Technical Working Groups

Name & Title	TWG Member Status	Company	Bio
Gregor M. Cailliet, Ph.D. Professor Emeritus of Biology (Ichthyology)	Scientist advising the Entrainment Study TWG	Moss Landing Marine Laboratories & California State University, Fresno	For the past four decades, since graduate work at UCSB (mid-1960s to early-1970s), Professor Cailliet has studied the ecology of marine fishes. He joined the MLML and CSU Fresno faculties in 1972 and retired in 2009, but he is still very active, doing research, advising students, and writing papers and book chapters. Professor Cailliet is primarily interested in marine ecology, focusing mostly on deep-sea and chondrichthyan fishes. From many hours in the field on ships and submersibles, he has collected fishes and data on their habitats. In the lab, Professor Cailliet has focused on fish life histories (i.e. feeding habits, age and growth, reproduction, and demography). Together with his graduate students he has pioneered age determination, verification, and validation techniques in fishes using the growth zones in calcified structures and their radioisotopic characteristics. Professor Cailliet has been very active both in the Western Society of Naturalists and the American Elasmobranch Society. He has been a consultant for the Regional & State Water Control Boards and the California Energy Commission over the past ten years on the effects of larval fish impingement and entrainment from cooling water intakes, mostly for power plants. He is now serving a similar role for the Santa Cruz desalination project.
Laura Cathcart-Dodge, G.PG Project Team Geophysicist	Consultant for the Offshore Geophysical Study TWG	EcoM	Ms. Cathcart-Dodge is a geophysicist with 18 years of experience. She is currently responsible for technical and business development for Spectrum Geophysics and for management of the Santa Ana office. She also manages a team of geophysicists who conduct a wide variety of geophysical projects. In addition, her responsibilities included the coordination of geophysical projects and field services, processing and interpretation of a wide variety of geophysical data, project oversight, report review of six project managers, and client liaison. She has participated significantly in maintaining business relationships as well as remote-site fieldwork.
Brad Damitz, MPA Environmental Policy Specialist	Regulator participating in the Entrainment Study and the Offshore Geophysical Study TWGs	MBNMS	Mr. Damitz joined the Sanctuary in 2000. His responsibilities include developing and implementing Sanctuary plans, guidelines, and policies on a variety of regional resource protection issues including desalination, cruise ship discharges, and coastal armoring. He also works on tracking and responding to various water quality and resource protection issues, as well as developing partnership opportunities between the Sanctuary and the recently designated California Coastal National Monument. Brad received a B.A. in Psychology from the University of Rhode Island, and an M.A. in International Environmental Policy from the Monterey Institute of International Studies, with an emphasis on marine protected area policy. Some of Brad's other work experience includes teaching marine environmental education in the Florida Keys, and leading kayak tours in the Monterey Bay.
Eric Desormeaux, P.E. Environmental Engineer	Consultant participating in the Entrainment Study TWG	CDM	Erik Desormeaux works for CDM in Walnut Creek, California and has 8 years of experience in brackish and seawater desalination, advanced water treatment, and wastewater reclamation. Mr. Desormeaux served as the project engineer for the scwd^2 desalination pilot program and is working on multiple open water and subsurface desalination projects, including several in California. Intake related experience comes from work on several California desalination projects including: Dana Point in Orange County which is currently testing a slant well intake, Cambria which will utilize beach wells, and a confidential project along San Francisco Bay which included site identification and cost estimates for both open water and subsurface intake options. Mr. Desormeaux has a M.S. in Environmental Engineering from Auburn University and is the North American Representative for the International Desalination Association Young Leaders Program Committee.
Hany Elwany, Ph.D Project Team Oceanographer/ Project Director	Consultant for the Offshore Geophysical Study TWG	EcoM	Dr. Elwany, President of ECO-M, has over 30 years of extensive experience with nearshore oceanography, coastal processes, coastal engineering, water quality, sediment analysis, and estuarine dynamics. He is an expert in beach dynamics and lagoon hydrodynamics and sedimentation. Dr. Elwany was responsible for overseeing the work performed for the Offshore Geophysical Study.
Curtis Hopkins, PG,CEG,CEH Project Team/Hopkins Groundwater	Consultant for the Offshore Geophysical	EcoM	Mr. Hopkins has over 20 years of experience as the manager and/or lead investigator of groundwater development projects for Hopkins Groundwater Consultants, Inc. These projects include groundwater basin resource and

Inc. Hydrogeologist	Study TWG		management studies, artificial recharge and recovery programs, brackish and saline groundwater supply development studies for desalination projects, and forensic groundwater studies utilizing isotope geochemistry and surface geophysical methods. Mr. Hopkins' technical experience has focused on constructing groundwater models, providing well design and well construction specifications for public bid, and directing construction management for numerous production and injection well projects. His work throughout central and southern California has included hydrogeologic study in coastal areas where seawater intrusion into aquifers is a significant concern and impacts of groundwater extractions and/or the design of abatement programs must be considered.
George Isaac Environmental Specialist III	Regulator participating in the Entrainment Study and the Offshore Geophysical Study TWGs	California Department of Fish & Game	George Isaac is an Environmental Specialist in the Marine Region of the CA Department of Fish & Game in the Monterey, CA office.
Sam Johnson, Ph.D. Research Geologist	Scientific advisor for the Offshore Geophysical Study TWG	US Geological Survey	B.A. (1975) University of California, Santa Cruz (Earth Sciences) M.S. (1978) University of Washington (Geological Sciences) Ph.D. (1982) University of Washington Geological Sciences Dr. Johnson's research interests include sea floor mapping and geomorphology, coastal and marine sedimentology and stratigraphy, active tectonics, geologic framework and hazards. Dr. Johnson's active field areas are Central California (San Simeon to Point Conception), Southern California (Oxnard to Point Mugu), Northern California (Stinson Beach to Point Arena), Puget Sound and eastern Juan de Fuca Strait.
Mark Legg, Ph.D Project Team, Earth Scientist/Lead Geophysicist/Seismic Refraction	Consultant for the Offshore Geophysical Study TWG	EcoM	Dr. Legg has 29 years of experience as a geophysicist. As President and Chief Consultant for Legg Geophysical, Inc., he directs subsurface geophysical investigations and data processing. He manages all geology and geophysical, and seismicity studies. Also, Dr. Legg manages projects in deterministic and probabilistic seismic hazard assessment and risk characterization, and directs geographic information system (GIS) projects
Tom Luster	Regulator participating in the Entrainment Study and the Offshore Geophysical Study TWGs	CA Coastal Commission	Tom Luster is an environmental scientist at the California Coastal Commission and is the Commission's lead staff for policies and projects related to desalination. He was primary author of the Coastal Commission's 2004 report, "Seawater Desalination and the California Coastal Act", and has served as co-chair of the State Desalination Task Force and on the Monterey Bay National Marine Sanctuary Desalination Working Group. His other work for the Coastal Commission involves policy and projects related to coastal energy issues, including offshore oil and gas, coastal power plants, and wave energy. Before coming to the Coastal Commission, Tom served as senior technical and policy staff for water quality and wetland issues at the Washington State Department of Ecology. His educational background includes a bachelor's degree in geography and a master's degree in Resource Geography.
Alec MacCall, Ph.D. Senior Scientist in the Fisheries Ecology Division	Scientific advisor for the Entrainment Study TWG	National Marine Fisheries Service	Dr. MacCall's research interests include development of new tools and techniques for data-limited stock assessment and fishery management such as catch-based methods, e.g., depletion-corrected average catch (DCAC), use of MPA information in stock assessment and fishery management, and full accounting of imprecision in assessment methods. Dr. MacCall studies ecological and oceanographic aspects of fish population dynamics, including: spatial behavior and density-dependent habitat selection, intraguild competition and species interactions, low-frequency environmental fluctuations, population dynamics and stock assessment of groundfish, especially rockfish (*Sebastes* spp.), and coastal pelagics, including sardines and anchovies.
Neil Marshall Project Manager/Field Supervisor	Consultant for the Offshore Geophysical Study TWG	EcoM	Mr. Marshall has participated in and been largely responsible for the completion and success of more than 60 oceanographic sonar expeditions and numerous oceanographic projects worldwide for more than 36 years. In addition, he has designed and developed new oceanographic instrumentation and published over 40 scientific articles. As a member of the Scripps Institution of Oceanography's Diving Control Board, he was involved in the development of many diving control and safety standards, which are now in wide use around the world.
David L. Mayer, Ph.D President and Principal Scientist	Consultant for the Entrainment Study TWG	Tenera Environmental	Dr. Mayer has a Ph.D. in Fisheries and Quantitative Sciences from the University of Washington and has over 30 years experience in environmental consulting specializing in studies of marine and freshwater systems. Dr. David Mayer, Tenera's President, was principal investigator of two desalination programs in Southern California (Huntington Beach and Carlsbad) for Poseidon Resources Corporation. For the Southern California desalination projects, Dr. Mayer testified on the projects' intake effects, and Tenera calculated the necessary amounts of

			restoration to offset the intake effects to complete final project approval. Most recently, he has directed year-long studies of intake effects on fish and invertebrate populations at California's largest approved desalination projects, thirteen California power plants, and power plants in Hawaii and Guam. He has provided expert witness testimony on the results of these studies. Dr. Mayer holds a valid CA Scientific Collecting Permit (No. SC-003909), is also named on a USFWS ESA Section 10(A)(1)(a) permit to allow for the collection of tidewater goby and delta smelt, and is a certified diver.
Tim Monahan Senior Project Manager	Consultant for the Offshore Geophysical Study TWG	Kennedy/Jenks Consultant	Tim Monahan is a registered Professional Engineer with more than 21 years of project management consulting experience in the water and wastewater industry. He has extensive experience in managing pre-design and evaluation studies, infrastructure condition assessment and asset management programs, design of water transmission and storage facilities, sewer collection and pump stations, and rehabilitation and expansion of wastewater treatment facilities. Other practical experience includes sewer collection system rehabilitation and construction management.
Dave Pereksta Avian Biologist	Regulator participating in the Entrainment Study TWG	USFWS	Mr. Pereksta is an Avian Biologist for the Bureau of Ocean Energy Management, Regulation and Enforcement, where he studies and analyzes the effects of offshore oil and gas, and renewable energy development on birds and bats off the Pacific coast. Throughout his career with various Federal and State agencies, he has studied several imperiled bird species including snowy plovers, piping plovers, least terns, ospreys, northern goshawks, brown pelicans, and spotted owls. Recently, David has assisted Cornell University in their searches for the Ivory-billed Woodpecker in Arkansas during the 2006, 2007, and 2008 field seasons. An avid birder for over 30 years, he has birded throughout North America and the American tropics, including leading trips to Belize, Costa Rica, and Peru. David has been an active participant in southern California pelagic trips since 1994 and has been a regular leader for Los Angeles Audubon, Buena Vista Audubon, The Searcher, and The Condor Express since 2000.
James Peeler Project Team, Geologist	Consultant for the Offshore Geophysical Study TWG	EcoM	Mr. Peeler has eight years of experience in site assessment, site maintenance, regulatory compliance, fieldwork oversight, and project management. He has conducted site assessments involving groundwater, surface water, stormwater, soil, and soil vapor sampling. Additionally, Mr. Peeler has conducted aquifer testing; GPS site surveying; geologic mapping, and drilling activities including hollow- stem, geoprobe, air, mud, and sonic. His report writing experience includes multiple Phase I and II reports, surface and groundwater monitoring reports, RI and FS reports, and site conceptual models. His regulatory compliance experience includes site audits, SPCC plans, H & S plans, HMBPs, and mine reclamation plans.
Carol Raifsnider Principal Investigator	Consultant for the Entrainment Study TWG	Tenera Environmental	Ms. Carol Raifsnider has been an environmental consultant for over 30 years. Carol was the project manager for the Marin Municipal Water District's Pilot Desalination Facility. She managed the collection and processing of entrainment and source water samples, and was the one of the principal authors of the report that was included in the Project's Draft EIR. She was the project manager for the Moss Landing, Potrero, and Morro Bay entrainment and impingement studies, and currently manages the Pittsburg and Contra Costa power plants' entrainment and impingement studies, and Contra Costa Water District's fish monitoring program. She is the principal investigator for the Endangered Species Act compliance project at the Pittsburg and Contra Costa power plants. Carol holds a valid CA Scientific Collecting Permit (No. SC-004917) and is also named on a USFWS ESA Section 10(A)(1)(a) permit to allow for the collection of tidewater goby and delta smelt.
Pete Raimondi, Ph.D Professor of Ecology and Evolutionary Biology	Scientific advisor for the Entrainment Study TWG	UCSC, Earth & Marine Sciences Dept	Dr. Raimondi's research interests include the contribution of oceanographic processes, larval dispersal, larval behavior and post-settlement processes to near-shore subtidal and intertidal communities, population dynamics of the barnacle Chthamalus anisopoma in the northern Gulf of California, contribution of larval behavior to the distributions of the corals *Agaricia humilis* and *Acropora palmata*, and factors affecting dispersal and self-fertilization in the giant kelp *Macrocystis pyrifera*. Current Projects: Spatial and Temporal Variation in Recruitment to Rocky Shores: Relationship to Recovery Rates of Intertidal Communities. Shoreline Inventory of Intertidal Resources of San Luis Obispo and Northern Santa Barbara Counties. Completed Project: Effects of Produced Water on Complex Behavior Traits of Invertebrate Larvae. Related Activities: Ecological Issues Related to Decommissioning of California's Offshore Production Platforms.

Todd Reynolds, P.E. scwd² Technical Advisor	Consultant participating in the Entrainment Study and the Offshore Geophysical Study TWGs	Kennedy/Jenks Consultants	Todd Reynolds is a Senior Engineer with Kennedy/Jenks Consultants in San Francisco, CA. He has 20 years of engineering and management experience and 15 years of consulting experience in groundwater and surface water supply and treatment; membrane treatment including microfiltration, ultrafiltration and seawater and brackish water desalination. He has served as a Project Manager and Engineer for the planning, design and construction of numerous projects. He has authored water-related articles and papers for professional society magazines and conferences. Todd has a BS in Nuclear Engineering and a MS in Environmental Engineering from the University of California at Berkeley. Todd is a member of the American Membrane Technology Association and American Water Works Association and is a Board Certified Environmental Engineer from the American Academy of Environmental Engineers. Before joining Kennedy/Jenks, Todd served as a nuclear submarine officer in the U.S. Navy.
Eli Silver, Ph.D Marine Geophysicist	Scientific advisor for the Offshore Geophysical Study TWG	UCSC, Earth & Marine Sciences Dept	Dr. Silver is Professor of Earth & Planetary Sciences Global Tectonics and Marine Geophysics. Eli Silver's research involves study of the active processes and mechanisms of continental margin evolution, focusing at present on subduction, ophiolite emplacement, and tectonic collisions. He studies these processes with a wide variety of techniques, including marine and subaerial geology and geophysics. Silver is currently focusing on two problems. One is collision processes and their role in mountain building, using the Solomon Sea and Papua New Guinea as field laboratories for these processes. Work there includes marine geophysics, field work on the collision zone onshore, and GPS observations of active movements. The second problem is the question of mass balance and fluid flow in subduction zones, and he is focusing on the Pacific margin of Costa Rica. Studies there include both 2D and 3D seismic reflection, submersible diving, and future ocean drilling and acoustic ranging experiments on the sea floor.
John Steinbeck Vice President/Principal Scientist	Consultant for the Entrainment Study TWG	Tenera Environmental	Mr. Steinbeck is the Principal Investigator for marine environmental studies conducted at the PG&E's Diablo Canyon Power Plant (DCPP). He has also worked on almost all of the environmental studies on the effects of power plant cooling water intake systems conducted in California since 1995. On these projects he was primarily responsible for project management, study design, and the design and analysis of the fishery-based models used in the assessment of results. He is recognized as an expert in the design and statistical analysis of environmental impact studies. He has been the principal or contributing author on papers published in scientific journals on statistical techniques for impact assessment. He is also the principal author on a report for the CEC on the design and modeling of effects due to entrainment by power plant cooling water systems. He has presented information on these topics in presentations at national and international meetings, in expert witness testimony in formal agency hearings, and in workshops on issues related to water quality, study design, and thermal and ecological modeling. John holds a valid CA Scientific Collecting Permit (No. SC-002624) and is a certified diver.
Curt Storlazzi, Ph.D. Research Geologist & Oceanographer	Scientific advisor for the Entrainment Study and the Offshore Geophysical Study TWGs	US Geological Survey	Dr. Storlazzi is a Research Geologist and Oceanographer Coastal and Marine Geology Program, US Geological Survey. He is a Research Associate of the Institute for Marine Sciences, University of California at Santa Cruz. From 2002-2004 he was a Research Fellow for the Partnership for Interdisciplinary Studies of Coastal Oceans Consortium. From 2000-2002 he was a Post-doctoral Researcher in the Institute for Marine Sciences, University of California at Santa Cruz. In 2000 Dr. Storlazzi received his Ph.D. from the University of California at Santa Cruz, Santa Cruz, CA Earth Sciences Department, where his concentrations were Coastal Geology and Oceanography. In 1996 he earned his B.Sc. from the University of Delaware, Newark, DE Geology Department, Concentrations: Geomorphology and Sedimentology. Dr. Storlazzi's interests span the coastal zone, from seacliff erosional processes to sediment dynamics in the shallow coastal ocean. His research focuses on the quantitative study of hydrodynamics, sediment transport, and geomorphology in coastal and marine environments.
Peter Von Langen, Ph.D.	Regulator participating in the Entrainment Study and the Offshore Geophysical Study TWGs	RWQCB	Peter von Langen has worked at the Central Coast Regional Water Quality Control Board since the end of 2001. Before joining the California Environmental Protection Agency, Peter earned a Ph.D. in Marine Sciences from the University of California at Santa Barbara, a M.S. in Marine Science from Moss Landing Marine Laboratories, and a B.S in Marine Biology from the University of California at Santa Cruz. Dr. von Langen's senior thesis documented the effects of a new sewage outfall pipe on the long shore sediment transport and recruitment of a new kelp forest in Mitchell's Cove.

scwd² STAFF			
Linette Almond, P.E Deputy Director/Engineering Manager	Staff participating in the Entrainment Study and the Offshore Geophysical Study TWGs	SCWD	Linette Almond graduated with Bachelor of Science in Civil Engineering from the University of Tennessee, Knoxville in 1980 and obtained a Master of Public Policy and Administration from California State University, Sacramento in 1996. Linette has 30 years experience in engineering and project management. As Deputy Director of the Santa Cruz Water Department, Linette oversees the Capital Improvement Program. From 2000 through its approval in 2005, Linette served as the Project Manager for the City's Integrated Water Plan process which resulted in approval of a plan that combined water conservation, use curtailments, and a supply augmentation project to address drought shortages. One of the projects currently under development is a 2.5 MGD seawater reverse osmosis plant.
Catherine Borrowman, MPA, MAIS Professional and Technical Assistant	Staff participating in the Entrainment Study and the Offshore Geophysical Study TWGs	SCWD	Catherine Borrowman graduated with a B.A. in 1995 from the University of California, Santa Cruz (American Studies). In 2006, she received two masters degrees (Public Administration and International Studies) with a concentration in environmental and natural resources management. Ms. Borrowman has been preparing technical reports for the public sector on desalination and water supply planning since 2006. With respect to the Intake Studies, Ms. Borrowman applied for permits for the Offshore Geophysical Study and worked closely with ECO-M on the final report.
Ryan Jolley Environmental Project Analyst	Staff	SCWD	Ryan Jolley graduated with a Bachelor of Arts in Economics from the University of California, Santa Cruz in 2004. In 2005, he obtained a Masters of Applied Science in Environmental Science from the University of Sydney (Australia) with a concentration in processes interactions and environmental management of coastal and estuarine ecosystems. For the past 5 years Ryan has served as a planner on numerous environmental compliance documents (CEQA/NEPA) and regulatory permits, including for water right permits, water infrastructure, water supplies development, and large-scale erosion control plans. He has also functioned as a technical analyst for issues related to streamflows, hydrology, groundwater, erosion, sedimentation, anadromous fish and other aquatic species, socioeconomics, and environmental justice.
Heidi R. Luckenbach, P.E Desalination Program Coordinator	Staff coordinating and participating in the Entrainment Study and the Offshore Geophysical Study TWGs	SCWD	As the Desalination Program Manager, Heidi is responsible for overseeing the various studies related to a proposed 2.5 MGD desalination plant that the City of Santa Cruz and Soquel Creek Water District are evaluating as a supplemental supply source. Heidi has worked for the City of Santa Cruz for more than 10 years and previously worked in Arizona, Illinois, and Southern California. Heidi has a bachelor's degree in civil engineering from California State University Northridge and a masters at UCLA in environmental engineering.
Melanie Mow Schumacher, P.E Public Outreach Coordinator	Staff participating in the Entrainment Study and the Offshore Geophysical Study TWGs	Soquel Creek Water District	Melanie received her BS in Civil Engineering from California Polytechnic State University, San Luis Obispo and is a licensed Professional Engineer in California. Melanie's engineering career began operating drill rigs and performing soil samples for a geotechnical firm in Sacramento. She then was a project engineer on several construction projects that focused on military base conversions and decided to pursue a career in her favorite realm of civil engineering- water resources. Melanie has worked for Soquel Creek Water District for over 15 years as an Associate Engineer and has recently assisted in the implementation of their Emergency Response Plan (2005) and Groundwater Management Plan Update (2007). She's also a past President of the Monterey Bay Water Works Association. As the scwd² Desalination Public Outreach Coordinator, she is actively working to educate the public on the technologies of desalination, the needs of a supplemental source of water for the City of Santa Cruz and Soquel Creek Water District, and how both agencies are working towards a sustainable water supply to protect against drought conditions and salt water intrusion.
Leah Van Der Maaten, P.E. Associate Civil Engineer	Staff participating in the Offshore Geophysical Study TWG	SCWD	Leah Van Der Maaten is an Associate Civil Engineer with the City of Santa Cruz Water Department. She has 9 years of experience in the water industry as a project manager for environmental compliance projects and civil engineering projects. Leah has a BS in Biological Sciences from the University of California, Irvine, and a MS in Civil Engineering from San Jose State University. With respect to the Intake Studies, Leah was the project manager for the first year of the studies.