SKYWARNEWS

NOAA's National Weather Service State College, PA - Spring 2005

"Working Together To Save Lives"

Edited by John La Corte and Dave Ondrejik

You and the NWS Severe Weather Warning Process

By Greg DeVoir
Senior Meteorologist

The greatest calling of NOAA's National Weather Service is the protection of life and property through the timely issuance of severe local storm warnings and routine weather and water forecasts. To warn or not to warn – that is *always* the question! Twenty four hours a day, 7 days a week, and 365 days of the year, NWS meteorologists in Pennsylvania and throughout the country take this question very seriously. With the public and emergency management community's ever-increasing reliance on the NWS to provide critical and timely information on potentially threatening weather, the issuance of warnings is easily the most important and visible component of the National Weather Service's mission. But how are such warning decisions made?

Warning operations are a true team effort. Long before storms appear on the State College PA WSR-88D Doppler radar, our meteorologists have participated in countless hours of severe weather training, including the use of weather event simulations where past archived severe weather events can be displayed and studied. In addition, forecasters complete seasonal weather drills, attend severe weather workshops, and in many cases, conduct their own research. On the equipment side of the house, our electronics and information technology staffs work tirelessly to ensure that our radar, computer network, software and other vital systems are performing optimally. Not to be forgotten, our office management team works continuously to develop and maintain relationships with the emergency management agencies at the local, state and federal level, to better deliver our services to the citizens of Pennsylvania.

Once storms are in the forecast, the focus quickly shifts from training and preparedness activities to short term forecast and warning operations. It becomes the sole responsibility of the warning forecaster(s) to deliver the NWS mission to the public in the form of life saving severe storm warnings. But once again, the question begs to be asked, how do meteorologists make these critical warning decisions?

On any given day, several constantly-changing variables weigh into whether to warn or not. Generally speaking, the 3 key inputs (variables) to the warning process are:

1.) Existing Storm Environment
2.) WSR-88D Doppler Radar Data
3.) Spotter Reports - <u>YOU!</u>

In an ideal world, meteorologists would be armed with all the information needed to make accurate and timely warning decisions. The reality, however, is that every severe weather event (and every weather forecast, for that matter) is characterized by degrees of uncertainty, based on various known and unknown variables. Through advances in science, computer technology and deployment of automated observing equipment throughout the country, meteorologists are better at diagnosing storm environments and assessing the severe weather potential than ever before.

In the 1990s, nationwide deployment of the WSR-88D Doppler Radar network heralded a bright new era in the NWS Warning program. Doppler radar dramatically increased our capabilities by enabling us to see wind speeds and circulations and to diagnose the intensity of storms much like a medical doctor diagnoses a patient's health. It is absolutely the most powerful tool meteorologists use to examine storm structure and assess severe weather potential, and is the basis for most severe weather warnings. Correspondingly, NWS severe storm verification statistics and warning lead times have improved dramatically in the WSR-88D era. Although some television commercials related to the station's "Doppler Ten Thousand Radar" claim to know what's happening in your neighborhood, the truth is that we aren't certain beyond a reasonable doubt unless we hear directly from you.

Upgraded technology is wonderful and has improved our capabilities in almost every conceivable area, but it is not infallible or without limitations when it comes to warning decision making. For these reasons, we value each and every spotter report our office receives. There are cases when spotter reports prompt severe thunderstorm or tornado warning issuances, and others which indicate warnings are not needed for particular storms. Either way, **both severe and non-severe reports are extremely important to us!**

The warning process is not perfect, and may never be, given the complexity involved. As the NWS continues to move forward incorporating cutting edge technology and research into our forecast and warning operations, please remember that the critical information you provide as a SKYWARN spotter will always be needed and appreciated. Your reports directly lead to more accurate warnings and a safer public, helping us fulfill our NWS mission to protect lives and property and better serve the citizens of central Pennsylvania.

CALL US ANYTIME WITH YOUR REPORT, DAY OR NIGHT AT
1-800-697-0010
or call the automated reporting line at:
1-877-633-6772

Pennsylvania Winter of 2004-05 in Review

by John La Corte, Senior Forecaster

Despite the recent snows of these early days of April, the winter is over and warmer days are once again just ahead of us. After the most recent two winters made snow lovers and heating oil companies happy with their storms and cold, this past winter was relatively mild and unremarkable snow-wise.

This year, we made a return to the kind of winters we almost got used to during the mid to late 1990's, when central Pennsylvania enjoyed almost balmy cold seasons and there was little need for snow blowing equipment.

The "meteorological" or "traditional" winter is represented by the three month period starting on December 1st and lasting through the end of February. This year most of the state averaged temperatures anywhere from exactly normal to nearly 2 degrees warmer than normal. For the third year in a row, extreme cold was rare and few records for temperature were set. See table 1 for a summary of winter temperatures around the region.

Station	Temp	Departure
Altoona	29.8	0.0
State College	29.8	+1.8
Bradford	23.8	+0.3
Williamsport	29.7	+1.5
Harrisburg	33.6	+1.0

Table 1 . Average Temperature for Dec 2004 through Feb 2005

The winter really took it's time getting started with regards to snow. December saw less than an inch of snow in Harrisburg, Williamsport, State College and Altoona. After the very slow start, January and February made up a bit for lost time, with the winter eventually averaging out not far from normal overall. In the Susquehanna Valley the three month snowfall ended up less than an inch above normal, while further west in the central mountains, snowfall totals averaged about a half foot below normal.

Station	Snow	Departure
Altoona	18.5	-7.3
State College	24.1	-5.6
Bradford	n/a	n/a
Williamsport	29.0	0.7
Harrisburg	26.6	0.6

Table 2. Seasonal Snowfall for Dec 2003 through Feb 2004

Given that the seasonal snowfall was not far from normal over the central part of the state, one might think that the overall precipitation (rain and the melted equivalent of snow) would also be fairly close to normal. Table 3 shows that seasonal totals varied widely with parts of the northern mountains being much drier than average, and portions of the mid and upper Susquehanna River basin checking in much above average.

Station	Sum	Departure
AOO	6.70	-0.33
UNV	10.00	1.60
BFD	7.79	-2.66
IPT	10.87	2.47
MDT	9.69	0.41

Table 3. Seasonal Precipitation (melted) Dec 2004 through Feb 2005

Summer Outlook

For the last couple of years we have suffered through relatively chilly-wet summers here in central Pennsylvania. All the while we continue to make some sort of stab at predicting the upcoming season. So we will once again consult the oracles, look at the scientific and statistical sources and see where they all lead us.

The science of long range forecasting is admittedly still far from exact. However, the Climate Prediction Center (CPC) continues to make inroads into trying to pass useful information to the public related to the upcoming seasonal temperature and precipitation trends. That being said the CPC has determined that with the lack of any significant contribution to the atmospheric patterns from El Nino (a tropical Pacific warming of ocean waters that affects atmospheric circulations all over the globe), that the upcoming season over the northeastern United States should end up averaging very close to normal for both temperature and precipitation.

The Pennsylvania State Climatologists office has also been dabbling in seasonal forecasting using slightly different methods than those employed by the CPC. This year they have matched the atmospheric pattern in April to patterns observed in 1960, 80, 91 and 96. Their "analog" method then looked at the seasons that followed those Aprils and lo and behold, they too look for a summer that should end up pretty much near normal. They do get a little more detailed however, hinting that June will average near normal for both temperature and precipitation. July will see near normal temperatures but is expected to be wet. August should end up warmer than normal while returning to near normal precipitation.

As for our own look back at previous seasons, our data also suggests a return to more normal summer type weather. What we did was look at the number of times in history we have had cool-wet summers two years in a row, and what kind of pattern followed the next year. Our statistics show a slightly elevated probability that the summer will return to near or above normal for temperatures and near or below normal for precipitation. So the likelihood of having three bad summers in a row seems statistically unlikely, however the statistics are far from over whelming.

Be sure to tune in this fall, by then we will be sure to have nailed that pesky seasonal forecast.

The Fujita Scale (F-Scale)

By Michael Dangelo, Senior Forecaster

You've more than likely heard the term "F-scale" or a phrase like "That was an F-4 Tornado." But, do you know what those phrases are referring to? Here is a brief history and breakdown of the F-scale, and its namesake.

The F-scale is a numerical scale used to classify the strength of a tornado due to the damage it created. The F-scale was devised by the late Dr. Tetsuya Theodore (T.T.) Fujita from the University of Chicago, who did some of the pre-eminent work on severe storms and wind damage.

Dr. Fujita was born in Japan in 1920, and obtained a Mechanical Engineering Degree in 1943. He had a life-long interest in maps, and did many surveys and mapping projects in Japan, including a survey of both Hiroshima and Nagasaki after the atom bombs to determine the number of bombs and the height of their detonation. In April 1946, he surveyed a volcanic eruption. In 1947, he conducted studies of downbursts in thunderstorms. In September of 1948, he conducted his first tornado survey, of the Enoura tornado, near Saga in Kyushu.

Following extensive collaboration and communication with Dr. Horace Byers (at the U. of Chicago), Dr. Fujita was invited to join the staff there, and moved to the United States in 1953. In 1968, Dr. Fujita became a U.S. Citizen.

In 1971, Dr. Fujita proposed a wind scale to cover the range from the top of the Beaufort Scale to Mach 1 (the speed of sound in air) in 12 equal steps. The equivalent on the Fujita Scale or F-scale of any wind speed (in meters per second) can be found from the equation:

$$F = 1.5\sqrt{\frac{M}{6.3}} - 2$$

In practice, however, only whole F-numbers are used, and the wind velocity is estimated from effects observable in a storm's aftermath. Using the F-scale, storm researchers and forensic meteorologists can give a tornado a numeric rating – based on the maximum damage from that specific tornado - from F0 to F5. Interestingly, the other F numbers (from 6 up to 12) have been

largely forgotten over time, as those wind speeds would be fantastic, and are not expected to occur in a tornado.

Fujita Damage Scale

F-scale	Type of Tornado	Intensity	Estimated Wind Speeds	Description of Damage
F0	Gale Tornado (gustnado)	Weak	40-72 mph	Some damage to chimneys; breaks branches off trees; push over shallow-rooted trees; damage sign boards.
F1	Moderate Tornado	Weak	73-112 mph	The lower limit (73 mph) is beginning of hurricane wind speed; peels shingles off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.
F2	Significant Tornado	Strong	113-157 mph	Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	Severe Tornado	Strong	158-206 mph	Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
F4	Devastating Tornado	Violent	207-260 mph	Well-constructed houses leveled; structure with weak foundation blown off some distance; cars thrown and large missiles generated.
F5	Incredible Tornado	Violent	261-318 mph	Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobiles-sized missiles fly through the air in the excess of 100 m; trees debarked; incredible phenomena will occur

Table 1. The Fujita Tornado Damage Scale

Since the F-scale (for tornadoes) is based on damage (primarily to buildings), there is some ambiguity in the scale. For example, a tornado which moves over open country will tend to receive a lower rating than a tornado which strikes a populated area. Since buildings have a wide variation in age, quality of design, and quality of building materials, more uncertainties are thrown into the mix. Tornadoes over open country will probably encounter varying types of vegetation, leading to uncertainties in these cases.

Dr. Fujita's work brought him into close partnership with Dr. Allen Pearson, the former director of the NWS NSSFC (National Severe Storm Forecast Center) – which is now the NWS's Storm Prediction Center (SPC), in Norman OK. Therefore, the Fujita Scale is sometimes termed the Fujita-Pearson Scale.

When the National Weather Service sends a storm damage survey team to a (suspected) tornado damage site, we try to view and assess the damage, interviewing any eyewitnesses to place the time and nature of the damage, and also assign an F-scale rating to any tornadoes, referring to Dr. Fujita's work as we do so.

A tornado (especially a long-lived and/or violent tornado) is not the same intensity through its entire life span. The F-scale rating given to a tornado will be the maximum rating of any damage due to that specific tornado.

Severe Weather Reports via the Web

by Ron Holmes, Information Technology

We will continue our 2nd year of providing a means to get your severe weather reports to forecasters in real-time via the web. Our look has changed slightly to provide a more uniform means of navigating the site. Just look for the left-hand menu item "Severe Weather Reports" to enter the site (URL provided below). NWS Spotters should go to the Spotters section and enter their 6 digit Spotter ID number and last name (lower case) to access the reporting page.

NOTE: We have changed the last name box to using lower case to make it easier for you to log in. So if you have trouble logging in make sure you don't have the Caps Lock feature accidentally toggled on.

In an effort to get more information into the office we have provided a separate Public Report Page as well. However free-form comments are not allowed on this page as they are on the Spotter page. You may want to tell your friends who may be interested in reporting severe weather about this new page. Of course our severe weather reports from trained spotters are taken more seriously than general public reports, but we welcome all input. When looking up severe weather reports the results page will clearly delineate Trained Spotter Reports from ordinary Public Reports.

One new idea we have in mind for this year that we will investigate providing is a plan-view map of severe weather reports that gets updated every hour as new reports come in.

The web site to report Severe Weather is:
http://nws.met.psu.edu/svrreport

Golf and Lightning Safety

by Joe Villani, General Forecaster

During the spring and summer months, thousands of people each year flock to golf courses. In northern states, golfers approach courses with unabated enthusiasm once the weather gets warm enough early in the season. Most people, especially avid golfers, are familiar with the risks and dangers involved in participating in this outdoor activity on a regular basis. Being out in the sun for several hours puts people at risk for sunburn, and long term exposure can even lead to skin cancer. The dangers of golfing in sunny weather are pretty well-publicized and common. Another major risk of golfing outdoors is when the weather becomes unsettled and thunderstorms occur. The main danger associated with thunderstorms is lightning.

In the northeast part of the country, including Pennsylvania, thunderstorms occur on a fairly frequent basis during the late spring and summer months. According to the National Lightning Safety Institute, 25 people have died in Pennsylvania due to lightning strikes between 1990 and 2003, but many more have been struck and injured. Pennsylvania was ranked 6th highest in the entire United States in lightning deaths. Most people are aware that lightning is dangerous, but everyone should take the appropriate measures to ensure their safety.

It is important to take precautions to prevent getting struck by lightning at all times, but especially on the golf course. Lightning is more prone to strike the tallest objects in wide open areas, as well as trees. This poses a serious problem to people on a golf course during a thunderstorm, since a human is usually the tallest object on a course, other than trees. Trees are very susceptible to being struck by lightning. People seeking shelter under a tree that gets struck by lightning will also get struck, since trees conduct electricity all the way down to the ground. Having metal golf clubs and riding carts is not safe either, since both will conduct electricity. The bottom line is that there are no safe areas on a golf course during a thunderstorm.

So what are golfers supposed to do when they encounter a thunderstorm on the golf course? First of all, be aware of the weather forecast on the day you plan to golf. If the potential for thunderstorms exist, have a plan of action if you find

yourself at the 12th hole and you hear thunder. The best advice is to seek shelter immediately when you hear thunder or see lightning. When you first hear thunder, the core of the storm is probably not too far away, and if you start heading back to the clubhouse this is generally enough time to seek shelter. Go to the clubhouse or your automobile immediately – do not hesitate at all! If you wait, it may be too late before the storm is right on top of you. It is also important to remember that lightning can also strike away from the main core of a storm, as far as 10 miles. Even though a thunderstorm may ruin your golf round, this may only be temporary. If you have the patience and time to wait it out, some storms may only last 15 minutes to a half hour and play can be resumed afterwards.

Climatologically speaking, most thunderstorms occur during the afternoon hours and early evening hours, so if you'd like to avoid most encounters with storms make a tee time between 6 and 8 am. This is also generally the coolest time of day during the hot summer months, so take advantage if you are an early riser.

Lawn Mower Safety Rules

By Victor Cruz, WFO Safety Focal Point

Each year over 87,000 Americans are injured while mowing the lawn. This includes over 10,000 children. Of this 10,000 over 2,300 are injured seriously.

1. **Loose Objects**
   - Pickup loose objects before mowing
   - A mower can throw objects at speeds greater than 200 mph!!
   - Objects left in the yard become missiles when hit by a mower blade

2. **Fuel**
   - Handle fuel with care
   - A gallon of gasoline has the explosive power of over 7 sticks of TNT!!!
   - Never fuel a mower when the engine is running or is hot

3. **Clothes**
   - Wear close, fitting clothes and closed toe leather shoes
   - Always wear safety glasses while mowing
   - House slippers and mowers don't mix
   - Leather shoes are good protection when mowing

4. **Children**
   - Keep children out of the area while mowing
   - Children under the age of 12 should not operate push mowers
   - On the average 1 child per day in the U.S. is backed over by a parent on a riding mower
   - Children under the age of 14 should not operate riding mowers

5. **Wet Grass**
   - Never mow wet grass
   - Mowing wet grass increases chances for the operator slipping under the mower
   - Wet grass clogs the mower
   - Causes an uneven cut of lawn

6. **Injury Prevention**
   - Always shut off engine before unclogging discharge chute

- Your hand cannot move faster than a mower blade
- 22% of mower injuries involve the hands fingers or wrist

7. **Inclines**
   - When using a push mower, mow across inclines
   - Many mower accidents occur when the operator slips under the mower

8. **Riding Mowers**
   - Drive riding mowers up and down inclines
   - Do not allow children to "ride along" on riding mowers
   - Riding mowers don't come with roll over protection!!

9. **Safety Hazards**
   - Never leave a running mower unattended
   - A mower left running is a safety hazard, especially to children and animals.

10 **Maintenance**
   - Disconnect spark plug before working on mower
   - It just takes a second to disconnect the spark plug wire
   - A mower blade revolves at over 2000 rpm!!
   - How long would it take to sew your fingers back?

Lawn Mower Maintenance

By David Martin, General Forecaster

Spring has finally arrived. After a cold and wet March, April started off mild and wet. This combination of mild temperatures and the soon to come bright sunny days resulted in a rapid green up by early May.

The mowing season usually starts in mid to late April for most of the region, and lasts well into October or even November. So now is a good time to get your mowing equipment tuned up and in good shape.

The list below summarizes some routine maintenance tips that will help assure your mowing equipment is ready to do the job throughout the season.

SPRING

- Change the oil each spring.
- Check and clean or replace the air filter as needed.
- Tighten any loose screws.
- Check the spark plug – replace as needed.
- Check and sharpen the blade.

ROUTINE

- After mowing – clean grass and dust off mower, and remove old grass from the bottom of the moving deck.
- Check and replace the oil as needed throughout the season.

FALL

- Before storing the mower for the winter – either drain or burn off the gas, or add a fuel stabilizer.

As always, safety is of paramount importance. Be sure to Read Victor's excellent article above and always exercise caution using your mower, or any sharp or dangerous tools for that matter!

Getting to know Droughts – a dry subject!

By Kevin Lipton, General Forecaster

Although often lost in the limelight of severe thunderstorms, tornadoes and floods, droughts can still be a very costly hazard to central Pennsylvania. Droughts develop from a prolonged period of below average rainfall. This can occur on a relatively short time frame, such as a month or two, or over a much longer duration of several years. In Pennsylvania, the most severe drought conditions often develop following an unusually dry fall and winter season. The fall and winter is when the groundwater recharges; that is, water from above ground (in the form of rain or melted snow) slowly penetrates through the soil, reaching and adding to the groundwater supply. During the spring and summer, when temperatures are warm and groundwater is used up by trees and other forms of vegetation, the groundwater supply decreases. If there is little rain or snowmelt during the crucial recharging period, it can then set the stage for drought problems during the following spring and summer, provided rainfall remains below normal. Increased evaporation from the soil from warm temperatures enhances the drought potential during the warmer months. A prolonged heat wave with little rainfall can really be the final straw that leads to a drought.

Pennsylvania uses 5 parameters to assess drought conditions and subsequent declarations– streamflow, precipitation, reservoir storage levels, groundwater elevations, and the Palmer Drought Index, which is a measure of soil moisture computed by NOAA's National Weather Service. Based on the severity of these factors, various drought declarations are issued under Pennsylvania's drought operating plan. The first of the three drought stages is a drought watch, which is used to alert government agencies, public water suppliers, water users and the public regarding the onset of conditions indicating the potential for future drought related problems. A drought watch calls for a voluntary 5 percent reduction of non-essential water use.

The second stage under Pennsylvania's drought operating plan is a drought warning, which is used to prepare for a coordinated response to imminent drought conditions and potential water supply shortages, relieve stressed resources, and if possible, to forestall the need to impose mandatory water use restrictions. A drought warning calls for a voluntary 10 to 15 percent reduction in water consumption.

The third and most severe stage is the drought emergency, which imposes mandatory water restrictions on non-essential water use. A drought emergency can only be declared by the governor. The objective of water use restrictions and other conservation methods during this phase is to reduce consumptive water use in the affected area by at least 15 percent, and to reduce total water use to preserve public water system supplies, to mitigate or avoid local or area shortages, and to assure the equitable sharing of limited supplies.

Since 1980, 5 significant droughts have affected central Pennsylvania. The most recent drought occurred from February through November of 2002, when much of south central and eastern

Pennsylvania was declared a drought emergency area. Prior to 2002, July through September 1999 were drought-ridden, with nearly all of central Pennsylvania reaching drought emergency declarations. Fortunately, with the help of the remnants of Hurricane Floyd, the drought abated during the fall. Other significant droughts since 1980 were from November 1980 through April 1982, when about two-thirds of central and eastern Pennsylvania reached drought emergency declarations, July 1991 through January 1992, when nearly all of central Pennsylvania was under a drought emergency, and September 1995 through November 1995, when north central Pennsylvania was hardest hit with drought emergency conditions.

Several other droughts, which in most cases were much longer lasting than those listed previously, occurred in Pennsylvania during the 1930's, 1950's, and especially the 1960's. The recent droughts generally ended within a matter of months, whereas some of the droughts in the 1930s and 1960s lasted several years. What would happen if a drought of that longevity affected central Pennsylvania now? The costs would likely reach the billions, especially given the potential for crop losses. Central Pennsylvania is long overdue for a prolonged, severe drought, therefore, a general understanding of drought formation and mitigation is important for everyone, even if it does not muster up the excitability of a severe summertime thunderstorm.

Although as of this writing, conditions are still rather wet across central Pennsylvania, the following are some basic water conservation tips to follow when drought conditions develop – whether it be this summer, or in the future. Please note that any other restrictions imposed by local or state enforcement agencies should be followed once the appropriate drought declarations are issued.

- Water the lawn at night – which will minimize the effects of evaporation on watering, therefore maximizing the amount of water your lawn receives.
- Wash your car at commercial car washes, which usually use less water than cleaning cars at home.
- Try taking a bath instead of a shower. Also – if showering, use low flow showerheads.
- Shut the water off while brushing teeth – and use only when needed.
- Check toilets and faucets for leaks – and get them fixed.
- Use a broom to clean sidewalks or any other outdoor walkways, rather than a hose.
- Add mulch around plants and trees, which will reduce weeds, watering, and temperature fluctuations.

Moving delays

By Dave Ondrejik, Warning Coordination Meteorologist

Construction delays have pushed our move date into the future. The Weather Forecast Office and the River Forecast Center were slated to move last February. With the construction delays, our move has been pushed back to late summer or early fall. So it appears we will be in our current location through this severe weather season.

Picture of our new office. We will be located on the top floor.

As always, we look forward to receiving calls with information about ongoing storms. Our number hasn't changed, so please don't hesitate to call us at: 1-800-697-0010.

Remember, we are looking for reports of wind damage (trees down, damage to structures); hail greater than one half inch in diameter; any sightings of tornadoes, funnel clouds, or wall clouds; and any flooding of roads or significant ponding of water on highways. Also, reports of heavy rain are very useful. Amounts of 1 inch per hour or 2 inches in three hours should be relayed immediately.

Remember, YOUR safety is paramount!! Do NOT put yourself in danger to make a report. Never drive your car through flooded roadways…it takes about 1.5 feet of water to float the average car.

So, being armed with the safety information, I hope everyone has a enjoyable summer…and hey…"lets be careful out there"!

Editors win chili cookoff

By Dave Ondrejik, Warning Coordination Meteorolgoist

Your editors (John La Corte and Dave Ondrejik) won the first annual chili cookoff at the NWS office. On April 14, the electronics staff (Les Thario and Sue Bingham) hosted a chili cookoff for the staff. Your editors swept the prizes. I won the "Judges Choice" (intelligent judges with a discriminating pallet) and John won the "Peoples Choice" award.

The staff brought in 9 different types of chili and they ranged from sweet to hellfire hot! Some of the recipes were "gamey", but all delicious.

Judges Sue Bingham (left) and Les Thario (right) sample all entries before deciding the best of show.

The event provided the staff with an excellent excuse to share some fine food and companionship.

Although John's recipe is secret, I am more than happy to share mine below.

Dave's "Best of Show" Chili

1 to 1.5 pounds of ground beef
1 pound loose hot sausage
1 medium to large onion (chopped)
3 cans Italian style tomato sauce
2 cans Italian style tomatoes

1 can pink kidney beans
2 cans chickpeas
1 cup ketchup
2 tablespoons Hinze 57 sauce
½ to 1 cup Sriracha Hot Chili sauce (to taste – can be found in most Asian stores and many grocery stores)
2 tablespoons of Worcestershire sauce
2 tablespoons Soy sauce

Brown ground beef and sausage drain grease. Add salt and pepper to taste Combine meat and all other ingredients in large sauce pot. Simmer for 1-3 hrs until desired thickness. Simmering brings out flavor and sweetness from tomatoes. Enjoy with your favorite toppings.

He's Back

By Dave Ondrejik, Warning Coordination Meteorologist

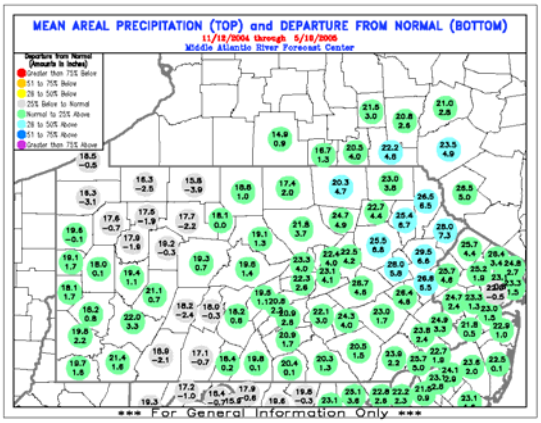
Peter Ahnert is the new Hydrologist in Charge (HIC) the Middle Atlantic River Forecast Center (MARFC) which is collocated with WFO State College, PA. The MARFC is responsible for precipitation forecasting, river modeling, and hydrologic forecasting for a multi-state area extending from Virginia to New York. Mr. Ahnert says he's "thrilled to return to beautiful central Pennsylvania to lead the outstanding staff at the MARFC".

From 1993 until 2004, Mr. Ahnert was the Meteorologist in Charge (MIC) of the NWS office in Binghamton, NY. From 1990 until 1993, he was the MIC of the NWS office in Harrisburg, PA. His 25 year NWS career also includes work as the Upper Air Test Program Manager from 1986 until 1990 and as a Research Hydrologist from 1979 until 1986. During that time, he developed and tested precipitation processing algorithms for the NEXRAD radar, many of which are still in use today. Mr. Ahnert has a M.S. degree (1986) in Meteorology/Applied Climatology from the University of Maryland and his call sign is N3NSD. We welcome Peter and his family…to our family!

Recent Rainfall

By Peter Jung, Senior Service Hydrologist

As many of you are aware, we have had a rather wet start to 2005 and that falls on the heels of a wet Fall in 2004. The recent rain caused two flood events in Pennsylvania. One occurred on March 27-29 and the other April 2-4.



Maps of recent rainfall can be found on the webpage for the Middle Atlantic River Forecast Center at: http://www.erh.noaa.gov/marfc/

Although the above map may be impossible to read, it shows that parts of central and eastern PA are well above normal rainfall over the last 6 months. Many areas in the Susquehanna and Deleware River basins are 4 to 7 inches above normal. Although most of this rain came in several large rain events, we have had a steady progression of weather systems that produced measurable rainfall. And, while the jury is still out on how wet this spring and summer are going to be…we need to remain vigilant in watching the area streams and creeks for flooding. Please be aware of the safety issues associated with flooding and take proper precautions.

Remember, never drive through flooded roadways. The water depth may be too great to allow safe passage. It takes only 18 inches to float the average vehicle and if the water is moving…less water depth is needed.

A Brief Explanation of Flood Products issued by the NWS State College

1 - Flood Watch

This product is issued when flooding is possible, not yet likely. It can be issued for anticipated River Flooding, County-wide flooding or Flash Flooding. Flood watches are usually issued 6 to 36 hours before a heavy rain event.

2 - Urban and Small Stream Flood Advisory

This is also referred to as a Minor Flood Advisory. This product is issued when heavy rain is expected to cause some nuisance flooding, but is not a threat to life or property. Examples would be rain that causes some flooded basements, closes a few roads (especially those with a history of poor drainage), and flooding and ponding of water in low lying areas.

3 - Flood Warning

This is issued for a county when heavy rain causes significant flooding problems. While usually not a significant threat to life since it is a slow evolving event, significant property damage is anticipated. Numerous road closures, streams come out of their banks and start to affect roads and property.

4 - Flash Flood Warning

This is issued for a county when heavy rain causes significant flooding problems on a short time scale. Although there is significant threat to property like a Flood Warning (above), a Flash Flood implies a significant threat to life as well. It is a rapid event, and covers situations like an ice jams, dam breaks, and summertime thunderstorms that produce quick flooding on streams.

5 - River Flood Warning

This is issued for a specific point on a gauged river. Warnings are issued when the river is forecast to exceed a pre-established Flood Stage based on forecast and observed rainfall. Since it is issued for a point on a waterway, and can cover either a single or multiple counties. River Flood warnings are issued by category (Minor, Moderate or Major) based on the expected damage and forecast river height.

SKYWARNEWS

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