Bay Breezes

Serving the San Francisco and Monterey Bay Areas

Summer 2007 **July 1, 2007**

Inside this issue:

New Heat Health Warning System

by Dave Reynolds *MIC*

Beginning on June 22nd the San Francisco Bay Area Forecast Office began using a new Heat Health Warning System (HHWS) that will provide a much improved heat warning service for communities in and around the San Francisco Bay. After the "Heat Storm" of July 2006, the unprecedented heat wave that hit California, the Emergency Manager from the City of San Jose approached the National Weather Service (NWS) asking if we could provide a modified set of criteria for San Jose. The former heat index of 105 and overnight lows near 80 were too high based on impacts observed last July. Pacific Gas & Electric noted that during the peak of the heat wave transformers were blowing around the city in that they could not sustain continuous operation. This actually caused power outages at pre-established cooling centers around San Jose which jeopardized many individuals seeking relief from the heat.

From this experience it was decided to contact Prof. Larry Kalkstein, a world renowned climate scientist

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Busy Fire Season Expected

by Ryan Walbrun *IMET*

After a dry winter across most of California a potentially busy fire season is expected across the state. The NWS office in Monterey is getting ready too. In early June Incident Meteorologists (IMET) Ryan Walbrun and Chris Brenchley along with IMET Trainee Matt Mehle and Meteorological Intern Brian Tentinger took part in the Wildland Fire School located at Fort Hunter Liggett in southern Monterey County. As on-site meteorologists, the IMET's are able to provide local meteorological updates to the firefighters and the expected effects on fire behavior. The four day training burn is conducted through the Monterey County Fire Training Officers Association in cooperation with the Monterey Peninsula College.

Then on June 12th and 13th, Ryan Walbrun attended the two day Wildland Fire Drill in Santa Clara County. The training burn is conducted at Grant Park near the base of Mount Hamilton about four miles east of San Jose. The preparedness drill allows city and wildland firefighters to train with live fire on the ground. It also is a great opportunity for the IMET's to fine

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Busy Fire Season Expected

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tune their equipment and observe first hand how the weather impacts fire behavior and the tactics that firefighters use to safely complete their mission. IMET trainee Matt Mehle and Forecaster Brooke Bingaman were able to participate on the first day and visit the fire lines. By seeing the fire first hand we are better able to fine tune our spot and general fire weather forecasts before the start of the busy fire season.

Finally on June 26th and 27th IMET Chris Brenchley and trainee Matt Mehle were involved in an East Bay training exercise in conjunction with the Alameda and Contra Costa Counties Fire Training Officers Associations. The drill will take place at Camp Parks in Dublin. In addition to the meteorological training, all of these drills allow our staff to become more familiar with the Incident Command System (ICS) that is often put in place for emergencies such as: Flooding, Tsuanmi and Wildfire.

As the "real" fire season rapidly approaches, our staff will be prepared to support the wildland fire agencies throughout California by providing both on-site support and continued 24 hour support at our office in Monterey completing routine fire weather forecasts, specialized spot weather forecasts, Red Flag Warnings and National Fire Danger Rating System trend forecasts.

Ryan gives the morning briefing about the day's forecasted weather.

Visit NWS Monterey Fire Weather website:

www.wrh.noaa.gov/mtr/fireweather.php

Firefighters attending to the Prescribed burn at Ft. Hunter Liggett

Ryan, Matt and Brooke standing in the 'black' at the Grant Ranch Training exercise

Incident Meteorologist in Training

by Matt Mehle *Forecaster*

On the weekend of June 1st, I had the privilege of attending a Wildland Fire School three day training exercise. This particular training exercise is run by the Monterey County Fire Training Officers Association and was held at Fort Hunter Liggett in southern Monterey County. While attending this exercise, local and state fire fighters learned valuable wildland fire fighting skills including: strategy and tactics, safety, use of handtools, hose laying and the importance of taking weather observations. The last skill is where I come in, weather observations.

As you can imagine, weather plays a big part in predicting fire behavior and how fire fighters attack a wildfire. In addition to learning some of the intricacies of wildland fire behavior; my main responsibility was to monitor all aspects of the weather. Wildland fire fighters are typically most concerned with temperature, wind speed and relative humidity as they help determine rate of spread and fire intensity.

A typical day on a wildfire begins by reviewing the fire weather forecast from the previous night and comparing it to the early morning weather observations. After making any necessary adjustments to the forecast, a morning weather briefing is given to fire officials and fire fighters for the upcoming day. On this particular morning, predicted hot and dry conditions were the main focus of the briefing. The hot and dry weather not only affects fire behavior, but the fire fighters themselves. It was emphasized during the weather briefing people working the fire should stay well hydrated to help prevent the possibility of heat stroke. After the morning briefing, myself and my IMET trainer, Ryan Walbrun, positioned ourselves near the fire to take localized weather observations to monitor current conditions. In addition to our observations, fire fighters in the field also took hourly weather observations, which measured current temperature, relative humidity, wind speed and direction. Weather observations throughout the day become critical to monitoring conditions near the fire and how the fire may be affected. Assuming no updates or amendments are needed to the current forecast the next item of business is to prepare the planning forecast for the following day. This forecast will be used by the fire officials planning on how to proceed with the next day's operations. After the weather forecast for the following day is completed and fire officials briefed, it's time for much needed sleep so we can wake up to do it all over again.

Matt taking weather observations using a sling psychrometer.

For more info about IMETS please visit:

www.magazine.noaa.gov/stories/mag189.htm

Leadership Corner

by Ryan Walbrun *Senior Forecaster*

Lead Forecasters Ryan Walbrun and Chris Brenchley are in the process of completing a two year journey that focused on leadership. The program is entitled LIFT, Leadership and Information for Tomorrow and is offered by the NWS Western Region Headquarters.

The leadership development is self-paced using conferences, current literature along with monthly calls with other employees across the NWS Western Region. Chris and Ryan just got back from a week long workshop in Salt Lake City in which the focus of the class was how to bring Leadership into each NWS office?

Historically, the NWS has focused its money on meteorological training and new advances such as Doppler radar. Similar to corporate America, the agency is realizing that in order to move forward and maintain relevancy in today's rapidly changing technological world it must invest in its employees. Coincidentally the May 2007 issue of the Bulletin of the American Meteorological Society has an article titled, "Leadership and Decision-Making Skills for Meteorologists: Keeping Humans in the Forecast Process". One interesting note from the workshop was the symbiotic relationship amongst: Diversity, Work-Family Balance and Leadership, meaning you can't have one without the other.

Spotter Safety Tips

by Rick Canepa *Forecaster*

The *mission* of the National Weather Service (NWS) is to *protect life and property.* Trained volunteer weather spotters help us accomplish this mission by providing timely reports to our office. Weather spotting can be a rewarding experience but spotters need to ensure their safety is top priority when reporting dangerous weather phenomena.

The following are a few ideas to keep in mind when reporting severe weather phenomena.

Flooding

Moderate or heavy rainfall over short to long periods of time (from an individual thunderstorm, line of thunderstorms producing or a series of storm systems typical during an El Nino Year) can lead to a flooding and/or flash flooding situation. The safest place to observe rising waters is from a distance and from the highest landscape you can find. Suddenly finding yourself in the path of rising waters is avoidable if you plan ahead and allow for a trusted escape route. Never drive through a flooded area as this is always a bad decision. The water is often much deeper than you estimate and it is dangerous because getting stuck in a flooded area means you've compromised your safety and possibly someone else's safety (someone who might be able to rescue you).

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For spotter related information please visit: www.wrh.noaa.gov/mtr/spotter.php

What is a Drought?

By Jeff Kopps *Service Hydrologist*

A drought could be defined as a period of dry weather that lasts long enough to cause significant problems such as crop damage and water supply shortages. The severity of a drought is dependent upon the level of moisture shortage, the duration, and the size of the affected area.

There are four types of drought:

Meteorological - a measure of departure from normal precipitation. With climate differences, a drought in one part of the country may not be a drought in another.

Agricultural - the amount of moisture in the soil no longer meets the needs of some crops.

Hydrological - when surface and subsurface water supplies are below normal.

Socioeconomic - when physical water shortages begin to affect the population.

WHAT ARE THE IMPACTS OF A DROUGHT?

Lack of rainfall for an extended period of time can bring farmers and metropolitan areas to their knees. And it does not take very long; in some parts of the country, just a few rain-free weeks can affect crops and spread panic. Before long, we are told to stop washing our cars and watering the grass, and could be mandated to take other water conservation steps.

Around 1970 California suffered a severe drought when rainfall was below normal for 1 to 2 years. Fire potential was extremely high and in fact fires did break out that caused losses in the tens of millions of dollars.

HOW DO METEOROLOGISTS PREDICT DROUGHTS?

Meteorologists establish the beginning and end of a drought by observing meteorological and hydrological factors such as rain patterns, soil moisture, and stream flow. Then, meteorologists use different indices to show deficits in rainfall over various periods of time.

HOW CAN I FIND OUT MORE ABOUT DROUGHT?

There is plenty of information on the internet about drought and its impacts on society. A few sites to start with where you can find more information about droughts and where droughts are currently are listed below:

Closer Look

Seasonal Precipitation from October 1st through June 1st was just 75% of normal for the San Francisco Bay Region. Seasonal precipitation at this time last year was 155% of normal.

Now that California is in the dry season, little relief is expected. While the drought is not expected to get worse, it will likely persist into the Fall.

Drought info on the Internet

NOAA's Drought Information Center
www.drought.noaa.gov/

National Drought Monitor Graphic
www.drought.unl.edu/dm/monitor.html

Palmer Drought Index
www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/palmer_drought/

New Heat Health Warning System

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who has developed a modified heat health warning system now used in 18 major cities throughout the US and in major cites around the world like Rome and Shanghai. Prof Kalkstein's system is based on determining whether a particular area shows a relationship between temperature and illness related mortality. His hypothesis is that the elderly and the infirmed are more likely to be at risk during very warm to hot days then on more normal days. Deaths due to accidents etc are removed from the statistics. Figure 1 shows an example of this relationship for New York City and the lack of a relationship for Jacksonville, FL. Here one sees that on a typical day in New York that as many as 100 people may expire. However as the temperature rises above about 90F or 32C the number of deaths increases and by the time the temperature reaches 95 F almost double the number of deaths occur in New York City. These deaths are not directly attributable to heat exhaustion or heat stroke. It is simply that more individuals die of heart attacks, stroke, or respiratory failure on these hot days than on other days. These are normally elderly people living without air conditioning that are unaware that they are at higher risk and their body is under more stress. They fail to take the necessary precautions to avoid the additional stress. This new warning system is directed specifically at these types of individuals.

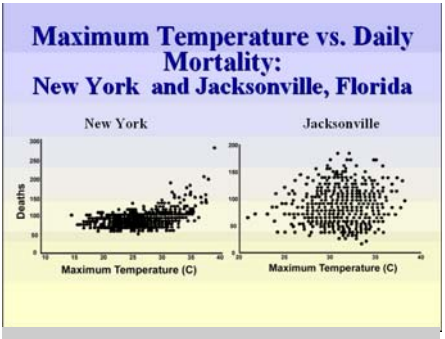

Figure 1 Relationship between deaths and temperature for New York City and Jacksonville, FL. Note there is no relationship for Jacksonville where the temperature tends to stay in a warm but narrow range all year.

The algorithm that this new system is based on for San Francisco Bay communities is dependent on two factors. The first is the presence of an offensive air mass. Prof Kalkstein's studies showed that only two of what have been classified as eight independent synoptic scale air mass types can produce conditions that put the fragile at more risk.

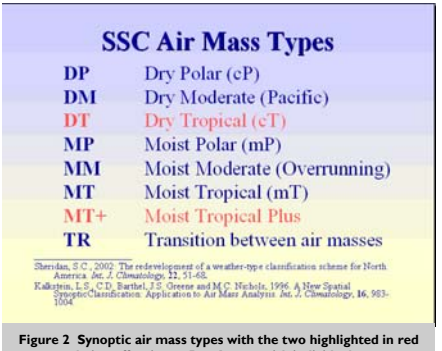

Figure 2 Synoptic air mass types with the two highlighted in red being offensive to Bay Area at risk individuals.

Figure 2 shows Kalkstein's air mass types. Only two of the eight are considered offensive to Bay Area residents. These are the DT (dry tropical) and

New Heat Health Warning System

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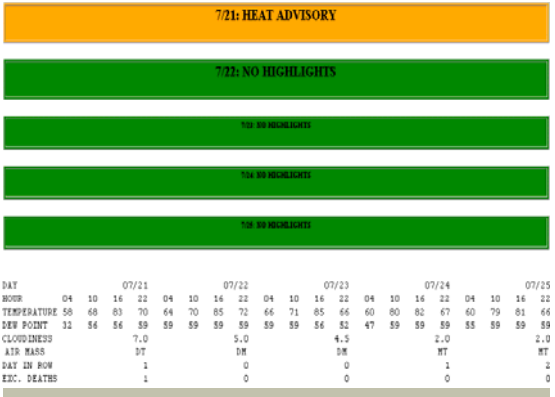
MT (moist tropical). The dry tropical is when the Bay Area experiences the offshore winds that are well known in causing the warmest temperatures during the summer and fall months. It occurs about 3% of the days between June 1st and Sept 1st. The other air mass is called MT (moist tropical). It is the type of air mass that occurred during July 2006. It is when a large high pressure center is located just to the east of California and the clockwise circulation around the high pulls up monsoonal moisture from Arizona that not only is very warm but humid. This air mass occurs less than 1% of the days between June 1 and Sept. 1. If either one of these air masses is in place, then a second trigger to determine if a heart advisory or heat warning is necessary is how warm it will get on a given day. This determines the potential for a higher than average number of deaths. The current system is set up to alert the forecaster when the mortality number exceeds one, such that a Heat Advisory is suggested and if three or more a Heat Warning is suggested. This system utilizes the NWS's gridded forecast system Point Forecast Matrix (PFM) to both determine the air mass type and the daily temperature range. Figure 3 shows an example of the guidance product that is monitored by the NWS forecaster.



DAY			07/21				07/22				07/23				07/24				07/25
HOUR	04	10	16	22	04	10	16	22	04	10	16	22	04	10	16	22	04	10	16	22
TEMPERATURE	58	68	83	70	64	70	85	72	66	71	85	66	60	80	82	67	60	79	81	66
DEW POINT	52	56	56	59	59	59	59	59	59	59	56	52	47	59	59	59	55	59	59	59
CLOUDINESS				7.0				5.0				4.5				2.0				2.0
AIR MASS				DT				DM				DM				MT				MT
DAY IN ROW				1				0				0				1				2
EXC. DEATHS				1				0				0				0				0

Figure 3 Heat Health Warning Guidance for San Jose. Note the system goes out 5 days and will provide guidance on wther a Heat Outlook, when 3 to 5 days out, or a Heat Watch when 2 days or less. Shown is every 6-hr temperature and dew point forecast, cloudiness, air mass type, number of days in a row if an offensive air mass, and the projected number of additional deaths that might be expected based on the historical relationship.

Prof Kalkstein performed two separate studies, one using San Francisco Airport 30 year climatology and San Francisco mortality data and one for San Jose using Moffett Field climate data (since 6-hr data were required) and Santa Clara County mortality data. Thus the system will be applied separately to these two areas. Figure 4 shows the public zone map for the San Francisco forecast area. This summer the San Fran-

Figure 4 NWS San Francisco public zones. Zones noted numbers 006 and 508 will use the San Francisco guidance and zone 513 will use the San Jose guidance information.

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Spotter Safety Tips

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Anytime you observe any of the following weather conditions, please call us with your report.

Please include your name and spotter number when calling.

Thunder/Lightning/ Hail

A thunderstorm on the horizon is as dangerous as a thunderstorm overhead. The reason being, lightning can sometimes reach great distances away from the main storm cell. A good rule of thumb is, if you can see it, flee it! Or if you hear the roar get indoors! The most common type of lightning (and most dangerous) is the cloud to ground type. Lightning often seeks out the path of least resistance which includes striking tall objects, including buildings, towers, trees and sometimes people. The safest place to be is in your home located far away from windows and metal objects. Use the telephone only if it is absolutely necessary. You are relatively safe in an automobile as the metal that makes up the frame of your car helps direct lightning around you and safely to the ground.

Hail stones larger than ¾ inches in diameter can possibly cause damage to objects caught in its path including injuring people. Take shelter immediately if you are caught in a hail storm, even when the hail stones appear small in size. Sometimes at the onset of a thunderstorm hail stones will be small at first but rapidly become larger in a short period of time. Being caught in a hail storm can lead to serious injury and/or death. Find a sturdy shelter immediately!

Funnel Clouds/ Tornado

While a funnel cloud is not dangerous, a tornado on the other hand can quickly become life threatening if you are caught near it. A tornado can either move slowly or quickly and will always be accompanied by winds strong enough to do serious damage to objects in its path. If you observe a tornado, ensure your safety is first. A storm shelter or laying flat in a ditch is your best bet. Calling your nearest NWS office with a spotter report is recommended only after you have established yourself in a safe location or shelter.

Wind

Most times a strong storm heading inland from the Pacific ocean will have moderate or strong winds associated with it. In strong winds, it is important to prepare for the possibility of falling trees, tree branches or any tall objects that can lead to serious injury and/or death. In addition, strong winds may lift objects off the ground and turn them into dangerous projectiles. The best path to safety is to find shelter immediately in a home or shelter of some kind.

Small Tornado Near Gilroy

by Wilfred Pi *Radar Focal Point*

A small tornado spun up at 4:05 PM PDT on April 14th next to Gavilan College about two miles southwest of Gilroy. Classified as an EF0, the lowest category on the Enhanced Fujita Scale, the tornado lasted for less than one minute. Nonetheless, it did damage to an awning on a temporary trailer and tore apart a large tree including several two-foot wide limbs ripped off at the trunk. The maximum wind speed with this tornado is unknown, but an EF0 tornado can produce peak gusts as high as 80 mph. Damages were estimated at $1,000.

This tornado is classified as a non-supercell tornado, which is a tornado that does not spawn from a supercell thunderstorm. Supercell thunderstorms require an environment with both strong lower troposphere wind shear and significant vertical instability. This tornado was generated from local effects in the lower atmosphere on a smaller scale.

A cold front had moved through the Bay Area earlier in the afternoon and strong northwest winds developed behind the front. Based on hourly observations all around the Bay Area, winds at 4 PM were gusting 20-40 mph. There was only limited instability though, and little low-level vertical wind shear behind the front. At the time of the reported tornado and associated pea size hail, KMUX Doppler Radar base reflectivity (figure 1) only indicated scattered light to moderate storms moving through the area. The KMUX Doppler Radar velocity product (figure 2) showed a faint suggestion of rotation, but below the normal thresholds for the issuance of a tornado warning. However, because of the complex mountainous terrain surrounding the Gilroy area, local winds can be enhanced, producing a vortex at the ground. The most likely scenario is one of the light to moderate storms seen in figure 1 had a strong enough updraft to vertically stretch the terrain generated circulation into the reported weak tornado.

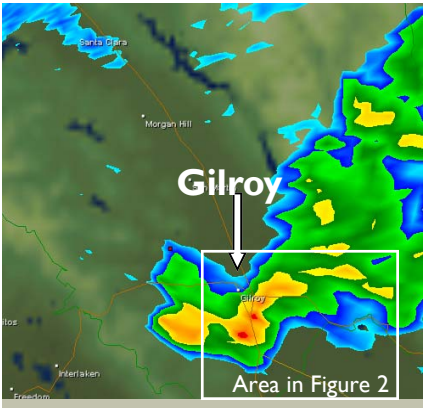

Figure 1 shows light to moderate storms near Gilroy

National Weather Service Dop-

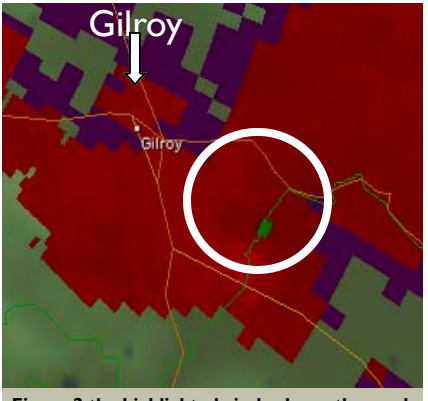

Figure 2 the highlighted circle shows the weak circulation near Gilroy

Small Tornado Near Gilroy

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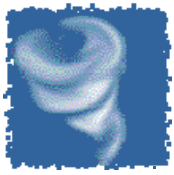
pler Radar is able to detect most vortices/ circulations associated with supercell thunderstorms, allowing appropriate warnings to be issued with some lead time. However, due to the complex terrain around the Bay Area and the elevation of the radar site, detection of small surface-based vortices is problematic. This stresses the importance of spotter reports regarding funnel clouds and tornadoes.

This article was written with assistance from Warren Blier.

For more information about the *NEW* Enhanced Fujita Scale please visit:

www.spc.noaa.gov/efscale/



EF-Scale Number	Wind Speed
EF0	65-85 mph
EF1	86-110 mph
EF2	111-135 mph
EF3	136-165 mph
EF4	166-200 mph
EF5	Over 200 mph

DRY 2006-2007 RAINFALL SEASON

by Duane Dykema
Climate Focal Point

The 2006-2007 Rainfall Season began on July 1, 2006 and ended June 30, 2007. Rainfall totals for the 2006-2007 year were below normal across the entire San Francisco and Monterey Bay Areas. Totals for the season were generally 50-70% of normal. (See table on page 11 for sample of area rainfall data)

In San Francisco, this was the driest rainfall season in 13 years, since the 1993-1994 season when 15.22 inches of rain was measured.

In San Jose, this was the driest rainfall season in 18 years, since the 1988-1989 season when only 8.32 inches of rain was measured.

In Monterey, this was the driest rainfall season in 19 years, since the 1978-1988 season when 12.14 inches of rain was measured.

2006-2007 Rainfall Season Data from the Bay Area

STATION NAME	2006-2007 RAINFALL*	NORMAL RAINFALL*	PERCENT OF NORMAL
NORTH BAY...			
CALISTOGA	23.99	38.51	62%
CLOVERDALE	26.13	42.06	62%
HEALDSBURG	29.38	42.15	70%
LAKE BERRYESSA	13.14	27.94	47%
MUIR WOODS	29.82	37.59	79%
NAPA	15.37	26.46	58%
SANTA ROSA	20.5	31.01	66%
SONOMA	18.2	30.64	59%
SAN FRANCISCO PENINSULA…			
HALF MOON BAY	18.19	27.96	65%
PALO ALTO	8.08	15.71	51%
SAN FRANCISCO AIRPORT	11.63	20.11	58%
SAN FRANCISCO DOWNTOWN	16.89	22.28	76%
EAST BAY...			
BERKELEY	16.77	25.4	66%
LIVERMORE	9.45	14.82	64%
MOUNT DIABLO	13.4	23.96	56%
OAKLAND MUSEUM	14.04	22.94	61%
SOUTH BAY AND SANTA CRUZ COUNTY…			
BEN LOMOND	28.62	47.68	60%
GILROY	9.75	20.6	47%
SAN JOSE	9.28	15.08	62%
SANTA CRUZ	17.2	30.67	56%
MONTEREY AND SAN BENITO COUNTY…			
BIG SUR STATION	22.64	43.2	52%
CARMEL VALLEY	11.38	17.17	66%
MONTEREY	13.54	20.35	67%
PINNACLES	9.6	17.35	55%
SALINAS	9.99	15.12	66%

* rainfall in inches

NOAA Celebrates 200 years of Science, Service & Stewardship

"The oceans and atmosphere are interacting parts of the total environmental system upon which we depend, not only for the quality of our lives, but for life itself.

We face immediate and compelling needs for better protection of life and property from natural hazards, and for a better understanding of the total environment -- an understanding which will enable us more effectively to monitor and predict its actions, and ultimately, perhaps to exercise some degree of control over them.

We also face a compelling need for exploration and development leading to the intelligent use of our marine resources. We must understand the nature of these resources, and assure their development without either contaminating the marine environment or upsetting its balance.

Establishment of the National Oceanic and Atmospheric Administration -- NOAA -- within the Department of Commerce would enable us to approach these tasks in a coordinated way"

With these words, published in July 1970, President Richard M. Nixon proposed the creation of a new agency -- the National Oceanic and Atmospheric Administration (NOAA).

The proposal, which was coupled with the creation of the Environmental Protection Agency, was part of a reorganization effort, which, according to the reorganization plan itself, was designed to unify the nation's widely scattered, piece-meal environmental activities and provide a rational and systematic approach to understanding, protecting, developing and enhancing the total environment. In addition to a specific responsibility for the rational development and conservation of marine fisheries, NOAA was to lead the development of a consolidated national oceanic and atmospheric research and development program and provide a variety of scientific and technical services to other Federal agencies, private sector interests and the general public.

The goals, responsibilities and programs of NOAA today reflect a continued commitment to the philosophy which created it. NOAA's primary mission and the ultimate goal of all

NOAA Celebrates 200 years of Science, Service & Stewardship

its activities is to predict environmental changes on a wide range of time and space scales in order to protect life and property, and provide industry and government decision-makers with a reliable base of scientific information.

Specifically, NOAA is a science-based agency which has the responsibility to predict changes in the oceanic and atmospheric environments and living marine resources, and to provide related data, information, and services to the public, industry, the research community, and other government agencies. These efforts range from warnings of severe events on short time-scales to information on climate shifts over decades or more. The main purpose of these efforts is to support NOAA's operational environmental warning, forecast, prediction, assessment, and information management responsibilities.

Just as they fulfill NOAA's environmental prediction responsibility, most, if not all, of the Agency's activities also contribute to the major Department of Commerce goal of Stimulating Productivity and Economic Development. Providing reliable forecasts and warnings of changing environmental conditions (like severe weather) protects life and property and enables industry to take appropriate actions. NOAA's programs to predict and assess significant changes in the ocean, coastal and Great Lakes environments ensures the safe, efficient, and cost-effective use of those marine environments and their resources and promotes the development of associated industry. Providing reliable fishery stock assessments and projections can significantly enhance the magnitude of the contribution of the domestic fishing industry to the U.S. balance of trade.

Office photograph for NOAA 200 Years Celebration

For more info about NOAA 200 years please visit:

Celebrating 200years. noaa.gov

New Heat Health Warning System

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cisco guidance will be applied to the zones numbered 506 and 508. The San Jose guidance will be applied to zone 513. These three areas encompass the largest population centers within the San Francisco forecast area. All other areas will use the previous criteria of heat index and overnight lows. As this is the first year in applying this new system, there will be some learning and possibly some adjusting.

So this summer when you hear that a Heat Advisory or Heat Warning has been issued for one of these areas and the temperatures are only forecast to be in the upper 80s to low 90s you will know that we have utilized to the new system in an effort to save more. The call to action statement in the advisory, watch, warning or outlook will specifically address the need to monitor the elderly and infirmed and to make sure they take the necessary precautions to minimize their risk.

Dan Gudgel

Dan Gudgel

Meteorologist

I am your new Forecaster at the Monterey Forecast Office as of January, 2007. Born and raised in the Merced area of Central California, my interest in meteorology is based on my background and interest in agriculture and aviation. After I received an Associate of Arts Degree in Aviation from Merced College, I earned a degree in meteorology from San Jose State and remained in the Bay Area for my NWS career. Despite maintaining close ties to "home" in Central California, my career started in the Public Service Unit in the Los Angeles Office in 1974. I then subsequently became an observer and worked a variety of weather forecast positions at the Forecast Office in Reno, NV, through the mid and late 1970s. Moving back to California in late 1979, I served as an Air Pollution Meteorologist and eventually Agricultural Meteorologist and Fire Suppression Meteorologist in the Fresno Office through the early 1980s. With the reinstatement of the NWS Agricultural Weather Program in the early 1980s, I re-established the Agricultural Program for Kern County and the Bakersfield Office as the Meteorologist In Charge through the early 1990s. With the Modernization and Restructuring of the NWS in the mid-1990s looming, I accepted the challenge of working in NWS Headquarters at Silver Spring, MD, to help determine policies and procedures in regard to the NWS Aviation Program. After two years at headquarters, I returned home to California as the spin-up Warning Coordination Meteorologist at the new San Joaquin Valley Office where I served until my report here to the Monterey facility in January. My family, Wife Tracy and three children, maintains a close tie with our Church Family as well as actively participating in music programs of all sorts.

Brian Tentinger

On January 22, 2007, I started my position as Intern Meteorologist for the Monterey Forecast Office. I moved here from Cedar Rapids, Iowa, a big change in many ways. Prior to moving here, the farthest west I had ever been was Denver, CO. Growing up in the Midwest I had always been fascinated by weather phenomena: thunderstorms, lightning, thunder, hail, tornadoes, and different cloud formations. I never really knew studying weather was an option for me until my advisor at the community college I attended made me more aware of this field and encouraged me down this path. I transferred to Iowa State University in 2000 where I earned my bachelors degree in meteorology in May of 2003. I find it very fitting that I am an Iowa State Cyclone with a degree in meteorology. While at Iowa State I went on many storm chases, most of which were busts, but nonetheless enjoyable. After graduating from Iowa State I took a year off and in 2004 I decided to apply to graduate school. I was accepted to the meteorology program at Saint Louis University and made the decision to move to the great state of Missouri. While at SLU, I was a research assistant studying the effects of computer modeled soil moisture across the Great Plains and Midwest on the lower atmosphere and subsequent rainfall. I eventually realized that the best option for me was the NWS, and after applying to various intern positions throughout the country I was offered the position here in Monterey.

Brian Tentinger

Meteorologist Intern

Luis Orozco

After 20 years of service in the U.S. Coast Guard, I recently retired and started working for the Weather Service as an Electronics Technician. I had a diverse and rewarding career in the Life Saving Service and had many duties including Search and Rescue, Law Enforcement and Fleet Support. It was during my last duty station in Baltimore, MD that I realized the value of continuing my career with the Federal government. That is when I decided the Weather Service would be perfect. I have many years of experience in Radar maintenance including Air Search Radar, which operates under the same principles as Doppler weather radar. This coming August I will attend the NEXRAD training school held in Kansas City for more training. Some of my previous training comes from the Cleveland Institute of Electronics where I majored in Electronics Engineering. I am married to my lovely wife Frances and have three wonderful children, Luis Jr., Nick and Margaret. Outside of work I enjoy exercising and athletic competition. I also enjoy dancing, snowboarding, and motocross among other things. I look forward to a wonderful career with the weather service and good times in Monterey!

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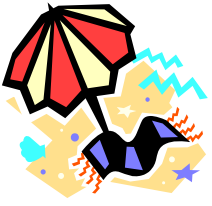
Goes Here

- San Francisco Bay Area broadcast - transmitting at 162.400 MHz
- South San Francisco Bay/ Monterey Bay Area broadcast - transmitting at 162.550 MHz
- South Bay/ Monterey Bay Marine Radio broadcast - transmitting at 162.450 MHz
- North Bay Marine broadcast - transmitting at 162.500 MHz
- East Bay Area broadcast - transmitting at 162.425 MHz

Check us out online at: www.weather.gov/sanfrancisco

Stay Cool This Summer!



As the days get longer and temperatures get warmer remember to stay cool and drink plenty of fluids this summer. Follow these tips to help ensure fun in the sun:

- ***Slow down***. Strenuous activities should be reduced, eliminated, or rescheduled to the coolest time of the day.
- ***Dress for summer.*** Lightweight light-colored clothing reflects heat and sunlight, and helps your body maintain normal temperatures.
- ***Drink plenty of water or other non-alcohol fluids.*** Your body needs water to keep cool. Drink plenty of fluids even if you don't feel thirsty.
- ***Spend more time in air-conditioned places***. Air conditioning in homes and other buildings markedly reduces danger from the heat.
- ***Don't get too much sun.*** Sunburn makes the job of heat dissipation that much more difficult

For more information please visit: www.nws.noaa.gov/om/brochures/heat_wave.shtml