



Office of Climate Water & Weather Services - CSD



Local Three Month Temperature Outlook





Project Background2

Accessing the Site3

Using the L3MTO Site8

National L3MTO Page8

National Temperature Analyses Past 90-days9

WFO L3MTO Pages10

WFO L3MTO Navigation10

Three Category Temperature Outlook12

Outlook Tables – Three Category Outlook15

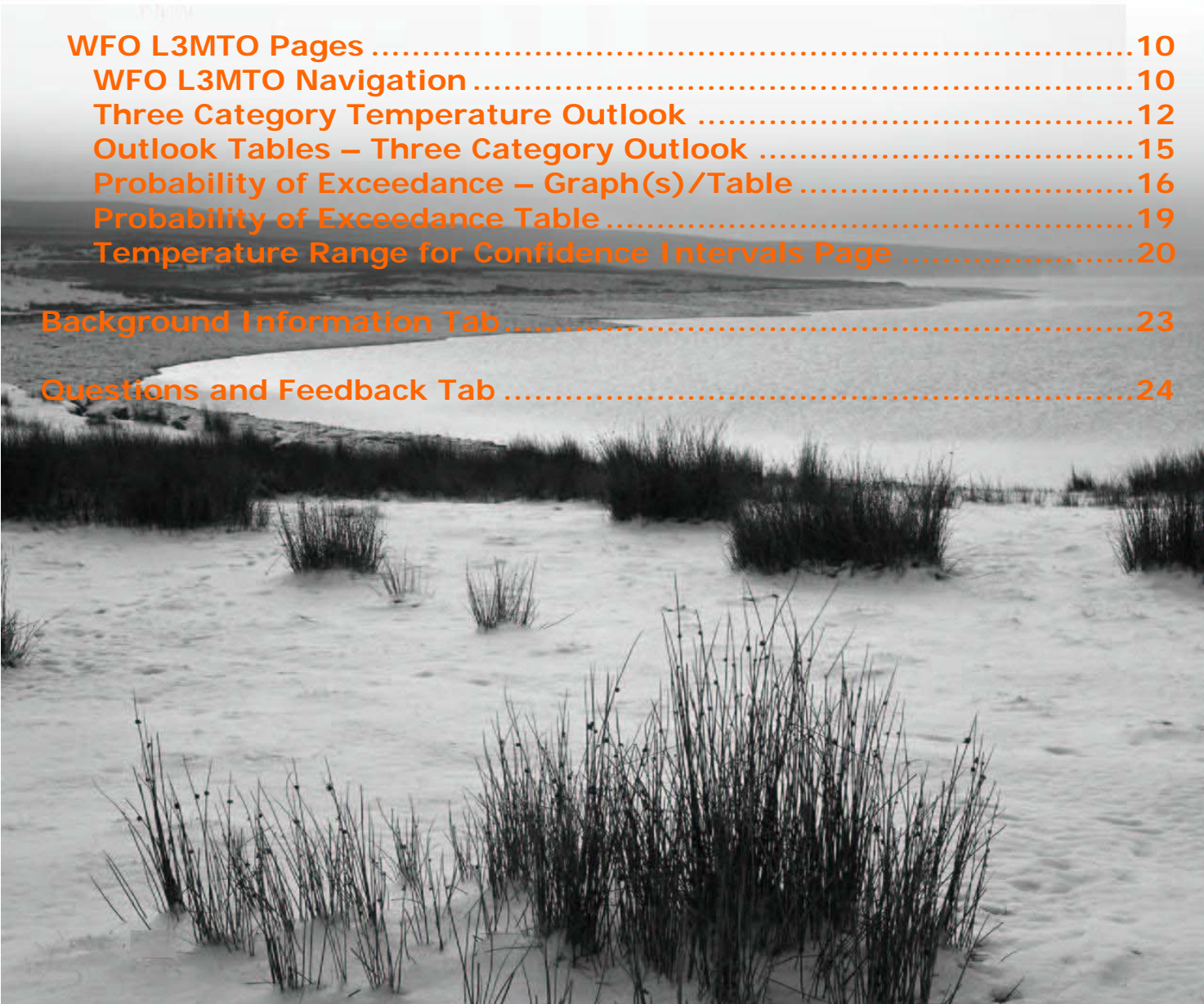
Probability of Exceedance – Graph(s)/Table16

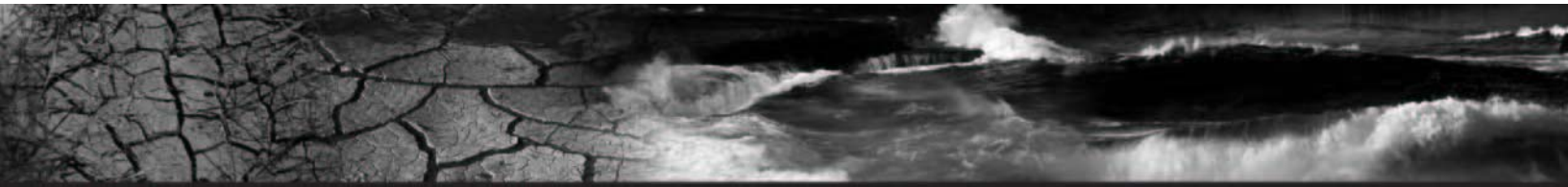
Probability of Exceedance Table19

Temperature Range for Confidence Intervals Page20

Background Information Tab23

Questions and Feedback Tab24





Project Background

CPC issues a series of thirteen three-month temperature and precipitation outlooks to provide information to decision makers in weather and climate activities sensitive to seasonal and inter-annual climate variation. Since these outlooks pertain to the average temperature and total precipitation for the entire valid period and **not** to the variability within it, they will **not** help people planning events for specific dates or sub-periods. The outlooks will be of most use for economic and business planning, particularly when used with Base Period Means.

CPC uses the General Meteorological Package (GEMPAK) software as an input into National Center Advanced Weather Interactive Processing System (NAWIPS). CPC issues these 13 outlooks simultaneously once a month on the third Thursday of the month at around 8:30 a.m. Eastern local time. CPC will issue the 13 outlooks with lead times from 0.5 months to 12.5 months. For example, in mid-January, CPC will issue Three-Month Outlooks for February through April, March through May, April through June, and so on to February through April of the following year; this is considered the “Valid Time” for these forecasts. For product/forecast expiration, the 0.5 month lead time outlook expires at the beginning of the valid time of that outlook. The other outlooks expire when the next set of outlooks are issued (i.e. on the third Thursday of the following month).

CPC develops the outlooks using tools applied to each of 102 area climate outlook divisions in the contiguous United States and 24 site specific cities in Alaska. Each area outlook division is composed of one (or more) National Climatic Data Center (NCDC) climate data division(s). CPC will express the outlooks in a 3-category probabilistic format as the chance the mean temperature or total precipitation for the period will fall into the most likely of three classes: above, below, or near normal. For each outlook divisional area and Alaskan city, CPC defines the classes as climatologically equally likely: the top 10 cases of a thirty year record define the above category (A); the middle 10 cases define the normal category (N), and the bottom 10 cases defining the below category (B). For areas where a favored class cannot be determined, CPC will indicate those areas with a "EC." EC means equal chances for each of the three climatological classes for the outlook's valid period. For each of the thirteen three-month outlook periods (January through March, February through April, etc.), CPC uses the 30-year mean temperature and 30-year mean total precipitation for the climatology and class limits. CPC updates this information once per decade.

CPC will indicate the total probability for the most likely class with solid contour lines. They will label the centers of maximum probability with the letters A, N, or B to denote the most likely class. For areas where a favored class cannot be determined, CPC will indicate those areas with a "EC" and not have contours. For example, if the probability for the above normal temperature class exceeds 40 percent for a given area and is the most likely class, then CPC will encircle the area by a probability contour of 40 percent on the temperature outlook chart and label the area with the letter A.



Accessing the Site

Users can access the Local Three Month Temperature Outlook (L3MTO) Web site one of two ways:

1. Access the site via the National Climate page using the “right-hand” dropdown selection box located just above the National Map. This will direct users to the National L3MTO Page. See **Figures 1 and 2**.
2. Access the site via the “Climate Prediction Tab” located on the local Weather Forecast Office (WFO) Climate Main Page. Once users select the tab, a page will display containing a thumbnail type graphic. Users will click on this thumbnail graphic to be directed to the L3MTO page of the WFO they accessed the Climate Prediction tab from. See **Figures 3, 4 and 5**.

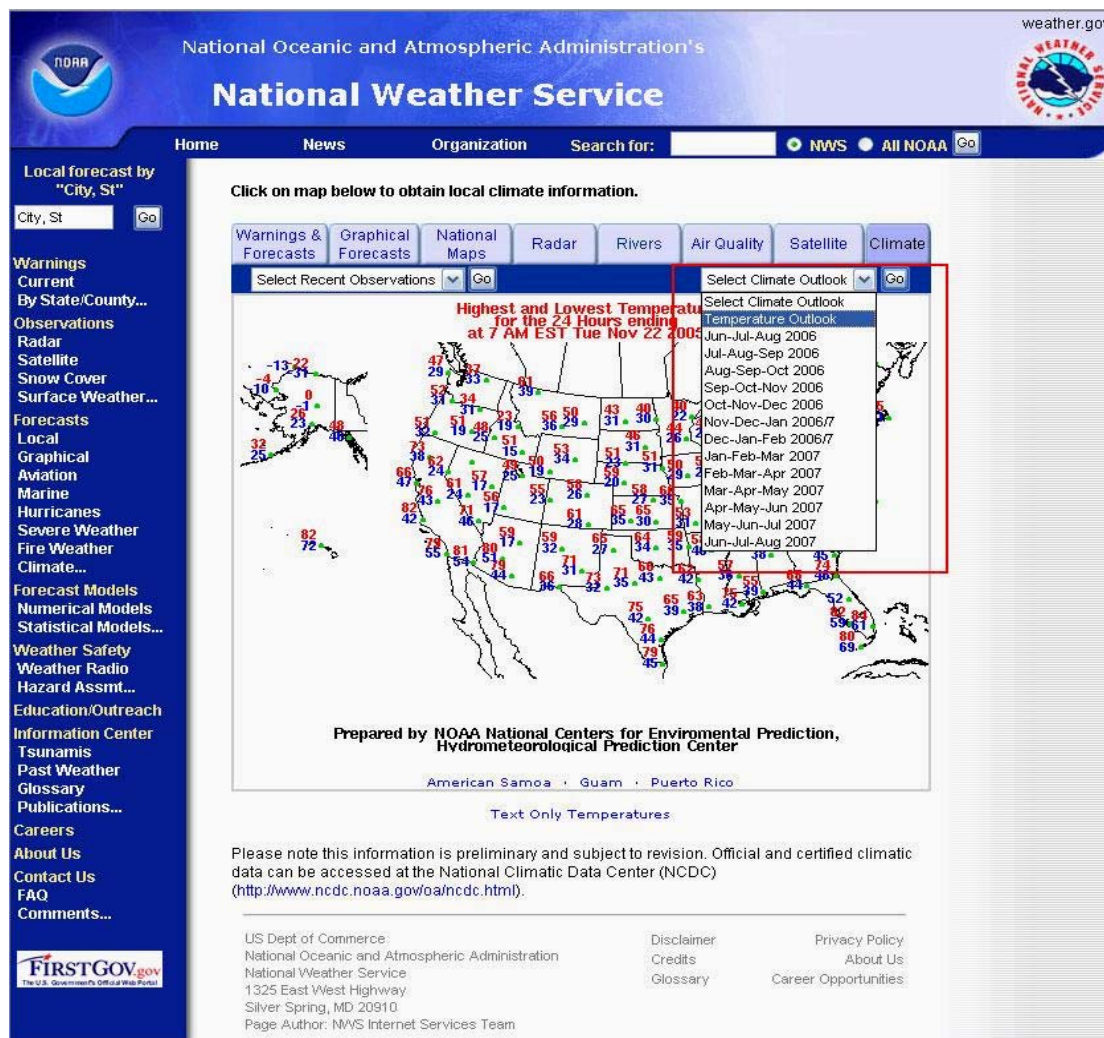


Figure 1: National Climate Page Access for L3MTO

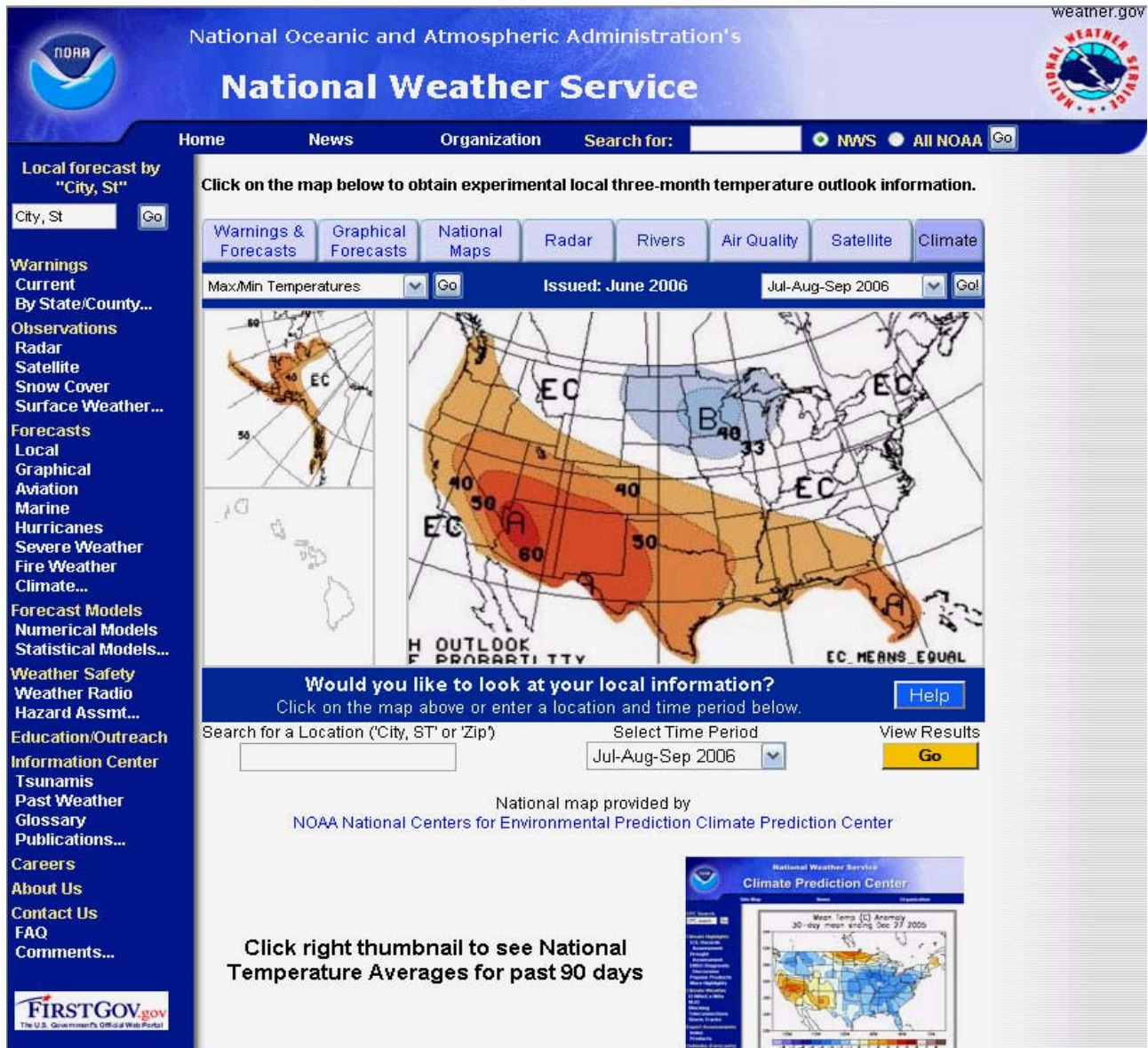


Figure 2: National L3MTO Page

From this page users can access their desired WFO L3MTO page by clicking on the appropriate geographical area on the map. Also, users can enter their local geographic information (City, State, or Zip) to search for the WFO that is located nearest to the information entered. A time period for a forecast/outlook can also be specified in this search.



National Weather Service Forecast Office
Phoenix, AZ

Home News Organization Search for: ☐ NWS ☐ All NOAA

Local forecast by "City, St"
City, St

Current Hazards
Watches/Warnings
StormCenter
National Outlooks
Current Conditions
Observations
Rivers & Lakes
AHPS
Weather Roundup
Radar Imagery
Satellite Imagery
NOAA Weather
Radio
Forecasts
Local Forecasts
Forecast Matrix
Numerical Models
Weather Center
Aviation
Fire Weather
Tropical
Climate
Local
National
More...
Hydrology
Forecasts/Data
AHPS Page
CO Basin RFC
CA-Nevada RFC
Quick Weather
Phoenix Zones
Flagstaff Zones
Tucson Zones
Las Vegas Zones
Discussion

As part of its ongoing efforts to improve service to the public, The National Weather Service has released an experimental local 3-month temperature outlook. Access the product for your area here. Through August 20, 2006, we are asking for your feedback regarding this product's usefulness and effectiveness. Please click here to complete the feedback survey.

Observed Weather Climate Locations **Climate Prediction** Climate Resources Local Data/Records Astronomical NOWData

Observed Weather Reports

1. Product »
☒ Daily Climate Report (CLI)
☐ Preliminary Climatology Data (CF6)
☐ Record Event Report (RER)
☐ Monthly Weather Summary (CLM)
☐ Regional Summary (RTP)
☐ State Summary (Temp/Precip)

2. Location »
Phoenix

3. Timeframe »
☒ Most Recent
☐ Archived Data:
No Records Found

4. View »

Storm Event Database (SPC)
Storm Data (NCDC)

Product Description:
DAILY CLIMATE REPORT - issued daily:
Detailed daily weather statistics (usually for yesterday), including temperature, precipitation, degree days, wind, humidity, sunrise/sunset, and record temperature data for the following day. Precipitation data includes both calendar year and water year totals, percent of normal values, and comparisons to normal. This product is available for up to 2 months.

Phoenix Weather Forecast Office
P.O. Box 52025
Phoenix, AZ 85072
Tel: (602) 275-0073
Ask Questions/Feedback
Page last modified: 23-Nov-2005 3:38 PM

Disclaimer
Credits
Glossary
Privacy Policy
About Us
Career Opportunities

Figure 3: Local WFO Climate Prediction Tab Access to L3MTO

Once users have accessed the local WFO Climate Page, they will be presented with navigational tabs located at the top of the page. The tab labeled "Climate Prediction" will be selected in order to access the WFO L3MTO site.

National Weather Service Forecast Office
Phoenix, AZ

Home News Organization Search for: NWS All NOAA Go

Local forecast by "City, St" City, St

Current Hazards
 Watches/Warnings
 StormCenter
 National Outlooks
 Current Conditions
 Observations
 Rivers & Lakes
 AHPS
 Weather Roundup
 Radar Imagery
 Satellite Imagery
 NOAA Weather
 Radio
 Forecasts
 Local Forecasts
 Forecast Matrix
 Numerical Models
 Weather Center
 Aviation
 Fire Weather
 Tropical
 Climate
 Local
 National
 More...
 Hydrology
 Forecasts/Data
 AHPS Page
 CO Basin RFC
 CA-Nevada RFC
 Quick Weather
 Phoenix Zones
 Flagstaff Zones
 Tucson Zones
 Las Vegas Zones
 Discussion
 AZ Today
 Yuma Sunrise
 Phoenix Sunrise
 Weather Safety
 Weather Radio

NWS Home > Climate > NWS Phoenix > Climate Prediction

CPC climate forecasts are provided, CDC climate information, as well as El Niño/La Niña, drought information, and other climate pattern information.

Observed Weather Climate Locations Climate Prediction Climate Resources Local Data/Records Astronomical NOWData

Climate Prediction and Variability

Climate Prediction
 Long range forecasts across the U.S.

Local 3-Month Outlook

Climate Prediction Web Sites

- Climate Prediction Center (CPC)
- Climate Diagnostics Center (CDC)

Week Two Forecasts (6-14 days)

- 6-10 Day Temperature Forecast Map
- 6-10 Day Precipitation Forecast Map
- 8-14 Day Temperature Forecast Map
- 8-14 Day Precipitation Forecast Map
- 6-10 Day & 8-14 Day Forecast Discussions
- U.S. Hazards Assessment

Monthly (30 day) Outlooks

- CPC Seasonal Outlooks
- Seasonal Outlook Discussion
- Monthly & Seasonal Outlook Maps

Climate Variability
 Topics important to climate assessment and prediction

Information on El Niño and La Niña

- CPC's El Niño / La Niña Page
- El Niño Theme Page
- What is La Niña
- ENSO Diagnostic Discussion

Drought Information

- U.S. Drought Assessment

Intraseasonal Oscillations

- Monitoring Intraseasonal Oscillations
- Madden-Julian Oscillation
- Daily Indices

Teleconnections

- Northern Hemisphere Teleconnections
- Daily Indices
- Forecasts of Teleconnection Indices

Figure 4: Local Climate Prediction Page

Once users have selected Climate Prediction, they will be directed to the page shown above, **Figure 4**, users need to click on the thumbnail graphic, highlighted by the **Red** rectangle, in order to access the WFO's L3MTO page. An example of the WFO L3MTO Page can be seen below.

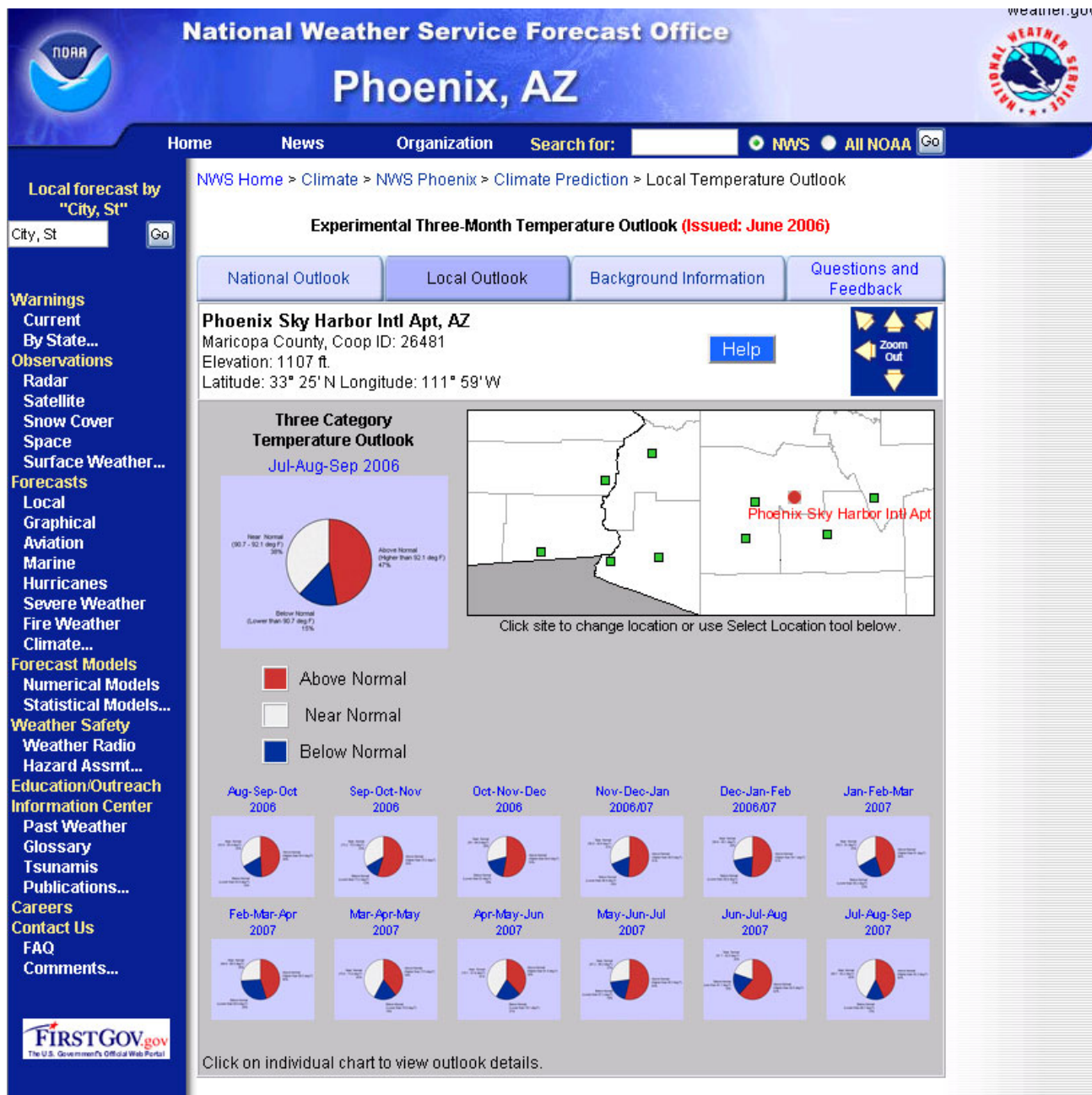
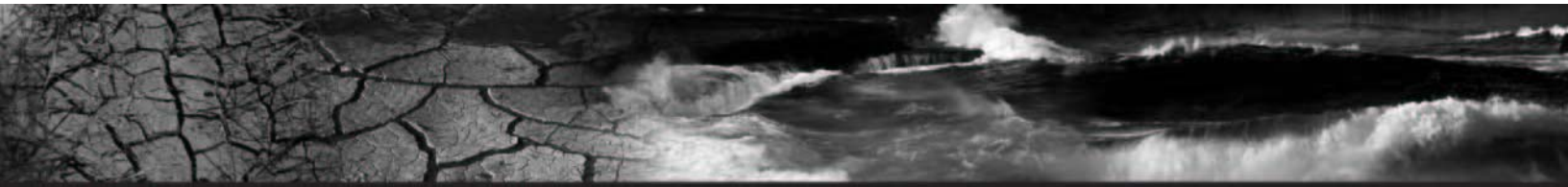


Figure 5: WFO L3MTO Page (PSR)

****Please note throughout this document, WFO PSR will be used in all examples.



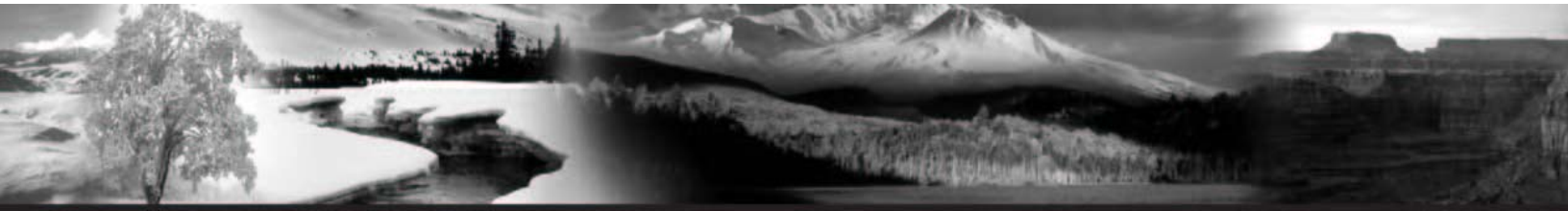
Using the L3MTO Site

National L3MTO Page

Once users have arrived on the National L3MTO Page, they have the option to select any 3-Month Temperature Outlook/Forecast(s) Map for the next year: **Blue** rectangle; access local WFO L3MTO pages by clicking the appropriate geographical area on the National Map: **Red** rectangle; or view National Temperature Analyses for the past 90 days by clicking the thumbnail image highlighted by the **Green** rectangle. See **Figure 6** below. Users can also access the L3MTO User Help Pages by clicking **Help**; this feature will be available to users throughout the L3MTO Web Suite located toward the top of each page.

The screenshot shows the National Weather Service's National L3MTO Page. The header includes the NOAA logo and the text "National Oceanic and Atmospheric Administration's National Weather Service". The navigation bar contains links for Home, News, Organization, and a search bar. The sidebar on the left lists various weather-related links, including Warnings, Observations, Forecasts, and Weather Safety. The main content area features a map of the United States with temperature outlooks for July-August-September 2006. A red rectangle highlights the map area, a blue rectangle highlights the "Help" button, and a green rectangle highlights a thumbnail image of the National Temperature Averages for the past 90 days. The page also includes a "Local forecast by City, St" section and a "Would you like to look at your local information?" prompt.

Figure 6: National L3MTO Page Features



National Temperature Analyses Past 90-days

From the National L3MTO Page users have the ability to access the National Temperature Averages Analyses that have occurred over the past 90-days. Once users have clicked on the thumbnail image highlighted by the **Green** rectangle in **Figure 6** above, they will be redirected to the page below; see **Figure 7**.

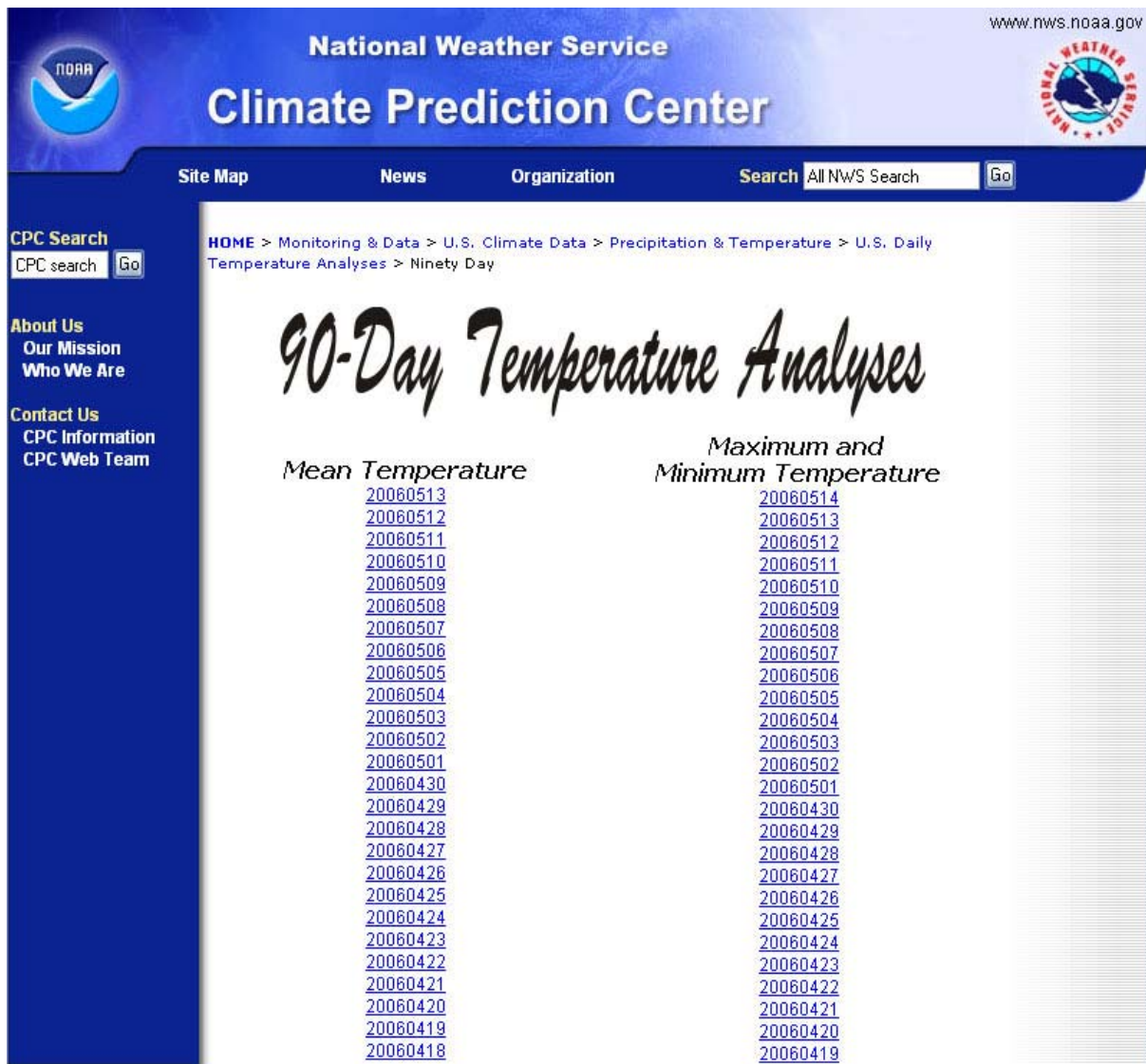
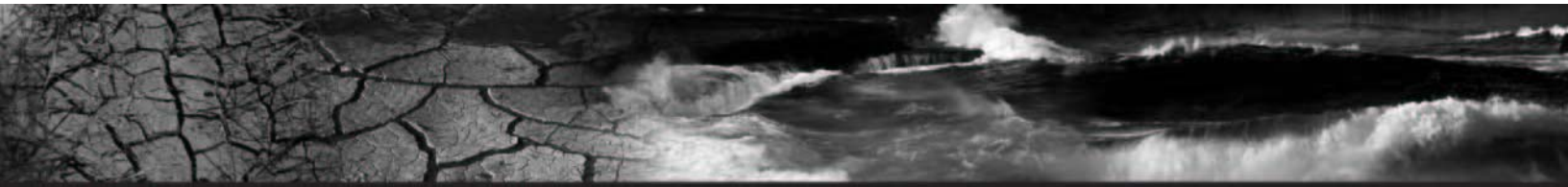


Figure 7: National Temperature Averages Analyses (past 90-days)



WFO L3MTO Pages

Once users have navigated to the WFO's L3MTO main page, they can access the following features:

- Access the 13 available Three-Month Temperature Outlooks for multiple locations by clicking the desired station on the WFO's County Warning Area (CWA) Map.
- View the Three Category Outlook Table, Probability of Exceedance, and Temperature Range graphs for the selected station.
- Access the Outlook Evaluation tools provided by NWS and NWS Partner groups.
- Navigate to adjacent WFOs via the Compass Navigation Feature.

These are just a few examples of items that users can utilize to interact with the site to produce data that are meaningful for their particular needs. This guide will now go into more detail regarding the features located on the WFO L3MTO Page(s) to better educate users on how to use the specific tools.

WFO L3MTO Navigation

To allow for ease of navigation around the WFO L3MTO Web suite, graphical navigation tools have been utilized throughout the site. Once users arrive on the WFO L3MTO default page they will notice tabular navigation buttons at the top of the page and graphical thumbnails located at the bottom of the page. Users can click on the tabular navigation items to move around the different levels within the L3MTO site. Likewise, they can click on the graphical thumbnails located at the bottom of the page to navigate between the different L3MTO products/variables. These items include Outlook Tables, Probability of Exceedance Graphs, Temperature Range Graphics and Probability of Exceedance Tables. These are highlighted by the **Red** rectangle in **Figure 8a and 8b** below. Also, users can utilize the Compass Navigation Tool, highlighted by the **Blue** rectangle, to navigate and view L3MTO data from adjacent WFOs.



Figure 8a: L3MTO Tabular Navigation

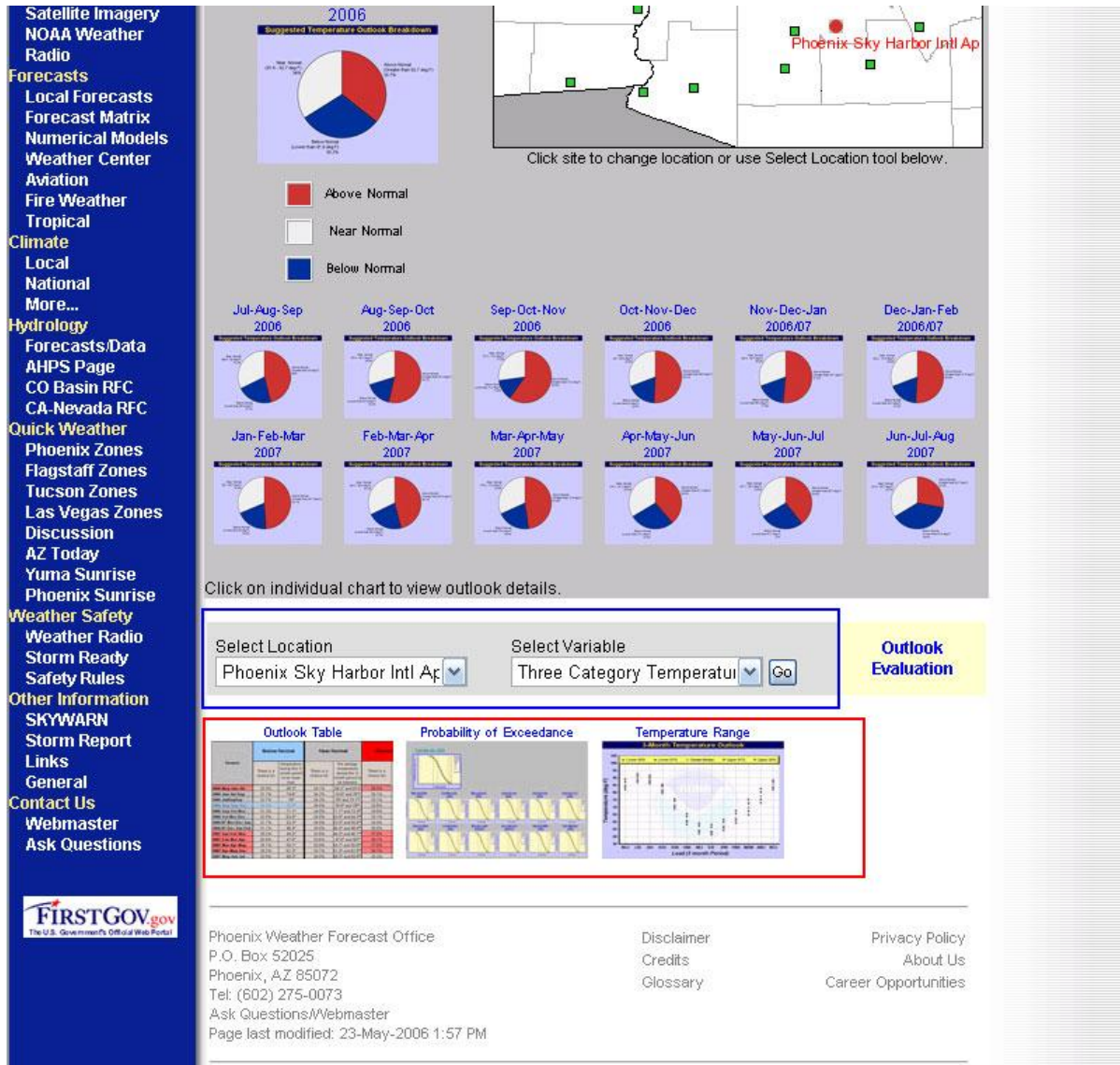
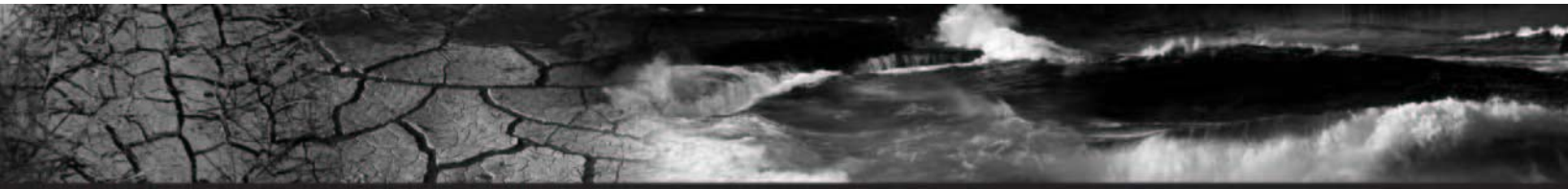


Figure 8b: WFO L3MTO Navigation Thumbnail Graphics/Selection Navigation

Users also have the ability to navigate to different sections within the WFO L3MTO site by using the “**Select Location**” (Station) and “**Select Variable**” options highlighted by the **Blue** rectangle. Here users can switch between station(s) and products/variables by simply making choices using the dropdown menus.



Three Category Temperature Outlook

When users arrive on the WFO L3MTO site, the Three Category Temperature Outlook is displayed by default. Here users are presented with graphical representations of the Suggested Temperature Outlook Breakdowns for the selected station. Users can click the thumbnail graphic, labeled with the specific three-month period they're interested in, to get a more in-depth look at that particular three-month period. This action will present users with a new page containing a larger graphic and color-coded text breakdown of that specific three-month period. See **Figures 9 and 10**.



Figure 9: WFO L3MTO Default Page (Three Category Temperature Outlook)

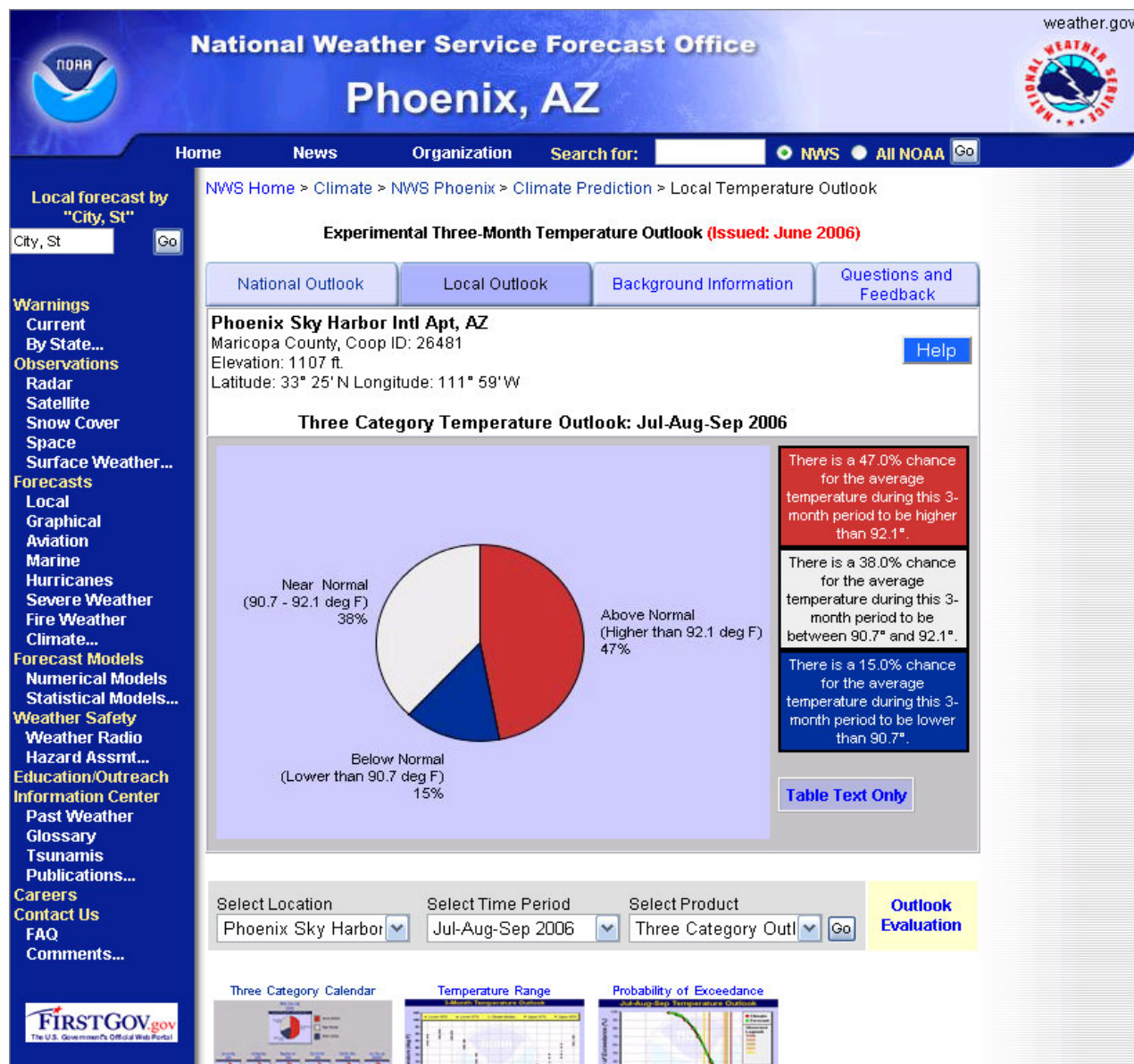


Figure 10: More in-depth Three Month Categorized Outlook

On this page, users have the option of viewing the text-only format of the graphical representations. To view this format of data click [Table Text Only](#); this will bring up a separate window containing all of the current Three-Month, Three-Category Outlooks in a text format, see **Figure 11**.



Experimental Three-Month Temperature Outlook

Issued: June 2006

Phoenix Sky Harbor Intl Apt, AZ

Maricopa County, Coop ID: 26481 Elevation: 1107 ft. Latitude: 33° 25' N Longitude: 111° 59' W

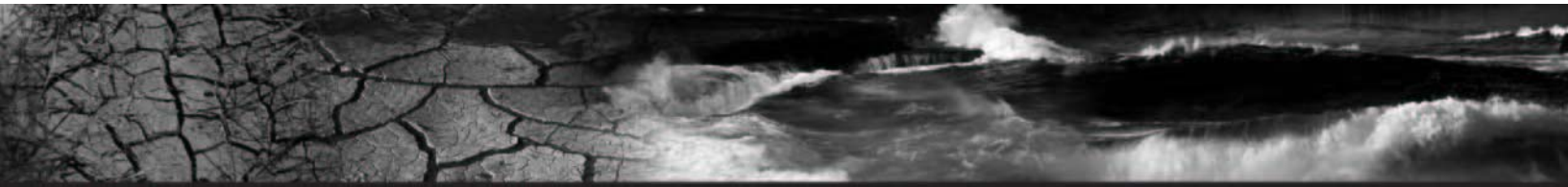
Three Category Outlook Table

| Season | Below Normal | | Near Normal | | | Above Normal | | |
|--------------------|--------------|-------|-------------|-------|-----|--------------|-------|-------|
| Jul-Aug-Sep 2006 | 15.0% | 90.7° | 38.0% | 90.7° | and | 92.1° | 47.0% | 92.1° |
| Aug-Sep-Oct 2006 | 18.0% | 83.9° | 33.0% | 83.9° | and | 85.4° | 49.0% | 85.4° |
| Sep-Oct-Nov 2006 | 12.0% | 73.2° | 33.0% | 73.2° | and | 75.5° | 55.0% | 75.5° |
| Oct-Nov-Dec 2006 | 18.0% | 63° | 29.0% | 63° | and | 64.8° | 53.0% | 64.8° |
| Nov-Dec-Jan 2006/7 | 18.0% | 56.9° | 31.0% | 56.9° | and | 58.8° | 51.0% | 58.8° |
| Dec-Jan-Feb 2006/7 | 21.0% | 56.6° | 28.0% | 56.6° | and | 58.1° | 51.0% | 58.1° |
| Jan-Feb-Mar 2007 | 22.0% | 59.2° | 33.0% | 59.2° | and | 61° | 45.0% | 61° |
| Feb-Mar-Apr 2007 | 29.0% | 64.8° | 26.0% | 64.8° | and | 66.5° | 45.0% | 66.5° |
| Mar-Apr-May 2007 | 19.0% | 70.6° | 42.0% | 70.6° | and | 73.5° | 39.0% | 73.5° |
| Apr-May-Jun 2007 | 21.0% | 79.1° | 41.0% | 79.1° | and | 81.6° | 38.0% | 81.6° |
| May-Jun-Jul 2007 | 19.0% | 87.2° | 27.0% | 87.2° | and | 88.3° | 54.0% | 88.3° |
| Jun-Jul-Aug 2007 | 18.0% | 91.7° | 20.0% | 91.7° | and | 92.5° | 62.0% | 92.5° |
| Jul-Aug-Sep 2007 | 15.0% | 90.7° | 42.0% | 90.7° | and | 92.2° | 43.0% | 92.2° |

Close Window

Figure 11: Three Category Outlook (Text-Only Format)

In the text-only format, data from all 13 Three Category Outlooks for the particular location are displayed. The station location information [issue dates, location, elevation, latitude, and longitude of the outlook(s)] are displayed in this summary as well. Click the “Close Window” button, highlighted in the graphic above with the **Red** rectangle, to close the window containing the Text-Only Format of the Three Month-Three Category Outlook.



Outlook Tables – Three Category Outlook

Users have the ability to view the Three Category Outlook(s) in either graphical chart(s) or in tabular form. On the WFO L3MTO main page, graphical chart view is the default view; however if users wish to view the current station information in tabular form, they only need to click on the thumbnail graphic labeled “Outlook Table” to view all 13 Three-Month, Three Category Outlooks on one table. Like the graphical outlook calendar, users have the option of selecting the text-only format of this table by clicking

[Table Text Only](#). See *Figure 12*.

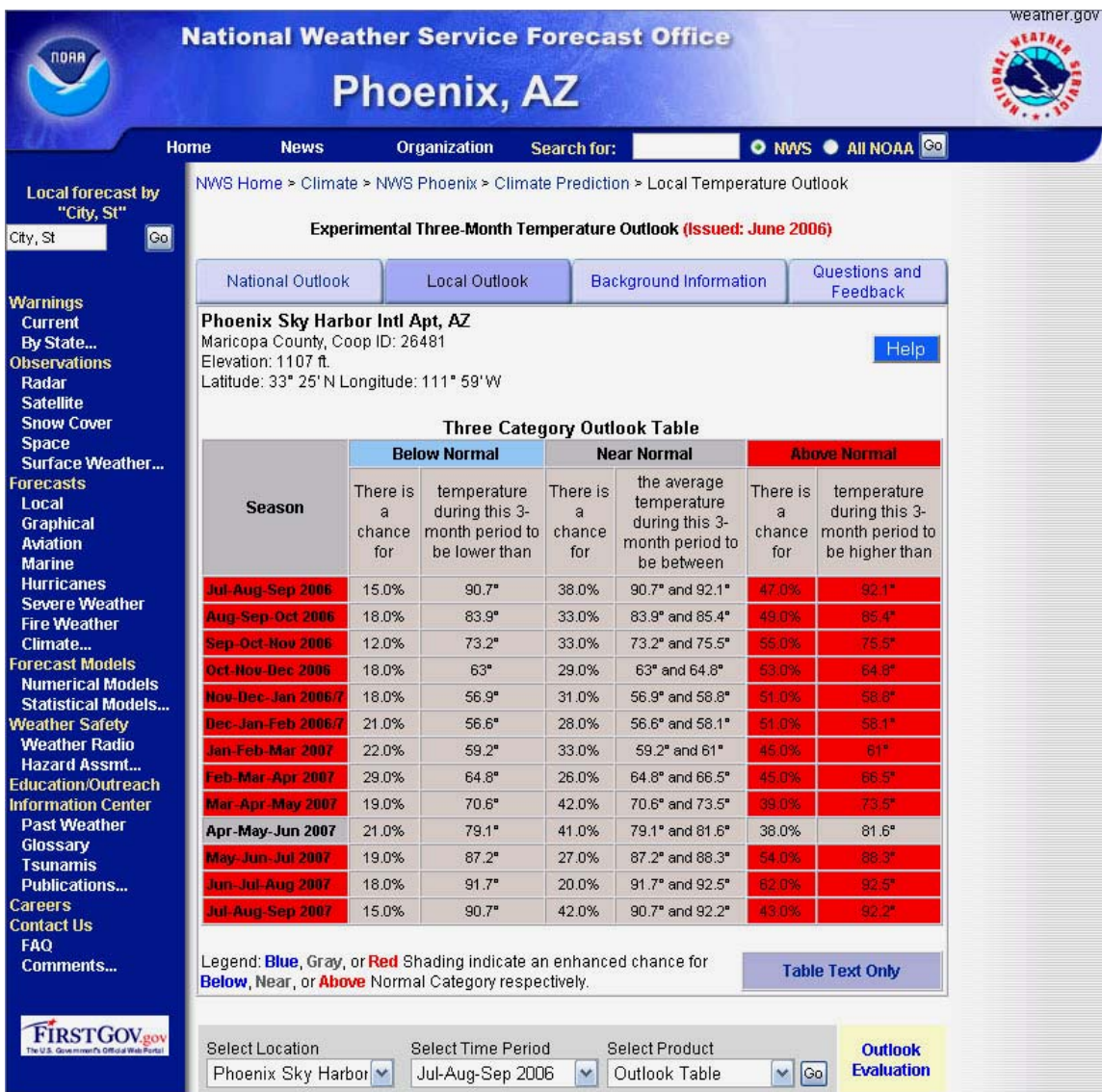
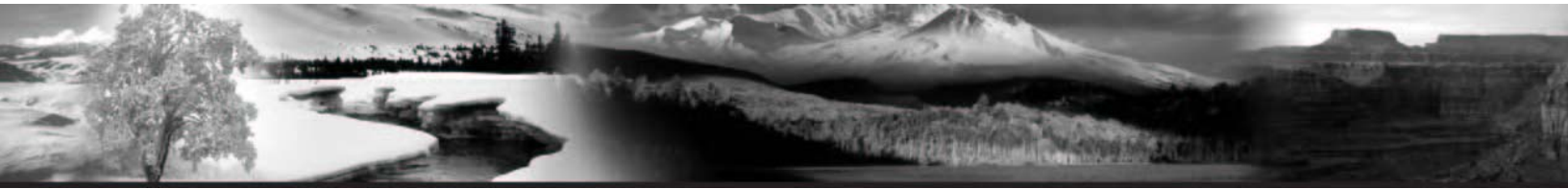


Figure 12: Three-Category, Three-Month Temperature Outlook (Tabular Form)



Probability of Exceedance – Graph(s)/Table

Once users have chosen to view Probability of Exceedance (PoE) for a location within a WFO's CWA, they will be directed to a page that is designed similar to the default WFO L3MTO page (Three Category-Three Month Temperature Outlook) however, instead of pie charts, the users will see PoE line graphs, see **Figure 13**. Navigation works exactly the same as it did for the Three Category Outlook page. When a user wishes to view a particular 3-month period they only need to click the thumbnail graphic associated with that period to be directed to a page that displays more information for the period.

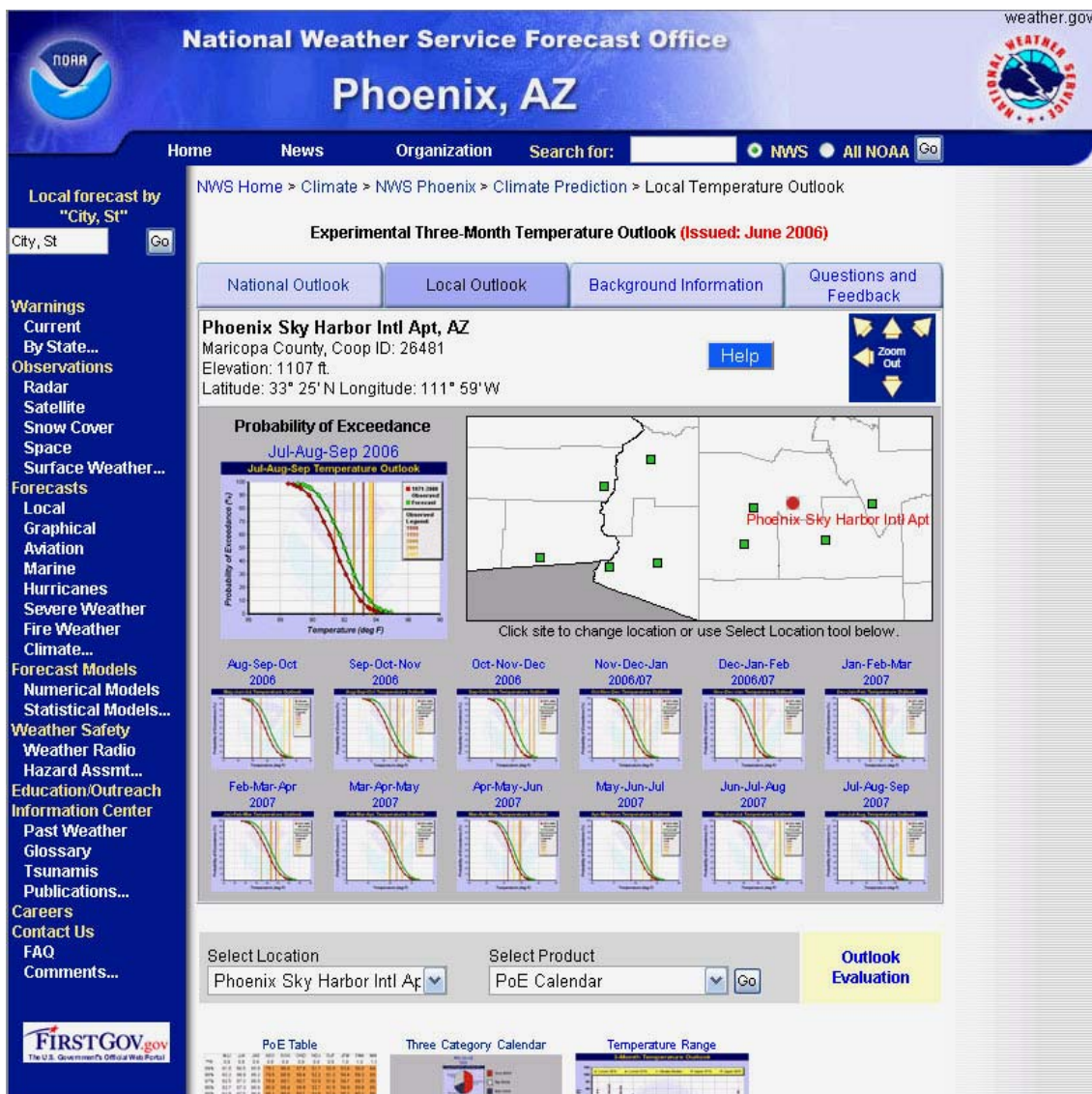


Figure 13: Probability of Exceedance Main Page

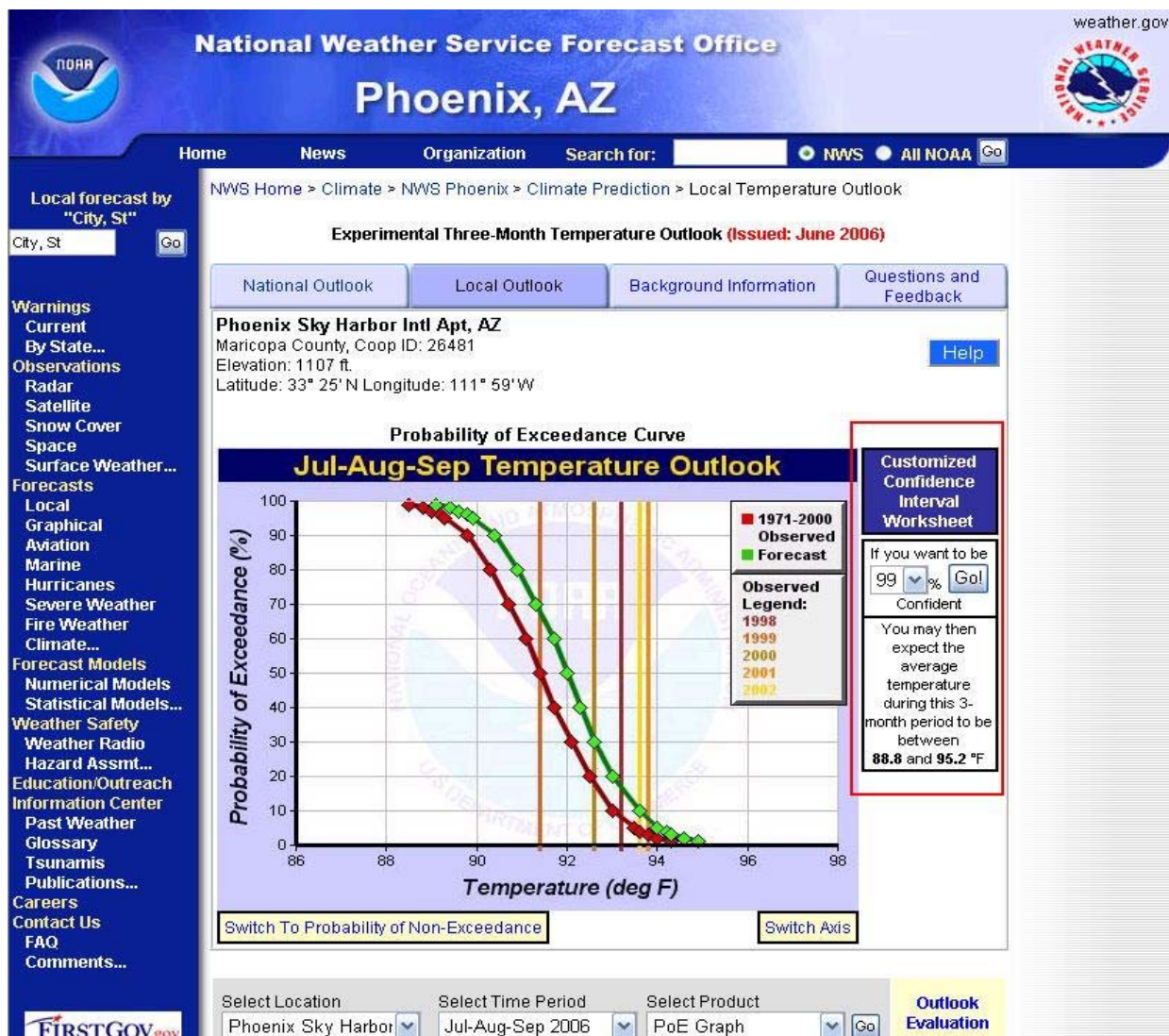


Figure 14: Probability of Exceedance Curve for 3-Month Period

Once users have arrived at this level within the variable of PoE, they will be presented with options that will allow them to view the data in a manner that is more meaningful to their needs. Users can click

[Switch To Probability of Non-Exceedance](#)

to change the currently displayed Probability of Exceedance graph into a Probability of Non-Exceedance graph. Users also have the ability to change the axis in which the data

[Switch Axis](#)

are displayed/plotted in the graph by clicking . Also located on these pages (Probability of Exceedance and Probability of Non-Exceedance) is the Customized Confidence Interval Worksheet. This tool allows users to input a percentage of confidence value that, in turn, will produce an average temperature range within that level of confidence percentage within the tool. The tool can be seen above highlighted with the Red rectangle, and can also be seen below in more detail; see **Figure 15**

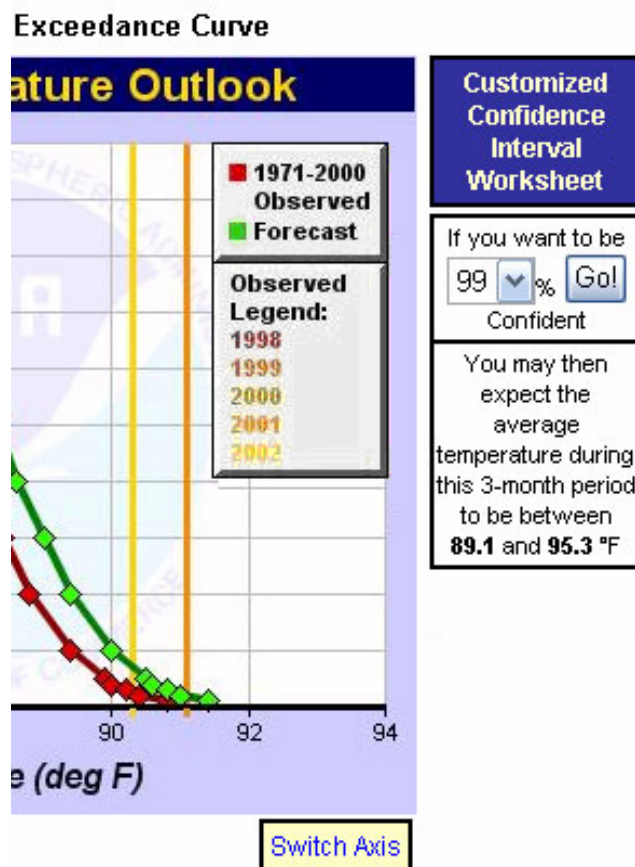
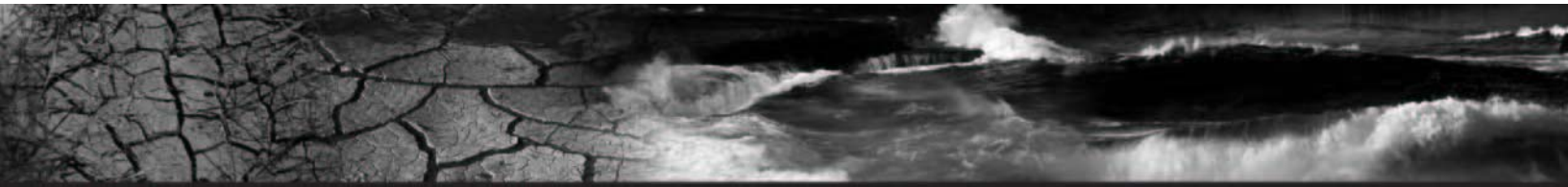


Figure 15: Customized Confidence Interval Worksheet



Probability of Exceedance Table

Users can view the Probability of Exceedance data for all 13 outlook/forecast(s) at the same time by clicking the thumbnail labeled PoE Table. Here users can see all data in tabular format with a color legend to easily distinguish areas of exceedance.

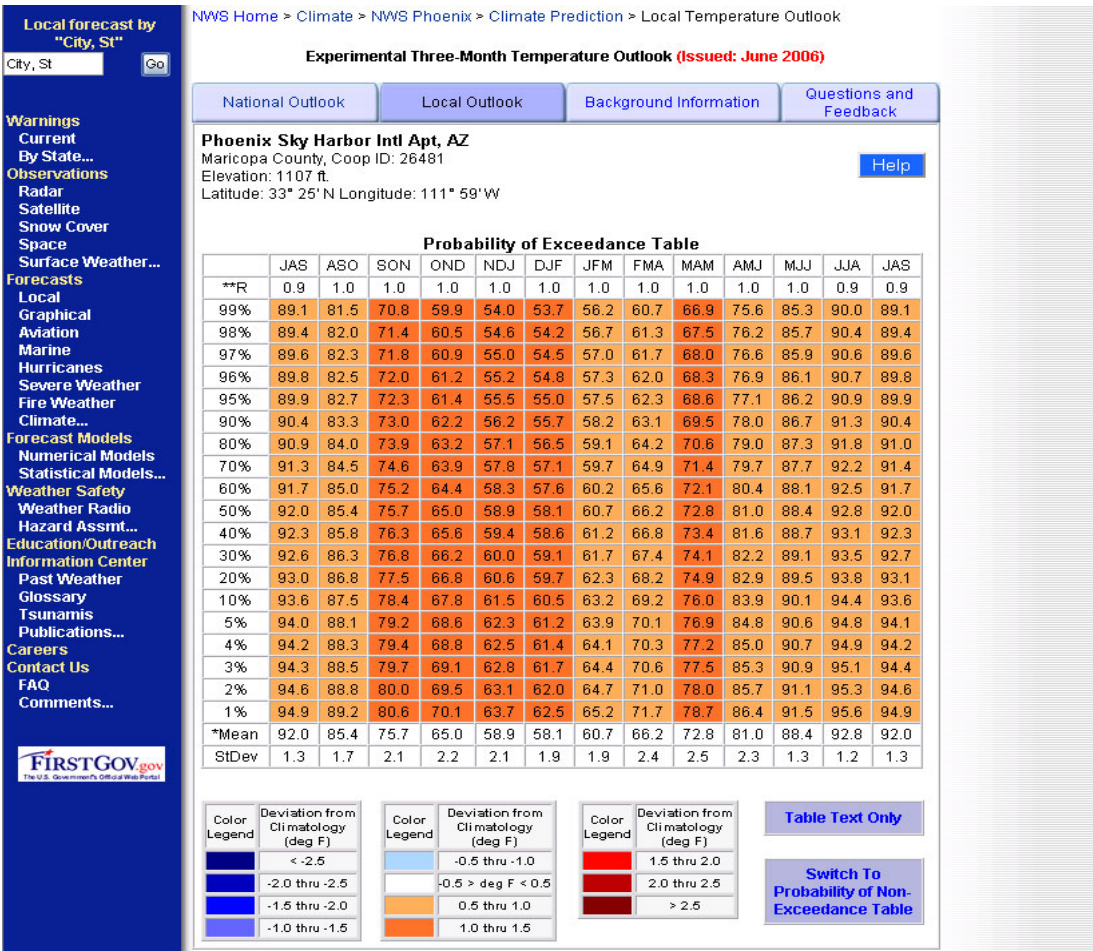
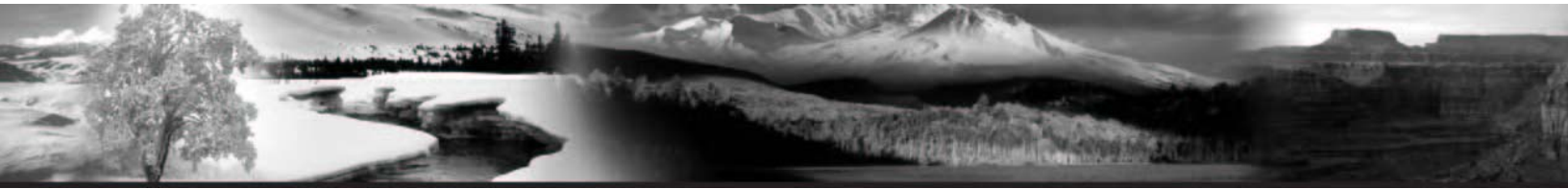


Figure 16: Probability of Exceedance Table

Users also have the ability to view the PoE table data in a text-only format by clicking **Table Text Only**. This will display the data in a separate window just like the Three Category Outlook text-only data. Additionally, users have the ability to view Non-Exceedance Data in tabular format

by clicking **Switch To Probability of Non-Exceedance Table**.



Temperature Range for Confidence Intervals Page

Upon clicking/using the appropriate dropdown link or thumbnail graphic to navigate to the Temperature Range Confidence Intervals Page, users will initially see a plotted graph at the 99% confidence level for the selected station. Using the Customized Confidence Interval Worksheet on this page, same tool shown in **Figure 15**, users can re-plot the graph using other available pre-defined confidence intervals within this tool: 50, 70, 90, 95, and 99%. Just like the other graphical representations throughout the site, users have the ability to view the text-only format for this data by clicking [Table Text Only](#). See **Figure 17**.

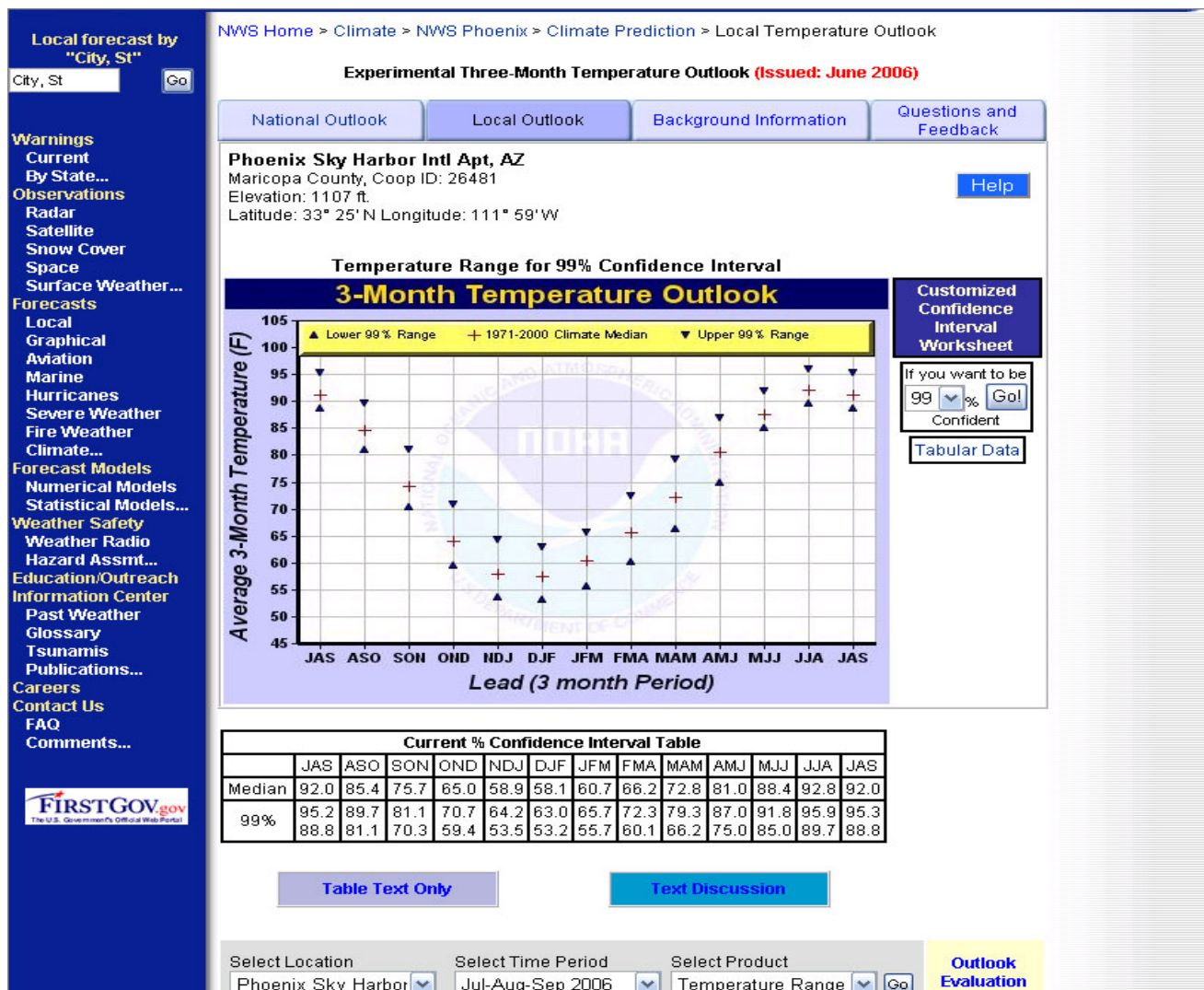
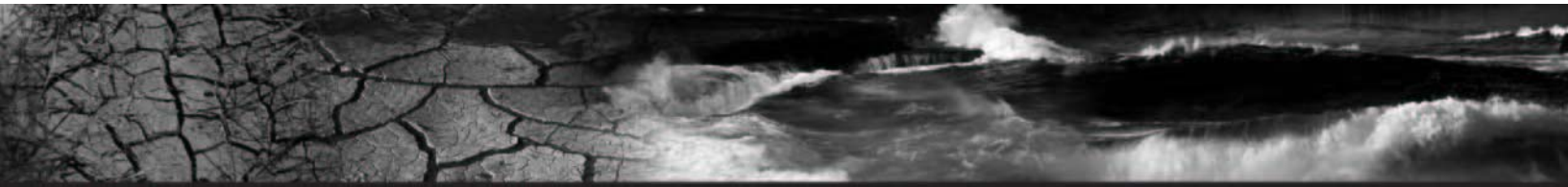


Figure 17: Temperature Range Page



The data on the Temperature Range Confidence Intervals Page can also be viewed in Tabular Format by clicking [Tabular Data](#); this action will redirect users to the Probability of Exceedance Table page, **Figure 16**.

Users can also view the text discussions for each Three-Month Outlook period by clicking

Text Discussion

. This action will display a new window containing all of the text discussions for the valid forecast/outlook period. See **Figure 18** below. Just as with the other Text-Only Format products, users can click the “Close Window” button to close the window and return to the last L3MTO page they were viewing.

Jun-Jul-Aug 2007

There is a 99% chance that the average 3-month temperature will be within the range of 89.7 and 95.9 Deg F.

There is a greater (72.1%) chance that the temperature will be higher than the climatological median* of 92.1 Deg F, and a lesser (27.9%) chance that the temperature will be lower than the climatological median*.

Jul-Aug-Sep 2007

There is a 99% chance that the average 3-month temperature will be within the range of 88.8 and 95.3 Deg F.

There is a greater (68.6%) chance that the temperature will be higher than the climatological median* of 91.2 Deg F, and a lesser (31.4%) chance that the temperature will be lower than the climatological median*.

*For the climatological reference information, the median statistic is reported. The median value means that during the present climatological reference period (1971-2000), half of the years (50%) temperature was greater than the median and in the other half (50%) less than that.

Close Window

Figure 18: Text Discussion Examples

Users can also view individual text discussions for a specific three-month period by clicking on the plotted graph in the desired outlook date range. See **Figure 19** for example.

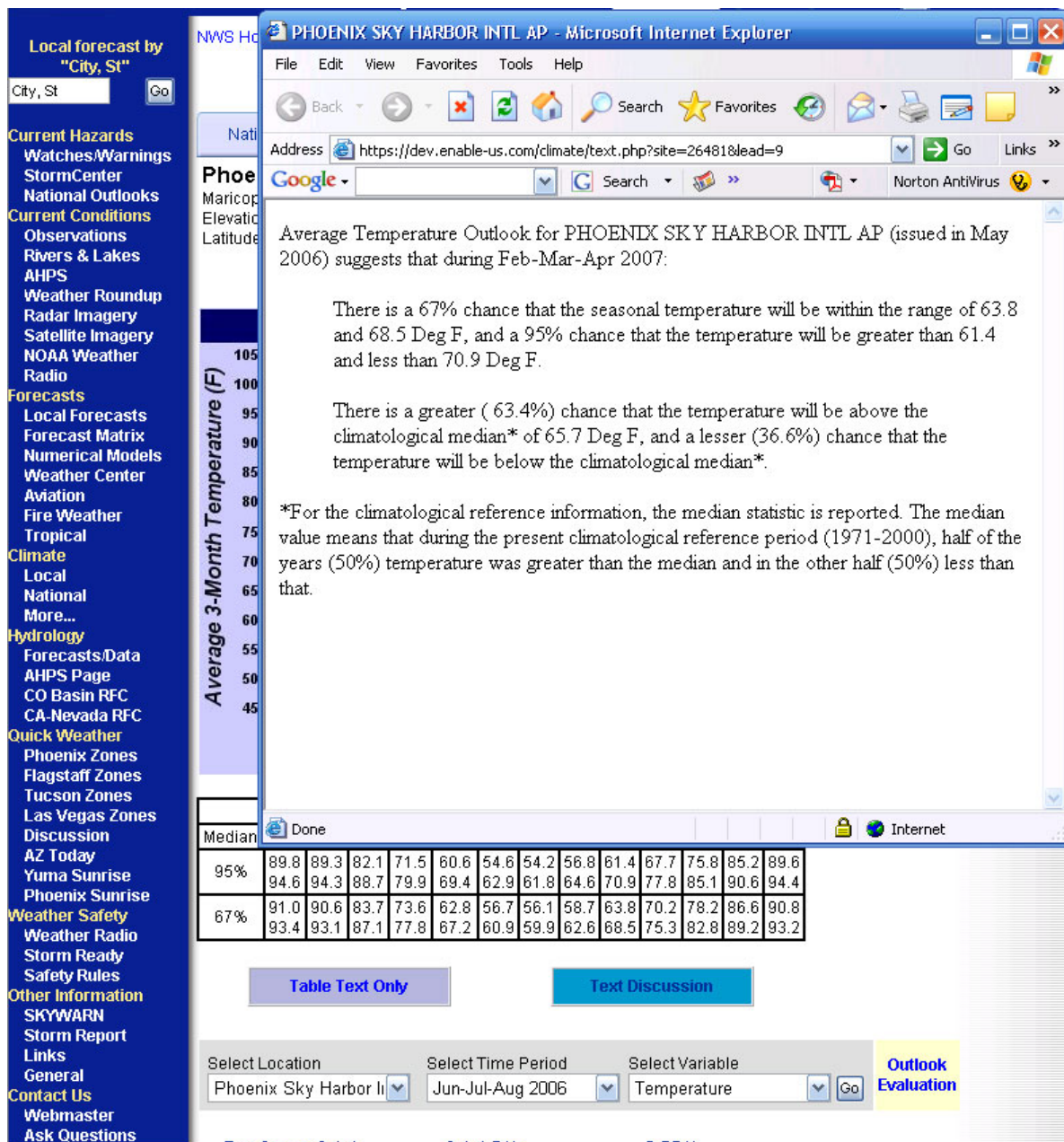
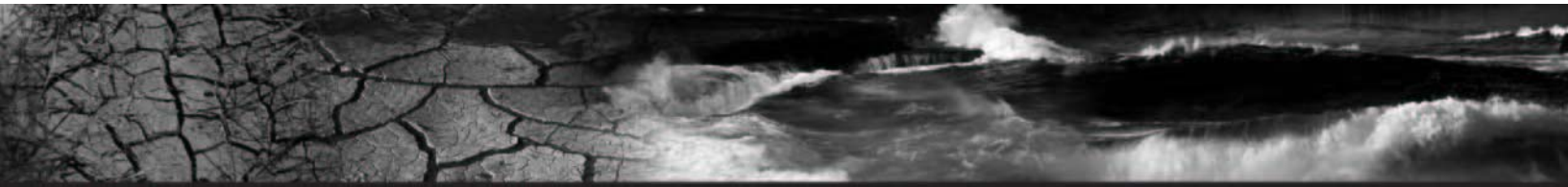


Figure 19: Click on Graph Text Discussion Example



Background Information Tab

Background Information shows at-a-glance all product components of Three Month Temperature Outlook and their interrelationship. Access to current outlooks is provided using small icons with the component image. Additionally, a [Help](#) button is available for each product component and a Product Description Document is available through the [NWS National Catalogue of New or Enhanced Products](#). Also, a glossary of terms is available by clicking the following link: [Climate Glossary](#).




Figure 20: Background Information Page



Questions and Feedback Tab


The Questions and Feedback Tab is designed to allow users to provide both general and specific feedback about the L3MTO Web site. Users need to simply use the selection areas and text input boxes to answer questions pertaining to their experiences on the site. See **Figure 21** below:



National Weather Service Forecast Office

Phoenix, AZ

weather.gov



HomeNewsOrganizationSearch for: NWS All NOAA Go

Local forecast by "City, St" Go

Warnings

Current

By State...

Observations

Radar

Satellite

Snow Cover

Space

Surface Weather...

Forecasts

Local

Graphical

Aviation

Marine

Hurricanes

Severe Weather

Fire Weather

Climate...

Forecast Models

Numerical Models

Statistical Models...

Weather Safety

Weather Radio

Hazard Assmt...

Education/Outreach

Information Center

Past Weather

Glossary

Tsunamis

Publications...

Careers

Contact Us

FAQ

Comments...

FIRSTGOV.gov

The U.S. Government's Official Web Portal

NWS Home > Climate > NWS Phoenix > Climate Prediction > Local Temperature Outlook

Local Three-Month Temperature Outlook (Issued: June 2006)

OMB Control Number 0648-0342 Expires 07-31-2008

Note, if you want a response to a specific question, please use the Ask Questions link at the bottom of the blue navigation area on the left side of this page. Questions asked in this survey might not be responded to.

- Privacy Policy -

National Outlook

Local Outlook

Background Information

Questions and Feedback

1) What products/services did you obtain?

☐ National 3-Month Temperature Outlook

☐ Local 3-Month Temperature Outlook

☐ Probability of Exceedance

☐ Probability of Non-Exceedance

☐ Temperature Range for 95 and 67% Confidence Intervals

☐ Text Products

☐ Other

2) How did you find out about our products?

3) What will be the primary use of the service?

☐ Scientific Research

☐ Business

☐ Legal

☐ Education

☐ Personal

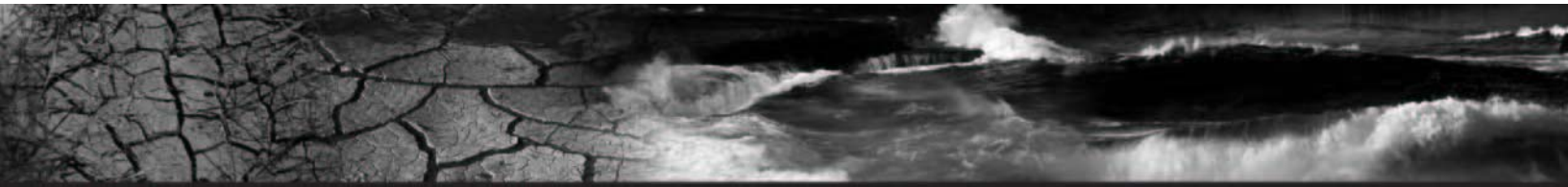
☐ Other

4) Do you have suggestions as to how NWS can improve its products and services?

Figure 21: Questions and Feedback Page

OCWWS / CSD Local Three Month Temperature Outlook

24



Users can also access the Questions and Feedback Page at any time during their visit to the L3MTO Site by clicking the link highlighted with the **Red** rectangle below in **Figure 22**. This link is located at the bottom left of every page within the L3MTO Web Suite.



Figure 22: Questions and Feedback Link

