessment Compensation Schedule - Spill volume determination in the absence of volumertric methods. Proceedings of the 1999 International Oil Spill Conference. Seattle, WA. 1999.

Challenger, G.E., and G.S. Mauseth. Closing and opening of fisheries following oil spills; A case study in Humboldt Bay, California. *Proceedings of the Twentyfirst Arctic Marine OilSpill Technical Program.* p 167-180, 1998.