Transcript : Meteorologist Debunks Weather Myths

MYTHBUSTING | SEASON 1 | EPISODE 10
[Observer] Oh my God, look at that thing!
It doesn't make me feel too good
when people say forecasts are always wrong,
especially when I know they're mostly right.
So remember that next time when you look at your phone
and it says it's going to be sunny and then it rains,
you probably should've watched me.
[upbeat music]
Hi, Wired, I'm Janice Huff,
Chief Meteorologist at WNBC-TV New York.
I'm here to debunk some common misconceptions
about the weather.
Tornadoes cannot cross water.
Sure they can.
Tornadoes can hit cities, they can cross water
and they can cross mountains.
Remember that the United States is mainly a rural country.
We have cities and large metropolitan areas,
but there's more countryside than there are big cities.
And so we don't hear of tornadoes hitting cities as much
because they mostly hit rural areas.
How far does a tornado travel?
Well, that varies.
Most tornadoes are small and weak,
but some of the bigger tornadoes can travel much farther.
We call those long-track tornadoes.
And the longest track we have on record
is the the Great Tri-State Tornado of 1925,
which traveled from Missouri to Illinois to Indiana,
over 200 miles, one storm.
Most of the tornadoes that happen around the world
happen in the United States.
And the reason why is because we almost have
the perfect setup for tornadoes to develop, which is right
in the central portion of our country and the Southeast

where warm moist air from the Gulf of Mexico meets up
with cold dry air from Canada and very dry air coming in
from the western states.
When all of those ingredients come together,
you get big super cell thunderstorms.
One of the things you might look for in a thunder storm
if you're outdoors to notice or see if there's a tornado
would be rotation in the clouds.
Oftentimes, thunderstorm super cells that produce tornadoes
are actually rotating clouds.
You may start to see a little appenditure on the back end
of the thunderstorm, the wall cloud separate itself
or at least drop down from the back of the cloud.
If that starts to rotate and you start
to see a little funnel forming, then there's your tornado.
You don't always see it that way,
but it often happens that way.
Tornadoes have hit every state in the United States,
so always stay aware when there's severe weather.
Lightning doesn't strike the same place twice.
Actually, lightning has struck many locations
more than once, like the Empire State Building.
Even people, Roy Sullivan who was a park ranger
at Shenandoah National Park in Virginia
was struck seven separate times
and lived to tell about every one.
Now, the chances of you being struck by lightning
is about one in 500,0000, but if you're outside
when there is a thunderstorm and you can hear the thunder,
that means there's lightning very close by,
so you really should go inside.
One lightning bolt is equal
to about 300 million volts of electricity.
Now, your standard household volt is only 120.
One of those volts could actually power
one incandescent light bulb in your house for three months.
Rain is shaped like teardrops, not really.
Instead of looking like a teardrop or a round circle,
it looks like a hamburger bun.
Raindrops start out usually high in the clouds as ice
or snow and as it falls through a warmer layer, it melts,

but because there are updrafts and downdrafts going on
inside the cloud, these raindrops are colliding
with each other to form bigger raindrops.
And then they get heavy enough
and they start to fall to the ground.
But as they're falling, their shape changes
because of the air underneath.
They are not shaped like teardrops.
So how do we track raindrops, precipitation, snow?
In our case at WNBC, we use an S-band high frequency
dual-polarization weather radar called StormTracker 4.
Dual-polarization means
that the scan goes vertical and horizontal.
So we can actually get a better idea
of the shapes of the articles that are in the cloud.
We can tell the difference between raindrops and snow,
snow and hail because we can detect the shape
using a sophisticated radar.
And that's usually how we track weather
as it's moving across the country.
When it reaches your region, you use a radar
so you can see it coming and we can let everybody know
here comes the rain.
Rainbows have seven colors.
That's pretty much true.
We see the colors of the rainbow in stripes,
but they're actually not in stripes.
It's one continuous change, one continuous band of color.
Rainbows are an actual circle, did you know that?
The rain has to be opposite of the sun
in order for you to get the rainbow.
And the rain droplets refract or bend the light,
the white light that passes through
and then we're able to see that color band, that bow.
A double rainbow happens when the light is reflected twice
through the raindrops.
It's not as intense as the primary rainbow,
it's the secondary rainbow and the colors are opposite, too,
from the reflections.
How do you get a triple rainbow?
That's even rarer, but the light has

to reflect off of something else.
So let's say you have a rainbow, your primary rainbow
and then maybe you have a secondary rainbow
because the light's passing through twice,
but then you may have a body of water nearby
that reflects light again.
And then you get another band of color.
And then you get a triple rainbow.
The weather forecast is always wrong.
No, it's mostly right.
The apps on your phone where you look at that
and you say, oh, the weather's gonna be this, that
and the other thing.
Those apps are good, but they're not great
and they're not always the most accurate
because they use raw weather data.
Whereas we can use data, we use technology,
we use our eyes and ears to actually see what's going on.
All of these things help to make our forecasts more accurate
than just looking at your phone.
The atmosphere is like a fluid.
It's always constantly moving.
Oftentimes as you get farther out into the forecast,
it may not be as accurate.
However, forecasts even longer ranger ones, like maybe out
to 10 days, have become more accurate over time
with new technology.
There are all sorts of observations from satellites,
from radiosondes that are taken up by weather balloons,
from buoys, from aircraft, all these things go
into a computer forecast, a numerical model.
And then that will take all that data that we put in
from the present and maybe from the past, too,
and then crank out the future.
Many things that are out of our control
can disrupt weather forecasting
and cause the forecast to maybe be less accurate.
Like COVID-19, when we had the shutdown back in March,
there were fewer planes flying in the sky.
We receive data from aircraft that help us make forecasts.
There was a 75 to 80% drop off in air traffic

and that changed the forecast.
What weather patterns are the most difficult to forecast?
It depends on where you live.
On the east coast, it's probably blizzards.
Trying to figure out where that rain, ice, snow line
is actually going to set up.
For other parts of the country, it's different things.
On the front range of the Rockies in Colorado,
they get these down sloping winds called chinooks.
Those things can heat up the atmosphere
or heat up the ground 30, 40 degrees in minutes.
[light music]
Thanks for tuning in.
The weather is the only thing
that affects our lives every day.
And we have to really pay attention to it.
So remember to stay weather aware
so you'll know what to wear.
[light music]
And that's your weather.
Take it away.