



California-Nevada River Forecast Center

Fall 2006

HIC's Corner By Rob Hartman

Welcome to the inaugural issue of the CNRFC newsletter. The purpose of this newsletter is to increase awareness and understanding of the products and services that the CNRFC delivers to its customers and partners.

The mission of the NWS is *protection of lives and property*. In addition, the hydrologic services program also strives to provide information that benefits the economic and environmental well being of the nation. These are the ideals that motivate the staff of the CNRFC. It's why we come to work and it's why we are continually working to improve the quality and relevancy of the information and service we provide.

At the CNRFC, the key word is *partnerships*. Our office has a long and successful partnership with the California Department of Water Resources (DWR). Engineers from DWR work side-by-side with CNRFC staff to develop and issue flood forecast guidance. Our partnership with eleven NWS Weather Forecast Offices (WFOs) provides a conduit to the public warning process and an interface for local customers and partners. The

CNRFC also works in partnership with federal, state, and local water resources managers. These include the US Army Corps of Engineers, the US Bureau of Reclamation, State Water Project, and a host of irrigation and water authorities. We have solid partnerships with many cities and counties who have chosen to implement the ALERT (Automated Local Evaluation in Real Time) local flood warning systems in their communities. And finally, we have a key partnership with the US Geological Survey, who operates a majority of the stream gages that are essential to our operations. But it doesn't end there. The CNRFC is also active in collaborative research, where partnerships with university and research agencies provide a pathway for better service in the future.

A great deal of effort has gone into improving the quality and relevance of the service the CNRFC provides. Four years ago we entered into a watershed recalibration effort associated with the Advanced Hydrologic Prediction Service (AHPS). Next summer we'll complete our calibration cycle, and then start all over again. Our goal is to review and tune every calibration and every procedure at least every five years. As a part of this process, we've added a significant number of locations for which we provide streamflow guidance. At the same time, our website, www.cnrfc.noaa.gov, has evolved into a great way to provide

information. Please visit our site.

While better and more relevant service is important, it is equally important to (1) make sure that our customers and potential customers are aware of and understand our products and (2) remain aware of evolving customer and partner needs for hydrologic information and service. That's why we've formed an Outreach, Marketing, and Customer Service Team. And we need your help. At the CNRFC we haven't forgotten that we work for NOAA's *National Weather Service*. Your guidance, input, and suggestions are essential. Please feel free to send us a note, give us a call, or send us an email.

You can look for additional newsletters from the CNRFC in the Spring and Fall each year. If there is something that you would like to see in our newsletter, please let us know.



CNRFC Hydrologist-In-Charge Rob Hartman.

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New Work Group Formed for Outreach

By Alan Haynes



Participants are shown here at the Water Resource Managers Workshop held October 26th.

A new work group, formed from among the CNRFC staff, was created this year by Hydrologist-In-Charge Rob Hartman for expanding the CNRFC's outreach efforts. The group is known as the *Outreach, Marketing and Customer Service Work Group* and its mission is to greatly increase the awareness of the products and services offered by the CNRFC among existing and potential customers and partners.

So far, the team's efforts have produced two major workshops designed to reorient customers and partners toward the CNRFC suite of products and services. The

workshops highlighted changes to these products and services and provided an opportunity to gather feedback. In addition, the group produced this inaugural newsletter publication and developed several marketing tools such as pens and notepads which include the NOAA logo and the CNRFC web address. This information was also incorporated in a display on the office's government vehicle with a colorful design contributed by John Juskie, the Science and Operations Officer at the Sacramento Weather Forecast Office.

The group's leader, Alan Haynes, says "Our team is just getting started so I expect that our outreach opportunities will

be expanding over the next couple of years as we develop stronger relationships with our Weather Forecast Offices and our customers and partners. In addition, we'll be able to leverage these relationships toward achieving the overall goals of our organization".

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What's New On The Web?

By Mike Ekern



Precipitation Analysis web page.

Our River Guidance Forecast Plots have become one of our more popular products on our website at www.cnrfc.noaa.gov. Many features have been added to provide more information to our users of this product. For instance, hovering your cursor over the Stage/Discharge and Rain+Melt plots will provide precise stage/time and rain and melt information for both observed and forecast data. An especially useful tool is the Tabular Data option, which provides detailed hourly stage, flow, trends, and status of each river forecast point.

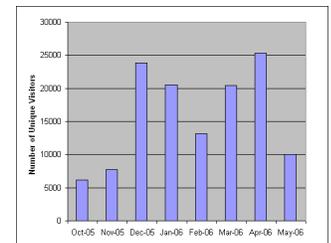
Another new product that we have linked on our Precipitation Data

web page is the national Precipitation Analysis Page. It displays a map of observed precipitation for the continental U.S. which can be displayed over user-selectable time periods. Users can also select between observed, normal, departure from normal and percent of normal precipitation.

The map graphic can be zoomed to state, regional, or national settings.

The web address for the Precipitation Analysis web page is:

http://www.srh.noaa.gov/rfcshare/precip_analysis_new.php



This chart tracks the monthly number of unique visitors to the CNRFC web site during the past winter season.

"Our River Guidance Forecast Plots have become one of our more popular products on our website at www.cnrfc.noaa.gov."



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WY 2007 Climate Outlook - El Niño is Back

By Pete Fickenscher

The one climate signal with a well documented effect on global climate patterns is the El Niño/Southern Oscillation (ENSO) Cycle. Also, because the ENSO cycle can be forecast with some confidence, the presence of an ENSO signal becomes the foundation of any seasonal climate outlook. So, based on where we are in the ENSO cycle, what might we expect for the coming water year?

The strength of an El Niño is reflected primarily in the equatorial Pacific's sea surface

temperatures (SSTs), which is currently indicating a "moderate El Niño". The most recent "moderate El Niño" occurred in WY 2003. The latest CPC ESNO update predicts that "El Niño conditions should intensify over the next 3 months".

The CPC's most recent outlook for December – February precipitation calls for a greater than average chance of wet conditions over the southern three-quarters of California.

Keep in mind that climate predictions are *probabilistic* forecasts. While the green shading for California shown in the graph below indicates a 40% chance of wetter than

average conditions for Southern California, there is also a 27% chance for drier than average conditions and a 33% chance of an average year.

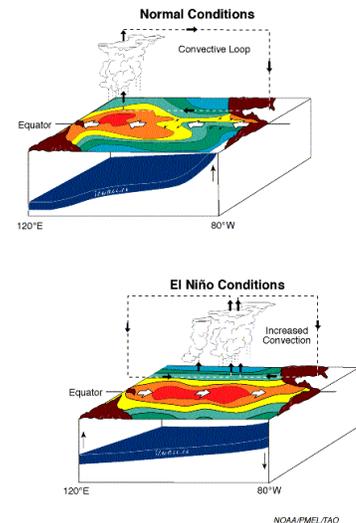
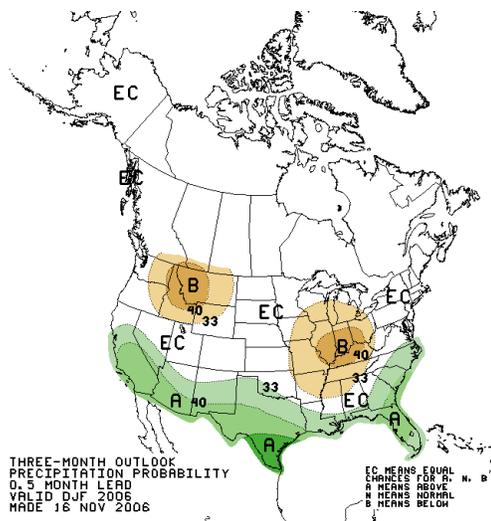
A key fact to remember is that no two El Niño events are exactly alike, especially considering precipitation patterns along the West Coast.

If you discount the two very strong El Niño years (1983 and 1998), the remaining moderate El Niño events are split 50-50 between wet and dry years in South-Central California. Northern California actually has more often been dry during moderate El Niño events (5 out of 8 events).

Finally, the timing of the transition of SSTs toward El Niño conditions may be a factor. The current El Niño event has developed much later than normal. Two similar events which developed late in the year occurred during WY 1964 and WY 1987, both of which were very dry years throughout California.

In summary, we are definitely in for an El Niño winter/spring. While the impacts on Northern California are highly uncertain, the South has an increased probability of wetter conditions. However, every El Niño event is unique, and we could well be in for a dry year.

"A key fact to remember is that no two El Niño events are exactly alike, especially considering precipitation patterns along the West Coast."



Schematic diagram of normal vs. El Niño conditions in the Pacific Ocean.



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Graphical River Forecast - How to Use This Product

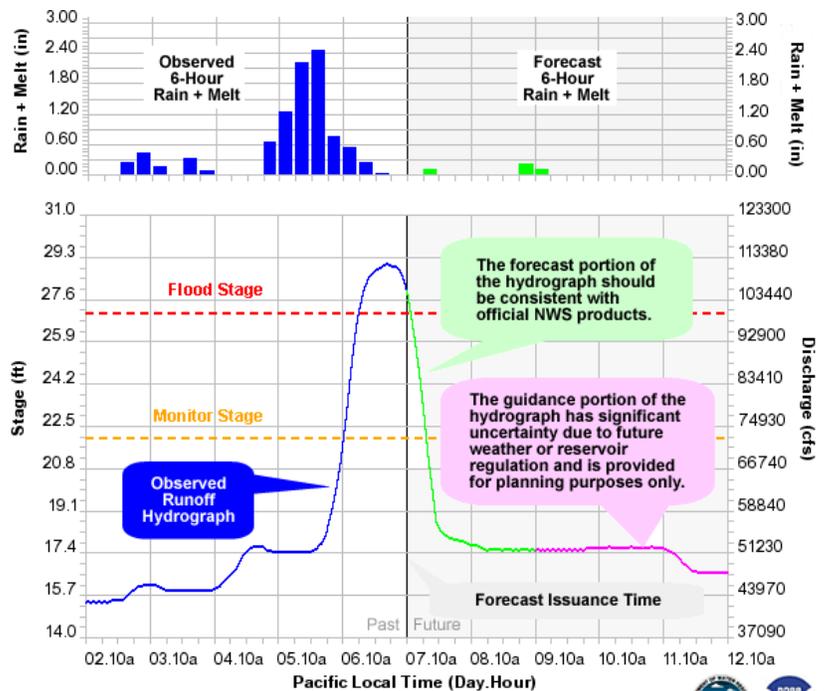
The graphical river forecast product is issued each morning and is updated as needed during significant runoff events. The information presented represents the output of the NWSRFS modeling system as adjusted by on-duty operational hydrologists. The forecast is specific for the river and location identified in bold letters across the top of the graphic. The monitor stage and flood stage for the specified forecast point location is located directly underneath the header. The forecast issuance time and the expected time of the next forecast are provided below the previous mentioned information.

The graphic on the right depicts 10 days of rain plus snowmelt (rain+melt) in inches. Unless labeled otherwise, the values on this graph are reflective of the average over the entire watershed above this location on the river. The first 5 days are observed and the latter 5 are forecast. Observed rain+melt is computed from observed precipitation and air temperature. Forecast rain+melt is computed from forecast precipitation, air temperature, and snowline elevation.

The graphic below the rain+melt shows a total of 10 days of streamflow comprised of observed (blue), forecast (green) and guidance (magenta) periods. The axis on the left is stage in feet and the axis on the right is discharge in cubic feet per second (cfs). The observed period covers the past 5 days. Observed data are preliminary and subject to future change.

The future period also covers 5 days and is comprised of a forecast and guidance period. The duration of the forecast period varies from location to location and may vary from one flood event to the next. More predictable locations (and events) will have longer forecast periods; less predictable locations (and events) have shorter forecast periods. The information in the forecast period should be consistent with official products issued by NWS Forecast Offices.

Waterway Name	Forecast Point Location	NWS Identifier
SACRAMENTO RIVER - BEND BRIDGE (BDBC1)		
Latitude: 40.29 ° N Longitude: 122.19 ° W Elevation: 286 Feet		
Location: Tehama County in California		
Monitor Stage: 22.0 Feet		Flood Stage: 27.0 Feet
Forecast Issuance: 3/31/05 7:39 AM PST		Next Forecast Issuance: 3/31/05 3:00 PM PST



Observed - Forecast - Guidance -
Generated 09/07/2005 at 10:15 AM PDT
California Department of Water Resources
NWS / California Nevada River Forecast Center

The guidance period begins at the end of the forecast period and extends through 5 days. Guidance values may contain significant uncertainty due to future weather and/or reservoir regulation. Actual conditions may be significantly above or below those described in the guidance portion of the hydrograph.