Speaker 1:	00:07	Hello everyone. Welcome to "Prep Talk," the emergency management podcast. Find out what you need to know about preparedness. Get all the latest tips from experts in the field and learn what to do before the next disaster strikes.
Speaker 1:	00:19	From the Emergency Management Department in the city that never sleeps, here are your hosts, Omar Bourne and Allison Pennisi.
Omar Bourne:	00:25	Hey everyone, thank you for listening. I'm Omar Bourne.
Allison Pennisi:	00:28	And I'm Allison Pennisi. Thank you for joining us. We want you to come back as often as you can and feel free to add Prep Talk to your favorite RSS feed. You can also follow us on social media. Now let's get into the show.
Omar Bourne:	00:39	That's right Allison. As the Black Eyed Peas like to say, "Let's get it started." Today, we're going to take a look back the 2017 Atlantic hurricane season. The season came to an end on November 30th and my, what a season's it's been. It's been described as the most destructive, nightmarish, even worst ever.
Allison Pennisi:	00:58	See, that's how I describe Black Friday but I digress. You're absolutely right.
Omar Bourne:	01:02	You have a point.
Allison Pennisi:	01:04	2017 has been one of the more active hurricane seasons we've seen, with major hurricanes like Harvey, Irma, and Maria. And today's show, we'll take a look back at the National Oceanic and Atmospheric Administration's prediction for hurricane season and how we can continue to keep people prepared.
Allison Pennisi:	01:20	So here to talk to us today, are Gary Conte, Warning Coordination Meteorologist from the National Weather Service, and we also have Henry Jackson who is Deputy Commissioner here at New York City Emergency Management. Gentlemen, welcome to the show.
Gary Conte:	01:33	Hi Allison.
Henry Jackson:	01:34	Hello.
Omar Bourne:	01:35	Gary, I want to start with you. Now, NOAA original predicted an above normal season, 11 to 17 name storms, five to nine hurricanes, and two to four major hurricanes. Back in August,

		those predictions were adjusted. Up in the name storms between 14 to 19 and the major hurricanes between two to five. What prompted that change?
Gary Conte:	01:58	Okay. So before we get to that, let's put the average hurricane season in context. Typically, we can experience 12 name storms, six hurricanes and three major hurricanes.
Omar Bourne:	02:09	Okay.
Gary Conte:	02:09	And that puts those numbers into better context. So when the updated hurricane forecast came out, by the Climate Prediction Center, it was upped simply because they were anticipating El Niño to develop across the equatorial Pacific Ocean. This inhibits hurricane development. And so that was a check on the negative side. In addition to that, they were thinking that the Atlantic tropical waters would be cooler than what they turned out to be. And that was also a check on the negative side. And forecast models were actually predicting less over all activity.
Gary Conte:	02:49	So what happened was they took a look at the observations, the near forecast trends and decided to "up" those numbers.
Omar Bourne:	02:59	Boy, did they get it right.
Allison Pennisi:	03:00	Mm-hmm (affirmative). We actually got an early start to the season this year with Arlene forming in the Atlantic during April. And then in 2016, we had a storm called Alex that formed in January. Do you believe this is going to be the new normal where we see more storms forming in the Atlantic before the official start of Atlantic hurricane season in June?
Gary Conte:	03:24	So Allison, I don't think so. I think if we go back in history we've had a lot different storms that have formed outside of the traditional and official hurricane season. The official hurricane season begins June 1 and ends November 30th. We've had storms like you've mentioned that have developed as early as January and storms that have developed as late in the year as December.
Gary Conte:	03:44	And so just like the tornado season, although there is a peak in the local area, essentially for the months of June, July, and August we certainly can get tornadoes outside of that peak season like we did back on September 2010.
Omar Bourne:	04:01	Okay.

Allison Pennisi:	04:02	Wow.
Omar Bourne:	04:03	Now what were the factors that contributed to such an active season? Would you consider this year an anomaly or is this a sign of things to come?
Gary Conte:	04:12	I don't think it an anomaly.
Omar Bourne:	04:13	Why?
Gary Conte:	04:14	So when we go back and we take a look, this was a very active and a destructive hurricane season like you mentioned, Omar. But when we go back in history, we've had other active years. We go back to 2010 hurricane season, very, very active season but the 2005 hurricane season, not only did we go through our American alphabet, we went through six letters of the Greek alphabet in naming storms. And 2005, there were an extraordinary number of major hurricanes.
Gary Conte:	04:49	And so then we can go back and I know that the inclination there is the correlation with climate change but if we go back to the 1950s. In the 1950s, 1954, the year I was born-
Omar Bourne:	05:04	Not to date yourself.
Gary Conte:	05:06	... we were impacted by three hurricanes that year and those were Carol August 25 to 31, Edna September 5th to the 11, and Hazel October 5, to the 15. And by the way, Hazel's winds, even though it was inland, were the highest winds ever recorded in Central Park-
Allison Pennisi:	05:27	Wow.
Gary Conte:	05:28	... in October of 1954. And so we really do not look at this as an abnormal season. There are other factors that go into the activity, the number of hurricanes, and the intensity of hurricanes. And one is a climate cycle and this climate cycle affects the sea surface temperatures. It causes them to oscillate between warm and cool sea surface temperatures. And it's a 30 year climate cycle and the latest 30 year climate cycle began in the mid 1990s and it is called the Atlantic multi-decadal climate cycle. And since the mid 1990s the sea surface temperatures were hurricanes develop across the tropical Atlantic waters, has been above normal.
Omar Bourne:	06:22	Okay.

Gary Conte:	06:22	And that is typically correlated with higher hurricane activity. So we're reaching now the end of that cycle and it'll be interesting to see once we get out of this favorable cycle, how future hurricanes cycle will look like for the Atlantic basin.
Omar Bourne:	06:41	And I'm glad that you brought up that we're getting to the end of that cycle. Hopefully, we'll see a turn for the better where maybe we go with less hurricanes or below normal seasons hopefully.
Gary Conte:	06:55	Possibly.
Allison Pennisi:	06:57	Stay tuned. We have a lot more ahead on today's show. Coming up, our guests shared their thoughts on how prepared they believe that the public is for hurricane seasons to come and what they are doing to ensure the city stays safe and prepared. But first, here's Bushra with today's tip.
Bushra:	07:11	Hey, everyone. This is Bushra with your "Prep Talk" tip. If you think you're too busy to be prepared, look no further than the Ready NYC app which helps you make an emergency plan before disaster strikes. Store important information you may need in an emergency including emergency contacts, meeting places, health information, and supply lists to help you gather items you might need in an emergency. Get the free app today for your Apple or Android device.
Bushra:	07:38	For information on how to be prepared, visit NYC.gov/emergencymanagement.
Omar Bourne:	07:44	Welcome back. Thank you, Bushra. We're discussing this year's Atlantic hurricane season which wrapped up on November 30th. Now I want to talk about public information flow, starting from when a storm first forms. And I'll open this up to either one of our guests. Do you think the public grasps the impacts and risks associated with these storms and what resources do you consider to be helpful and highlight in these impact?
Henry Jackson:	08:11	Well, I'll take that. Thanks Omar. So we at New York City Emergency Management start tracking these storms as they form right off the coast of Africa. And so internally, we're doing a lot of tracking but what we've seen over the years is that the sort of commercial media is starting to do the same thing. So I think these storms are getting highlighted earlier in the process and than they used to be. I think in a lot of cases that the news media is using this sort of as a draw and really pumping up

some of these storms which I think helps us to sort of impart the impact and seriousness of storms.

Omar Bourne: 08:51 Right.

Henry Jackson: 08:52 I certainly think over the years and in our jurisdiction you know with Sandy, people are aware of the risks and impacts associated with them and we do a lot of communication, public communication to alert our citizens to those risks and tell them what to do about it. So every year I think we get a little better at it but it's a tough nut to crack.

Gary Conte: 09:18 And I'll add, I think Sandy has kind of changed the landscape here locally across the New York City Metropolitan area.

Omar Bourne: 09:25 Right.

Gary Conte: 09:25 It wasn't really until we had Sandy that people knew what is storm surge.

Omar Bourne: 09:29 Mm-hmm (affirmative).

Allison Pennisi: 09:29 Mm-hmm (affirmative).

Gary Conte: 09:30 What can storm surge do and I think that has changed a lot of people's minds, the traditional thought is, "Oh, let's have a hurricane party and ride out the storm." I think now that people have felt essentially storm surge, Sandy was an education on storm surge.

Gary Conte: 09:49 I think people are more sensitive to some of the high impacts that are caused by hurricanes. And I think today that more people know within the US Government that the National Hurricane Center is the one that's making the call-

Omar Bourne: 10:03 Right.

Allison Pennisi: 10:04 Mm-hmm (affirmative).

Gary Conte: 10:04 ... and is visible on television. So when a tropical storm or a hurricane watch or warning goes up for the New York City Metropolitan area, I think there are more people today that do know that that is coming from the National Hurricane Center.

Omar Bourne: 10:20 I'm glad you guys mentioned Sandy. And Gary, I'm glad that you talked about riding out the storm and having a hurricane party because when you look at public behavior and we say this a lot,

people are more familiar with their last experience. And so when you look at Sandy and Irene came before, and a lot of people had said, "Well, you know Irene wasn't as bad as the officials predicted or forecasted to be." And so a lot of people felt like they could ride out the storm when Sandy came the following year. So how do ensure or is there something that can be done to ensure that people take heed every time we have a warning or every time there's going to be a hurricane that's coming up the coast?

Gary Conte: 11:09 I think that we are slowly turning people's behavior around but you're right. People do have a tendency to go back and think about how the last hurricane impacted them.

Omar Bourne: 11:22 Right.

Gary Conte: 11:22 And so, if they didn't feel any impacts, it's like, "Okay, not a big deal." And oh what a difference one great point makes in meteorology and so if Irene, for example, was only 30 or 60 miles further to the west on it's track to the north, New York City would had much more significant storm surge like Long Island did and like Connecticut did. So just to put things into perspective with Irene and this is where we take a look at the ... a little wider picture, we had homes in New Haven, in Connecticut, not too far from the city. And this is from Long Island Sound, this is not the Atlantic Ocean, a much smaller body of water that basically produced a storm surge up to six feet above ground level and swept homes right off the Cosey Beach in New Haven.

Omar Bourne: 12:13 Wow.

Gary Conte: 12:13 And if I didn't see it, I wouldn't believe it.

Omar Bourne: 12:16 Right.

Allison Pennisi: 12:16 Right.

Henry Jackson: 12:17 I think we saw a little bit. I think we saw clearly that with the Irene and Sandy experiences and I think we're hopeful that since Sandy was the last experience we had that people were heeded that time, but you know, we do more and more advertising on this topic. I think you know we should treat every hurricane as a teachable moment, even if it's not coming to us that some other jurisdiction is going be impacted. And you just need to keep repeating and repeating it.

Omar Bourne:	12:49	I like that point.
Allison Pennisi:	12:50	Yeah. And I know that this something we sort of touched on already and it's rather a loaded question, but I'm curious as to how hurricane season has influenced your respective fields. Gary, you mentioned before about storm surge, the National Hurricane Center had rolled out a prototype product that highlights the hazard of storm surge. What are key changes that the two of you have seen over the years?
Gary Conte:	13:13	Well, I think again, let's go back to Sandy and since Sandy, the National Weather Service at that point used mostly, I'm not even going to say this. They used a combination of graphic and text information to communicate the hazards and impacts. But at that time, we did not have the graphics available for people to visualize storm surge. We do have that today. And today the National Hurricane Center now issues storm surge watches and warnings and to go along with that, even a flood potential map that shows a one in ten chance of the area where you live being inundated with water, where the total water level is now referenced to the ground that you're standing on.
Omar Bourne:	14:04	Right.
Gary Conte:	14:05	How high is that water going get? It's going to get up to my knees, my waist and so what they've done, they put these nice color graphics together and they basically provided you with intervals that you could typically see with different color shades. Oh, if I live C gate in Brooklyn, I can expect water from one to three feet above ground level. Or if I live on the east shore of Staten Island, there's a chance there's a one in ten chance that the water could reach three to six feet above ground level.
Gary Conte:	14:35	So I think when people now see these new graphics in combination with the storm surge watches and warnings that are now being issued, I think that helps a lot for them to help visualize what their risks are so that if or when New York City EM calls for an evacuation order, they now have a little bit more meaning to look at and by the way, storm surge warnings are now available through Wireless Emergency Alerts.
Omar Bourne:	15:08	Right.
Gary Conte:	15:08	So if you got your iPhone, you're being pinged on that storm surge warning.

Henry Jackson:	15:13	Yep. Yep. Those tools have been getting better and better every year. And when so has our response plan to coastal storms. And you know, we're really still working through Sandy after action items and every year we add new components to it. And this year, we added some new emergency contracts. We've been working on sand bags in various locations in the city. And we're doing even more sort of intensive research on vulnerable population status so that we can find people who may be impacted after a storm.
Henry Jackson:	15:49	So every year, every season, we learn new things. We implement new strategies to prepare the city for coastal storms.
Omar Bourne:	15:59	Now, Gary, I'm going lighten the mood a little bit. I know you've been with the National Weather Service since 1979, correct?
Gary Conte:	16:08	That is correct. That's a long time Omar.
Omar Bourne:	16:10	A very long time. Few years before I was born, but we'll not get into that. So you're going to be retiring soon and obviously you bring a wealth of knowledge and experience to the field, and my question for you is, having 30-plus, almost 40 years of experience with the National Weather Service, do you have any last words? Where do you see us going in our preparation and in our predicting of bad weather in general? And anything you'd people to know about your experience and what they can expect going forward?
Gary Conte:	16:48	Well, I've experienced a lot-
Omar Bourne:	16:49	Sure.
Gary Conte:	16:50	... during that time period. I could tell you that much whether we're talking about hurricanes, winter storms, whether we're talking about tornadoes, an awful lot and I can honestly say that organizationally, the National Weather Service has come far. It really has come far especially in the past decade in its ability to better articulate and communicate with the hazards, the risks, and the impacts are for the general public and I think the general public now as continue to see big winter storms almost on an annual winter season basis.
Omar Bourne:	17:28	Don't remind us.
Gary Conte:	17:29	I think that people are becoming a little bit more sensitive to the higher frequency of impact events that we're seeing across the local area. And so the question then becomes is, how much

of that can be attributed to climate change and how of it is part of the natural climate cycle?

Omar Bourne: 17:48 Okay.

Gary Conte: 17:50 And I can tell you now that there is no question that we are experiencing climate change and you know we can see here that essentially that great US Government website is climate.gov. And the climate office does put out a great webpage that will show you the content of the heat in the ocean increasing over time and it will show you essentially the sea level rise that is occurring because of the ice melting over time.

Gary Conte: 18:25 And what we are experiencing whether you're sitting and you have tickets for a show at the Jones Beach Theater in Nassau County, is you may not want to get and spend a lot more money for those front row seats. You better take a look at the phase of the moon. Is it going to be during high astronomical tides or low astronomical tides? So that when you get your fancy shoes on and get down to that first or second row, you're actually not sitting in water.

Gary Conte: 18:55 I think a lot of people have been surprised when they go down to some of the shoreline stadiums and see this thing actually happening. And so that is the key. The key is, is I think that you know for the New York City Metropolitan area embedded within the northeast of the United States, we are seeing essentially an increase in temperature. And that temperature here has led to more water vapor in the atmosphere and so we are seeing more extreme events related to heavy precipitation, which academia has actually corroborated through a number of studies.

Gary Conte: 19:33 So that is going on. And we do see change. And interestingly enough, for people who do look at the numbers, and if you look at the numbers in Central Park, you'll see essentially that the winters are actually warming over time, on average. But so is the snow fall is actually increasing. At the same time, the temperatures are warming because the temperature's are not warming quite fast enough to compensate for the increase in water vapor concentration that is basically hovering over this city ... the Atlantic Ocean. So there's typically more water vapor available to generate the bigger storms.

Omar Bourne: 20:12 Wow.

Allison Pennisi:	20:12	I'm so glad I have those winter coats.
Gary Conte:	20:15	And so bottom line, is the one I like to always say, I can't even say this is in the past is, climate is what you expect. You go back, you look at the records, you look at the numbers, and climate's what you expect but weather's what you get. And if you don't like the weather today, just wait a day or two.
Omar Bourne:	20:33	I like that.
Gary Conte:	20:34	It changes.
Allison Pennisi:	20:37	That's a good one.
Omar Bourne:	20:37	Are you going to be a radio host in retirement because you have the voice for it.
Allison Pennisi:	20:41	I would wholeheartedly agree with that.
Gary Conte:	20:43	Not planning to but-
Henry Jackson:	20:45	Should consider it.
Gary Conte:	20:47	I would consider it, sure.
Allison Pennisi:	20:48	So Henry, there's a rumor going around that you are called Action Jackson. Can you enlighten us as to what that's about?
Omar Bourne:	20:57	I'm curious to know.
Henry Jackson:	20:59	Okay. I can't seen to escape that. So after 9/11, we obviously did a lot of work and there was a lot press going on and press guy at the time, Francis "Cookie" McCarton was trying to get me to do interviews and I was so busy I just couldn't do a thing and you know finally he was pressing me and the boss was pressing me so I said, "Fine, I'll sit down and have an interview." So I sat down with New York Magazine and Frank introduces me to other reporter and says, "This is Henry Jackson, deputy commissioner, and we call him Action Jackson." And I looked at him. I had never heard that before. I had no idea where it came but I had to go along with that point so. She printed it. A lot of people read it and I've got a beautiful pink hat upstairs that says Action Jackson and I hold onto dearly.
Omar Bourne:	21:51	The rest is history, as they say.
Henry Jackson:	21:53	Indeed. Thanks for bringing that up, Allison.

Omar Bourne:	21:56	Well, we want to thank you both for joining us today. Remember, to our listeners hurricane season may be over, but you can take steps to be prepared by visiting NYC.gov/knowyourzone and weather.gov/nyc to find out how you can prepare for hurricanes in New York City.
Allison Pennisi:	22:15	That's this edition of "Prep Talk." Like what you heard? Listen anytime online and through your favorite RSS feed. Until next time, stay safe and prepared.