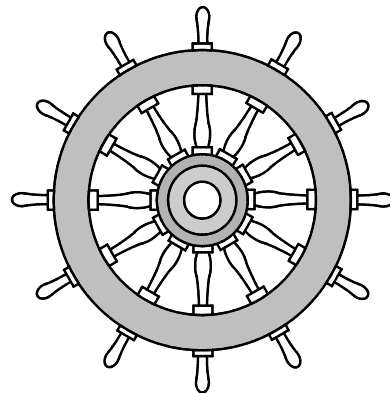
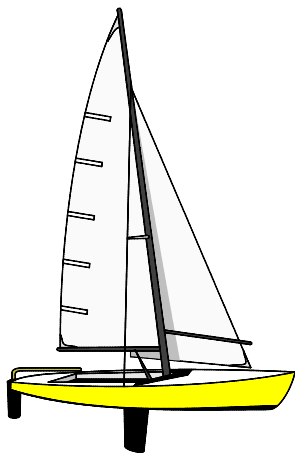


National Weather Service Los Angeles/Oxnard

<http://www.wrh.noaa.gov/lox>



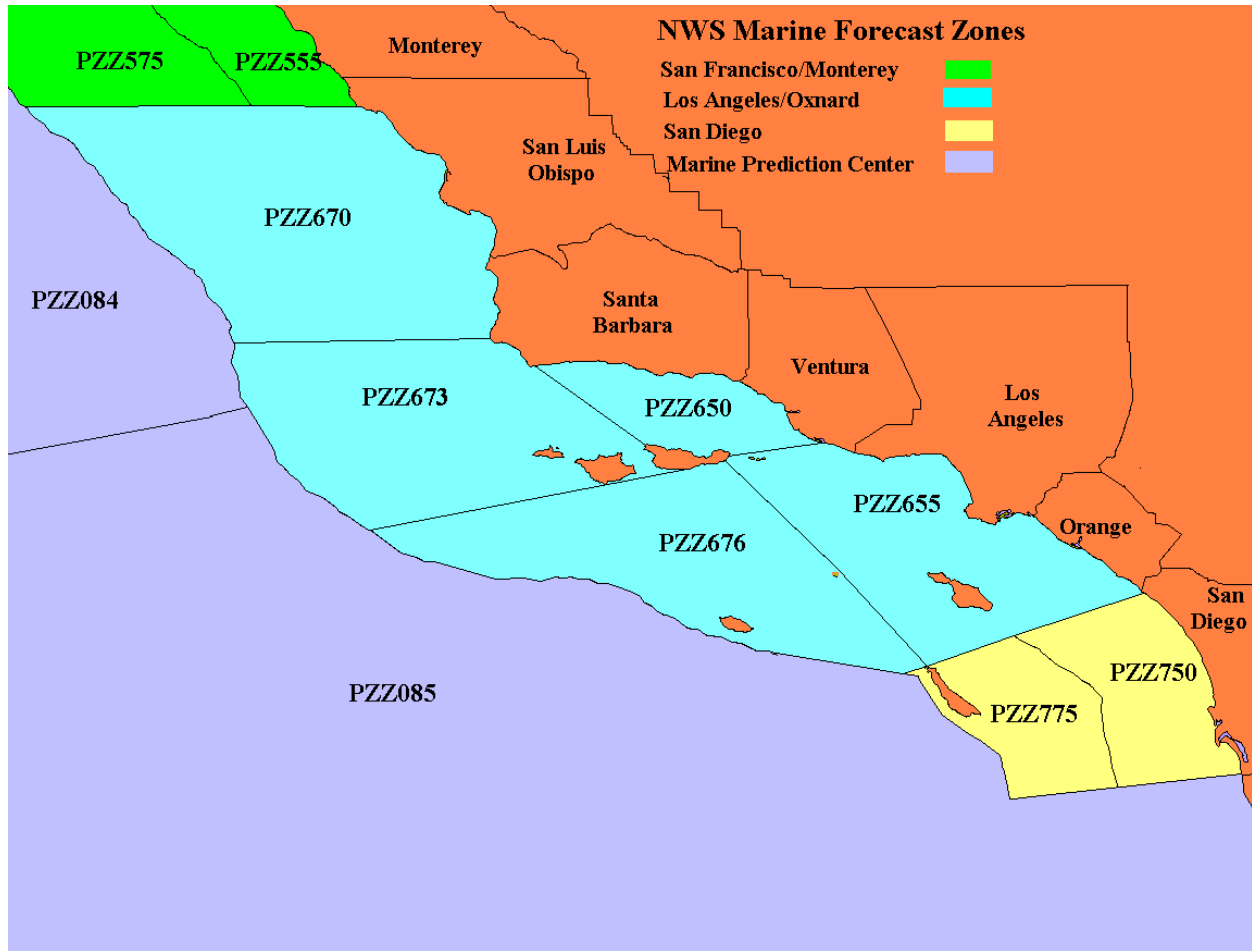
Marine Weather User's Guide

September 2004

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DESCRIPTIONS OF NWS MARINE FORECAST ZONES

Marine Forecasts issued by NWS San Francisco/Monterey (partial listing):

- PZZ555** Pigeon Point to Point Piedras Blancas out to 20 nm
- PZZ575** Pigeon Point to Point Piedras Blancas 20 to 60 nm offshore

Marine Forecasts issued by NWS Los Angeles/Oxnard:

- PZZ670** Point Piedras Blancas to Point Arguello out to 60 nm
- PZZ673** Point Arguello to Santa Cruz Island out to 60 nm
includes San Miguel and Santa Rosa Islands
- PZZ676** Outer Waters from Santa Cruz Island to San Clemente Island
includes San Nicolas Island
- PZZ650** East Santa Barbara Channel from Point Conception to Point Mugu
includes Santa Cruz and Anacapa Islands
- PZZ655** Inner Waters from Point Mugu to San Mateo Point
includes Santa Catalina and Santa Barbara Islands

Marine Forecasts issued by NWS San Diego:

- PZZ750** Coastal Waters from San Mateo Point to the Mexican Border out to 30 nm
- PZZ775** Waters from San Mateo Point to the Mexican Border extending 30 to 60 nm out including San Clemente Island

Marine Forecasts issued by Ocean Prediction Center, NWS Washington DC:

- PZZ084** Point Arena to Point Conception 60 to 250 nm offshore
- PZZ085** Point Conception to Guadalupe Island 60 to 250 nm offshore

MARINE SERVICE AND WARNING PROGRAM

The objective of the Marine Services and Warning Program is to improve efficiency and safety for commercial, governmental, and recreational maritime operations on the high seas and along the coasts of the United States. The National Weather Service has statutory responsibility for the forecasting of weather, the issuing of storm warnings, and the collection and transmission of marine information for the benefit of commerce and navigation.

The National Weather Service (NWS) Forecast Office in Oxnard is responsible for the issuance of all marine forecasts and warnings for the Central and Southern California coastal waters out to 60 nautical miles offshore from Point Piedras Blancas south to San Mateo Point, including Santa Cruz, San Miguel, Santa Rosa, San Nicolas, Anacapa, Santa Barbara and Catalina Islands.

The San Diego NWS office issues the forecasts and warnings for the coastal waters from San Mateo Pt. to the Mexican Border including San Clemente Island.

The Monterey NWS office issues the forecasts and warnings for the coastal waters out to 60 nautical miles from Point Arena to Point Piedras Blancas, including the San Francisco Bay area and Monterey Bay.

The NWS Marine Prediction Center, located in Camp Springs MD, issues the marine forecasts for the waters from 60 to 250 nautical miles offshore along the entire West Coast.

METHODS OF RECEIVING NWS FORECASTS, STATEMENTS AND WARNINGS

NOAA Weather Radio - continuous broadcast of the latest buoy and weather observations, forecasts, statements, and warnings.

<u>Weather Band</u>	<u>Frequency</u>	<u>Call Sign</u>	<u>Location</u>
Weather 1	162.550 MHz	KIH-30	Point Arena
Weather 2	162.400 MHz	KHB-49	Mt. Pise (San Francisco)
Weather 5	162.450 MHz	WWF-64	Monterey (marine radio)
Weather 7	162.525 MHz	WNG-59	Hearst Castle (marine radio)
Weather 1	162.550 MHz	KIH-31	San Luis Obispo
Weather 3	162.475 MHz	WWF-62	Santa Barbara (marine radio)
Weather 2	162.400 MHz	KIH-34	Santa Barbara
Weather 1	162.550 MHz	KWO-37	Los Angeles (Mount Lukens)
Weather 7	162.525 MHz	WNG-58	Avalon (marine radio)
Weather 5	162.450 MHz	WWG-21	Santa Ana
Weather 2	162.400 MHz	KEC-62	San Diego
Weather 4	162.425 MHz	WNG-37	San Diego (marine radio)

Public Telephone Numbers - These numbers offer the latest recorded forecasts (and warnings if any are in effect) at all times. In addition, a live person can be reached for further information during the hours indicated below:

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METHODS OF RECEIVING NWS WEATHER INFORMATION (CONTINUED)

<u>NWS Office</u>	<u>Number</u>	<u>Hours Live Person is Available</u>
Los Angeles/Oxnard	(805) 988-6610	9am-2pm Daily
San Diego	(858) 675-8706	8am-4pm Monday – Friday
Monterey	(831) 656-1725	8am-4pm Monday - Friday

NWS FTPMAIL - NWS radiofax charts broadcast by the USCG from Point Reyes, as well as NWS marine text forecasts, are available via email. The FTPMAIL server is intended to allow Internet access for mariners and other users who do not have direct access to the World Wide Web but who are equipped with an email system. Turnaround time (time from sending email request to receiving response) is generally under one hour, however, performance may vary widely and receipt cannot be guaranteed. Instructions for using FTPMAIL may be obtained by sending an email to ftpmail@weather.noaa.gov. The subject line may be blank or any text, and the body of the message should be "help". These instructions are also on the Web at <http://weather.noaa.gov/pub/fax/ftpmail.txt>

NWS Web Sites - These contain a wealth of weather information, including most real-time forecasts and warnings. Users should keep in mind that the Internet is not an official source of NWS weather information, and there may be outages or data delays on occasion. The NWS Marine Dissemination page listed below contains a substantial amount of useful material regarding the various methods of obtaining weather information.

NWS Los Angeles/Oxnard - <http://www.wrh.noaa.gov/lox>
NWS San Diego - <http://www.wrh.noaa.gov/Sandiego/index.shtml>
NWS San Francisco/Monterey - <http://www.wrh.noaa.gov/Monterey>
NWS Marine Dissemination Page- <http://www.nws.noaa.gov/om/marine/home.htm>

NWS Radiofax Charts - Weather analysis and forecast charts are broadcast from many locations around the world. Maps are received onboard using a dedicated radiofax receiver, or a single sideband shortwave receiver connected to either an external fax recorder or a PC equipped with a radiofax interface and application software. Additional information about the radiofax program is available online at <http://www.nws.noaa.gov/om/marine/radiofax.htm>. For the West Coast, broadcasts (detailed in the back of this guide) are made from Point Reyes on the following schedule/frequencies (UTC time is obtained by adding 8 hours to PST, or adding 7 hours to PDT):

<u>Broadcast Start Times (UTC)</u>	<u>Frequencies (kHz)</u>
0245Z, 0800Z, 1100Z, 1430Z	4346, 8682, 12730, 17151.2
1930Z, 2300Z	8682, 12730, 17151.2, 22527

USCG VHF Broadcasts - NWS coastal marine forecasts and warnings are broadcast by the U.S. Coast Guard. These are broadcast on Channel 22A (157.1 MHz VHF FM), after an initial announcement on Channel 16 (156.8 MHz VHF FM). Typical coverage range extends about 20 nautical miles offshore, but can be greater. Selected transmitting locations and broadcast times for Southern and Central California are listed below:

METHODS OF RECEIVING NWS WEATHER INFORMATION (CONTINUED)

<u>Location</u>	<u>Broadcast Times (UTC)</u>
Group Los Angeles/Long Beach	0200Z, 1800Z
Group San Francisco	1630Z, 1900Z, (2130Z - winter only)
Activities San Diego	Warnings only

USCG MF Broadcasts - NWS offshore marine forecasts, selected coastal marine forecasts, tropical weather information, and tsunami bulletins are broadcast on 2670 kHz, following an initial announcement on 2182 kHz. Typical coverage range is 50-150 nautical miles offshore during the day, and 150-300 nautical miles offshore at night. Note that while the coastal marine forecast from NWS Monterey is included in the current broadcast program from Group San Francisco, the coastal forecast from NWS Oxnard is NOT included in the broadcast from Group Los Angeles/Long Beach. More information can be found online at:

www.nws.noaa.gov/om/marine/mfvoice.htm

Selected transmitting locations and broadcast times for Southern and Central California:

<u>Location</u>	<u>Broadcast Times (UTC)</u>
Group Los Angeles/Long Beach	0503Z, 1303Z, 2103Z
Group San Francisco	0203Z, 1403Z

NAVTEX Broadcast - Specially prepared NWS NAVTEX forecasts are broadcast via this system, which provides a method of printing out text forecasts on board a vessel. The broadcasts are made on the 518 kHz frequency. In the past this system has been found mainly on large ships, however lower cost receivers suitable for recreational boating are now available. The NAVTEX forecasts are a blend of NWS coastal and offshore forecasts, and some of the forecast detail is lost for the coastal areas. Users requiring greater forecast detail within 60 nautical miles of shore should use NOAA weather radio, FTPMAIL, or the USCG VHF or MF broadcasts to obtain this information. More details about NAVTEX are available online at:

<http://www.nws.noaa.gov/om/marine/navtex.htm>

Selected transmitting locations and broadcast times for Southern and Central California:

<u>Location</u>	<u>Broadcast Times (UTC)</u>
San Francisco	0000Z, 0400Z, 0800Z, 1200Z, 1600Z, 2000Z
Cambria	0045Z, 0445Z, 0845Z, 1245Z, 1645Z, 2045Z

USCG HF Broadcast - NWS offshore and high seas forecasts along with tsunami bulletins are broadcast in upper sideband mode using a synthesized voice ("Perfect Paul"). Broadcast range can vary greatly, but can reach up to several thousand miles in good reception conditions with a proper antenna. For more details on HF, look online at: <http://www.nws.noaa.gov/om/marine/hfvoice.htm>

METHODS OF RECEIVING NWS WEATHER INFORMATION (CONTINUED)

Selected broadcast schedules and frequencies:

Point Reyes:

Broadcast Start Times (UTC)

0430Z, 1030Z

1630Z, 2230Z

Frequencies (kHz - USB)

4426, 8764, 13089

8764, 13089, 17314

Honolulu:

Broadcast Start Times (UTC)

0600Z, 1200Z

0005Z, 1800Z

Frequencies (kHz - USB)

6501, 8764

8764, 13089

DIAL-A-BUOY - This service allows mariners to obtain the latest conditions at many buoy and CMAN stations around the country. An option is also available to hear the latest NWS marine forecast for any of the buoy or CMAN locations. To use this service, dial (228) 688-1948 from any touch tone or cell phone. Enter 1, then the 5 digit buoy number (numbers for area buoys are listed below), followed by the # key. For CMAN stations, enter numbers corresponding to the letter ID of the station (listed below). The computer voice will then read the latest observation for the station you selected. After hearing the observation, press the # key to hear the marine forecast for that location, or press 6 to go back and select another buoy or CMAN location. More information on the Dial-A-Buoy service is available online at:

<http://www.ndbc.noaa.gov/dial.shtml>

<u>Buoy Number</u>	<u>Buoy Name/Location</u>	<u>Marine Forecast Zone</u>
46059	California Offshore	-----
46014	Point Arena	PZZ455
46013	Bodega Bay	PZZ550
46026	San Francisco	PZZ550
46012	Half Moon Bay	PZZ550
46042	Monterey	PZZ555
46028	Cape San Martin	PZZ575
46062	Point San Luis	PZZ670
46011	Santa Maria (Point Sal)	PZZ670
46023	Point Arguello	PZZ670
46063	Point Conception	PZZ673
46054	W. Santa Barbara Channel	PZZ673
46069	S. Santa Rosa Island	PZZ676
46047	Tanner Bank	-----
46086	San Clemente Basin Buoy	PZZ775
46053	Mid Santa Barbara Channel	PZZ650
46025	Santa Monica Basin	PZZ655
PTAC1 (enter 78221)	Point Arena CMAN	-----
PTGC1 (enter 78421)	Point Arguello CMAN	-----

MARINE TERMINOLOGY

Coastal Flooding - Inundation of coastal areas from waves and storm surge.

Coastal Waters - Waters out to 60 nautical miles (nm).

Gale - Wind speeds from 34 to 47 knots.

High Surf - widespread surf of 7 feet or greater (10 feet north of Pt. Conception)

Hurricane - Severe tropical cyclone with wind speeds of 64 knots or greater.

Knot - One nautical mile per hour (1.15 mph).

Marine Layer - A moist shallow layer of air of marine origin that usually has drier warmer air above it.

Offshore Waters - Waters from 60 nm to 250 nm.

Seas - Combination of swell and wind waves.

Storm - Wind speeds greater than 47 knots.

Storm Surge - A rise of the sea level preceding a storm due to the wind and low atmospheric pressure.

Swell - Wind generated waves that have traveled out of the generation area, of regular and longer duration than wind waves.

Tropical Disturbance - Tropical cyclone with wind speeds less than 20 knots.

Tropical Depression - Tropical cyclone with wind speeds between 20 and 34 knots.

Tropical Storm - Tropical cyclone with wind speeds between 35 and 63 knots.

Tsunami - Seismic sea wave caused by an earthquake, undersea landslide or volcanic eruption. Typically arrives onshore as a series of surges.

Wind Waves - Short period, irregular waves caused by the flow of air over water.

BEAUFORT SCALE

<u>Number</u>	<u>Description</u>	<u>Wind (kts)</u>	<u>Sea State</u>
0	calm	0	calm
1	light air	1-3	lightly rippled
2	slight breeze	4-6	small wavelets
3	gentle breeze	7-10	long unbreaking waves
4	moderate breeze	11-16	waves with whitecaps
5	fresh breeze	17-21	moderate waves, many whitecaps
6	strong breeze	22-27	larger waves, regular whitecaps
7	moderate gale	28-33	large waves
8	fresh gale	34-40	high sea with blowing foam
9	strong gale	41-47	high crested waves
10	whole gale	48-55	high churning white seas
11	storm	55-63	mountainous waves
12	hurricane	64+	severe and extensive damage

MARINE PRODUCTS

COASTAL WATERS FORECAST

The Coastal Waters Forecast is a routine product issued four times daily at 3:00 am, 9:00 am, 3:00 pm and 9:00 pm year round. It is the general forecast for the coastal waters out to 60 nautical miles offshore. The Coastal Waters Forecast includes information about wind, wave, swell, and significant weather (including fog, rain or showers, and thunderstorms). Any advisories or warnings, such as a Small Craft Advisory or a Gale Warning, will be "headlined" within this product.

EXAMPLE COASTAL WATERS FORECAST (CWF, FZUS56)

COASTAL MARINE FORECAST
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
300 AM PST SAT MAR 2 2002

PZZ600-021700-

.SYNOPSIS FOR SOUTHERN CALIFORNIA COAST AND SANTA BARBARA CHANNEL INCLUDING THE CHANNEL ISLANDS NATIONAL MARINE SANCTUARY...AT 09Z...1 AM LOCAL TIME...A 1022 MB HIGH WAS LOCATED 500 NM SW OF POINT CONCEPTION...WITH A TROUGH OF LOW PRESSURE OVER THE CALIFORNIA COAST. OFFSHORE FLOW WILL DEVELOP OVER THE COASTAL WATERS THIS MORNING...THEN CONTINUE INTO SUN.

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PZZ670-673-021700-

POINT PIEDRAS BLANCAS TO POINT ARGUELLO AND OUT 60 NM-
POINT ARGUELLO TO SANTA CRUZ ISLAND AND OUT 60 NM-
300 AM PST SAT MAR 2 2002

...SMALL CRAFT ADVISORY FOR HAZARDOUS SEAS...

.TODAY...WIND E TO NE 5 TO 15 KT. LOCALLY STRONGER GUSTS NEAR SHORE. WIND WAVES 2 FEET. SWELL NW 8 TO 10 FEET EVERY 11 SECONDS.

.TONIGHT...WIND E 5 TO 15 KT. LOCALLY STRONGER GUSTS NEAR SHORE. WIND WAVES 2 FEET. SWELL NW 5 TO 8 FEET EVERY 11 SECONDS.

.SUN...WIND E TO SE 10 TO 20 KT. LOCALLY STRONGER GUSTS NEAR SHORE IN THE MORNING. WIND WAVES 1 TO 3 FEET. SWELL NW 4 TO 6 FEET EVERY 10 SECONDS.

.SUN NIGHT...WIND VARIABLE 15 KT OR LESS. WIND WAVES 2 FEET OR LESS. SWELL NW 4 TO 6 FEET.

.MON...WIND VARIABLE 15 KT OR LESS. WIND WAVES 2 FEET OR LESS. SWELL NW 4 TO 6 FEET.

.TUE...WIND NW 10 TO 15 KT. WIND WAVES 2 FEET. SWELL NW 4 TO 6 FEET.

.WED...WIND NW 10 TO 20 KT. WIND WAVES 1 TO 3 FEET. SWELL NW 4 TO 6 FEET.

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PZZ676-021700-

OUTER WATERS SANTA CRUZ ISLAND TO SAN CLEMENTE ISLAND-
300 AM PST SAT MAR 2 2002

.TODAY...WIND E TO NE 10 KT. WIND WAVES 1 FOOT. SWELL NW 5 TO 7 FEET EVERY 11 SECONDS.

.TONIGHT...WIND E TO NE 10 TO 15 KT WITH LOCALLY STRONGER GUSTS. WIND WAVES 2 FEET. SWELL NW 4 TO 7 FEET EVERY 11 SECONDS.

.SUN...WIND E 10 TO 20 KT. LOCALLY STRONGER GUSTS IN THE MORNING. WIND WAVES 1 TO 3 FEET. SWELL NW 4 TO 6 FEET EVERY 10 SECONDS.

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EXAMPLE COASTAL WATERS FORECAST (CONTINUED)

.SUN NIGHT...WIND E 10 TO 15 KT WITH LOCALLY STRONGER GUSTS. WIND WAVES 2 FEET. SWELL NW 4 TO 6 FEET.

.MON...WIND VARIABLE 15 KT OR LESS. WIND WAVES 2 FEET OR LESS. SWELL NW 4 TO 6 FEET.

.TUE...WIND NW 10 TO 15 KT. WIND WAVES 2 FEET. SWELL NW 4 TO 6 FEET.

.WED...WIND NW 10 TO 20 KT. WIND WAVES 1 TO 3 FEET. SWELL NW 4 TO 6 FEET.

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PZZ650-021700-
EAST SANTA BARBARA CHANNEL-
300 AM PST SAT MAR 2 2002

.TODAY...WIND NE TO E 10 TO 20 KT WITH LOCALLY STRONGER GUSTS. WIND STRONGEST E OF RINCON POINT. WIND WAVES 1 TO 3 FEET. SWELL W 2 TO 4 FEET EVERY 10 SECONDS.

.TONIGHT...WIND E 10 TO 20 KT. LOCALLY STRONGER GUSTS E OF RINCON POINT. WIND WAVES 1 TO 3 FEET. SWELL W 2 TO 4 FEET EVERY 10 SECONDS.

.SUN...WIND E 15 TO 25 KT IN THE MORNING WITH LOCALLY STRONGER GUSTS E OF RINCON POINT...LOWERING TO 15 KT OR LESS LATE IN THE DAY. WIND WAVES 2 TO 4 FEET IN THE MORNING...SUBSIDING TO 2 FEET OR LESS LATE IN THE DAY. SWELL W 3 TO 5 FEET EVERY 10 SECONDS.

.SUN NIGHT...WIND E 15 KT OR LESS. WIND WAVES 2 FEET. SWELL W 3 TO 5 FEET.

.MON...WIND VARIABLE 10 KT. WIND WAVES 1 FOOT. SWELL W 3 TO 5 FEET.

.TUE...WIND VARIABLE 15 KT OR LESS. WIND WAVES 2 FEET OR LESS. SWELL W 3 TO 5 FEET.

.WED...WIND W TO NW 10 TO 15 KT. WIND WAVES 2 FEET. SWELL W 3 FEET.

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PZZ655-021700-
INNER WATERS POINT MUGU TO SAN MATEO POINT-
300 AM PST SAT MAR 2 2002

...SMALL CRAFT ADVISORY...

.TODAY...WIND NE TO E 15 TO 25 KT...WITH LOCAL GUSTS OVER 30 KT NEAR SHORE. WIND WAVES 2 TO 4 FEET. SWELL W 3 FEET EVERY 10 SECONDS.

.TONIGHT...WIND E 10 TO 20 KT. LOCALLY STRONGER GUSTS NEAR SHORE. WIND WAVES 1 TO 3 FEET. SWELL W 3 FEET EVERY 10 SECONDS.

.SUN...WIND E 15 TO 25 KT IN THE MORNING WITH LOCALLY STRONGER GUSTS NEAR SHORE...LOWERING TO 15 KT OR LESS IN THE AFTERNOON. WIND WAVES 2 TO 4 FEET IN THE MORNING...SUBSIDING TO 2 FEET OR LESS LATE IN THE DAY. SWELL W 3 TO 5 FEET EVERY 10 SECONDS.

.SUN NIGHT...WIND E TO NE 15 KT OR LESS. WIND WAVES 2 FEET OR LESS. SWELL W 2 TO 4 FEET.

.MON...WIND VARIABLE 10 KT. WIND WAVES 1 FOOT. SWELL W 3 FEET.

.TUE THROUGH WED...WIND VARIABLE 15 KT OR LESS. WIND WAVES 2 FEET OR LESS. SWELL W 3 FEET.

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SURF ZONE FORECAST

The Surf Zone Forecast is a surf and swell forecast for Southern California beaches. The forecast includes surf height, rip current potential, water temperature, remarks such as max sets or surf trends during the day, and an outlook for the following day. The forecast is issued twice each day at 2:00 am and 2:00 pm. The forecast issued in the morning is for the same calendar day and the forecast issued in the afternoon is for the following calendar day.

NWS Los Angeles/Oxnard issues the surf forecast for Los Angeles and Ventura counties as well as for the Santa Barbara County South Coast, while NWS San Diego issues the surf forecast for Orange and San Diego counties.

Routine surf forecasts are not issued for areas north of Point Conception. However, the National Weather Service does issue high surf advisories when necessary for these areas. High surf advisories are explained in more detail later in the user's guide.

EXAMPLE SURF ZONE FORECAST (SRF, FZUS56)

SURF ZONE FORECAST
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
200 PM PDT FRI SEP 17 2004

.FOR THE BEACHES OF SOUTHERN CALIFORNIA...VALID SAT SEP 18...

* THE FOLLOWING INFORMATION APPLIES WHEN FORECAST RIP CURRENT POTENTIAL IS "LOW": DUE TO HIGHLY VARIED COASTAL TOPOGRAPHY, DANGEROUS RIP CURRENTS ARE ALWAYS A POSSIBILITY ALONG THE SOUTHERN CALIFORNIA COASTS, AND SWIMMERS ARE URGED TO USE CAUTION AT ALL TIMES.

CAZ041-180900-
LOS ANGELES COUNTY COAST-
200 PM PDT FRI SEP 17 2004

.SATURDAY...
SURF HEIGHT.....1-3 FEET.
RIP CURRENT POTENTIAL.....LOW*
WATER TEMPERATURE.....64-68 DEGREES.

REMARKS...NONE.

OUTLOOK FOR SUNDAY...LITTLE CHANGE.

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EXAMPLE SURF ZONE FORECAST (CONTINUED)

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CAZ040-180900-
VENTURA COUNTY COAST-
200 PM PDT FRI SEP 17 2004

.SATURDAY...
SURF HEIGHT.....1-3 FEET.
RIP CURRENT POTENTIAL.....LOW*
WATER TEMPERATURE.....64 DEGREES.

REMARKS...NONE.

OUTLOOK FOR SUNDAY...LITTLE CHANGE.

\$\$

CAZ039-180900-
SANTA BARBARA COUNTY SOUTH COAST-
200 PM PDT FRI SEP 17 2004

.SATURDAY...
SURF HEIGHT.....1-2 FEET.
RIP CURRENT POTENTIAL.....LOW*
WATER TEMPERATURE.....61-64 DEGREES.

REMARKS...NONE.

OUTLOOK FOR SUNDAY...LITTLE CHANGE.

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MARINE WEATHER STATEMENT

The Marine Weather Statement (MWS) for coastal waters is the complimentary product of the Special Weather Statement which covers land areas. It is issued for a variety of purposes including:

1. to provide follow-up information on Special Marine Warnings and to cancel all or part of a warning (Special Marine Warnings are explained in detail later in the user's guide).
2. for isolated or local non-severe thunderstorm activity (severe thunderstorm over water would require a Special Marine Warning), also to give heads-up
3. for possible thunderstorm or waterspout activity within the next 12 hours.
4. to provide information on significant marine conditions including dense fog in high traffic areas, hazardous material spills, and extreme tides and/or tidal overflows.
5. to describe short duration but potentially hazardous conditions in which sustained winds or frequent gusts are up to 33 knots for 2 hours or less (winds 34 knots or greater would require a Special Marine Warning).
6. to alert mariners to very significant weather features expected in the 2 to 5 day forecast periods (approaching storm, possible gales etc).

Marine weather statements can be issued at any time, as necessary. Most marine weather statements will be updated at least every 6 hours. Examples of several different types of marine weather statements follow.

EXAMPLE MARINE WEATHER STATEMENT - THUNDERSTORMS (MWS, FZUS76)

MARINE WEATHER STATEMENT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
415 PM PST FRI FEB 9 2001

...LINE OF SHOWERS AND POSSIBLE THUNDERSTORMS OFF THE CENTRAL COAST OF CALIFORNIA...

AT 400 PM...RADAR INDICATED A LINE OF SHOWERS AND POSSIBLE THUNDERSTORMS EXTENDING FROM NORTH OF MORRO BAY TO THE SOUTHWEST OVER 100 MILES. THESE SHOWERS ARE ALONG A COLD FRONT THAT WILL MOVE ONSHORE THROUGH THIS EVENING. SOUTHEAST WINDS AT 20 TO 30 KTS WILL SHIFT TO SOUTHWEST AND THEN NORTHWEST WITH THE PASSAGE OF THIS FRONT.

EXPECT GUSTY WINDS AND SHOWERS...WITH POSSIBLE THUNDERSTORMS THROUGHOUT THE EVENING HOURS. LIGHTNING AND SMALL HAIL MAY BE ASSOCIATED WITH ANY THUNDERSTORMS.

MARINERS ARE ADVISED TO SEEK SAFE HARBOR OR STAY IN PORT UNTIL THESE STORMS PASS THROUGH THE AREA LATER THIS EVENING.

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EXAMPLE MARINE WEATHER STATEMENT - STORM OUTLOOK (MWS, FZUS76)

MARINE WEATHER STATEMENT

NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
235 AM PST TUE JAN 9 2001

...STRONG WINDS AND VERY HIGH SEAS WILL LIKELY AFFECT THE COASTAL WATERS WEDNESDAY AFTERNOON THROUGH THURSDAY...

...MINOR TIDAL OVERFLOW POSSIBLE FOR LOW LYING COASTAL AREAS THROUGH FRIDAY MORNING...

A STRONG STORM SYSTEM WILL APPROACH THE CALIFORNIA COAST WEDNESDAY...AND MOVE ONSHORE WEDNESDAY NIGHT THROUGH THURSDAY. THIS STORM HAS THE POTENTIAL TO PRODUCE GALE FORCE WINDS ACROSS THE COASTAL WATERS NORTH OF POINT CONCEPTION...WITH WINDS ABOVE SMALL CRAFT ADVISORY CRITERIA LIKELY ACROSS THE REMAINDER OF THE COASTAL WATERS. VERY LARGE SEAS ARE LIKELY IN ASSOCIATION WITH THIS STORM AS WELL... AND HEAVY SURF ADVISORIES WILL VERY LIKELY BE REQUIRED ONCE AGAIN FOR WEDNESDAY NIGHT THROUGH THURSDAY.

IN ADDITION...THE FULL MOON DURING THE NEXT COUPLE OF DAYS WILL PRODUCE HIGH ASTRONOMICAL TIDES...WHICH COMBINED WITH THE LARGE SWELL WILL BE CAPABLE OF CAUSING MINOR TIDAL OVERFLOW ACROSS LOWLYING COASTAL AREAS. HIGHEST PREDICTED TIDES AT SELECTED COASTAL LOCATIONS FOR THE NEXT FEW DAYS...

DAY.....DATE	LOS ANGELES HARBOR HEIGHT.....TIME	PORT SAN LUIS WHARF HEIGHT.....TIME
TODAY...JAN 9	7.1 FEET.....807 AM	7.0 FEET.....855 AM
WED.....JAN 10	7.1 FEET.....853 AM	7.0 FEET.....941 AM
THU.....JAN 11	6.9 FEET.....941 AM	6.8 FEET.....1029 AM
FRI.....JAN 12	6.4 FEET.....1031 AM	6.3 FEET.....1119 AM

STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST MARINE WEATHER INFORMATION.

EXAMPLE MARINE WEATHER STATEMENT - SPECIAL MARINE WARNING UPDATE (MWS, FZUS76)

MARINE WEATHER STATEMENT

NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
215 AM PST TUE FEB 13 2001

...SPECIAL MARINE WARNING REMAINS IN EFFECT FOR THE INNER WATERS POINT MUGU TO SAN MATEO POINT UNTIL 315 AM...

AT 200 AM...POWERFUL WINDS CONTINUED TO BLOW AROUND A STRONG LOW PRESSURE AREA SOUTHWEST OF LOS ANGELES. SOUTHEASTERLY WINDS OF 40 TO 50 KT WITH LOCALLY STRONGER GUSTS WERE AFFECTING THE INNER COASTAL WATERS OF SOUTHERN CALIFORNIA. SAN PEDRO CHANNEL AT 130 FEET REPORTED AN EAST WIND AT 46 KT...AND CATALINA AIRPORT REPORTED A SOUTH WIND GUSTING TO 47 KT.

THESE STRONG WINDS WILL AFFECT THE INNER COASTAL WATERS AT LEAST THROUGH 3 AM TUESDAY MORNING. MARINERS ARE ADVISED TO SEEK SAFE HARBOR IMMEDIATELY.

SPECIAL MARINE WARNING

The Special Marine Warning is used for severe, short-term events of approximately two hours or less. It is issued for short duration yet sustained winds of 34 knots or greater, when severe local storms move from land to coastal waters or when severe weather develops over the coastal waters. Special Marine Warnings are often issued in Southern California during the winter when waterspouts develop in the coastal waters. Special Marine Warnings are updated using the Marine Weather Statement (MWS). Several different examples of Special Marine Warnings appear below:

EXAMPLE SPECIAL MARINE WARNING - THUNDERSTORM (SMW, WMUS1)

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
820 AM PST FRI JAN 12 2001

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

* SPECIAL MARINE WARNING FOR...
INNER WATERS FROM POINT MUGU TO SAN MATEO POINT

* UNTIL 915 AM PST

* AT 815 AM...RADAR SHOWED AN INTENSE THUNDERSTORM 15 MILES WEST OF PALOS VERDES PENINSULA. MOVEMENT WAS TO THE NORTHEAST AT 5 KNOTS.

* THIS INTENSE STORM WILL MOVE THROUGH THE SANTA MONICA BAY DURING THE NEXT HOUR. IT WILL LIKELY BE ACCOMPANIED BY BRIEF HEAVY RAIN...GALE FORCE WINDS...DANGEROUS LIGHTNING...HAIL...AND POSSIBLY WATERSPOUTS.

MARINERS AND BOATERS SHOULD REMAIN IN HARBOR UNTIL THIS STORM PASSES. THUNDERSTORMS ACCOMPANIED BY DEADLY LIGHTNING CAN GENERATE HIGH WINDS AND WATERSPOUTS MAKING FOR LOCALLY HAZARDOUS SEAS.

WATERSPOUTS CAN EASILY SWAMP BOATS...AND ALSO CREATE LOCALLY HAZARDOUS SEAS.

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Marine User's Guide - National Weather Service Los Angeles/Oxnard

EXAMPLE SPECIAL MARINE WARNING - STRONG WINDS (SMW, WMUS1)

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
115 AM PST TUE FEB 13 2001

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

- * SPECIAL MARINE WARNING FOR...
INNER WATERS FROM POINT MUGU TO SAN MATEO POINT
- * UNTIL 315 AM PST
- * AT 110 AM...A STRONG LOW PRESSURE AREA WAS CENTERED NEAR SAN NICOLAS ISLAND...OR ABOUT 100 NM SOUTHWEST OF LOS ANGELES. EAST AND SOUTHEAST WINDS AHEAD OF THIS LOW WERE GUSTING OVER 50 KNOTS AT SOME LOCATIONS ACROSS THE INNER WATERS FROM POINT MUGU TO SAN MATEO POINT. STRONG SUSTAINED WINDS OF 30 TO 40 KNOTS WITH LOCAL GUSTS OVER 50 KNOTS WILL CONTINUE THROUGH 315 AM AS THE LOW PRESSURE CENTER SLOWLY MOVES CLOSER TO THE AREA. A GALE WARNING IS ALSO IN EFFECT FOR THE INNER WATERS.

MARINERS AND BOATERS SHOULD REMAIN IN HARBOR UNTIL THE WINDS SUBSIDE. CONDITIONS ACROSS THE INNER COASTAL WATERS ARE EXTREMELY DANGEROUS AT THIS TIME. THE SPECIAL MARINE WARNING MAY NEED TO BE EXTENDED LATER TONIGHT...DEPENDING ON THE MOVEMENT OF THE SURFACE LOW PRESSURE SYSTEM DURING THE NEXT COUPLE OF HOURS. STAY TUNED TO NOAA WEATHER RADIO FOR THE LATEST WEATHER INFORMATION.

EXAMPLE SPECIAL MARINE WARNING - WATERSPOUT (SMW, WMUS1)

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
138 PM PST MON FEB 12 2001

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

- * SPECIAL MARINE WARNING FOR...
EAST SANTA BARBARA CHANNEL
 - * UNTIL 215 PM PST
 - * AT 137 PM PST...WEATHER SPOTTERS REPORTED A WATERSPOUT 10 MILES SOUTHWEST OF POINT MUGU. MOVEMENT WAS ESTIMATED TO BE EAST AT 15 MPH.
- MARINERS CAN EXPECT GUSTY WINDS...LOCALLY HIGH WAVES...DANGEROUS LIGHTNING AND HEAVY DOWNPOURS IN THE VICINITY OF THIS STORM. BOATERS SHOULD SEEK SAFE HARBOR IMMEDIATELY UNTIL THIS STORM PASSES.

REPORT SEVERE WEATHER TO THE NEAREST COASTAL AGENCY. THEY WILL RELAY YOUR REPORT TO THE NATIONAL WEATHER SERVICE FORECAST OFFICE IN OXNARD.

COASTAL FLOOD PRODUCTS

Coastal Flood Products include watches, warnings, advisories, and statements. All coastal flood products are issued with the same (CFW, FZUS68) identifier.

COASTAL FLOOD WATCH

A Coastal Flood Watch is issued to inform the public and cooperating agencies that coastal flooding is possible approximately 12 to 36 hours after issuance time.

EXAMPLE COASTAL FLOOD WATCH (CFW, FZUS68)

COASTAL FLOOD WATCH
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
245 PM PST TUE JAN 9 2004

...A COASTAL FLOOD WATCH IS IN EFFECT FOR WEDNESDAY NIGHT THROUGH FRIDAY FOR SAN LUIS OBISPO...SANTA BARBARA...VENTURA AND LOS ANGELES COUNTIES...

...TIDAL OVERFLOW POSSIBLE FOR LOW LYING AREAS THROUGH FRIDAY MORNING...

A STRONG STORM SYSTEM WILL APPROACH THE CALIFORNIA COAST WEDNESDAY...AND MOVE ONSHORE WEDNESDAY NIGHT THROUGH THURSDAY. THIS STORM HAS THE POTENTIAL TO PRODUCE COASTAL FLOODING IN LOW LYING COASTAL LOCATIONS BETWEEN POINT PIEDRAS BLANCAS AND POINT VICENTE... ESPECIALLY AROUND THE TIME OF THE MORNING HIGH TIDE. TIDES OF 6 TO 8 FEET ABOVE NORMAL ARE POSSIBLE IN COASTAL LOCATIONS.

REMEMBER...A COASTAL FLOOD WATCH MEANS THAT THERE IS POTENTIAL FOR COASTAL FLOODING TO DEVELOP...BUT THERE IS NO COASTAL FLOODING OCCURRING RIGHT NOW.

A NEARLY FULL MOON DURING THE NEXT COUPLE OF DAYS WILL PRODUCE HIGH ASTRONOMICAL TIDES...WHICH COMBINED WITH THE LARGE SWELL WILL BE CAPABLE OF CAUSING TIDAL OVERFLOW ACROSS LOW LYING COASTAL AREAS. HIGHEST PREDICTED TIDES AT SELECTED COASTAL LOCATIONS FOR THE NEXT FEW DAYS ARE...

DAY.....DATE	LOS ANGELES HARBOR HEIGHT.....TIME	PORT SAN LUIS WHARF HEIGHT.....TIME
TODAY...JAN 9	7.1 FEET.....807 AM	7.0 FEET.....855 AM
WED.....JAN 10	7.1 FEET.....853 AM	7.0 FEET.....941 AM
THU.....JAN 11	6.9 FEET.....941 AM	6.8 FEET.....1029 AM
FRI.....JAN 12	6.4 FEET.....1031 AM	6.3 FEET.....1119 AM

ALL PERSONS LIVING ALONG THE COAST SHOULD TAKE IMMEDIATE ACTION TO PROTECT THEIR PROPERTY. SECURE ALL LOOSE OBJECTS...BOARD UP WINDOWS CLOSE TO THE GROUND...AND KNOW YOUR EVACUATION ROUTES.

STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST INFORMATION ON THIS DEVELOPING WEATHER EVENT.

COASTAL FLOOD WARNING

A Coastal Flood Warning is issued to inform the public and cooperating agencies that coastal flooding, posing a serious threat to life and property, is occurring, is imminent, or is expected within the next 24 hours.

EXAMPLE COASTAL FLOOD WARNING (CFW, FZUS68)

BULLETIN - IMMEDIATE BROADCAST REQUESTED
COASTAL FLOOD WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
830 PM PST WED JAN 10 2004

...A COASTAL FLOOD WARNING HAS BEEN ISSUED FOR THURSDAY THROUGH FRIDAY
FOR SAN LUIS OBISPO...SANTA BARBARA...VENTURA...AND LOS ANGELES COUNTIES...

A COASTAL FLOOD WARNING HAS BEEN ISSUED FROM POINT PIEDRAS BLANCAS TO POINT CONCEPTION AND SOUTHWARD TO POINT VICENTE FOR THURSDAY THROUGH FRIDAY. THIS MEANS THAT COASTAL FLOODING IS LIKELY...ESPECIALLY NEAR THE TIMES OF THE ASTRONOMICAL HIGH TIDES. ALL PERSONS LIVING ALONG THE COAST OR WITH INTERESTS IN LOW LYING AREAS SHOULD RUSH ANY NEEDED PREPARATIONS TO COMPLETION THIS EVENING.

A MAJOR WINTER STORM OFF THE CALIFORNIA COAST HAS GENERATED VERY STRONG WINDS AND HIGH SEAS OVER THE OFFSHORE WATERS. CALIFORNIA OFFSHORE BUOY 46059... LOCATED 550 MILES NORTHWEST OF POINT CONCEPTION...HAS BEEN REPORTING SEAS OF UP TO 39 FEET DURING THE EVENING HOURS. THESE VERY LARGE SEAS ARE MOVING TOWARD THE COAST THIS EVENING...AND WILL BEGIN TO ARRIVE ON THE CENTRAL COAST NORTH OF POINT CONCEPTION LATE TONIGHT. THE LARGE SWELL WILL SPREAD INTO THE INNER WATERS SOUTH OF POINT CONCEPTION ON THURSDAY MORNING. SEAS WILL BUILD TO 20 TO 28 FEET ACROSS THE COASTAL WATERS NORTH OF POINT CONCEPTION DURING THE DAY THURSDAY. THE WESTERLY DIRECTION OF THE SWELL WILL ALLOW MUCH OF THE SWELL ENERGY TO SPREAD INTO THE INNER WATERS AS WELL...AND SEAS ARE EXPECTED TO BUILD TO 12 TO 20 FEET ON THURSDAY.

THIS LARGE SWELL WILL COMBINE WITH HIGH ASTRONOMICAL TIDES...ASSOCIATED WITH THE NEARLY FULL MOON...TO CAUSE COASTAL FLOODING ACROSS LOW LYING COASTAL AREAS. THE FLOODING WILL BE MOST SEVERE NEAR THE TIMES OF HIGHEST TIDES EACH MORNING...BUT COASTAL FLOODING WILL BE POSSIBLE AT ANY TIME THURSDAY THROUGH FRIDAY. HIGHEST PREDICTED TIDES AT SELECTED COASTAL LOCATIONS FOR THE NEXT TWO DAYS ARE...

DAY.....DATE	LOS ANGELES HARBOR HEIGHT.....TIME	PORT SAN LUIS WHARF HEIGHT.....TIME
TODAY...JAN 11	6.9 FEET.....941 AM	6.8 FEET.....1029 AM
FRI.....JAN 12	6.4 FEET.....1031 AM	6.3 FEET.....1119 AM

THE LARGE SWELL IS EXPECTED TO BEGIN SLOWLY DIMINISHING ON FRIDAY...BUT SEAS WILL REMAIN ABOVE 20 FEET ACROSS THE OUTER COASTAL WATERS...AND ABOVE 12 FEET ACROSS THE INNER WATERS...FOR MUCH OF THE DAY.

STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST WEATHER INFORMATION.

COASTAL FLOOD STATEMENT

A Coastal Flood Statement is used to keep the public and cooperating agencies informed of the status of existing coastal flood watches and/or warnings. It provides the latest information on local conditions, an overview of the threat for the entire coastline, and current tidal information. This statement is also used to cancel or delete part of a coastal flood watch or warning, and to issue, update or cancel a High Surf Advisory.

EXAMPLE COASTAL FLOOD STATEMENT FOR COASTAL FLOODING (CFW, FZUS68)

COASTAL FLOOD STATEMENT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
1130 PM PST THU JAN 11 2004

...COASTAL FLOOD WARNING REMAINS IN EFFECT THROUGH FRIDAY FOR SAN LUIS OBISPO...SANTA BARBARA...VENTURA AND LOS ANGELES COUNTIES...

A COASTAL FLOOD WARNING REMAINS IN EFFECT THROUGH FRIDAY FROM POINT PIEDRAS BLANCAS TO SOUTH TO POINT VICENTE. THE WARNING MEANS THAT COASTAL FLOODING IS LIKELY...ESPECIALLY NEAR THE TIMES OF ASTRONOMICAL HIGH TIDE.

A MAJOR WINTER STORM OFF THE COAST OF CENTRAL CALIFORNIA HAS CAUSED STRONG WINDS AND VERY HIGH SEAS OVER THE COASTAL WATERS. THE SEAS PEAKED DURING THE DAY ON THURSDAY...WITH HEIGHTS REACHING 20 TO 26 FEET ALONG THE CENTRAL COASTAL WATERS NORTH OF POINT CONCEPTION. AS OF 11 PM...SEAS HAVE BEGUN TO SLOWLY DIMINISH...WITH SEA HEIGHTS GENERALLY RUNNING AROUND 18 FEET...AND PERIODS OF 14 TO 17 SECONDS. MORRO BAY HARBOR REPORTED BREAKERS UP TO 25 FEET HIGH ON THURSDAY...WITH SEVERE BEACH EROSION OCCURRING. ALTHOUGH SEAS HAVE STARTED TO DECREASE... COASTAL FLOODING AND BEACH EROSION IS LIKELY AGAIN FRIDAY MORNING AROUND THE TIME OF THE ASTRONOMICAL HIGH TIDE. THE SEVERE BEACH EROSION WHICH OCCURRED ON THURSDAY WILL MAKE THE COASTAL AREAS MORE VULNERABLE TO ADDITIONAL FLOODING AND BEACH EROSION ON FRIDAY MORNING...EVEN THROUGH THE SEA HEIGHTS HAVE DECREASED SOMEWHAT.

ACROSS THE INNER WATERS SOUTH OF POINT CONCEPTION...THE IMPACT OF THE SWELL DECREASED SLIGHTLY BY LATE THURSDAY AFTERNOON...AS THE DIRECTION OF THE SWELL BECAME SLIGHTLY MORE NORTHWESTERLY. THIS PREVENTED SOME OF THE SWELL ENERGY FROM REACHING INTO THE INNER WATERS. HOWEVER...SEAS HAVE STILL BEEN RUNNING AT 10 TO 12 FEET IN THIS AREA. BEACH EROSION AND PROPERTY DAMAGE HAS BEEN REPORTED ALONG THE VENTURA COUNTY COAST NORTHWEST OF THE CITY OF VENTURA. BREAKERS OF 8 TO 12 FEET WERE COMMON ALONG MANY SOUTHERN CALIFORNIA BEACHES ON THURSDAY. ADDITIONAL COASTAL FLOODING AND BEACH EROSION IS LIKELY AROUND THE TIME OF HIGH TIDE FRIDAY MORNING.

SEAS AND SURF WILL CONTINUE TO DIMINISH ON FRIDAY...AND THE COASTAL FLOODING THREAT SHOULD LESSEN FRIDAY AFTERNOON...ONCE THE TIME OF ASTRONOMICAL HIGH TIDE HAS PASSED. HOWEVER...COASTAL RESIDENTS SHOULD REMAIN ALERT FOR LIKELY COASTAL FLOODING AND BEACH EROSION THROUGH MIDDAY FRIDAY.

HIGH SURF ADVISORY

High surf advisories are issued when widespread surf is expected to reach heights of 7 feet or greater across beaches south of Point Conception, or 10 feet or greater on beaches north of Point Conception. High surf is normally caused by large ocean swell, typically generated by North Pacific storms during the winter and early spring (October - April), and by distant Southern Hemisphere storms during the summer and early fall (May - September). Impact of the surf on particular beaches can vary greatly from one event to the next, depending on the exact direction, height and period of the swell. High surf advisories are issued when high surf is expected to occur within the next 6 to 12 hours, and are normally updated every 6 hours until the high surf has subsided. Marine weather statements are also issued for above normal surf which is forecast to be just below high surf advisory criteria. High surf advisories are "headlined" in the Coastal Waters Forecast, just like a Small Craft Advisory or Gale Warning.

EXAMPLE COASTAL FLOOD STATEMENT FOR A HIGH SURF ADVISORY (CFW, FZUS68)

COASTAL FLOOD STATEMENT

NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
230 AM PST TUE FEB 20 2004

...A HIGH SURF ADVISORY REMAINS IN EFFECT FOR TODAY AND TONIGHT ALONG THE COAST FROM POINT PIEDRAS BLANCAS TO POINT VICENTE...

A LARGE WESTERLY SWELL WILL CONTINUE TO SPREAD ACROSS THE COASTAL WATERS THIS MORNING. AT 2 AM...BUOYS ALONG THE CENTRAL COAST NORTH OF POINT CONCEPTION REPORTED SEA HEIGHTS OF 13 TO 18 FEET...WITH SWELL PERIODS OF 14 SECONDS. THIS LARGE SWELL WILL CAUSE HEAVY SURF CONDITIONS TO DEVELOP ALONG THE COAST OF CENTRAL AND SOUTHERN CALIFORNIA. A HEAVY SURF ADVISORY REMAINS IN EFFECT FOR WEST FACING BEACHES FROM POINT PIEDRAS BLANCAS TO POINT VICENTE FOR TODAY AND TONIGHT.

ACROSS THE COASTAL WATERS FROM POINT CONCEPTION NORTHWARD...WESTERLY SWELL WILL REMAIN BETWEEN 13 AND 18 FEET TODAY...THEN SLOWLY SUBSIDE TONIGHT AND WEDNESDAY. THIS WILL PRODUCE HIGH SURF OF 10 TO 16 FEET ON WEST FACING BEACHES. HAZARDOUS CONDITIONS CAN BE EXPECTED ACROSS HARBOR ENTRANCES...INCLUDING MORRO BAY.

ACROSS THE INNER WATERS SOUTH OF POINT CONCEPTION...SWELL HEIGHTS WILL BUILD TO 9 TO 13 FEET TODAY. THE WESTERLY SWELL DIRECTION WILL ALLOW MUCH OF THE WAVE ENERGY TO SPREAD ACROSS THE INNER WATERS AND IMPACT WEST FACING SOUTHERN CALIFORNIA BEACHES. SURF HEIGHTS ARE EXPECTED TO AVERAGE 6 TO 10 FEET...WITH LOCAL MAXIMUM SETS TO 12 FEET...ON EXPOSED WEST FACING BEACHES FROM RINCON POINT TO POINT VICENTE.

IT IS EXTREMELY DANGEROUS TO FISH OR OBSERVE WAVES FROM EXPOSED COASTAL STRUCTURES OR ROCKS DURING HIGH SURF CONDITIONS. VERY LARGE WAVES CAN SUDDENLY SWEEP ACROSS PREVIOUSLY DRY AREAS. SWIMMING OR SURFING IN THESE WAVES MAY BE DANGEROUS FOR ANYONE. STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST MARINE WEATHER INFORMATION.

ADVISORIES AND WARNINGS "HEADLINED" IN OTHER FORECASTS

Since the greatest weather threat to mariners is either directly or indirectly wind-related, there are five products used in the Marine Warning Program to define the warning threshold for increasing wind speeds. These advisories or warnings are "headlined" when criteria for issuance are met or forecast. Small Craft Advisories can be issued up to 24 hours and warnings up to 36 hours prior to onset of adverse conditions.

SMALL CRAFT ADVISORY	Forecast winds of 21 to 33 knots - Small Craft Advisories may also be issued for hazardous sea conditions (10 feet or greater).
GALE WARNING	Forecast winds of 34 to 47 knots.
STORM WARNING	Forecast winds of 48 to 63 knots.
TROPICAL STORM WARNING	Forecast winds of 34 to 63 knots associated with a tropical storm.
HURRICANE WARNING	Forecast winds of 64 knots or higher associated with a hurricane.
HURRICANE FORCE WIND WARNING	Forecast winds of 64 knots or higher NOT associated with a hurricane.

EXAMPLE HEADLINE WITHIN A PRODUCT

COASTAL MARINE FORECAST
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
230 AM PST WED FEB 21 2003

PZZ670-211630-
POINT PIEDRAS BLANCAS TO POINT ARGUELLO AND OUT 60 NM-
230 AM PST WED FEB 21 2001

...SMALL CRAFT ADVISORY FOR HAZARDOUS SEAS...

.TODAY...WIND SE TO S 10 TO 20 KT...SHIFTING TO W 10 TO 15 KT LATE IN THE AFTERNOON. WIND WAVES 2 TO 3 FEET. SWELL NW 11 FEET...SUBSIDING TO 9 FEET IN THE AFTERNOON. A CHANCE OF RAIN.
.TONIGHT...WIND NW 10 TO 15 KT. WIND WAVES 2 FEET. SWELL NW 8 FEET.
.THU...WIND W TO NW 10 TO 15 KT...BECOMING NW 15 TO 20 KT IN THE AFTERNOON. WIND WAVES 2 FEET...BUILDING TO 3 FEET. SWELL NW 8 FEET...BUILDING TO 10 FEET DURING THE AFTERNOON. A CHANCE OF RAIN.

COASTAL WEATHER BUOYS AND OTHER MARINE OBSERVATIONS

WEATHER BUOYS 46069 AND 46086

Two new NOAA weather data buoys were deployed in the area south of Santa Rosa Island and southeast of San Clemente Island in December 2003. This established regular weather observations from these areas for the first time. These buoys allow early detection of long period or large swell approaching the Southern California coast, as well as provide real-time wind and wave data for an offshore waters region which has previously had little or no current weather data available. The location of data buoy South Santa Rosa Island, designated as buoy number 46069, is 21 nautical miles south of the western tip of Santa Rosa Island, at latitude 33 degrees 39 minutes north and longitude 120 degrees 12 minutes west. The location of data buoy San Clemente Basin, designated as buoy number 46086, is 26 nautical miles southeast of San Clemente Island, at latitude 32 degrees 50 minutes north and longitude 118 degrees 0 minutes west.

OTHER SOUTHERN AND CENTRAL CALIFORNIA WEATHER BUOYS

<u>Buoy Number</u>	<u>Location</u>	<u>Marine Forecast Zone</u>
46028	Cape San Martin	PZZ575
46011	Point Sal	PZZ670
46023	Point Arguello	PZZ670
46062	Port San Luis	PZZ670
46054	W. Santa Barbara Channel	PZZ673
46063	Point Conception	PZZ673
46053	Mid Santa Barbara Channel	PZZ650
46025	Santa Monica Basin	PZZ655
46047	Tanner Bank	-----

ADDITIONAL MARINE OBSERVATIONS (BROADCAST WHEN AVAILABLE)

<u>Name/Location</u>	<u>Data Available</u>	<u>Marine Forecast Zone</u>
Goleta Point	Wave Ht/Period/Direction	PZZ650
Anacapa passage	Wave Ht/Period/Direction	PZZ650
Avalon Harbor Entrance	Wind Speed/Direction	PZZ655
San Pedro Channel	Wind Speed/Direction	PZZ655
Point Vicente	Wind Speed/Direction	PZZ655
San Pedro Buoy	Wave Ht/Period/Direction	PZZ655
Huntington Beach	Wave Height/Period	PZZ655
Point Dume Buoy	Wave Ht/Period/Direction	PZZ655
Santa Monica Bay Buoy	Wave Ht/Period/Direction	PZZ655
Dana Point	Wave Height/Period	PZZ655
Oceanside Offshore	Wave Ht/Period/Direction	PZZ750
Torrey Pines Inner	Wave Ht/Period/Direction	PZZ750
Torrey Pines Outer	Wave Ht/Period/Direction	PZZ750
Scripps Pier	Wave Height/Period	PZZ750
Point La Jolla Buoy	Wave Ht/Period/Direction	PZZ750
San Clemente Isl. Buoy	Wind Speed/Direction	PZZ775

ADDITIONAL MARINE OBSERVATIONS (BROADCAST WHEN AVAILABLE) CONT.

<u>Name/Location</u>	<u>Data Available</u>	<u>Marine Forecast Zone</u>
San Nicolas Island Buoy	Wave Ht/Period/Direction	PZZ676
Harvest Buoy	Wave Ht/Period/Direction	PZZ673
Diablo Canyon Buoy	Wave Ht/Period/Direction	PZZ670
Point Piedras Blancas	Wind Speed/Direction	PZZ670
Point Arguello	Wind Speed/Direction	PZZ670/673

SANTA ANA WINDS

Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below passes and canyons of the coastal ranges of Southern California and in the Los Angeles basin. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon (the canyon from which it derives its name). Forecasters at the NWS in Oxnard usually place speed minimums on these winds and reserve the use of "Santa Ana" for winds greater than 25 knots.

The complex topography of Southern California combined with various atmospheric conditions create numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra mountains and west of the Rocky mountains including most of Nevada and Utah). Clockwise circulation around the center of this high pressure area forces air down slope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees F per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana winds can have gusts greater than 60 knots over widespread areas and gusts greater than 100 knots in favored areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze. The sea breeze which typically blows onshore daily, can moderate the Santa Ana winds during the late morning and afternoon hours.

Major Santa Ana wind associated dangers for mariners include: strong and gusty winds below passes and canyons along the coast, unusually high surf conditions on the northeast facing sides of the Channel Islands, and in extreme events, widespread high winds across the coastal waters.

SUNDOWNER WINDS

Along the Pacific coastline, 100 miles northwest of Los Angeles, beneath the ridges and canyons of the Santa Ynez Mountains, lies the city of Santa Barbara. This city and vicinity experience a down slope wind event named "Sundowner". Sundowners are independent of Santa Ana down slope winds and much smaller in scale. Sundowners received their name because the wind occurs predominantly in the late afternoon or evening hours.

The area affected by Sundowner winds is a narrow coastal plain one to five miles wide that rises precipitously to the Santa Ynez Mountain ridge line. The ridge is notched with three significant openings: (1) Nojoqui Pass (pronounced nah-ho-wee) at 925 feet, (2) Refugio Pass at 2254 feet, and (3) San Marcos Pass, directly above the city of Santa Barbara, at 2224 feet. Strong channeling of the Sundowner winds occurs in the vicinity of the three major mountain passes and near the south facing coastal canyons. There is also a fourth notch to the northeast of Santa Barbara, Romero Saddle at 3025 feet, which can occasionally contribute significantly in Sundowner wind episodes.

Sundowners, like most down slope winds, occur in various degrees of severity. Light Sundowners create irregular rises in temperature at Santa Barbara with gentle offshore breezes. Stronger Sundowners, occurring two or three times a year, result in sharp temperature rises and local gale force winds. Rarely, approximately every ten years, an "explosive" Sundowner occurs, resulting in extremely strong and hot winds along the south side of the Santa Ynez Mountains and onto the shoreline region reaching gale force or higher speeds.

The down slope and offshore mechanisms that cause Sundowner events around Santa Barbara are essentially the same as those that cause the larger scale Santa Ana winds to the south. Typically a north-south difference in atmospheric pressure with the region of high pressure located north or northwest of Santa Barbara is an early precursor of a Sundowner event. Clockwise circulation around the center of high pressure directs winds from the north across and down the mountain ranges north of Santa Barbara. The down slope winds are warmed by compression while their velocity increases as they descend through the passes and canyons and onto the coastal plain.

The hazards associated with Sundowner winds are the same as those of the Santa Ana winds. Namely, high winds below passes and canyons along the Santa Barbara County coast, with high winds becoming more widespread during extreme events.

Marine User's Guide - National Weather Service Los Angeles/Oxnard

RADIOFACSIMILE SCHEDULE - USCG POINT REYES CA - UPDATED September 2003

Time	Map Area	Contents of Transmission / Chart
0230Z		Test Pattern
0235Z	4	Tropical 0/24Hr Wind/Wave Forecast (20S-30N, East of 145W)
0248Z	7	Latest GOES IR Satellite Image (05N-55N, East of 130W)
0259Z	5	Latest GOES IR Satellite Image (05N-60N, West of 100W)
0310Z	1	00Z Sea State Analysis (20N-70N, 115W-135E)
0320Z	2	00Z Surface Analysis - Part 1 NE Pacific (20N-70N, 115W-175W)
0333Z	3	00Z Surface Analysis - Part 2 NW Pacific (20N-70N, 175W-135E)
0345Z	1	00Z 500mb Analysis (20N-70N, 115W-135E)
0355Z	10	03Z Tropical Cyclone Danger Area [Note: Replaced by High Wind/Wave Warning Area when not in hurricane season] (0N-40N, 80W-180W)
0408Z	4	Tropical 48Hr Wind/Wave Forecast (20S-30N, East of 145W)
0750Z		Test Pattern
0755Z	4	00Z Tropical Surface Analysis (20S-30N, East of 145W)
0808Z	8	24Hr Surface Forecast (25N-60N, East OF 155W)
0818Z	8	24Hr Wind/Wave Forecast (25N-60N, East OF 155W)
0828Z	1	48Hr 500mb Forecast (20N-70N, 115W-135E)
0838Z	1	48Hr Surface Forecast (20N-70N, 115W-135E)
0848Z	1	48Hr Wind/Wave Forecast (20N-70N, 115W-135E)
0858Z	1	48Hr Wave Period/Swell Direction Forecast (20N-70N, 115W-135E)
0908Z	7	06Z GOES IR Satellite Image (05N-55N, East of 130W)
0919Z	2	06Z Surface Analysis - Part 1 NE Pacific (20N-70N, 115W-175W)
0932Z	3	06Z Surface Analysis - Part 2 NW Pacific (20N-70N, 175W-135E)
0944Z	5	06Z GOES IR Satellite Image (05N-60N, West of 100W)
0955Z	4	Tropical 0/24Hr Wind/Wave Forecast (2 Charts) (20S-30N, East of 145W)
1008Z	4	Tropical 48Hr Wave Period/Swell Direction Forecast (20S-30N, East of 145W)
1100Z		Test Pattern
1104Z		Broadcast Schedule Part 1

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RADIOFACSIMILE SCHEDULE - USCG POINT REYES CA – CONTINUED

Time	Map Area	Contents of Transmission / Chart
1115Z		Broadcast Schedule Part 2
1126Z		Request For Comments
1137Z		Product Notice Bulletin
1148Z	4	06Z Tropical Surface Analysis (20S-30N, East of 145W)
1158Z	4	Tropical 48/72Hr Wind/Wave Forecast (20S-30N, East of 145W)
1430Z		Test Pattern
1438Z	5	Latest GOES IR Satellite Image (05N-60N, West of 100W)
1449Z	6	Latest GOES IR Satellite Image (23N-42N, East of 136W)
1500Z	8	12Z Sea State Analysis (25N-60N, E of 155W)
1510Z	4	Tropical 0/24 Hour Wind/Seas Forecast (2 Charts) (20S-30N, East of 145W)
1520Z	2	12Z Surface Analysis - Part 1 NE Pacific (20N-70N, 115W-175W)
1533Z	3	12Z Surface Analysis - Part 2 NW Pacific (20N-70N, 175W-135E)
1545Z	1	12Z 500 mb Analysis
1555Z	10	Tropical Cyclone Danger Area [Note: Replaced by High Wind/Wave Warning Area when not in hurricane season] (0N-40N, 80W-180W)
1608Z	4	12Z Tropical Surface Analysis (20S-30N, East of 145W)
1930Z		Test Pattern
1933Z	8	24Hr Surface Forecast (25N-60N, East OF 155W)
1943Z	8	24Hr Wind/Wave Forecast (25N-60N, East OF 155W)
1953Z	1	48Hr 500 mb Forecast (20N-70N, 115W-135E)
2003Z	1	48Hr Surface Forecast (20N-70N, 115W-135E)
2013Z	1	48Hr Wind/Wave Forecast (20N-70N, 115W-135E)
2023Z	1	48Hr Wave Period/Swell Direction Forecast (20N-70N, 115W-135E)
2033Z	1	96Hr 500mb Forecast (20N-70N, 115W-135E)
2043Z	1	96Hr Surface Forecast (20N-70N, 115W-135E)
2053Z	1	96Hr Wind/Wave Forecast (20N-70N, 115W-135E)
2103Z	1	96Hr Wave Period Forecast (20N-70N, 115W-135E)

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RADIOFACSIMILE SCHEDULE-USCG POINT REYES CA-CONTINUED

Time	Map Area	Contents of Transmission / Chart
2113Z	5	18Z GOES IR Satellite Image (05N-60N, West of 100W)
2124Z	2	18Z Surface Analysis - Part 1 NE Pacific (20N-70N, 115W-175W)
2137Z	3	18Z Surface Analysis - Part 2 NW Pacific (20N-70N, 175W-135E)
2149Z	4	Tropical 0/24 Hour Wind/Wave Forecast (2 Charts) (20S-30N, East of 145W)
2159Z	4	Tropical 48/72Hr Wave Period/Swell Direction (20S-30N, East of 145W)
2212Z	4	18Z Tropical Surface Analysis (20S-30N, East of 145W)
2300Z		Test Pattern
2304Z	9	Latest SST Analysis (40N-53N, East OF 136W)
2314Z	6	Latest SST Analysis (23N-42N, East of 136W)
2324Z		Broadcast Schedule Part 1
2335Z		Broadcast Schedule Part 2

Area Definitions:

1=20N-70N, 115W-135E

6=23N-42N, East of 136W

2=20N-70N, 115W-175W

7=05N-55N, East of 130W

3=20N-70N, 175W-135E

8=25N-60N, East of 155W

4=20S-30N, East of 145W

9=40N-53N, East of 136W

5=05N-60N, West of 100W

10=0N-40N, 80W-180W

Contractions: VT=VALID TIME, WV=Wave, Bul=Bulletin, Hr=Hour, Prelim=Preliminary

Assigned Frequencies (KHZ):

4346 (night)

8682 (continuous)

12730 (continuous)

17151.2 (continuous)

22527 (day)

For Carrier Frequency Subtract 1.9 kHz

ABOUT THE MARINE USER'S GUIDE

This Marine User's Guide was produced by the staff of the Los Angeles/Oxnard NWS Weather Forecast Office. This September 2004 version is the seventh edition of the guide.

To offer comments on the Marine User's Guide, or suggestions for future editions of the guide, you may contact:

**Joseph Sirard
Marine Program Manager
National Weather Service Los Angeles/Oxnard
520 North Elevar Street
Oxnard CA 93030**

joe.sirard@noaa.gov