

EXECUTIVE OFFICER SUMMARY REPORT
August 13, 2014

ITEM: 9

SUBJECT: Information Item: Ocean Acidification and the Relationship of Discharges to the Ocean. (*David Barker*)

PURPOSE: This is an information item to update the San Diego Water Board on ocean acidification issues and their relationship to land based discharges to the ocean.

RECOMMENDATION: There is no recommendation as this is an information item and the Board will take no action.

KEY ISSUE: Ocean acidification is an emerging statewide issue of concern and poses a significant threat to aquatic life beneficial uses.

PRACTICAL VISION: This information item topic was developed in conformance with the San Diego Water Board's Practical Vision entitled *Healthy Waters, Healthy People*. Ocean monitoring programs are measuring significant ocean acidification related changes in ocean water chemistry at a rate much faster than previously predicted and with continuing acceleration. Consistent with the mission of the *Monitoring and Assessment* chapter of the Practical Vision, this item will provide important emerging information to the San Diego Water Board on the status and trends of ocean acidification related changes and conditions in San Diego Region ocean waters so that appropriate regulatory and management actions can be considered.

DISCUSSION: This item provides an opportunity for Dr. Stephen Weisberg, Executive Director of the Southern California Coastal Water Research Project (SCCWRP), to present information and provide perspective on ocean acidification and its link to various regulatory and water quality management decisions the San Diego Water Board may need to consider. Ocean acidification refers to an increase in the acidity of the Earth's oceans, as measured by pH (the concentration of hydrogen ions), due primarily to the uptake of carbon dioxide from the

atmosphere to the ocean. Scientists are also exploring whether and to what extent nutrients from wastewater discharges and runoff from land-based activities contribute to ocean acidification in marine waters. Excess nutrient additions to the ocean from these discharge sources have the potential to exacerbate acidification by stimulating algal growth in ocean waters which creates more dissolved carbon dioxide when the algae die.

The change in the acidity of ocean waters drives a number of changes in ocean chemistry, such as reduced availability of shell-forming minerals (carbonate ions), with significant potential adverse effects on marine ecosystems. Aquatic organisms that use calcium carbonate to make shells and skeletons, such as shellfish, some corals that build critical reef habitat and certain types of marine plankton that form the basis of the marine food web, are particularly at risk to the corrosive conditions caused by ocean acidification.

The west coast of the United States is particularly susceptible to ocean acidification due to seasonal upwelling which brings waters high in nutrients, low in dissolved oxygen, and low in pH onto the coastal shelf. In 2013, the State of California's Ocean Protection Council, in concert with the governments of Oregon, Washington, and British Columbia, identified ocean acidification as a priority ocean health issue and convened a multidisciplinary scientific panel to provide technical guidance and advance understanding of this complex issue to guide policy development. Information regarding this panel can be obtained at <http://www.opc.ca.gov/2013/08/california-ocean-protection-council-announces-west-coast-ocean-acidification-and-hypoxia-science-panel/>.

**SUPPORTING
DOCUMENTS:**

1. SCCWRP Fact Sheet – Ocean Acidification

PUBLIC NOTICE:

This item was noticed in the Meeting Notice and Agenda for the August 13, 2014 Board meeting.