NOAA SCIENTIFIC PUBLICATIONS REPORT
AUGUST 17, 2015

HIGHLIGHTED ARTICLES

Understanding ENSO diversity
BAMS (11.57)

Surface-based observations can assess activity budgets and fine-scale habitat use by an endangered whale population
Aquatic Mammals (0.702)

The impact of El Niño events on the pelagic food chain in the northern California Current
Global Change Biology (8.224)

Spilled oils: Static mixtures or dynamic weathering and bioavailability?
PLoS One (3.534)

ADDITIONAL ARTICLES

OAR Publications

31 May 2013 El Reno tornadoes: advantages of rapid-scan phased array radar data from a warning forecaster's perspective
Weather and Forecasting (1.860)

Mapping the spatial distribution of the biomass and filter-feeding effect of invasive dreissenid mussels on the winter-spring phytoplankton bloom in Lake Michigan
Freshwater Biology (2.905)

Evaluating environmental impacts on tropical cyclone rapid intensification predictability utilizing statistical models
AMS Weather and Forecasting (1.606)

Internal consistency of marine carbonate system measurements and assessments of aragonite saturation state: Insights from two U.S. coastal cruises
Marine Chemistry (2.735)

[Further evidence of a context-specific agonistic signal in bottlenose dolphins: The influence of consortships and group size on the pop vocalization]

Behaviour (1.401)

[Ichthyoplankton distribution and abundance in relation to nearshore dissolved oxygen levels and other environmental variables within the Northern California Current System]

Oceanography (2.986)

HIGHLIGHTED ARTICLES

Understanding ENSO diversity
BAMS (11.57)
A. Capotondi (CIRES at PSD), A. T. Wittenberg (GFDL), M. Newman (CIRES at PSD), E. Di Lorenzo, J.-Y. Yu, P. Braconnot, J. Cole, B. Dewitte, B. Giese, E. Guilyardi, F.-F. Jin, K. Karnauskas, B. Kirtman, T. Lee, N. Schneider, Y. Xue, and S.-W. Yeh

- El Niño events of all types are often preceded by westerly wind events in the western and central equatorial Pacific. ENSO events can also be triggered by atmospheric variations outside of the tropics. Stronger El Niños typically involve a greater role for subsurface motions of the equatorial thermocline, and generate climatic anomalies that extend farther to the east.
- At present, forecast models show some skill in distinguishing ENSO flavors up to six months in advance, but events peaking in the eastern Pacific tend to be better predicted.
- Climate models indicate an increased frequency of central Pacific El Niño events with global warming. However, decade-long changes of ENSO characteristics may occur even in the absence of climate change, as a result of intrinsic climate system variations, so that human-caused influences on ENSO may take a long time to detect.

The cover of the June 2015 issue of the Bulletin of the American Meteorological Society features a figure from an article authored by PSD–CIRES and GFDL scientists. The OAR scientists collaborated with colleagues from 14 other

institutions around the world, to analyze the diverse conditions and impacts associated with the El Niño / Southern Oscillation (ENSO), and to better understand whether distinct 'types' of events exist. Examination of historical records and recent model simulations shows a continuum of variability with striking extremes, rather than distinguishable types. In particular the team found that warm events (El Niños) are generally more diverse than cold events (La Niñas), and stronger El Niños tend to exhibit their peak warm sea surface temperature (SST) anomalies farther east. El Niño events of all types are often preceded, and perhaps triggered, by westerly wind events in the western and central equatorial Pacific. The equatorward spread of off-equatorial disturbances, as well as the initial heat content of the equatorial Pacific ocean can also play an important role in the development of different ENSO types.

Present-day prediction systems can distinguish the 'flavor' of ENSO evolution up to six months in advance with some skill. On longer time scales, simulations suggest that multi-decade prevalence of a given ENSO flavor can occur at random. Based on climate change model simulations, human-caused influences are expected to increase the intensity of ENSO rainfall anomalies in the central and eastern equatorial Pacific.
Publication Date: June 2015
Available online: http://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-13-00117.1

Surface-based observations can assess activity budgets and fine-scale habitat use by an endangered whale population
Aquatic Mammals (0.702)
D. P. Noren and D.D.W. Hauser **(NMFS/NWFSC)**

- This study identifies key areas where Southern Resident killer whales engage in specific activity states (primarily resting and foraging) in waters surrounding the San Juan Islands, which is their core summer critical habitat.
- The results can be used to better assess risk of vessel presence to Southern Resident killer whales as well as inform selection of vessel exclusion zones, if deemed necessary by regional managers.

Behavioral observations can provide insight into the ecology and habitat use of marine species. Previous observational studies have shown that movement patterns