



## **National Transportation Safety Board**

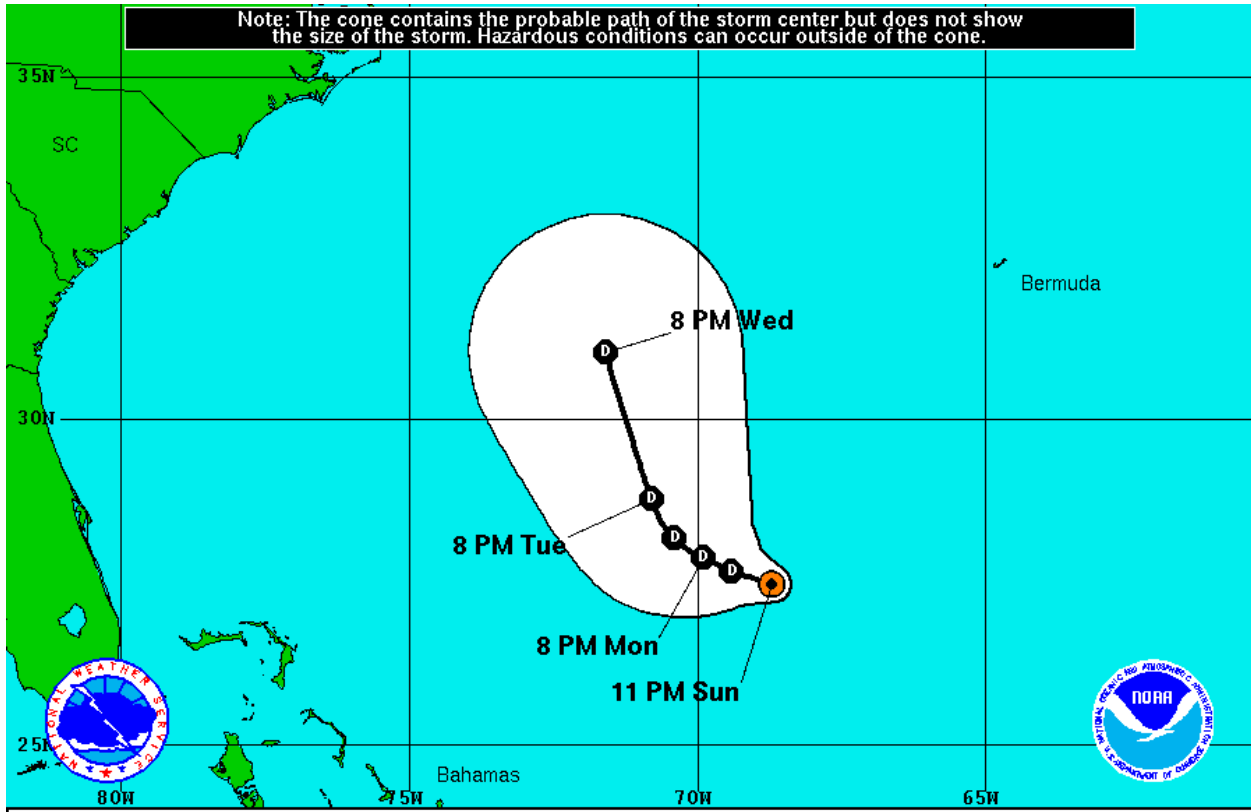
**Office of Marine Safety  
Washington, D.C. 20594-2000**

December 13, 2016

**ATTACHMENT 4 to the METEOROLOGY GROUP FACTUAL REPORT  
DCA16MM001**

Tropical Cyclone Track Forecast Cone and Watches/Warnings, Tropical Cyclone Surface Wind Fields, Tropical Cyclone Surface Wind Speed Probabilities (34 knots, 50 knots, and 64 knots) and Tropical Cyclone Danger graphics issued between 2300 EDT on September 27, 2015, and 1100 EDT on October 1, 2015.

*Submitted by: Mike Richards  
NTSB, AS-30*



**Tropical Depression Eleven**  
 Sunday September 27, 2015  
 11 PM EDT Advisory 1  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 27.5 N 68.7 W  
 Max Sustained Wind 35 mph  
 Movement NW at 2 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▽ Day 1-3 ◁ Day 4-5

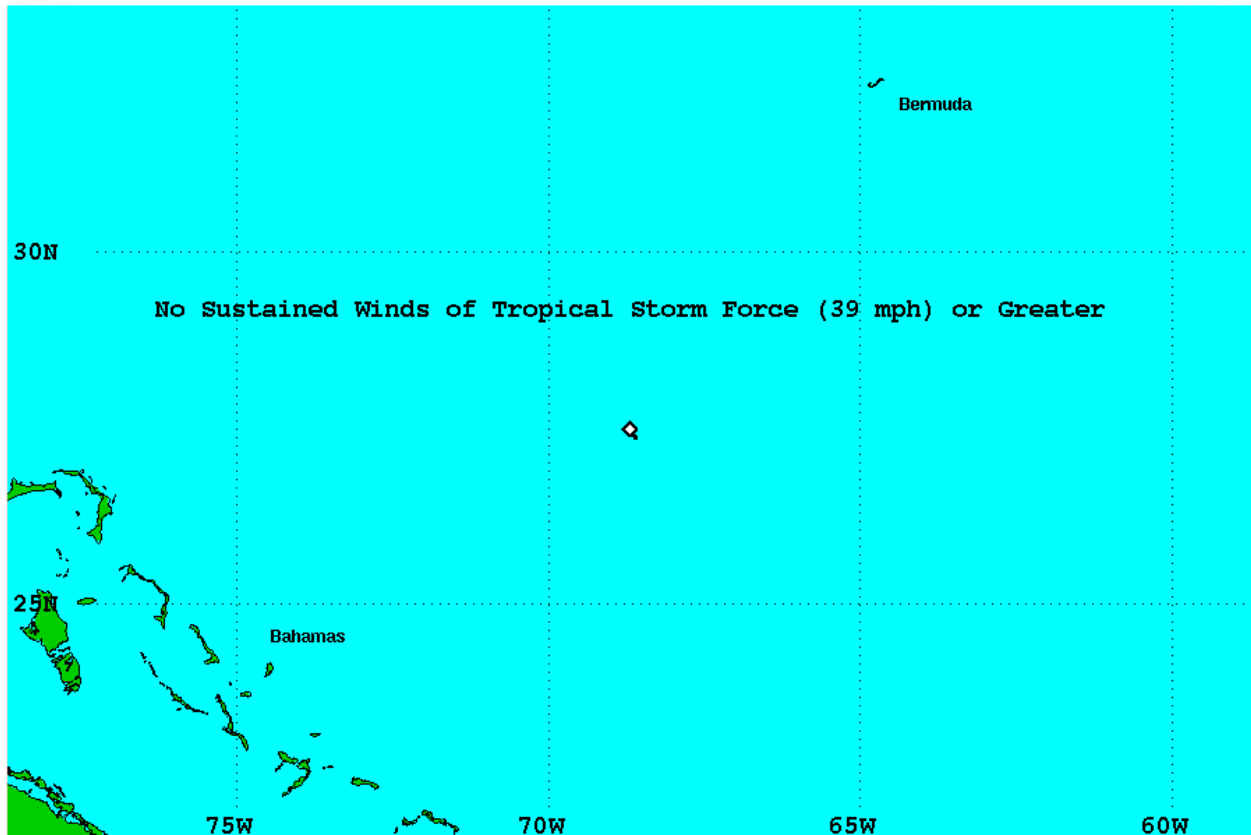
**Watches:**  
 ■ Hurricane ■ Trop.Storm

**Warnings:**  
 ■ Hurricane ■ Trop.Storm



# Surface Wind Field of Tropical Depression Eleven

Sustained Winds as of 1100 PM AST Sun Sep 27, 2015 Advisory Number 1



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

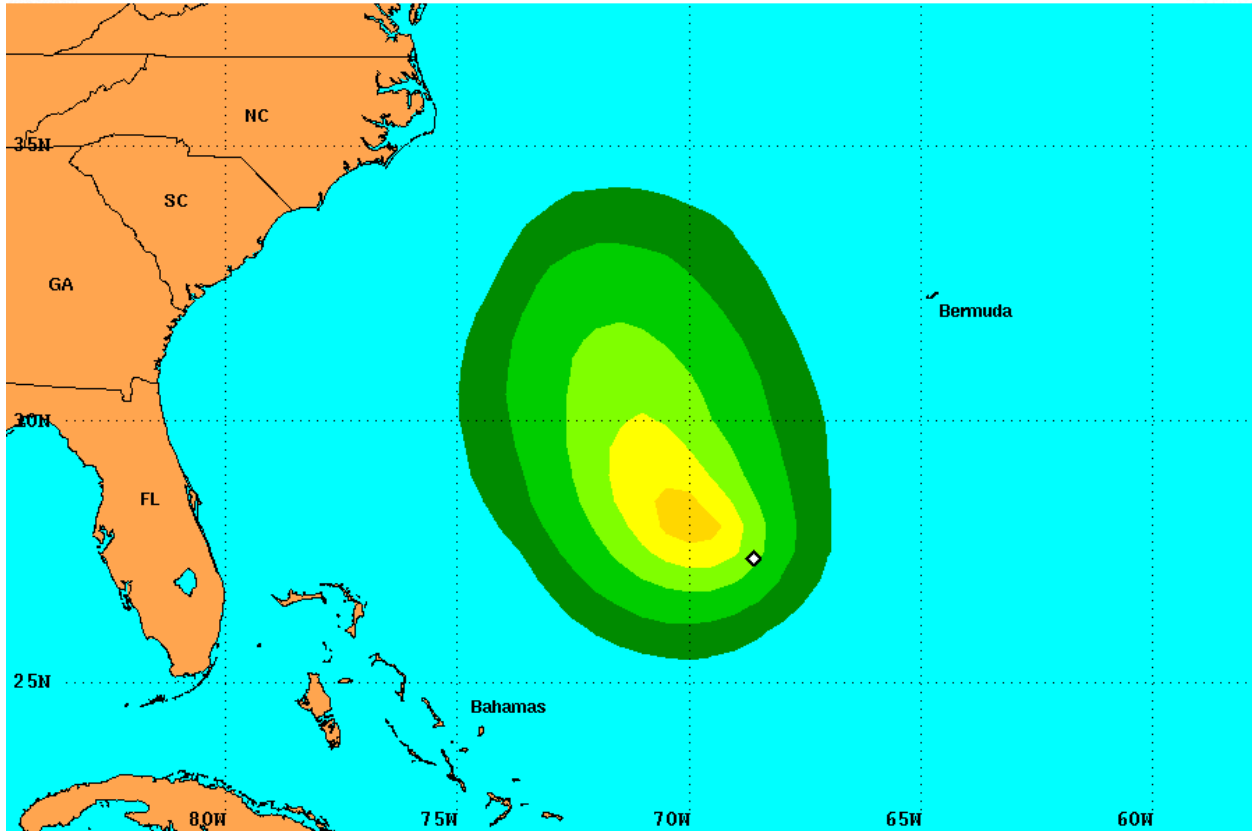
**Position:**

- ◇ Center as of 1100 PM AST
- Past Track



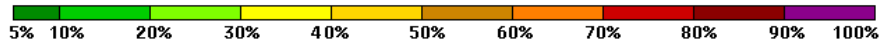
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Sun Sep 27 to 8 PM EDT Fri Oct 2



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

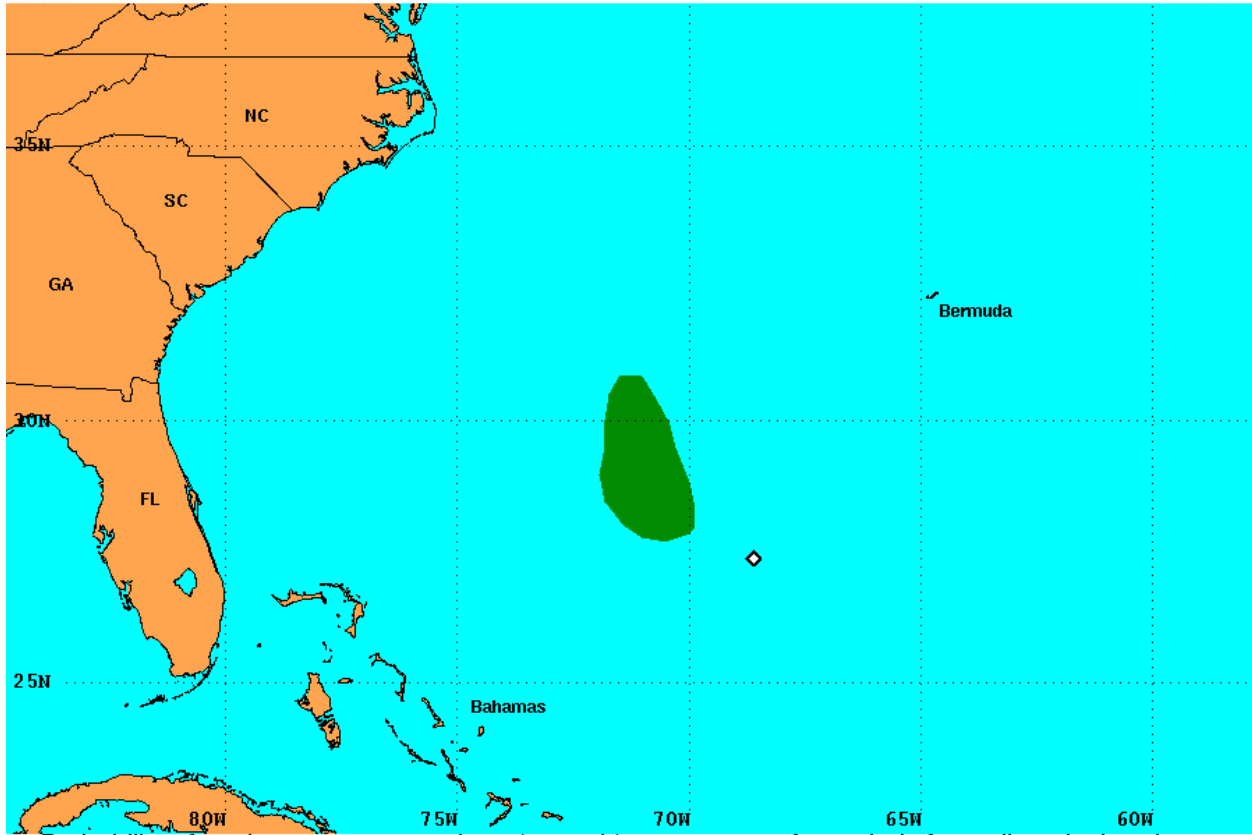
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 8 PM EDT Sun Sep 27 2015 (Forecast/Advisory #1)





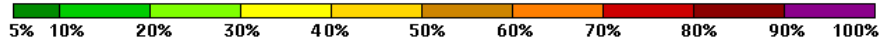
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Sun Sep 27 to 8 PM EDT Fri Oct 2



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

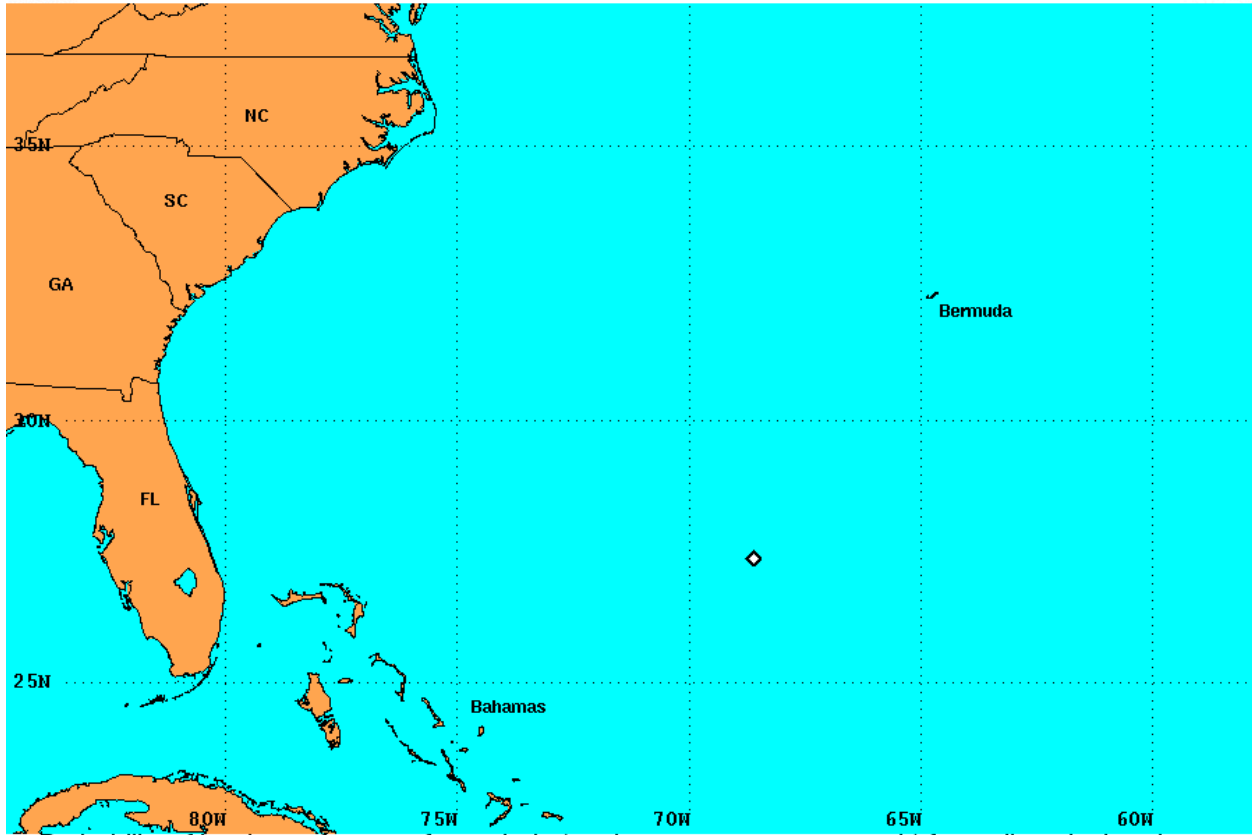
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 8 PM EDT Sun Sep 27 2015 (Forecast/Advisory #1)





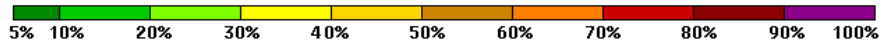
# Hurricane Force Wind Speed Probabilities

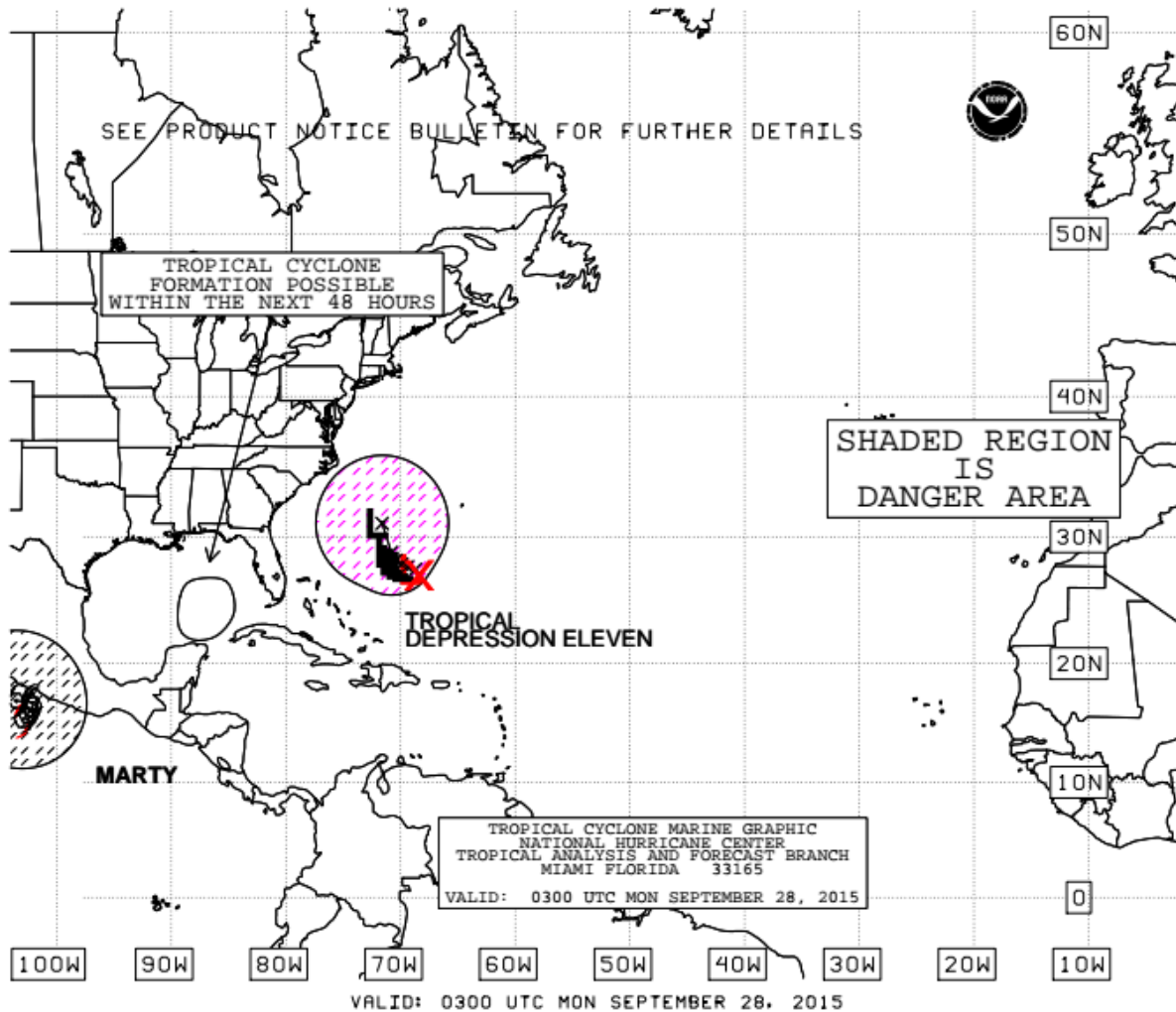
For the 120 hours (5 days) from 8 PM EDT Sun Sep 27 to 8 PM EDT Fri Oct 2



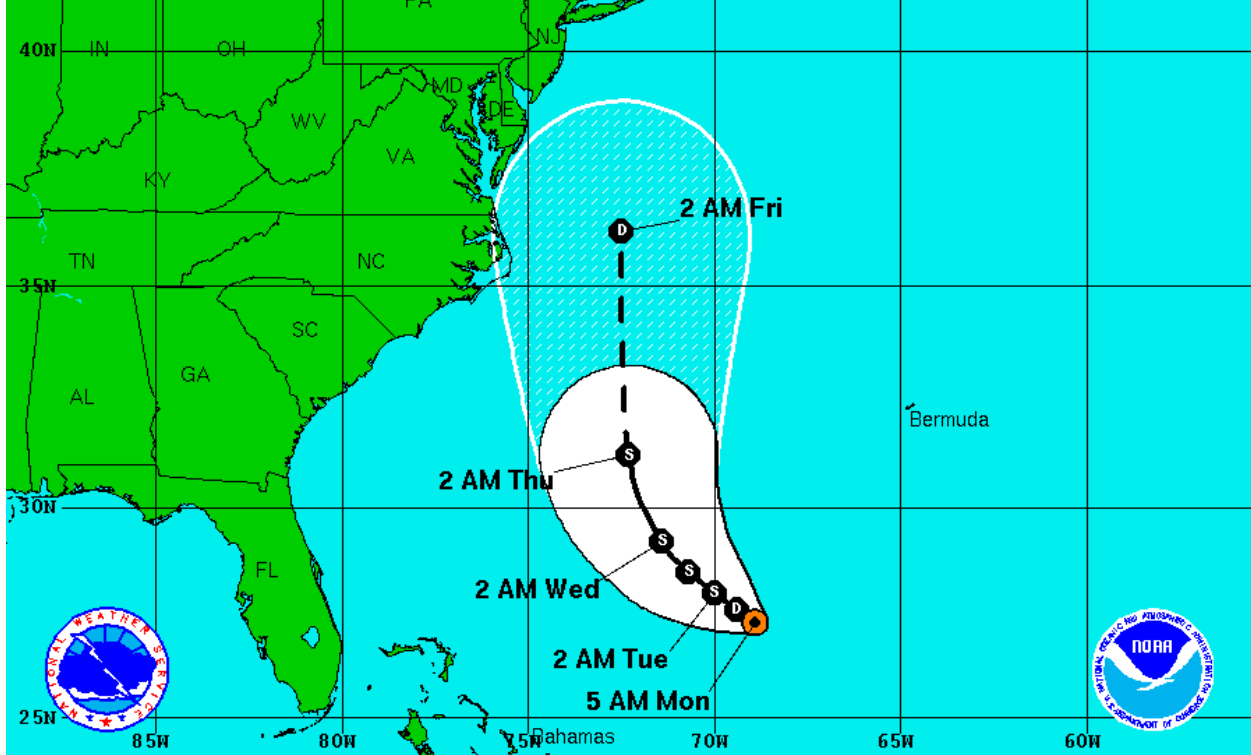
Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones







◇ indicates TROPICAL DEPRESSION ELEVEN center location at 8 PM EDT Sun Sep 27 2015 (Forecast/Advisory #1)





Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



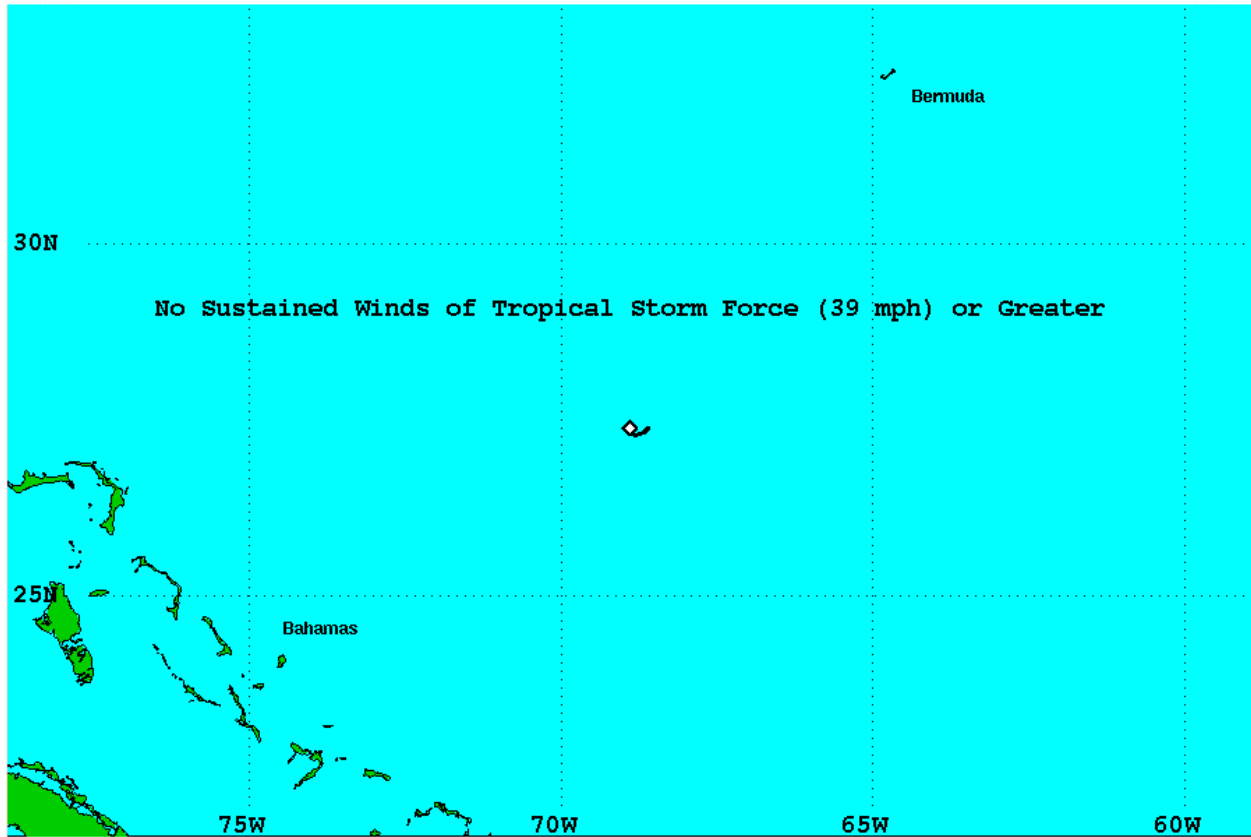
<p><b>Tropical Depression Eleven</b>  <i>Monday September 28, 2015</i>  <b>5 AM EDT Advisory 2</b>          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 27.3 N 68.9 W          Max Sustained Wind 35 mph          Movement W at 2 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>   Day 1-3  Day 4-5</p>	<p><b>Watches:</b>   Hurricane  Trop.Storm</p>	<p><b>Warnings:</b>   Hurricane  Trop.Storm</p>





# Surface Wind Field of Tropical Depression Eleven

Sustained Winds as of 500 AM AST Mon Sep 28, 2015 Advisory Number 2



### Watches:

- Hurricane Watch
- Tropical Storm Watch

### Warnings:

- Hurricane Warning
- Tropical Storm Warning

### Sustained Winds:

- Hurricane Force
- Tropical Storm Force

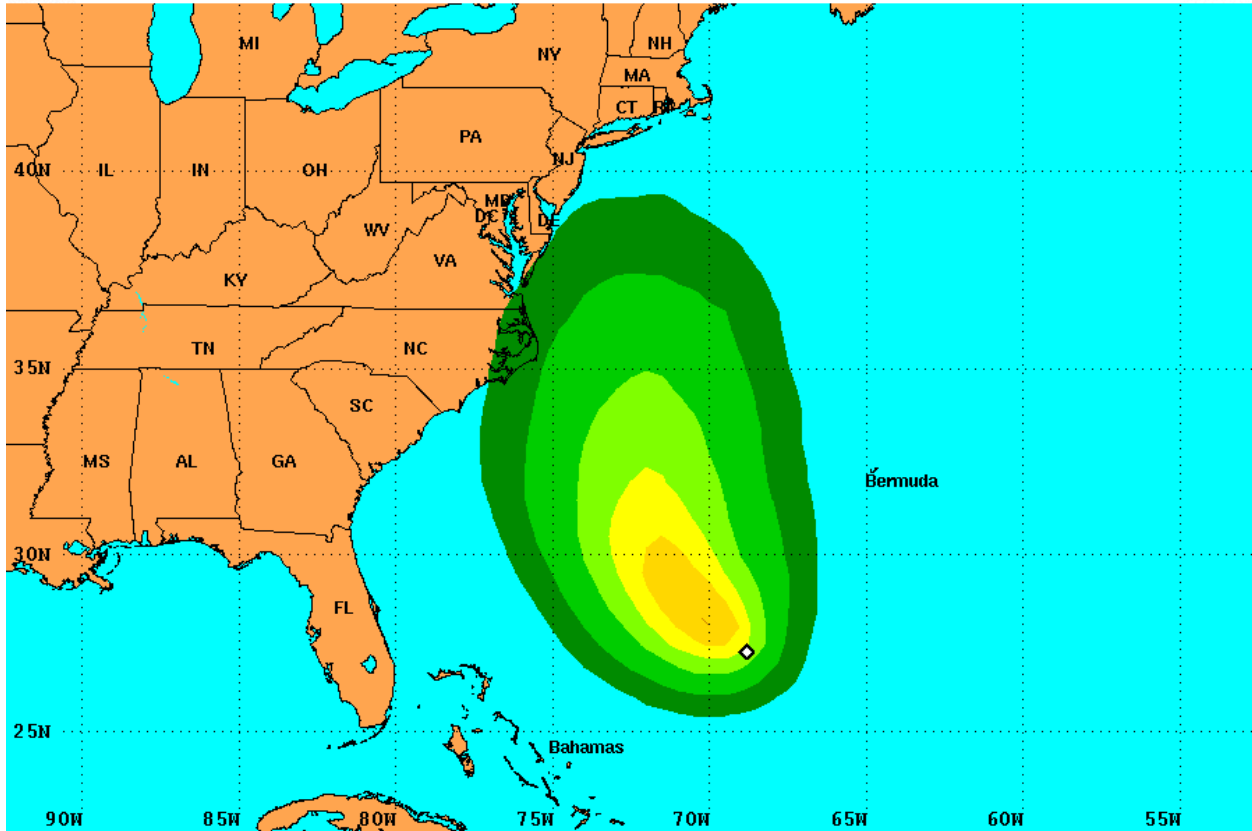
### Position:

- Center as of 500 AM AST
- Past Track



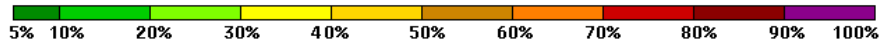
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Mon Sep 28 to 2 AM EDT Sat Oct 3



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

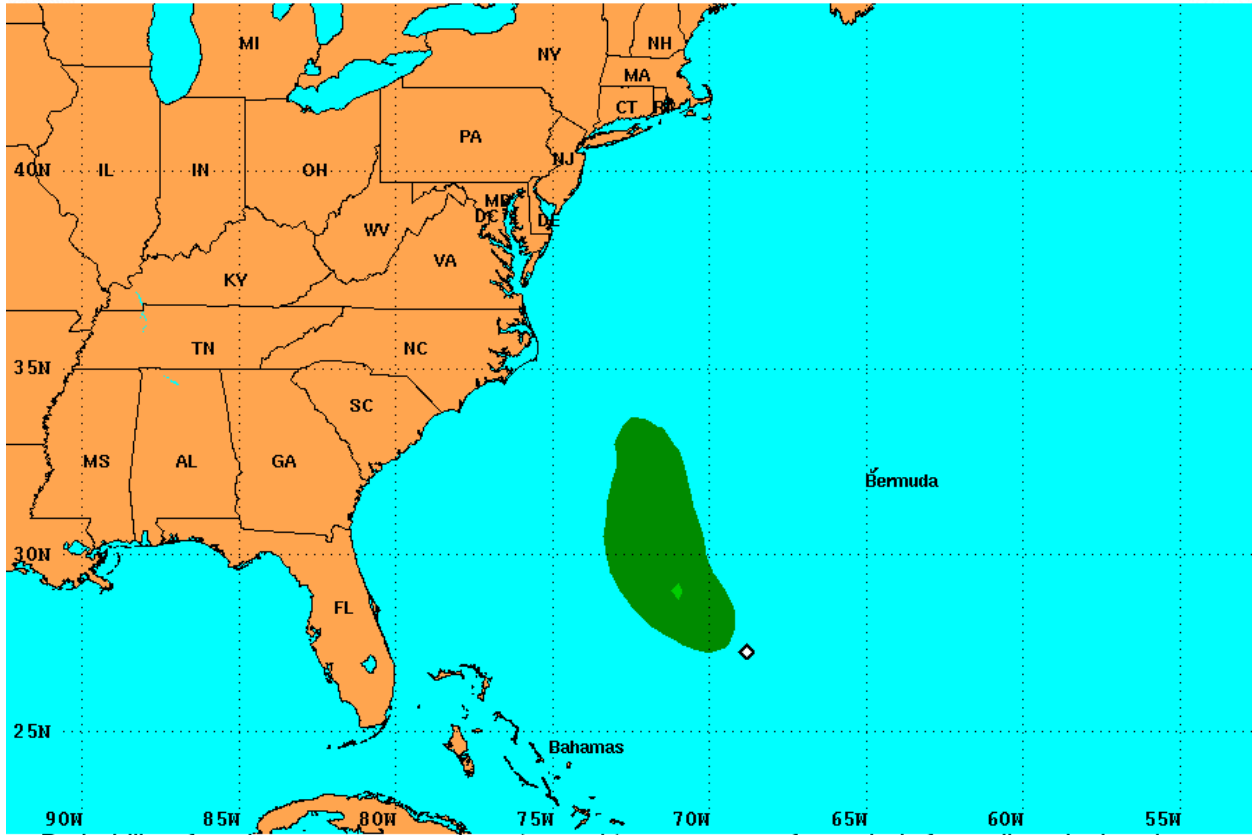
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 AM EDT Mon Sep 28 2015 (Forecast/Advisory #2)





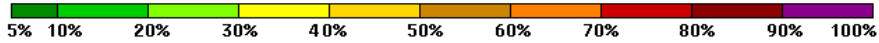
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Mon Sep 28 to 2 AM EDT Sat Oct 3



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

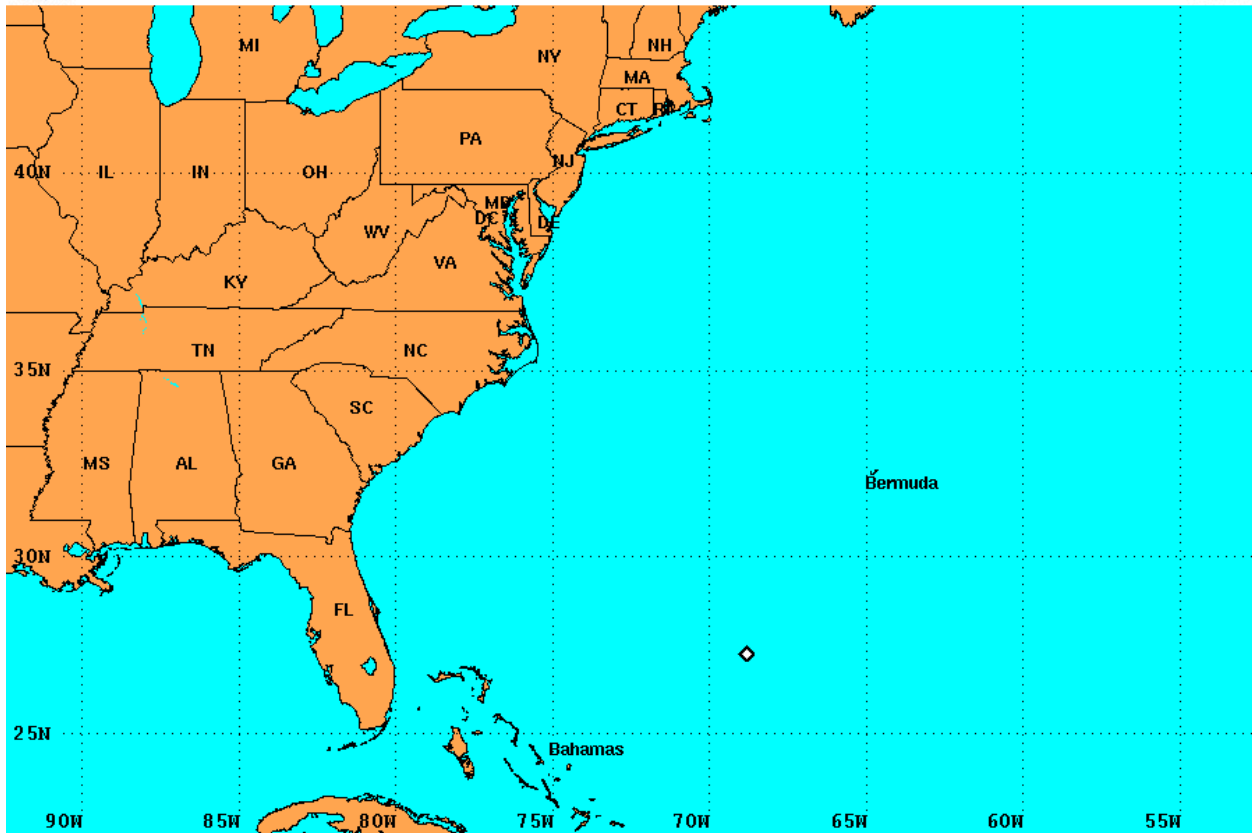
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 AM EDT Mon Sep 28 2015 (Forecast/Advisory #2)





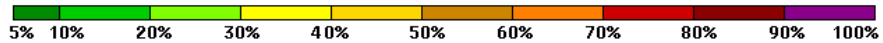
# Hurricane Force Wind Speed Probabilities

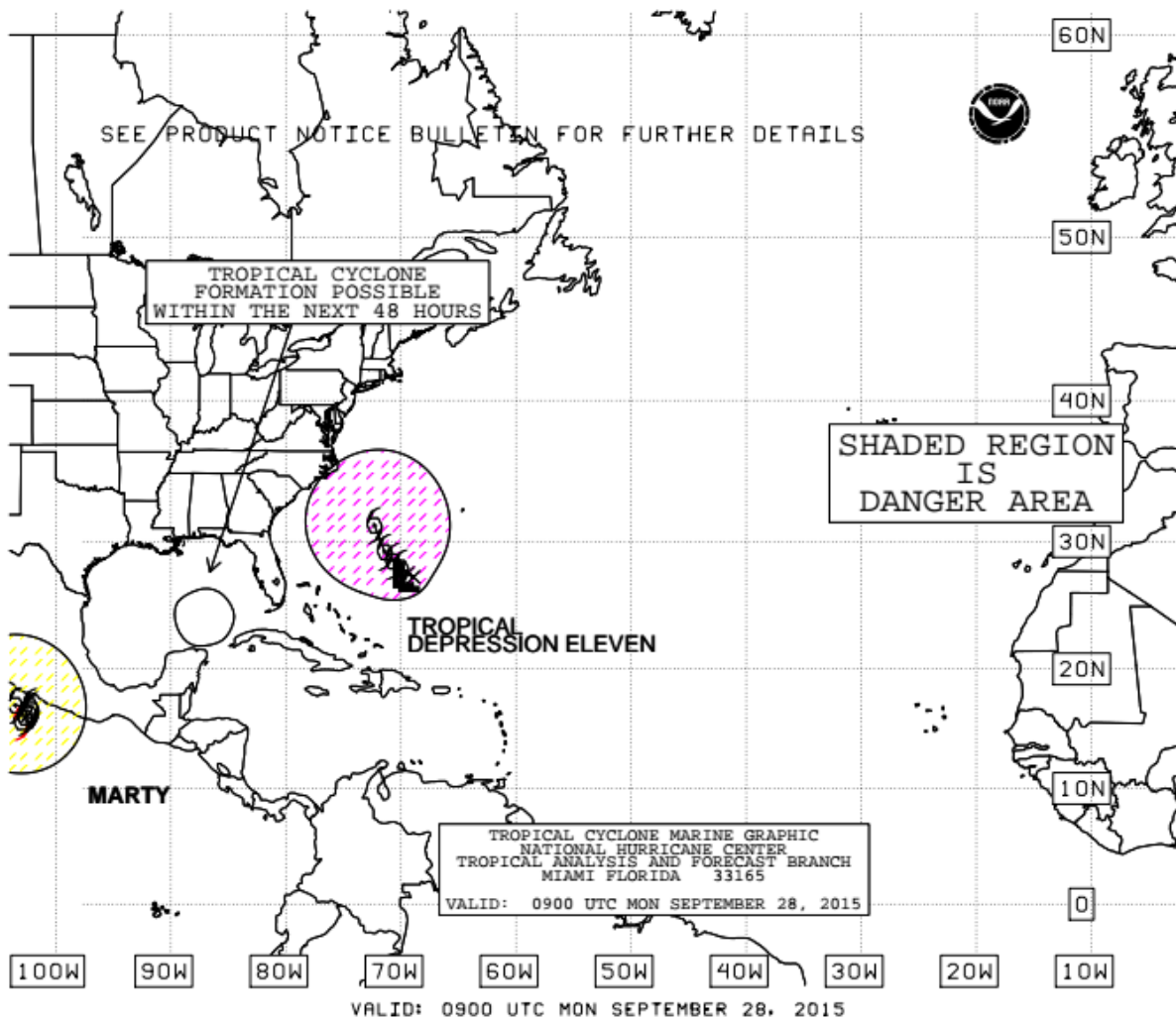
For the 120 hours (5 days) from 2 AM EDT Mon Sep 28 to 2 AM EDT Sat Oct 3



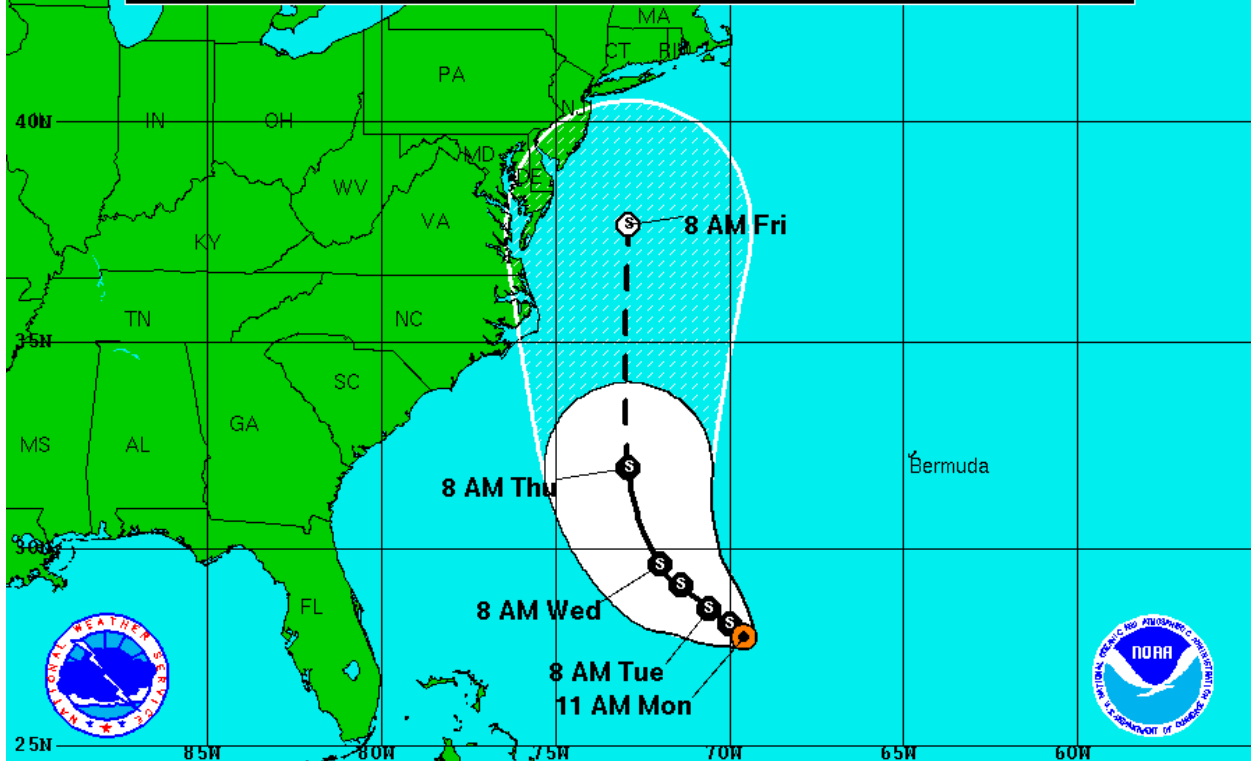
Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 AM EDT Mon Sep 28 2015 (Forecast/Advisory #2)





Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Tropical Depression Eleven**

Monday September 28, 2015  
 11 AM EDT Advisory 3  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 27.8 N 69.6 W  
 Max Sustained Wind 35 mph  
 Movement WNW at 5 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▽ Day 1-3 ◃ Day 4-5

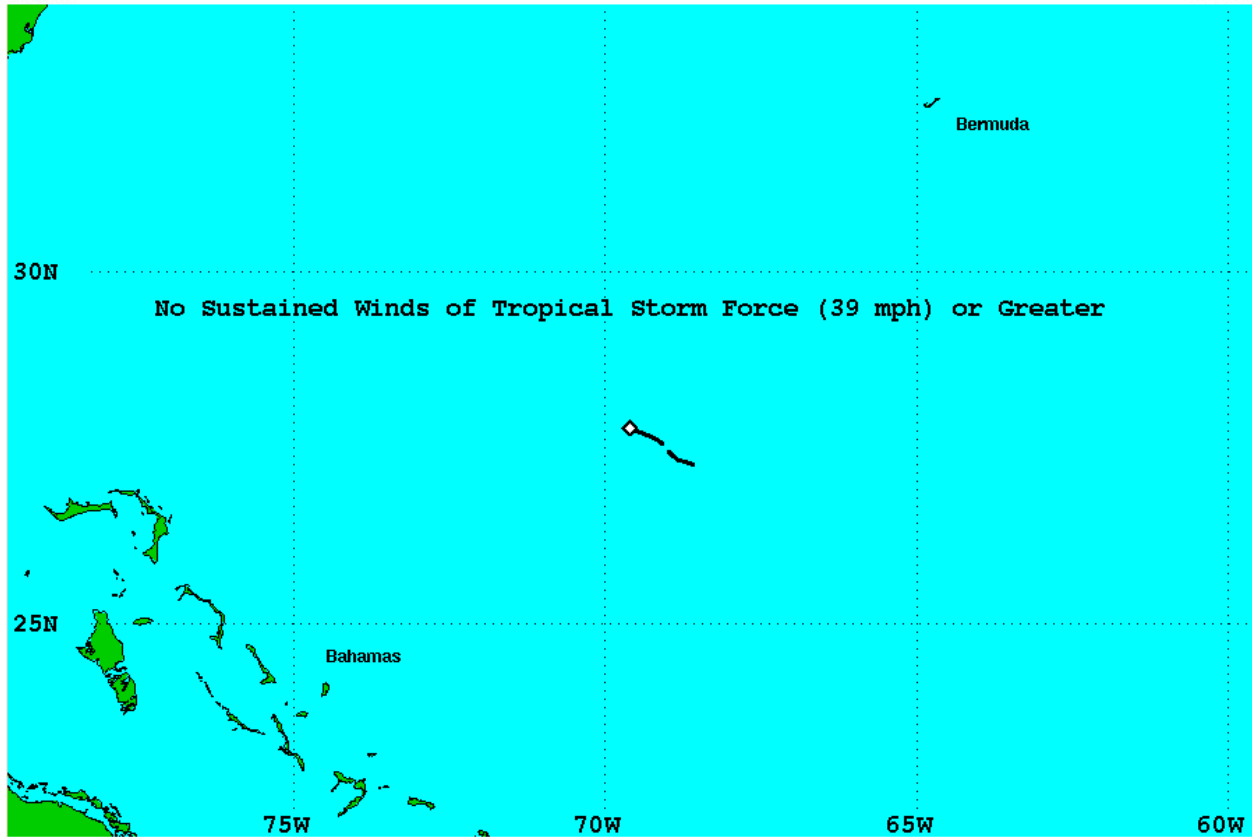
**Watches:**  
 ■ Hurricane ■ Trop.Storm

**Warnings:**  
 ■ Hurricane ■ Trop.Storm



# Surface Wind Field of Tropical Depression Eleven

Sustained Winds as of 1100 AM AST Mon Sep 28, 2015 Advisory Number 3

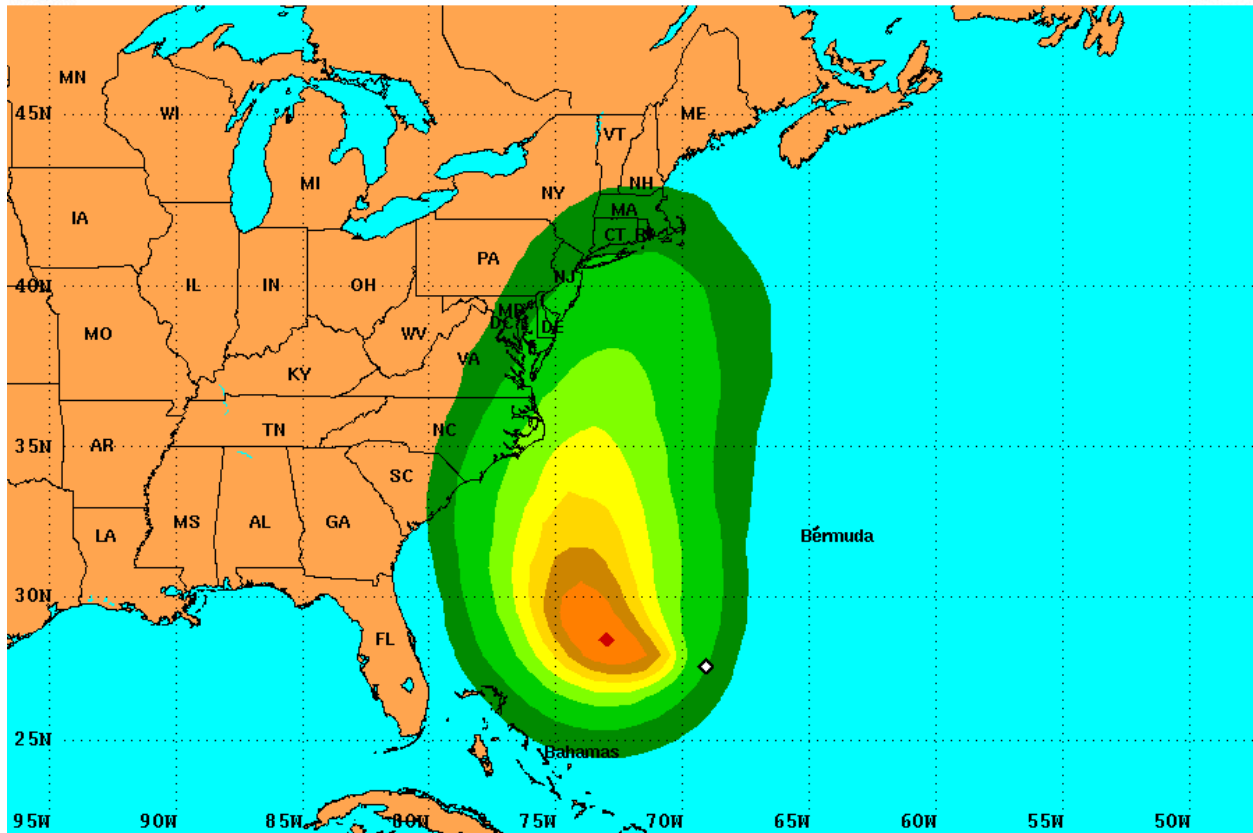


- |                      |                        |                         |                          |
|----------------------|------------------------|-------------------------|--------------------------|
| <b>Watches:</b>      | <b>Warnings:</b>       | <b>Sustained Winds:</b> | <b>Position:</b>         |
| Hurricane Watch      | Hurricane Warning      | Hurricane Force         | Center as of 1100 AM AST |
| Tropical Storm Watch | Tropical Storm Warning | Tropical Storm Force    | Past Track               |



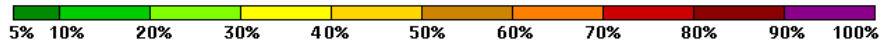
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Mon Sep 28 to 2 PM EDT Sat Oct 3



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 PM EDT Mon Sep 28 2015 (Forecast/Advisory #3)

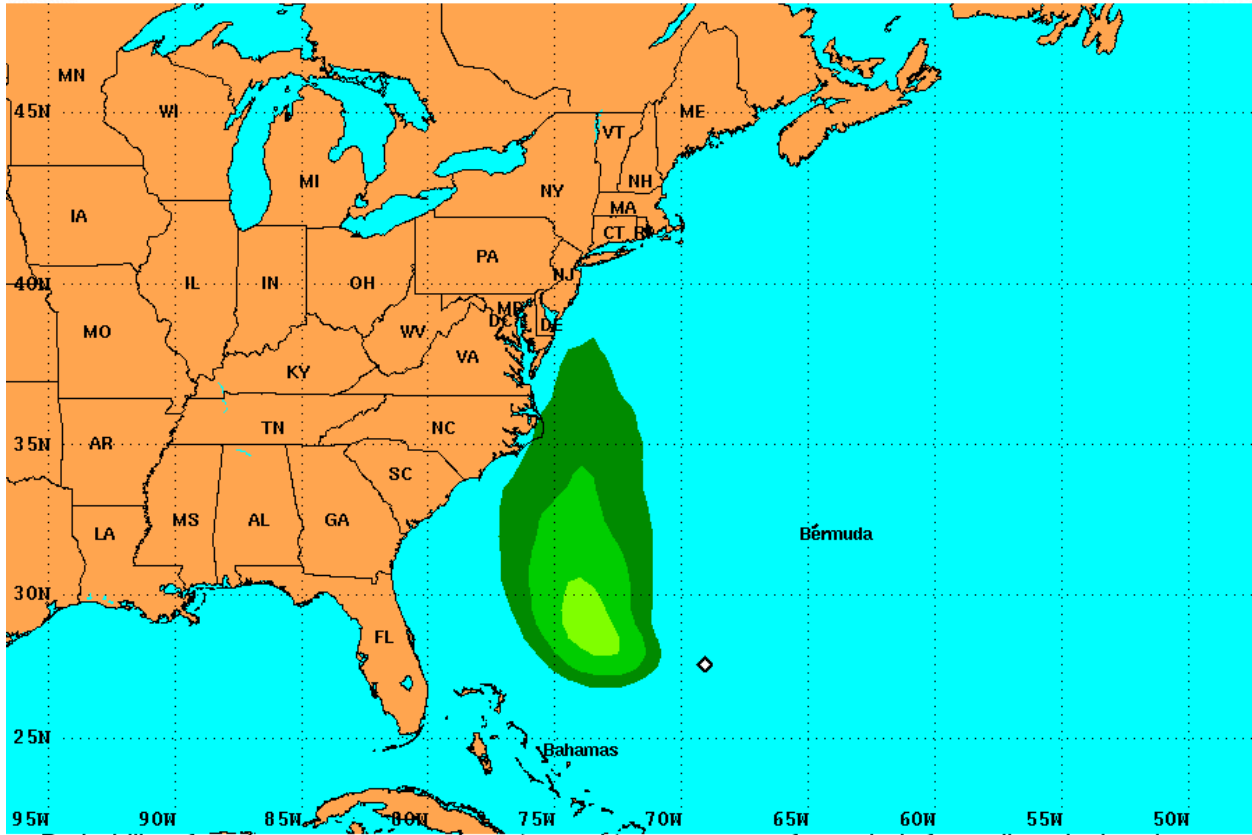






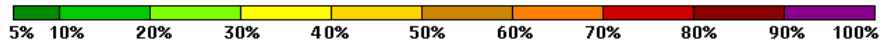
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Mon Sep 28 to 2 PM EDT Sat Oct 3



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

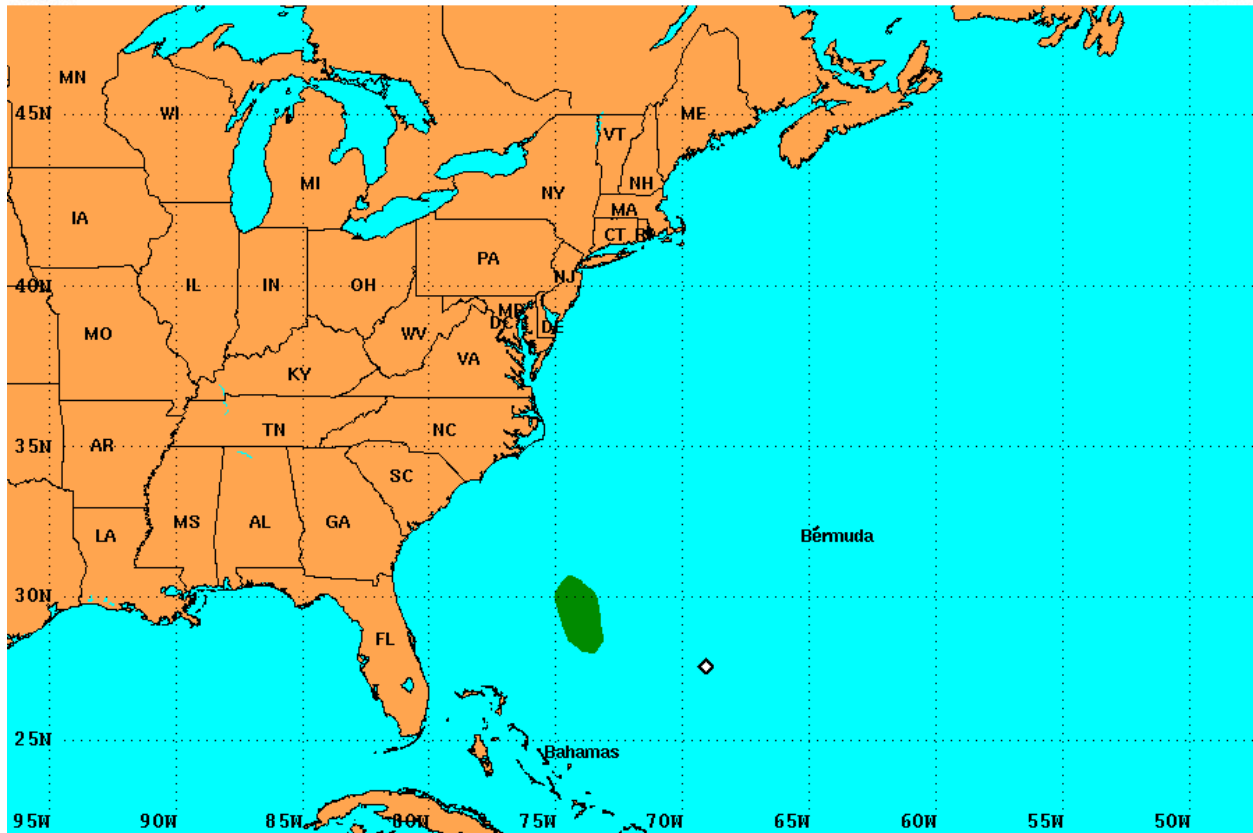
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 PM EDT Mon Sep 28 2015 (Forecast/Advisory #3)





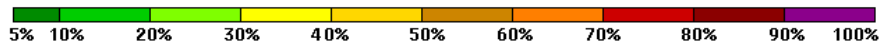
# Hurricane Force Wind Speed Probabilities

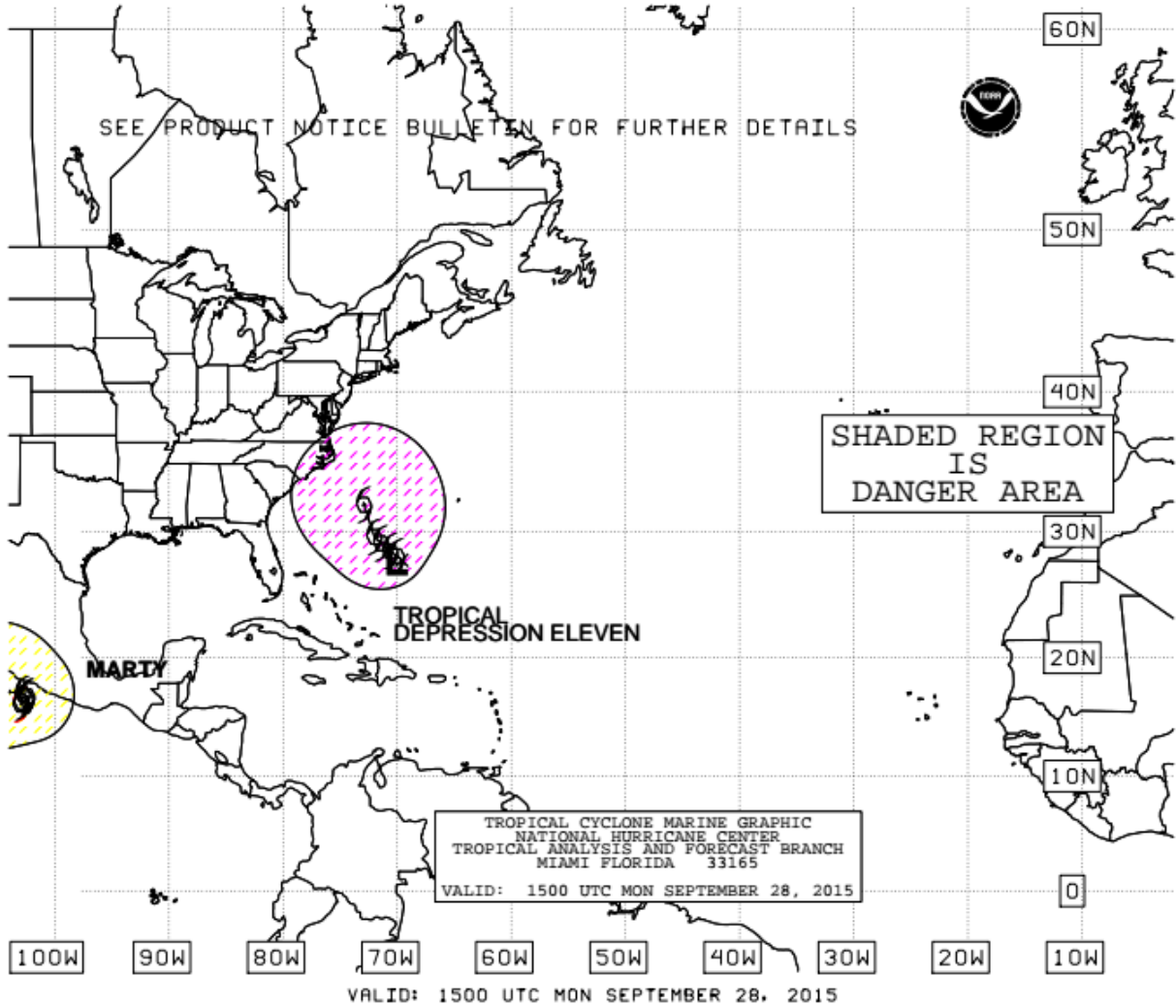
For the 120 hours (5 days) from 2 PM EDT Mon Sep 28 to 2 PM EDT Sat Oct 3

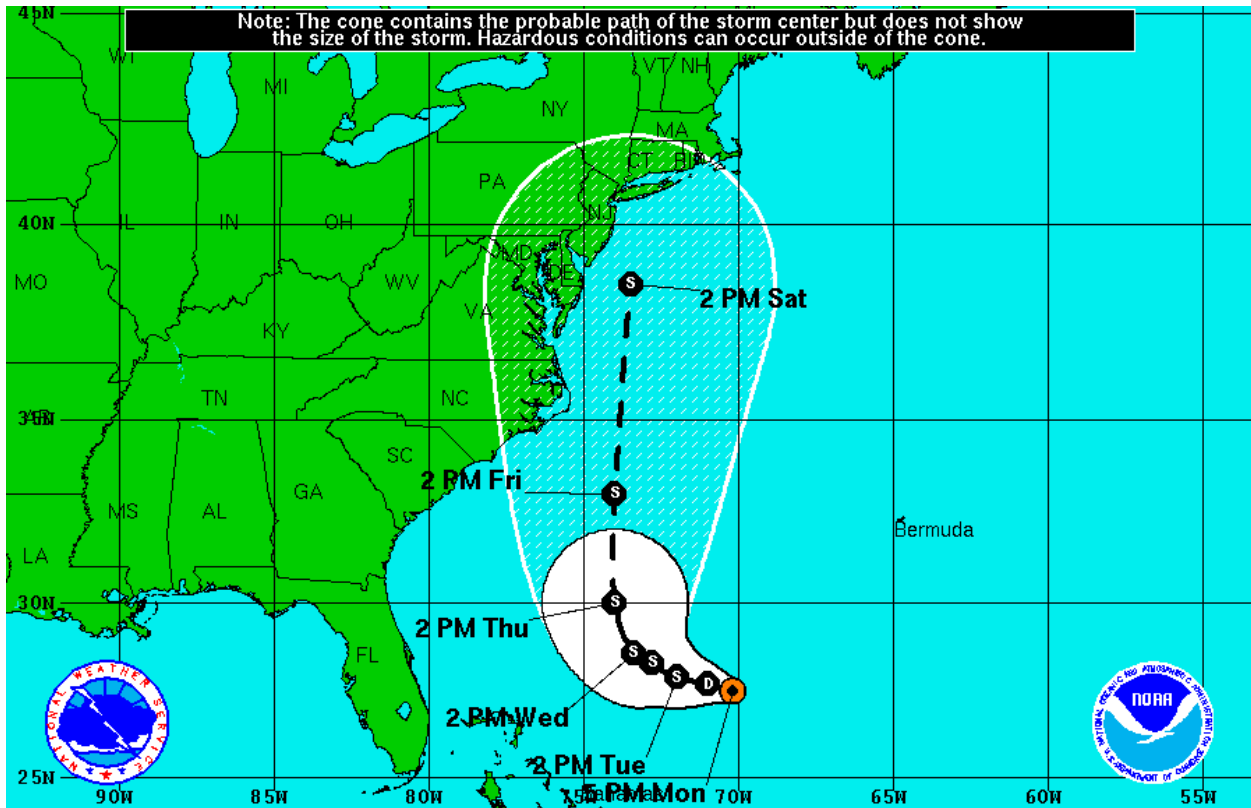


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones







◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 PM EDT Mon Sep 28 2015 (Forecast/Advisory #3)







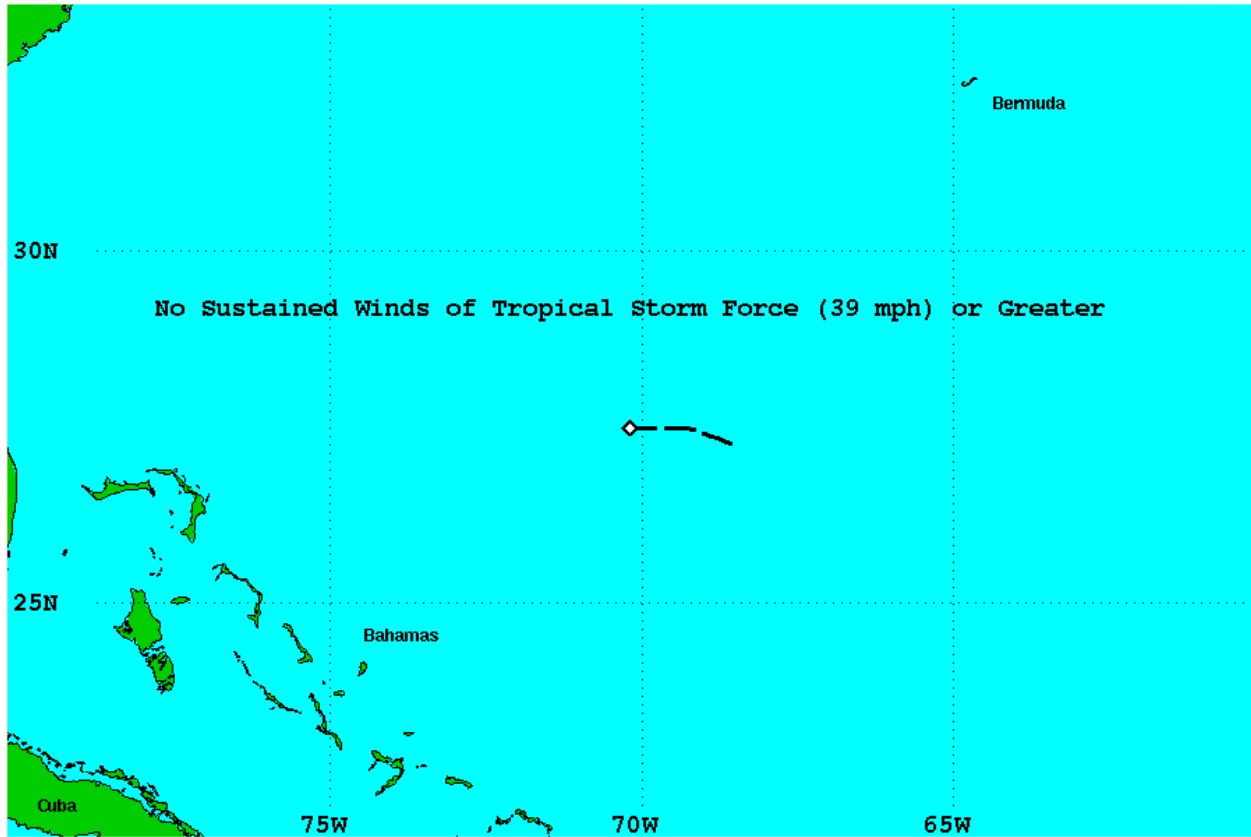
Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

<p><b>Tropical Depression Eleven</b>  <i>Monday September 28, 2015</i>  <b>5 PM EDT Advisory 4</b>          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 27.5 N 70.2 W          Max Sustained Wind 35 mph          Movement W at 6 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>   Day 1-3  Day 4-5</p>	<p><b>Watches:</b>   Hurricane  Trop.Storm</p>	<p><b>Warnings:</b>   Hurricane  Trop.Storm</p>



# Surface Wind Field of Tropical Depression Eleven

Sustained Winds as of 500 PM EDT Mon Sep 28, 2015 Advisory Number 4



### Watches:

- Hurricane Watch
- Tropical Storm Watch

### Warnings:

- Hurricane Warning
- Tropical Storm Warning

### Sustained Winds:

- Hurricane Force
- Tropical Storm Force

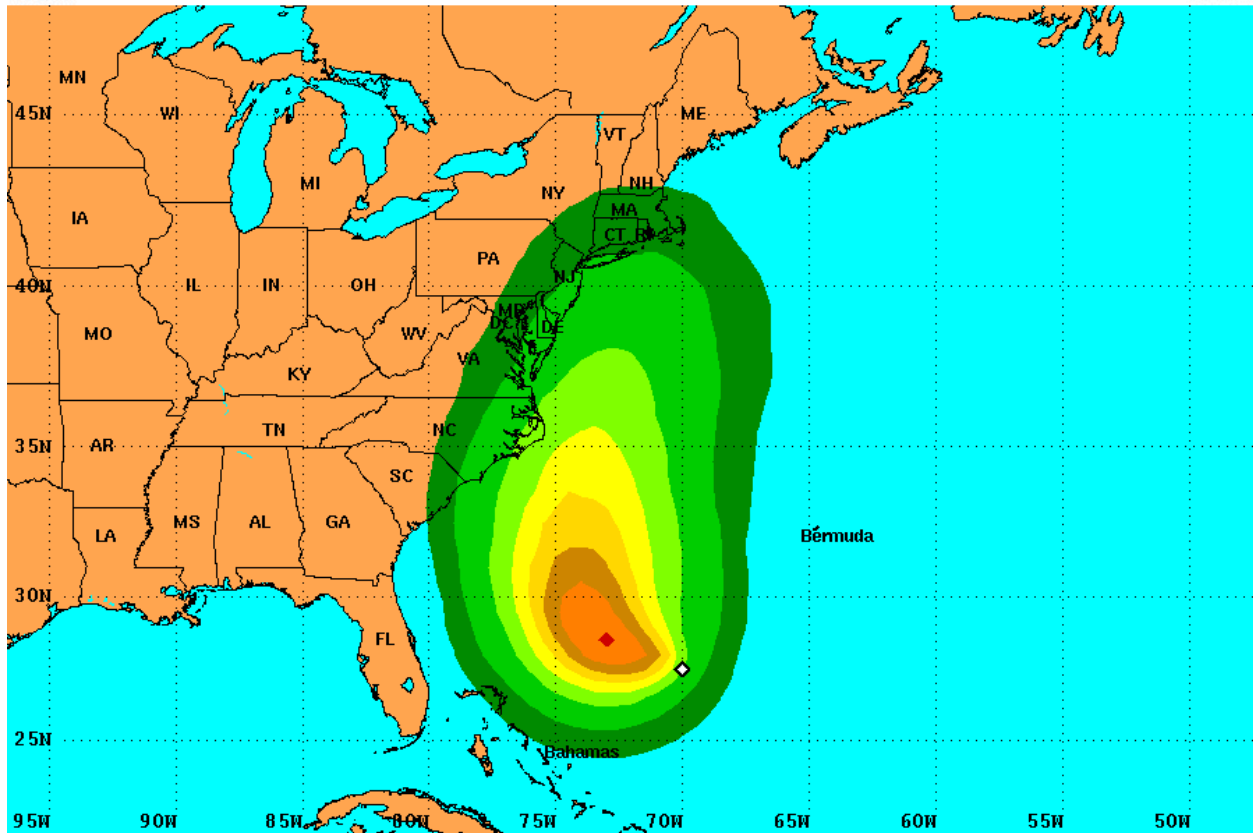
### Position:

- ◇ Center as of 500 PM EDT
- Past Track



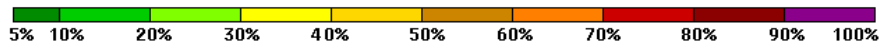
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Mon Sep 28 to 2 PM EDT Sat Oct 3



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

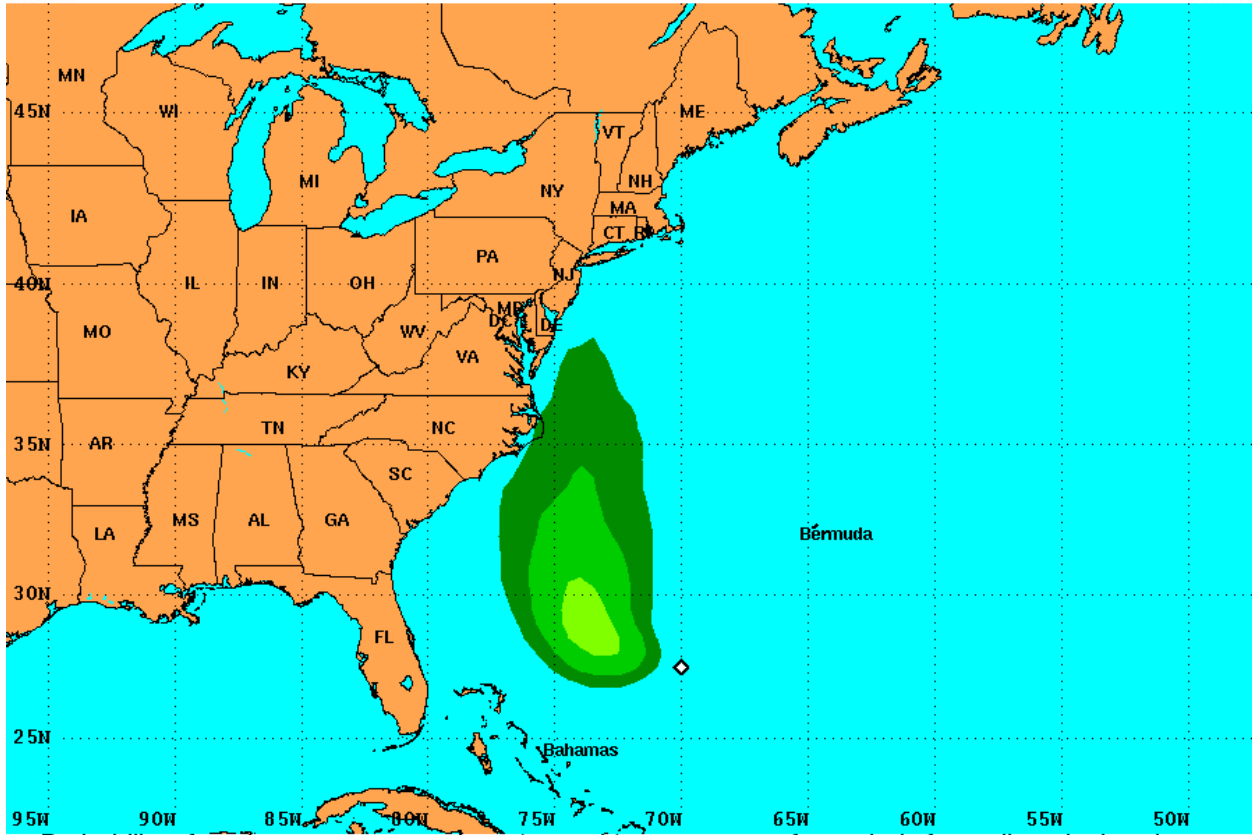
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 PM EDT Mon Sep 28 2015 (Forecast/Advisory #4)





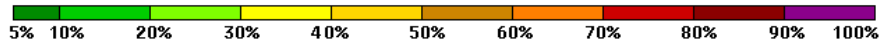
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Mon Sep 28 to 2 PM EDT Sat Oct 3



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

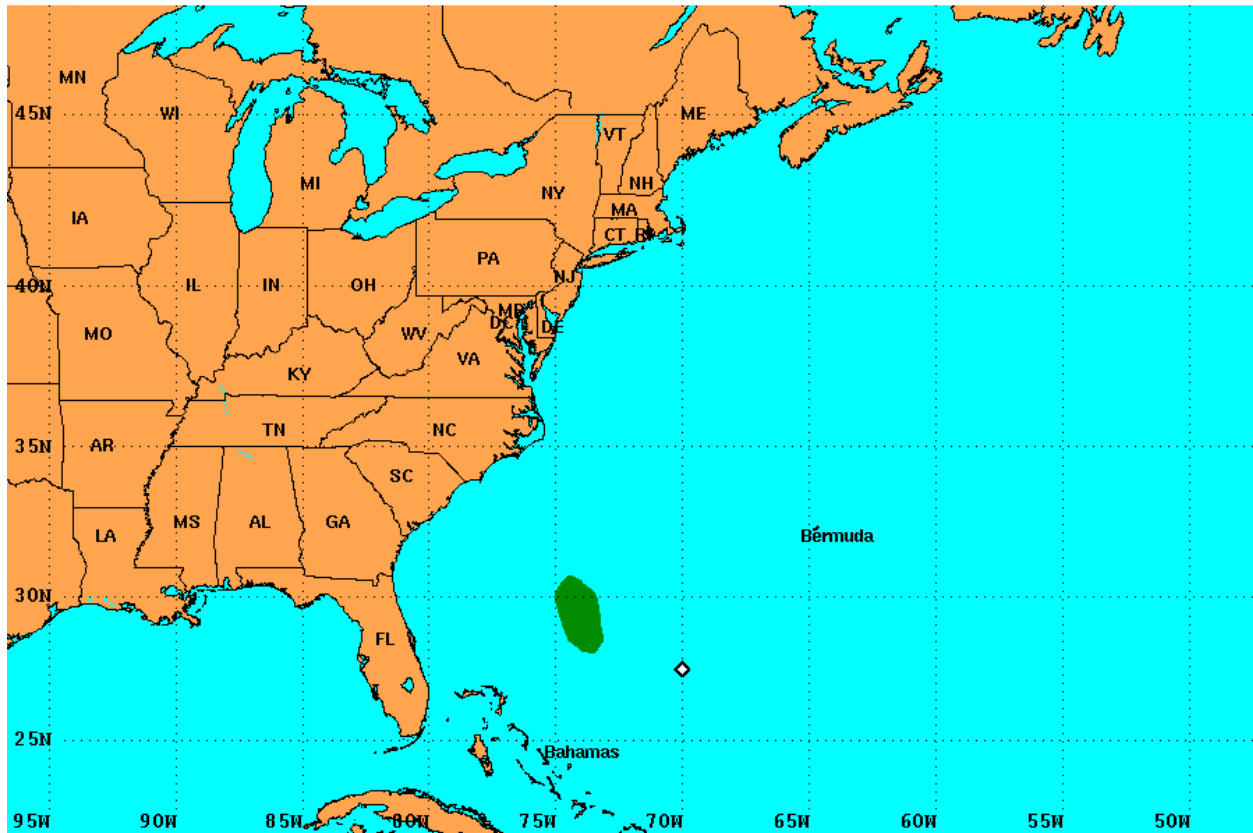
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 PM EDT Mon Sep 28 2015 (Forecast/Advisory #4)





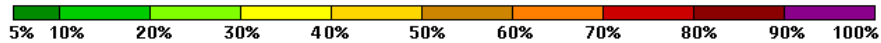
# Hurricane Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Mon Sep 28 to 2 PM EDT Sat Oct 3

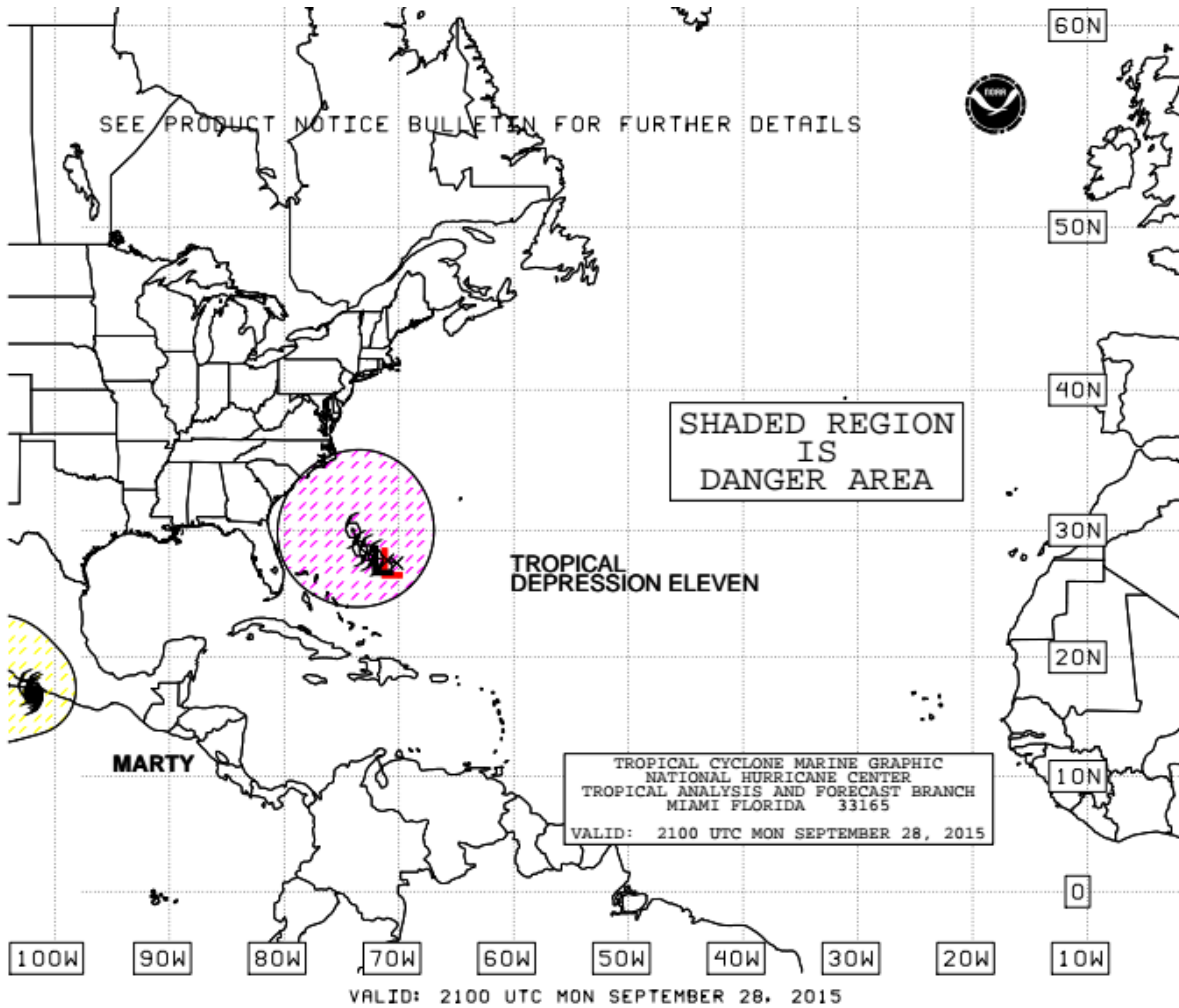


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

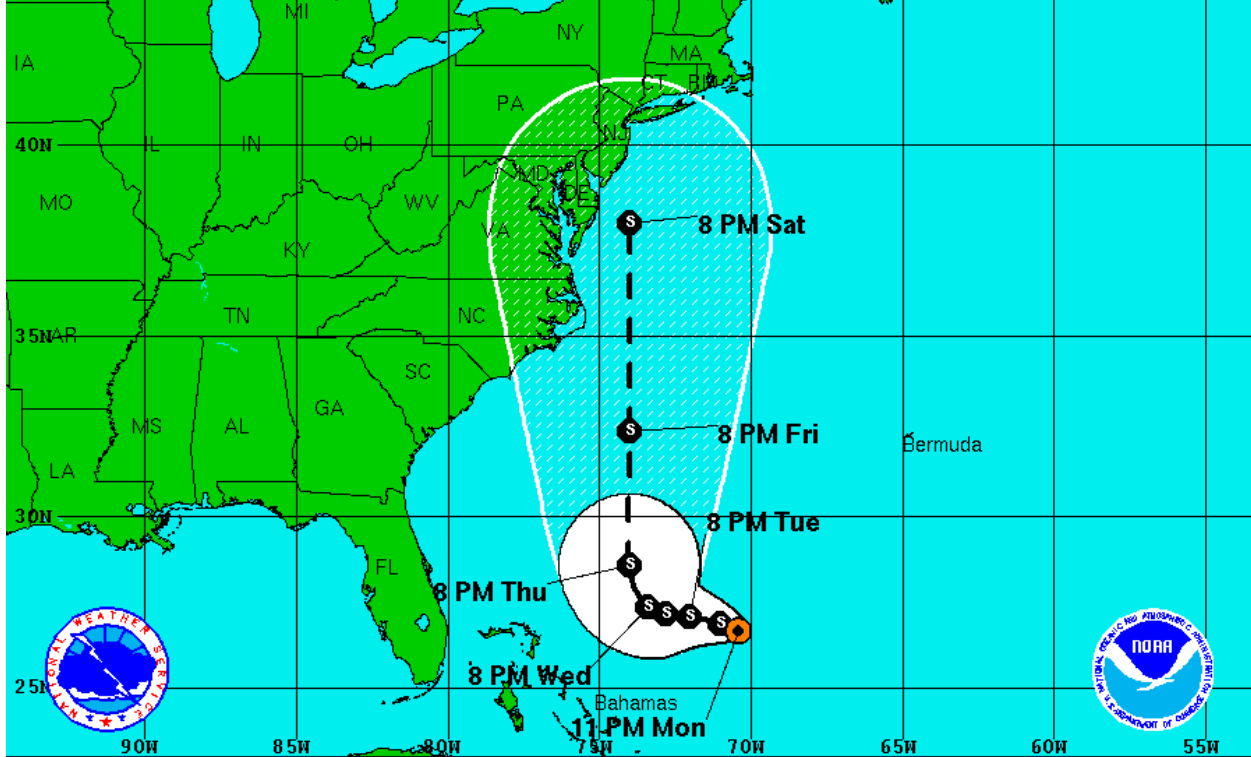
◇ indicates TROPICAL DEPRESSION ELEVEN center location at 2 PM EDT Mon Sep 28 2015 (Forecast/Advisory #4)









Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Tropical Storm Joaquin**  
 Monday September 28, 2015  
 11 PM EDT Advisory 5  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 26.7 N 70.4 W  
 Max Sustained Wind 40 mph  
 Movement SW at 5 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 Day 1-3  Day 4-5

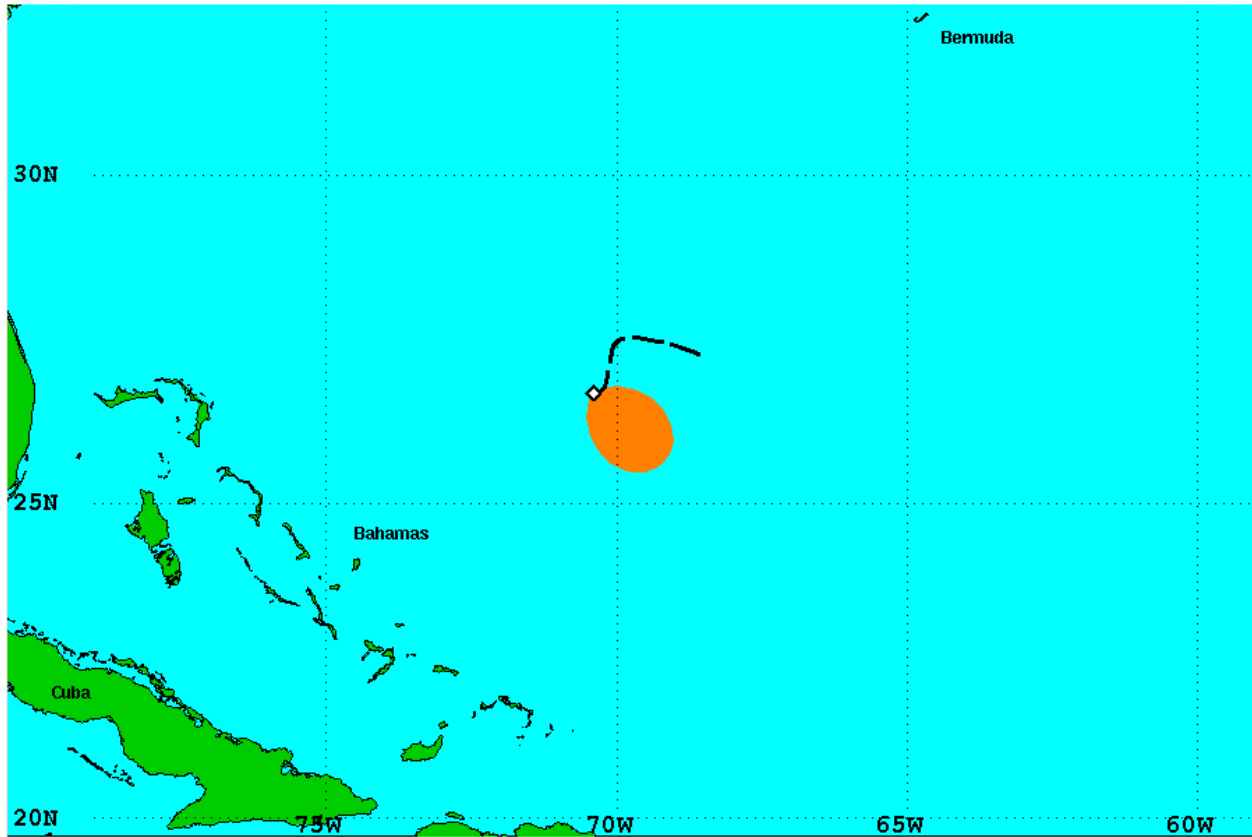
**Watches:**  
 Hurricane  Trop.Storm

**Warnings:**  
 Hurricane  Trop.Storm



# Surface Wind Field of Tropical Storm Joaquin

Sustained Winds as of 1100 PM EDT Mon Sep 28, 2015 Advisory Number 5



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

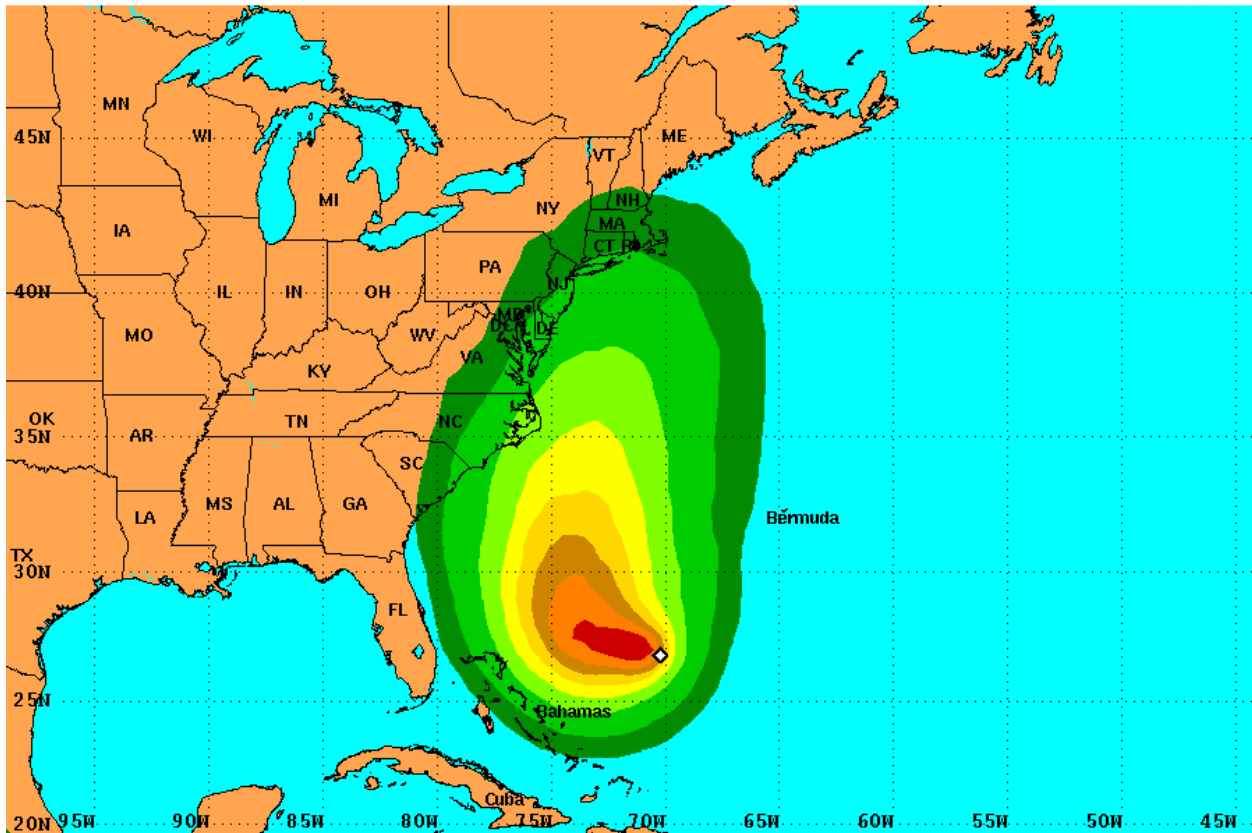
**Position:**

- Center as of 1100 PM EDT
- Past Track



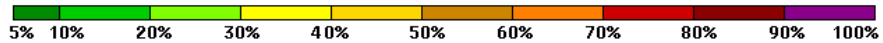
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Mon Sep 28 to 8 PM EDT Sat Oct 3



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

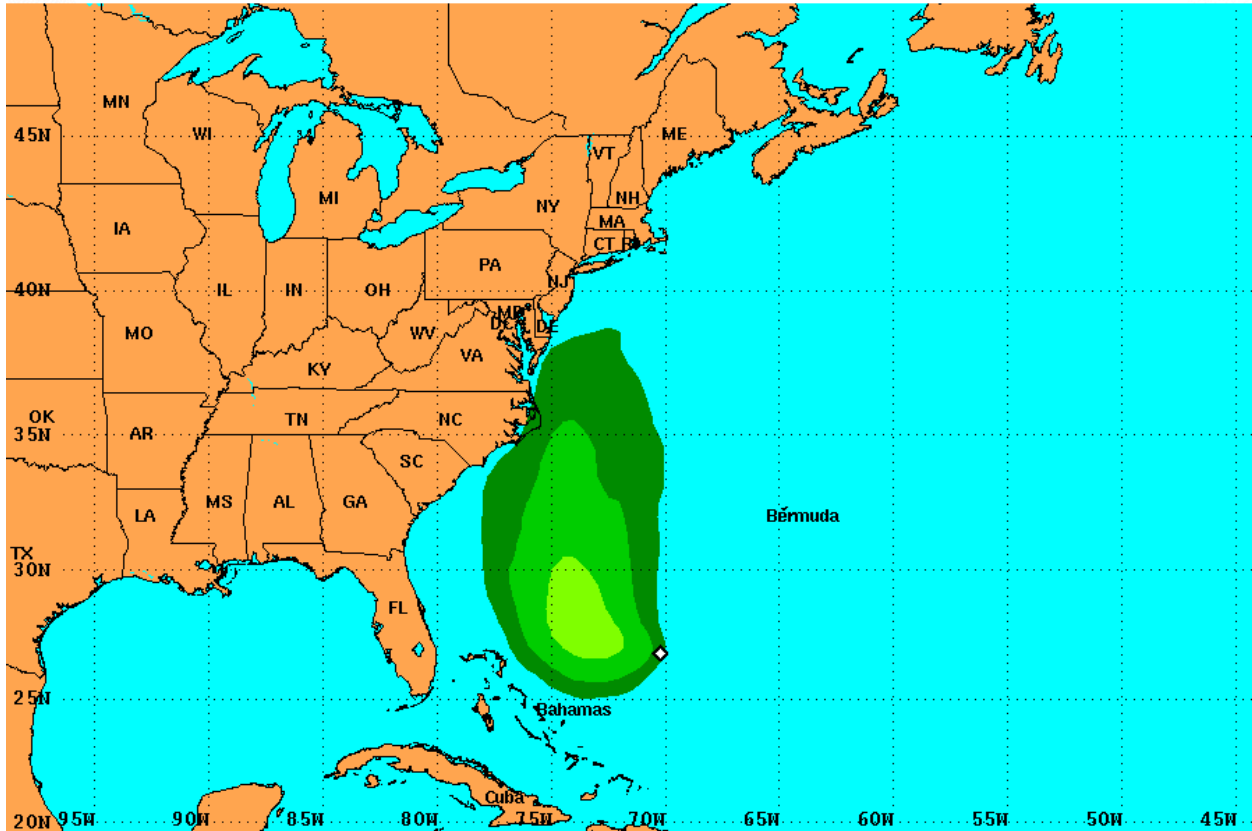
◇ indicates TROPICAL STORM JOAQUIN center location at 8 PM EDT Mon Sep 28 2015 (Forecast/Advisory #5)





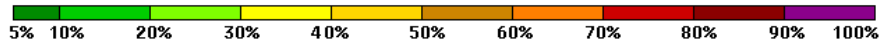
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For the 120 hours (5 days) from 8 PM EDT Mon Sep 28 to 8 PM EDT Sat Oct 3



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

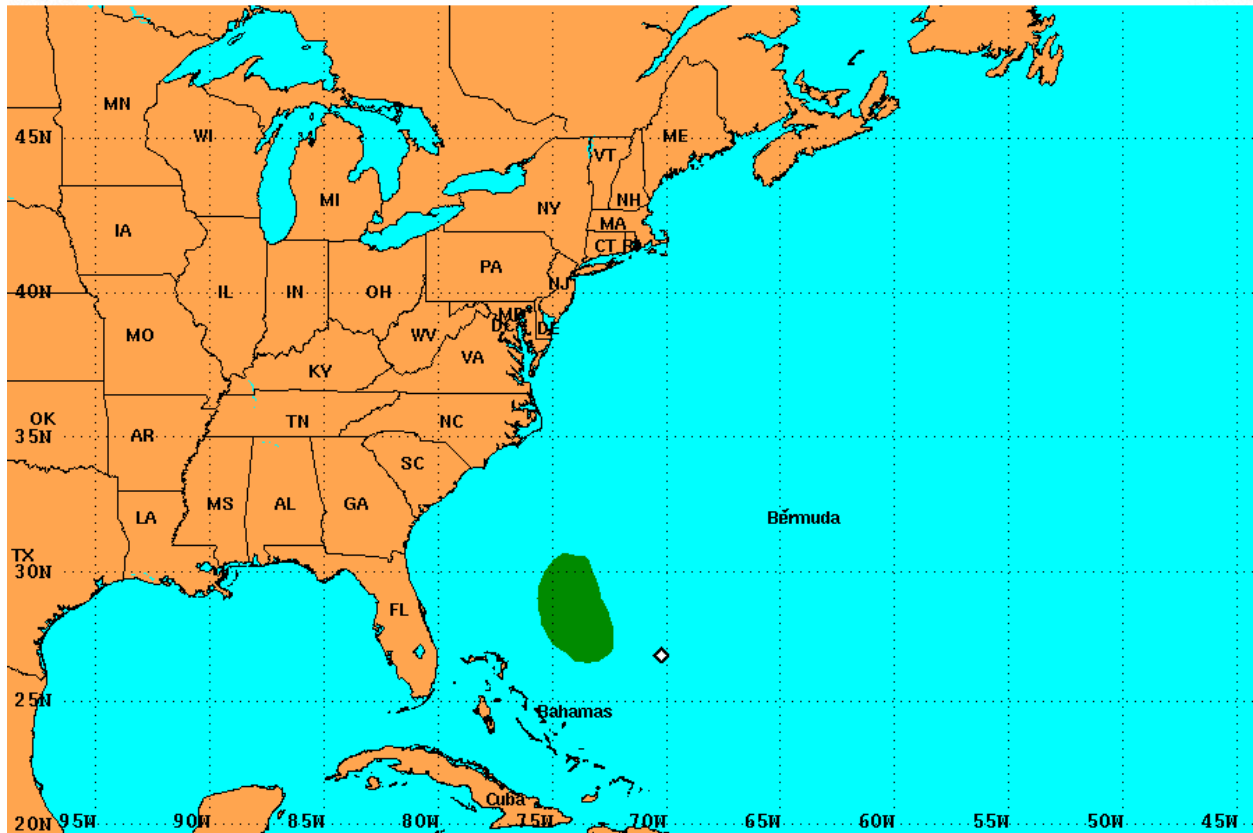
◇ indicates TROPICAL STORM JOAQUIN center location at 8 PM EDT Mon Sep 28 2015 (Forecast/Advisory #5)





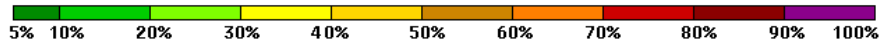
# Hurricane Force Wind Speed Probabilities

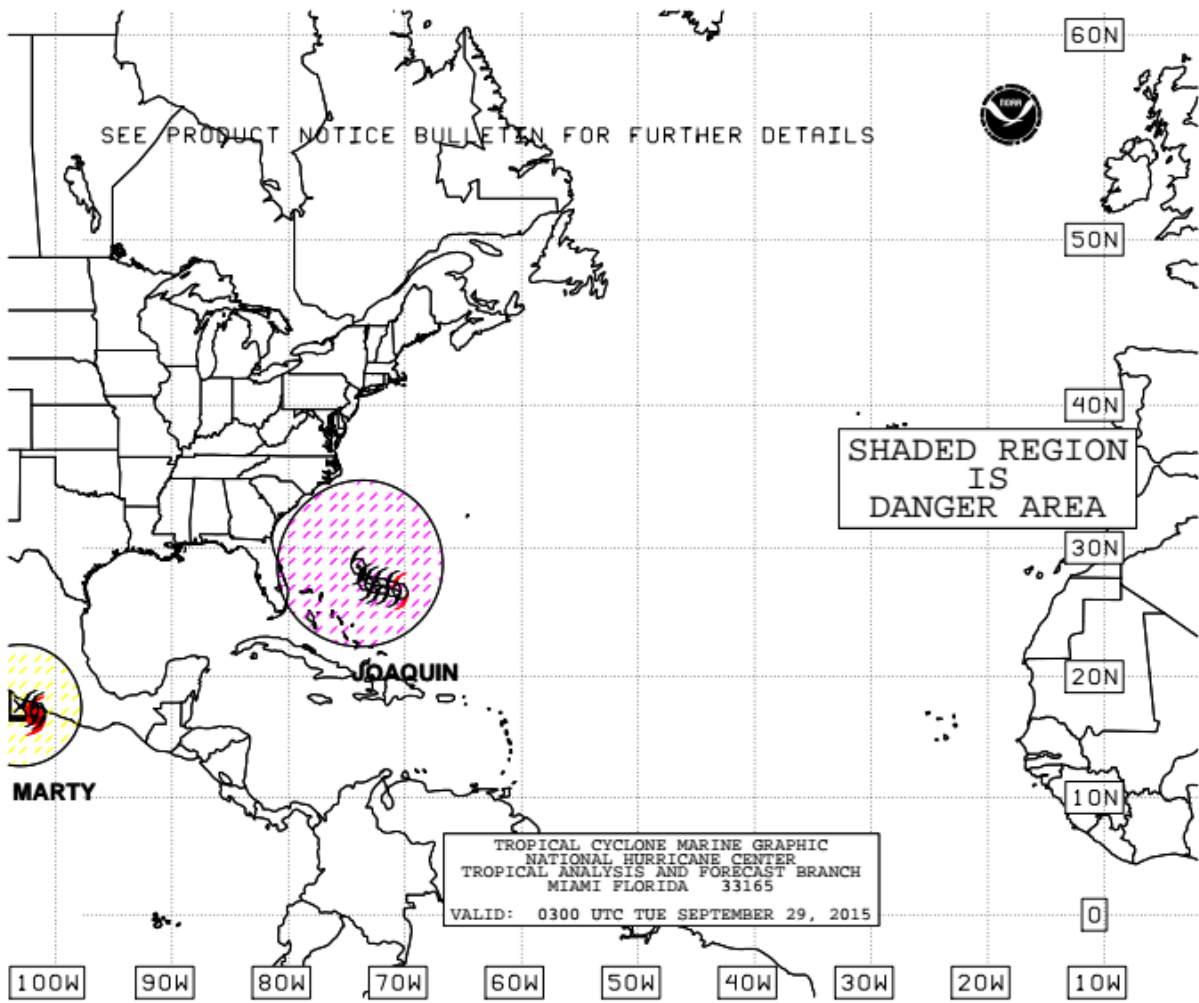
For the 120 hours (5 days) from 8 PM EDT Mon Sep 28 to 8 PM EDT Sat Oct 3



Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

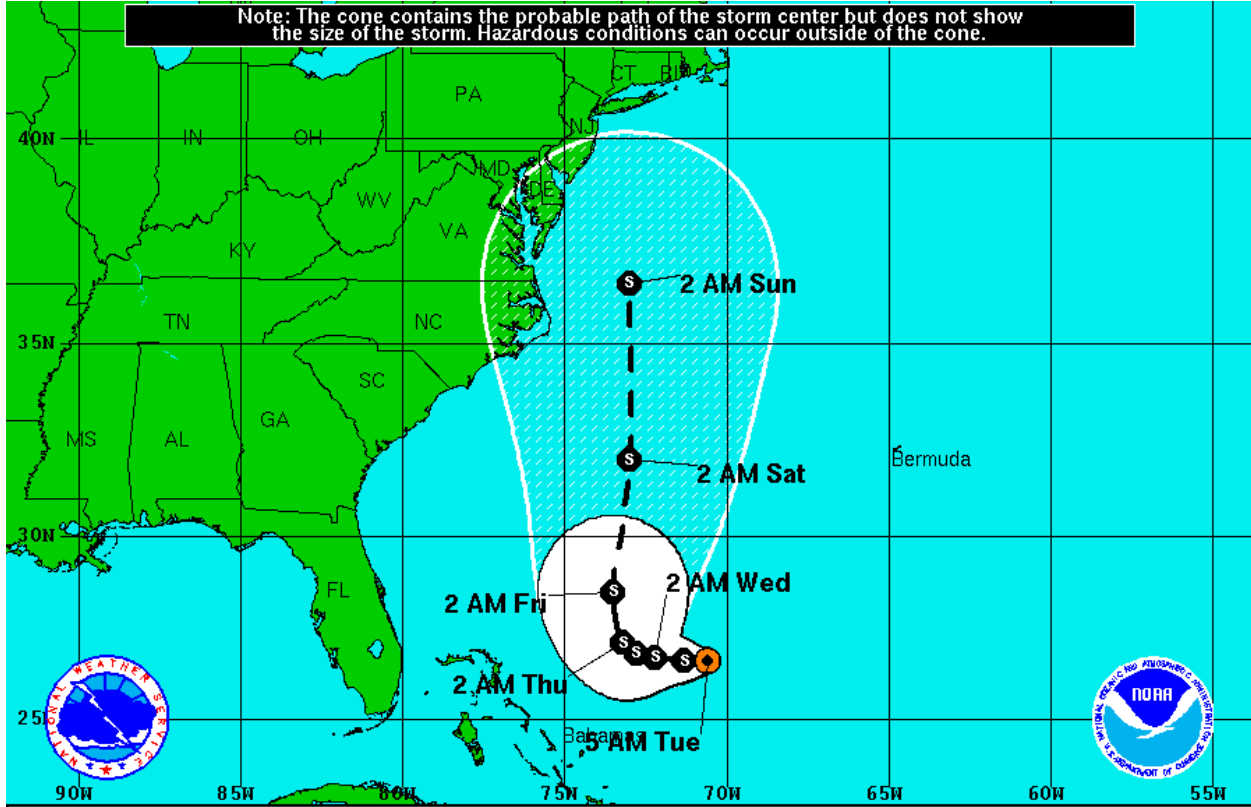
◇ indicates TROPICAL STORM JOAQUIN center location at 8 PM EDT Mon Sep 28 2015 (Forecast/Advisory #5)





VALID: 0300 UTC TUE SEPTEMBER 29, 2015

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Tropical Storm Joaquin**  
 Tuesday September 29, 2015  
 5 AM EDT Advisory 6  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 26.6 N 70.6 W  
 Max Sustained Wind 40 mph  
 Movement W at 5 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▽ Day 1-3 ◁ Day 4-5

**Watches:**  
 ■ Hurricane ■ Trop.Storm

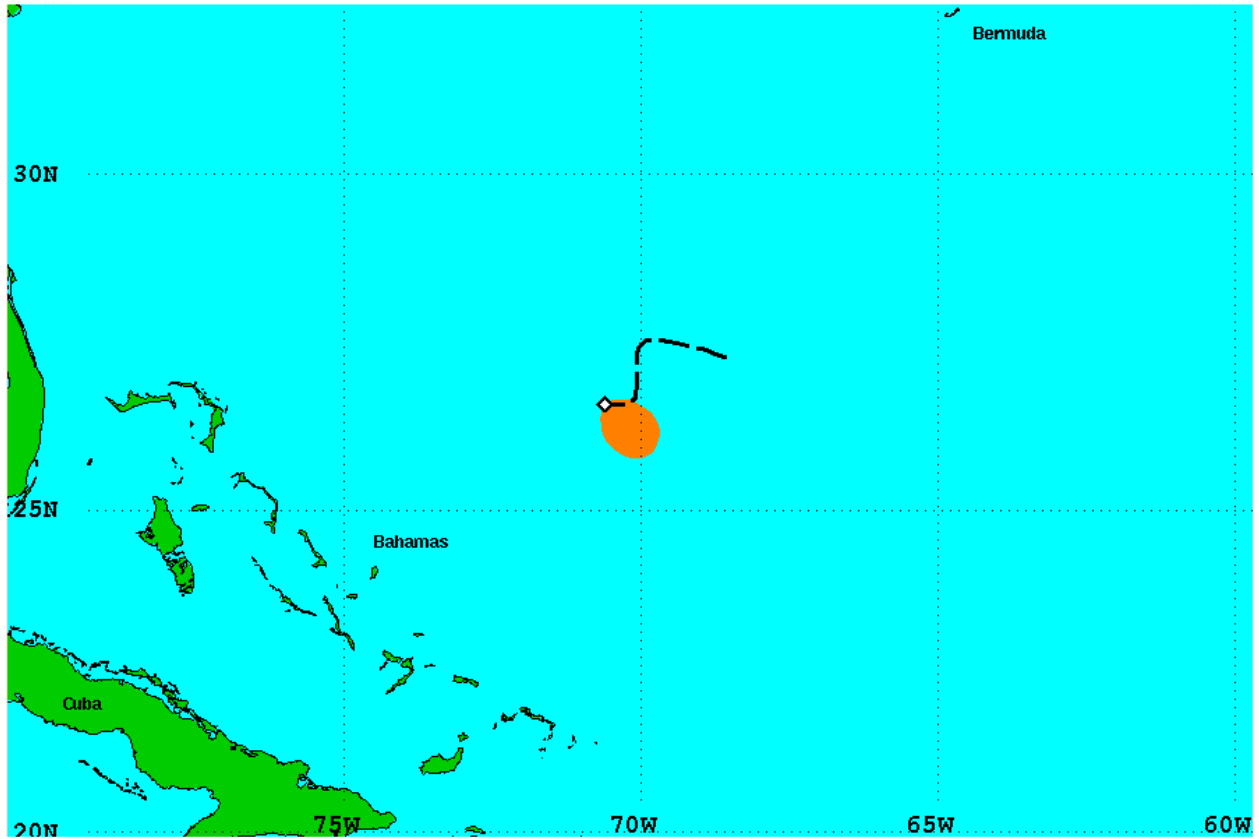
**Warnings:**  
 ■ Hurricane ■ Trop.Storm





# Surface Wind Field of Tropical Storm Joaquin

Sustained Winds as of 500 AM EDT Tue Sep 29, 2015 Advisory Number 6

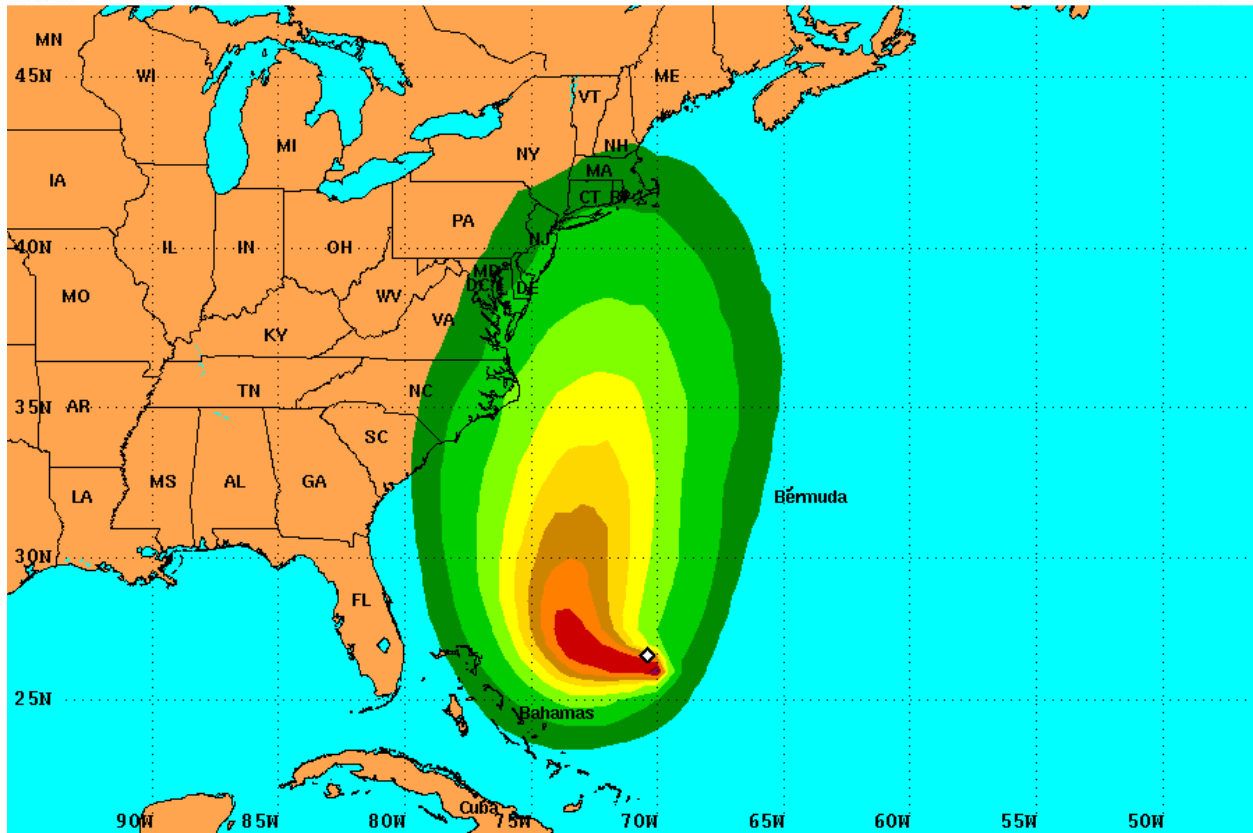


<b>Watches:</b>	<b>Warnings:</b>	<b>Sustained Winds:</b>	<b>Position:</b>
Hurricane Watch	Hurricane Warning	Hurricane Force	Center as of 500 AM EDT
Tropical Storm Watch	Tropical Storm Warning	Tropical Storm Force	Past Track



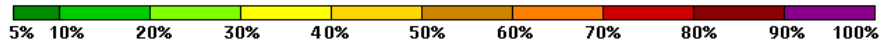
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Tue Sep 29 to 2 AM EDT Sun Oct 4



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

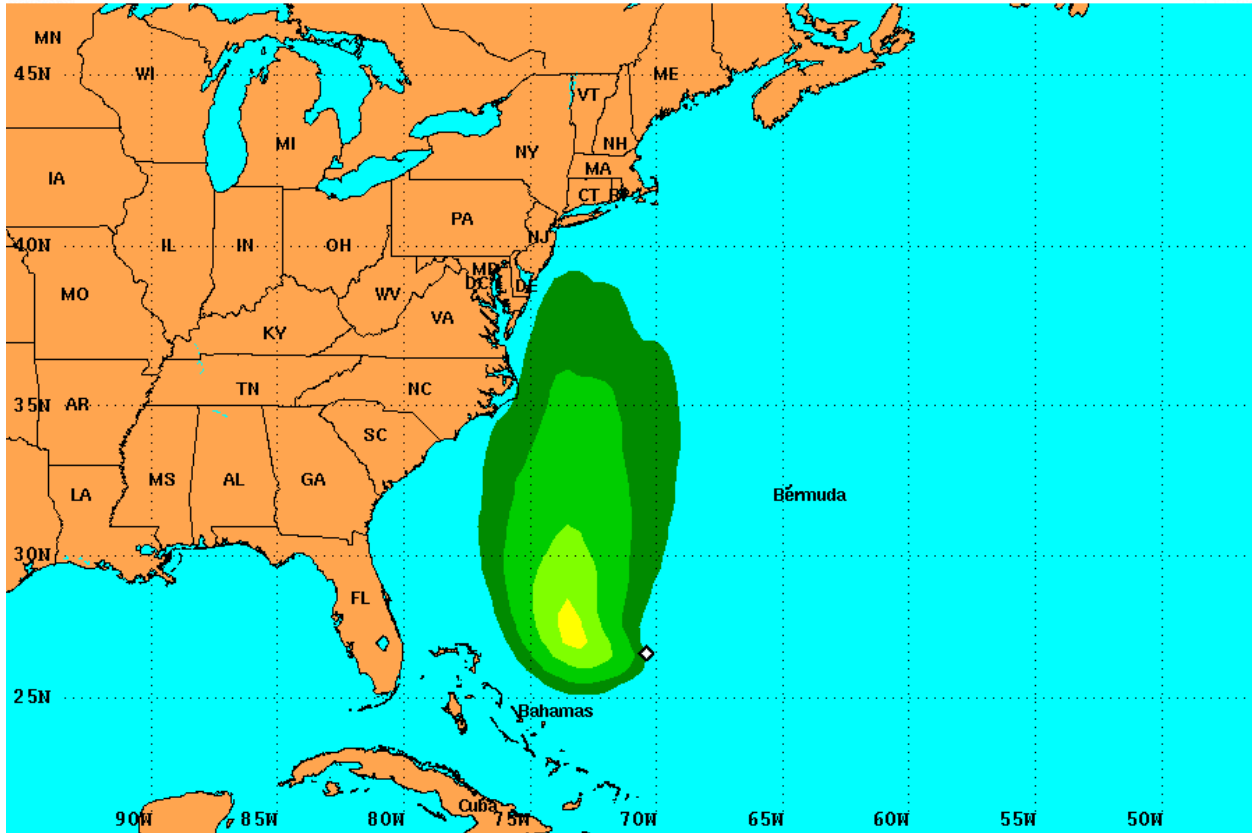
◇ indicates TROPICAL STORM JOAQUIN center location at 2 AM EDT Tue Sep 29 2015 (Forecast/Advisory #6)





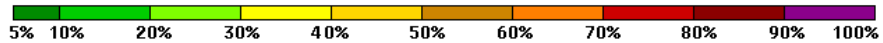
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Tue Sep 29 to 2 AM EDT Sun Oct 4



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

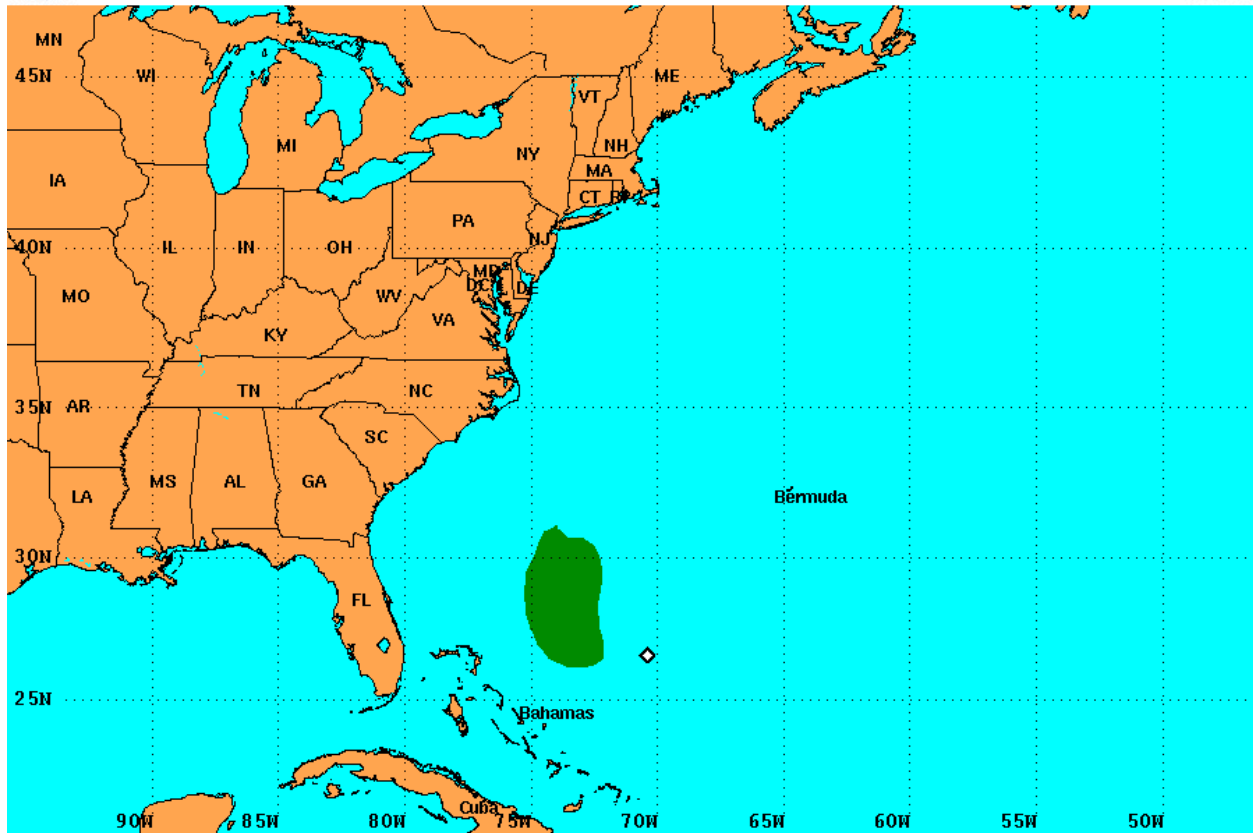
◇ indicates TROPICAL STORM JOAQUIN center location at 2 AM EDT Tue Sep 29 2015 (Forecast/Advisory #6)





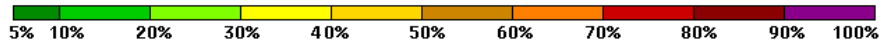
# Hurricane Force Wind Speed Probabilities

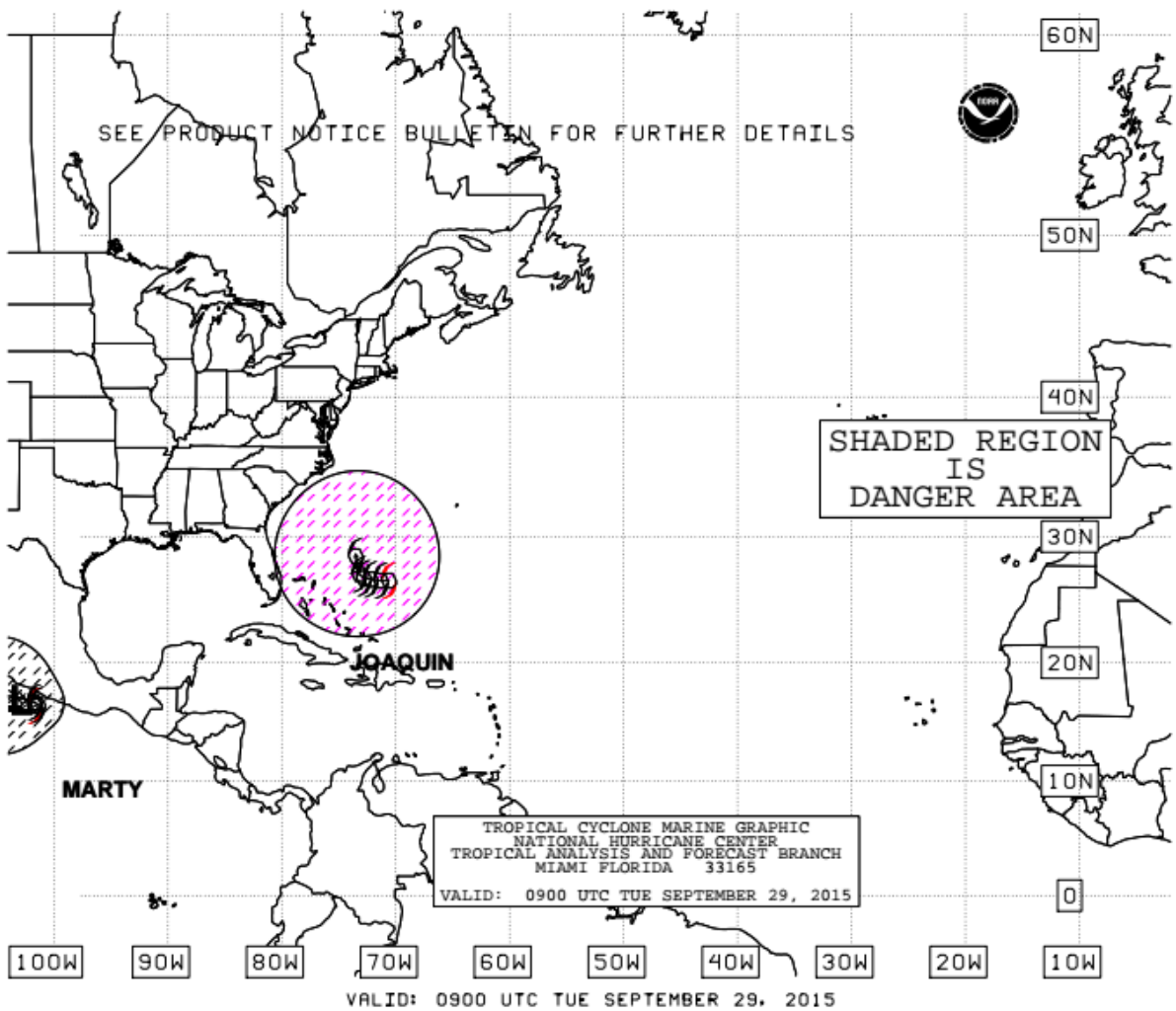
For the 120 hours (5 days) from 2 AM EDT Tue Sep 29 to 2 AM EDT Sun Oct 4

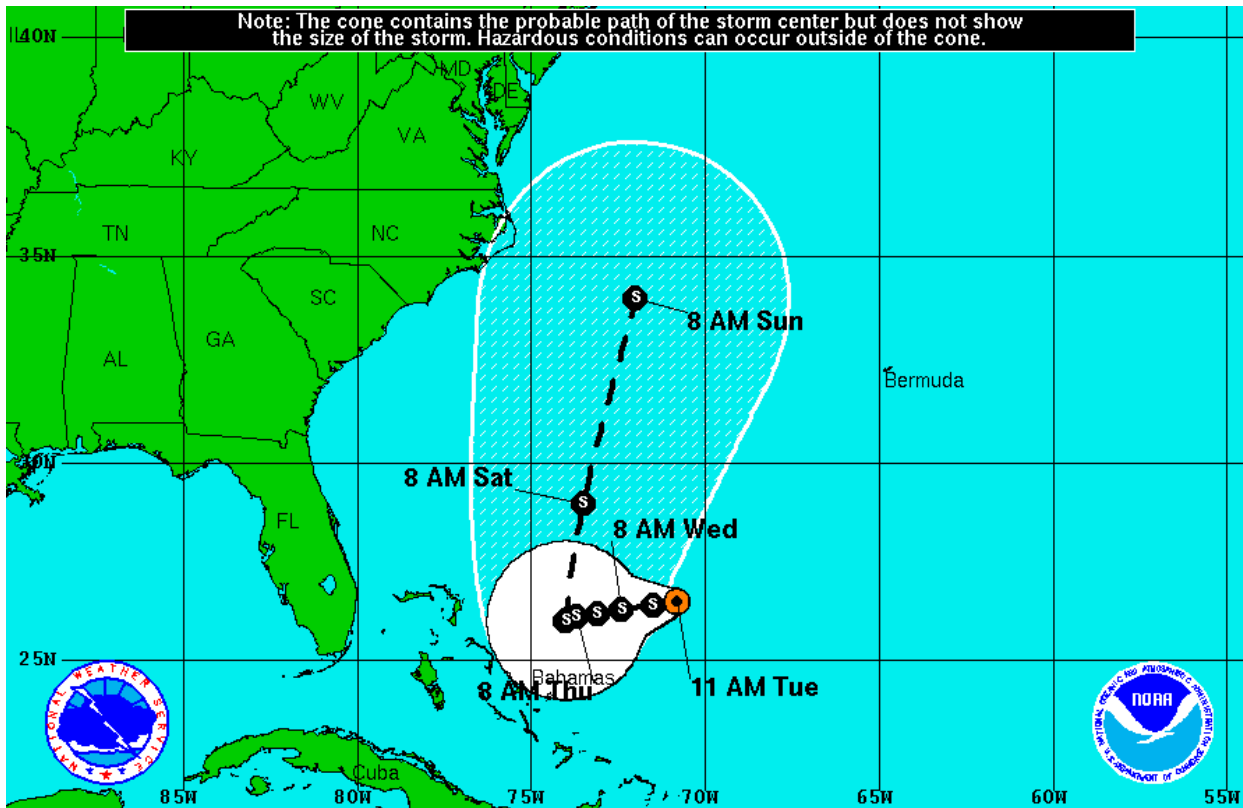


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones







◇ indicates TROPICAL STORM JOAQUIN center location at 2 AM EDT Tue Sep 29 2015 (Forecast/Advisory #6)







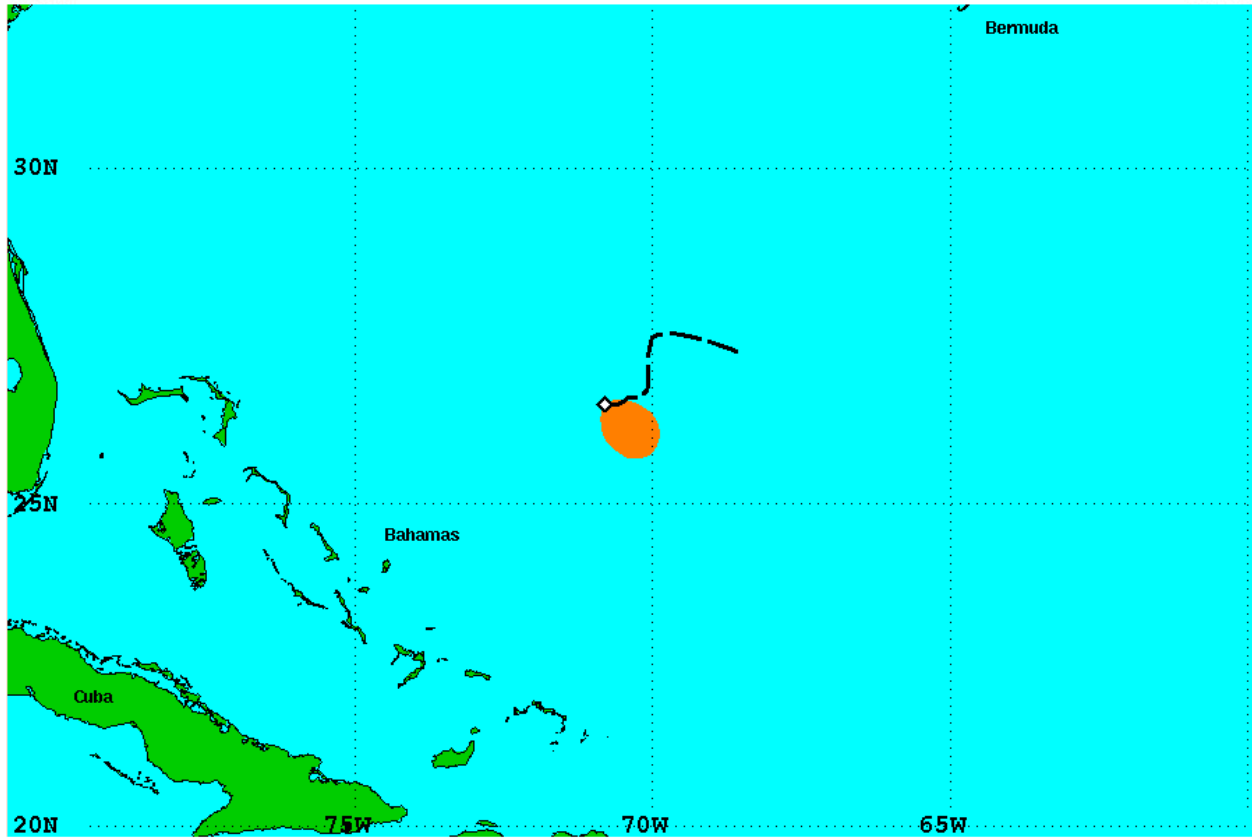
Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

<p><b>Tropical Storm Joaquin</b>          Tuesday September 29, 2015          11 AM EDT Advisory 7          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 26.5 N 70.8 W          Max Sustained Wind 45 mph          Movement W at 5 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>   Day 1-3  Day 4-5</p>	<p><b>Watches:</b>   Hurricane  Trop.Storm</p>	<p><b>Warnings:</b>   Hurricane  Trop.Storm</p>



# Surface Wind Field of Tropical Storm Joaquin

Sustained Winds as of 1100 AM EDT Tue Sep 29, 2015 Advisory Number 7



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

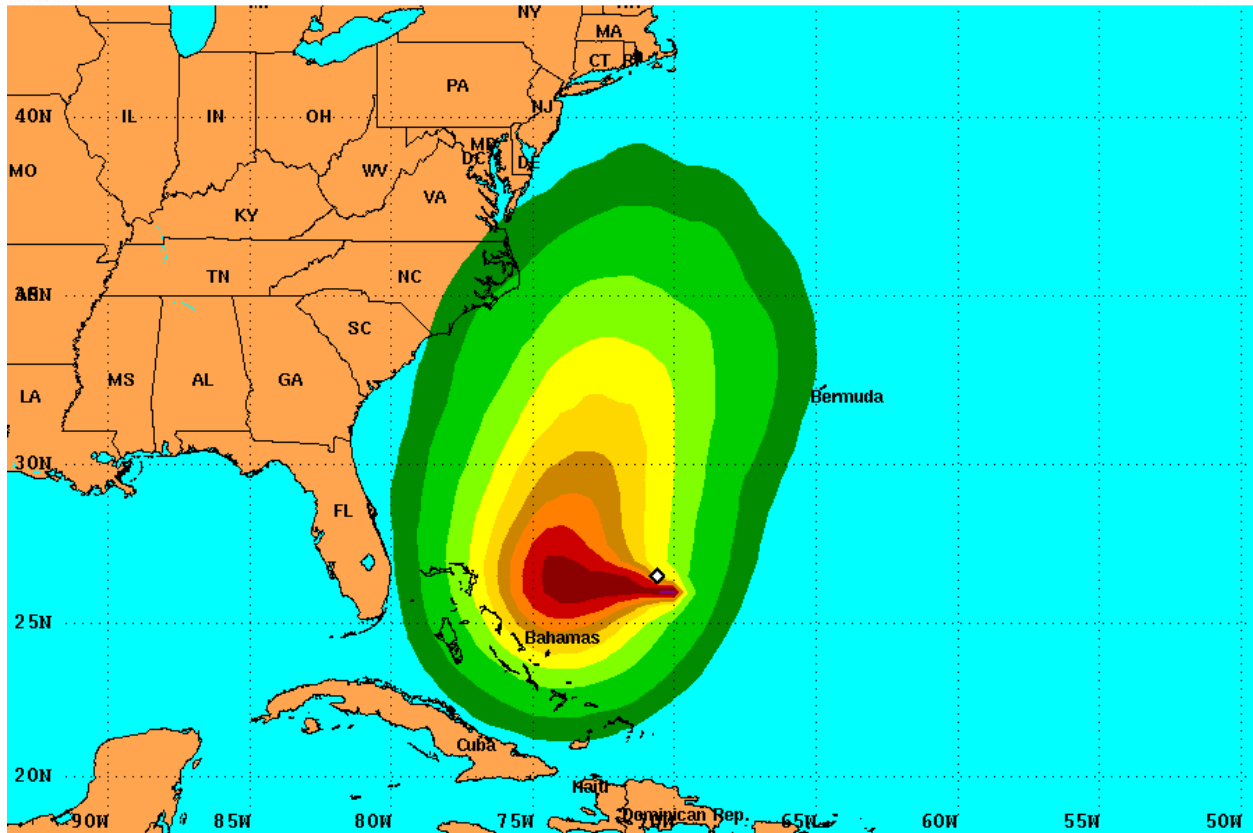
**Position:**

- Center as of 1100 AM EDT
- Past Track



# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Tue Sep 29 to 8 AM EDT Sun Oct 4



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

◇ indicates TROPICAL STORM JOAQUIN center location at 8 AM EDT Tue Sep 29 2015 (Forecast/Advisory #7)

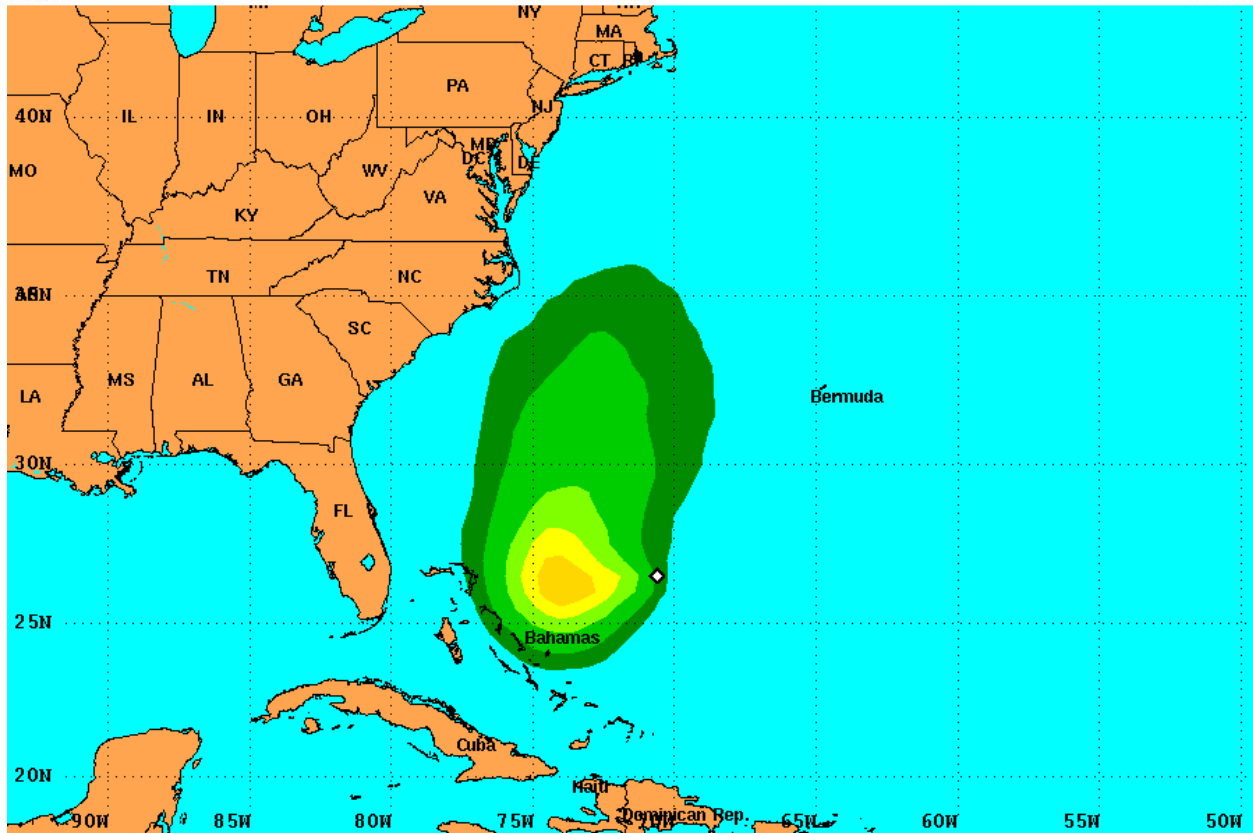






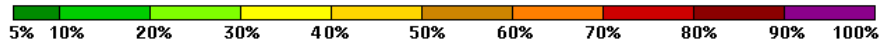
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Tue Sep 29 to 8 AM EDT Sun Oct 4



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

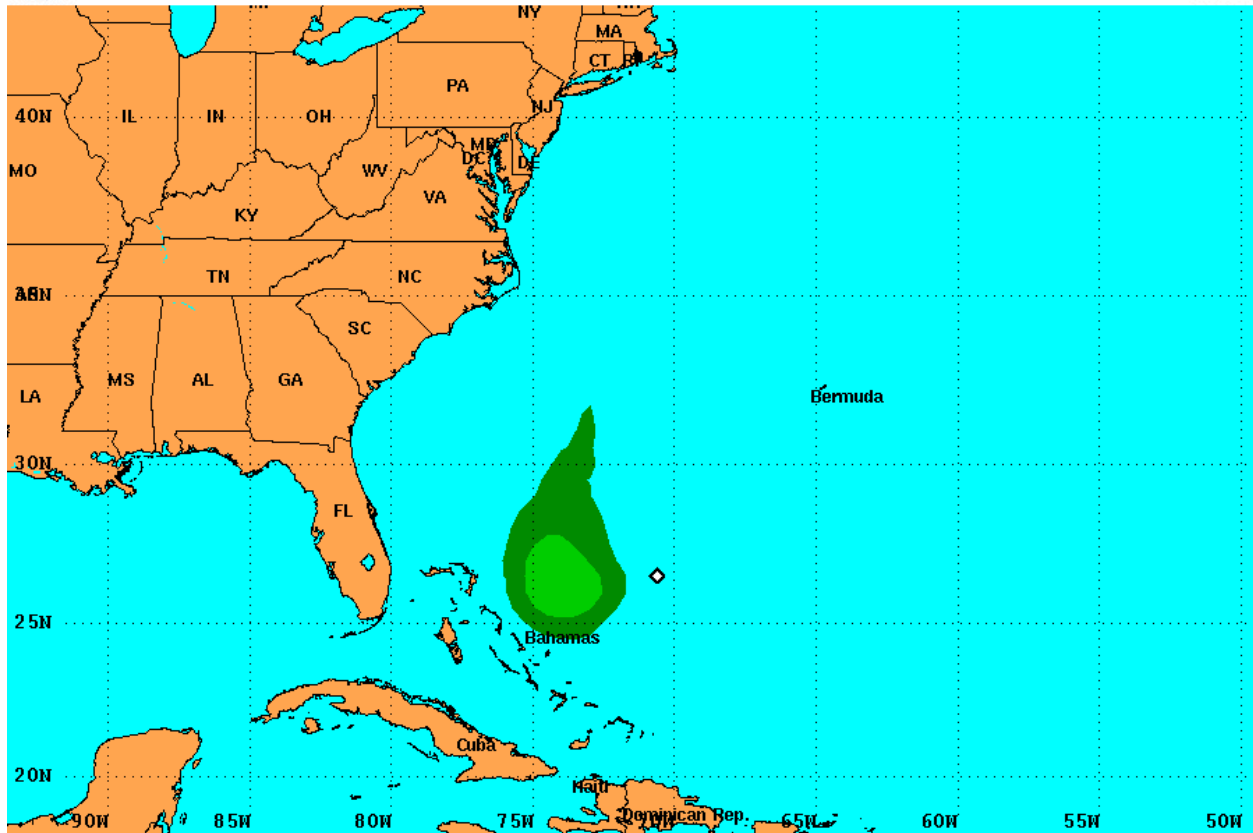
◇ indicates TROPICAL STORM JOAQUIN center location at 8 AM EDT Tue Sep 29 2015 (Forecast/Advisory #7)





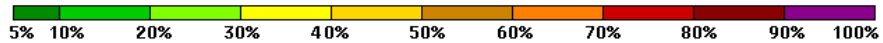
# Hurricane Force Wind Speed Probabilities

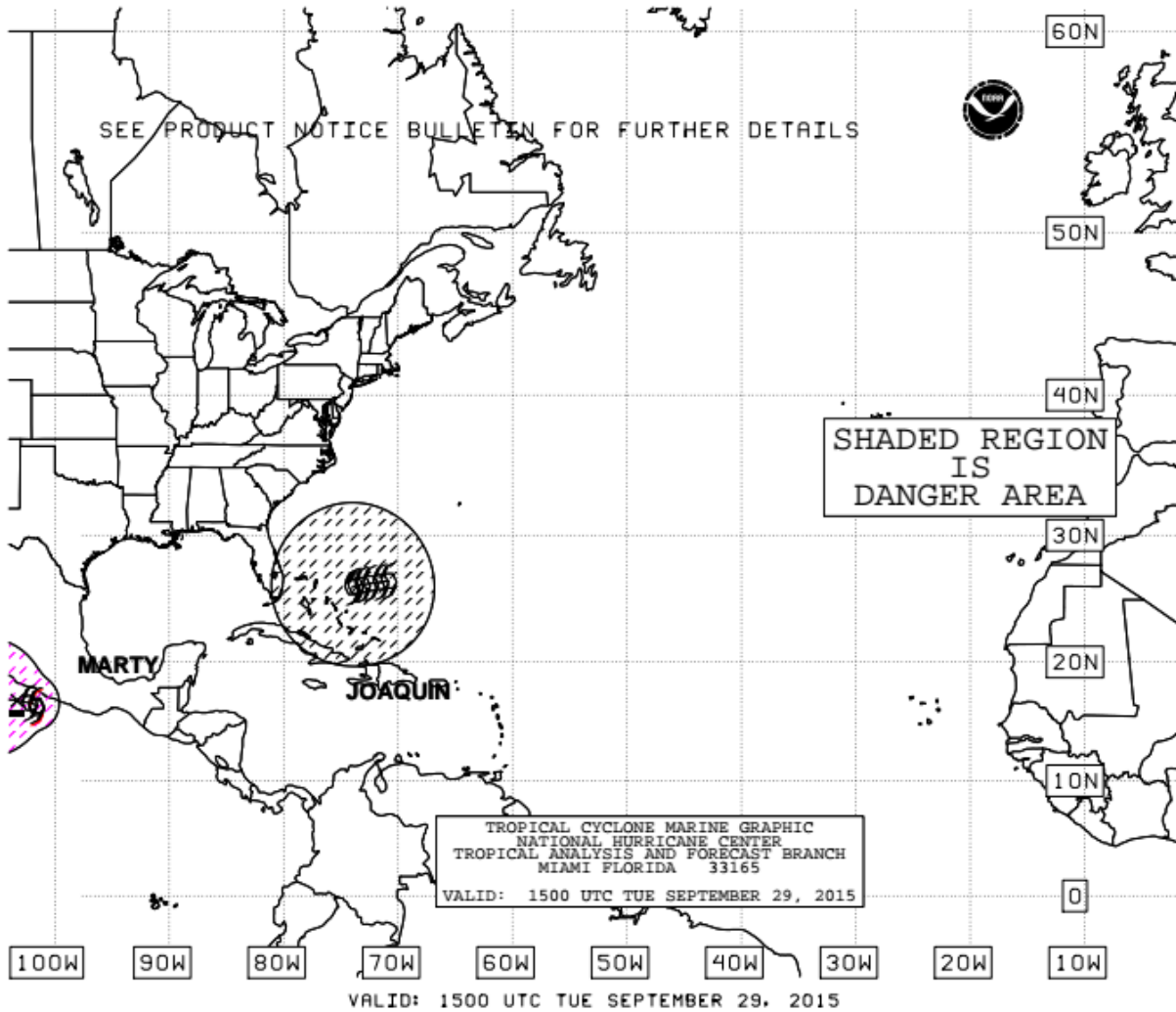
For the 120 hours (5 days) from 8 AM EDT Tue Sep 29 to 8 AM EDT Sun Oct 4

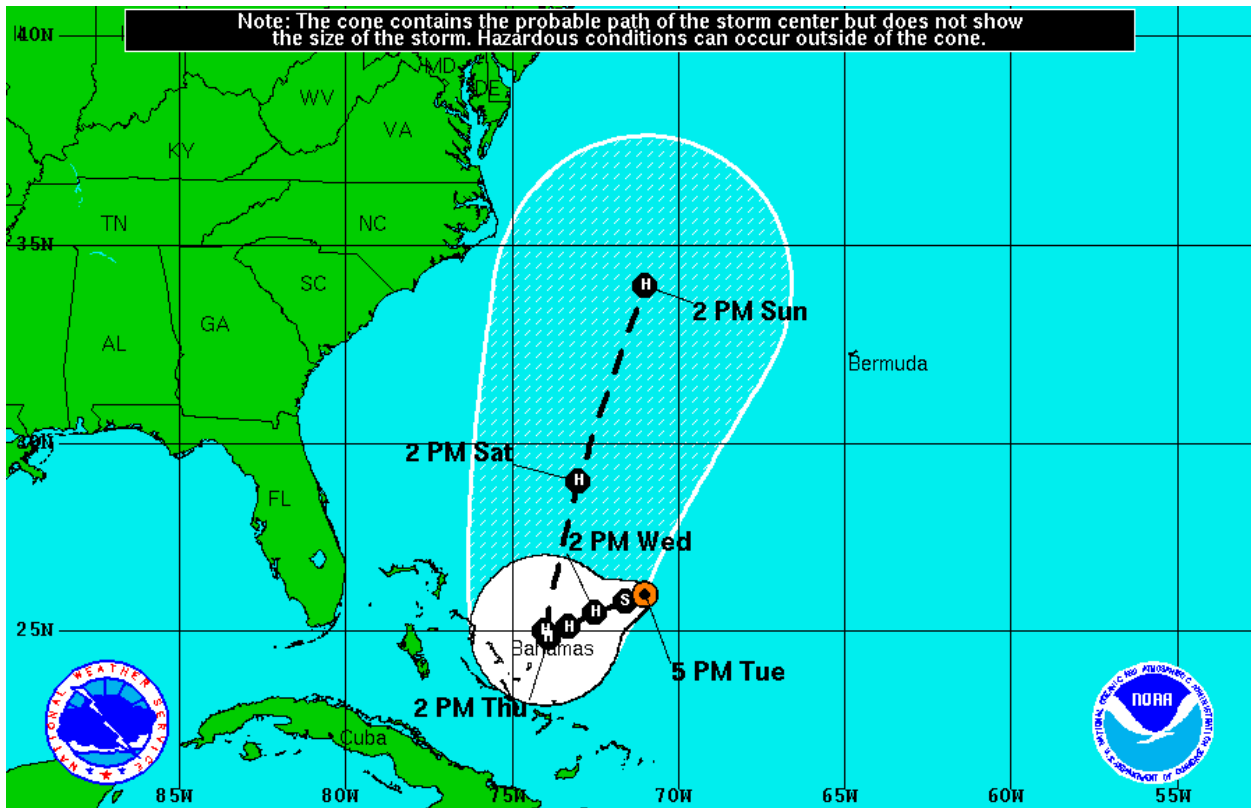


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

◇ indicates TROPICAL STORM JOAQUIN center location at 8 AM EDT Tue Sep 29 2015 (Forecast/Advisory #7)







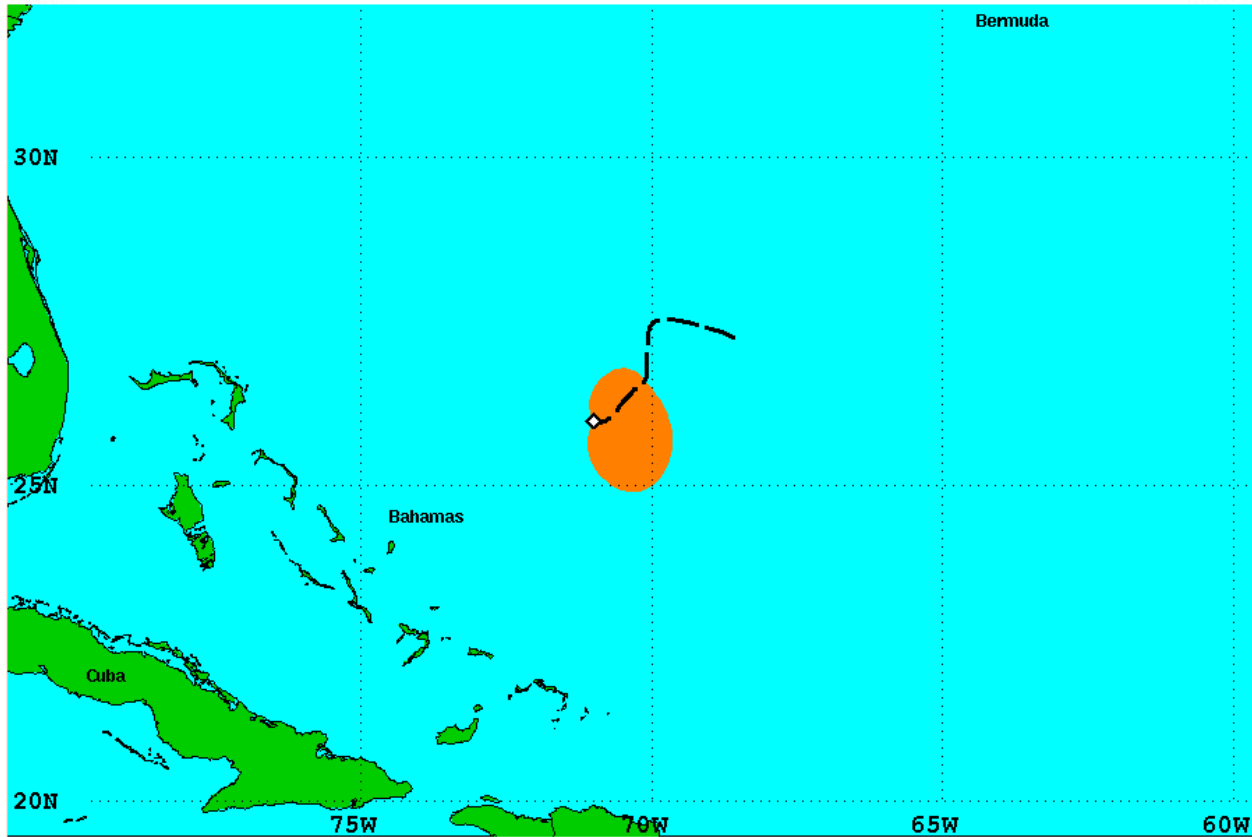
Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

<p><b>Tropical Storm Joaquin</b>          Tuesday September 29, 2015          5 PM EDT Advisory 8          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 26.0 N 71.0 W          Max Sustained Wind 65 mph          Movement WSW at 5 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>          ▽ Day 1-3 ◁ Day 4-5</p>	<p><b>Watches:</b>          ■ Hurricane ■ Trop.Storm</p>	<p><b>Warnings:</b>          ■ Hurricane ■ Trop.Storm</p>



# Surface Wind Field of Tropical Storm Joaquin

Sustained Winds as of 500 PM EDT Tue Sep 29, 2015 Advisory Number 8

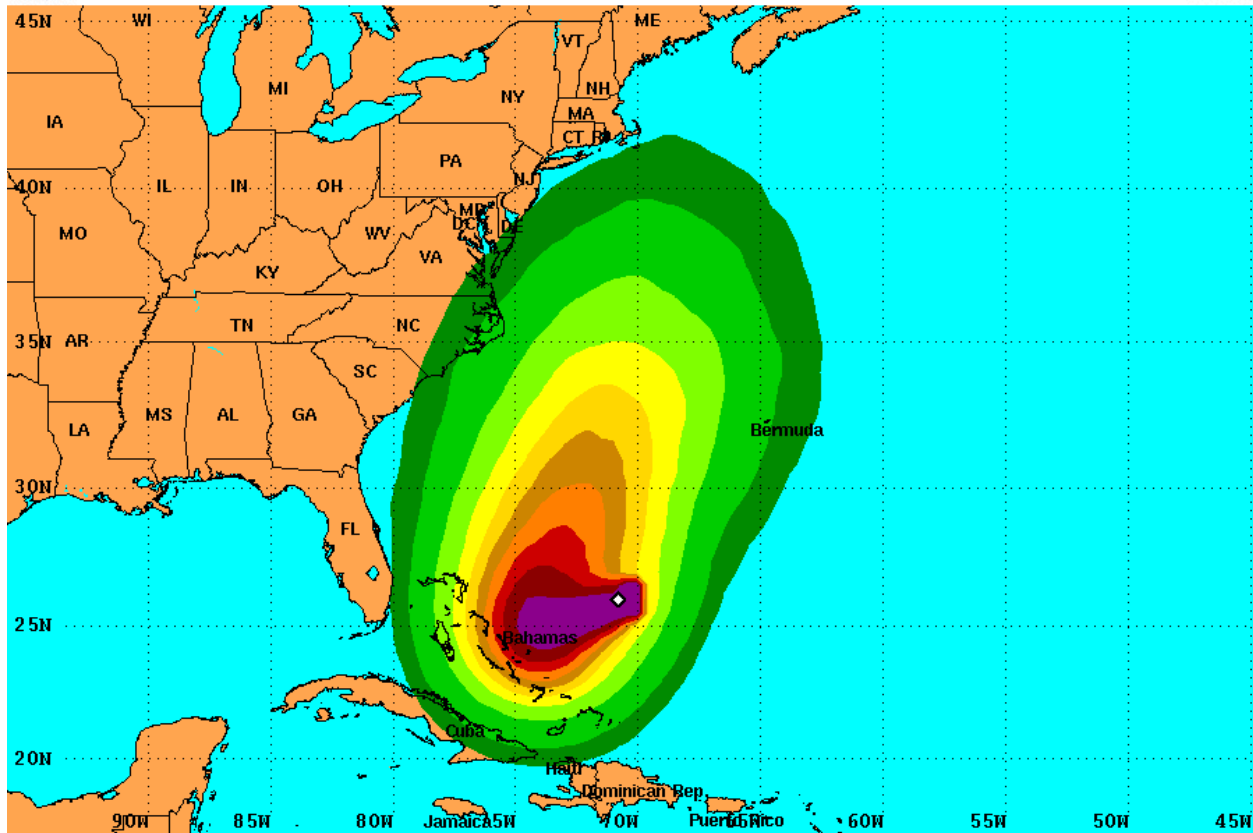


<b>Watches:</b>	<b>Warnings:</b>	<b>Sustained Winds:</b>	<b>Position:</b>
Hurricane Watch	Hurricane Warning	Hurricane Force	Center as of 500 PM EDT
Tropical Storm Watch	Tropical Storm Warning	Tropical Storm Force	Past Track



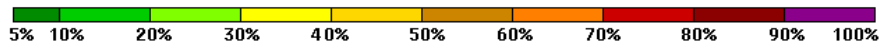
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Tue Sep 29 to 2 PM EDT Sun Oct 4



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

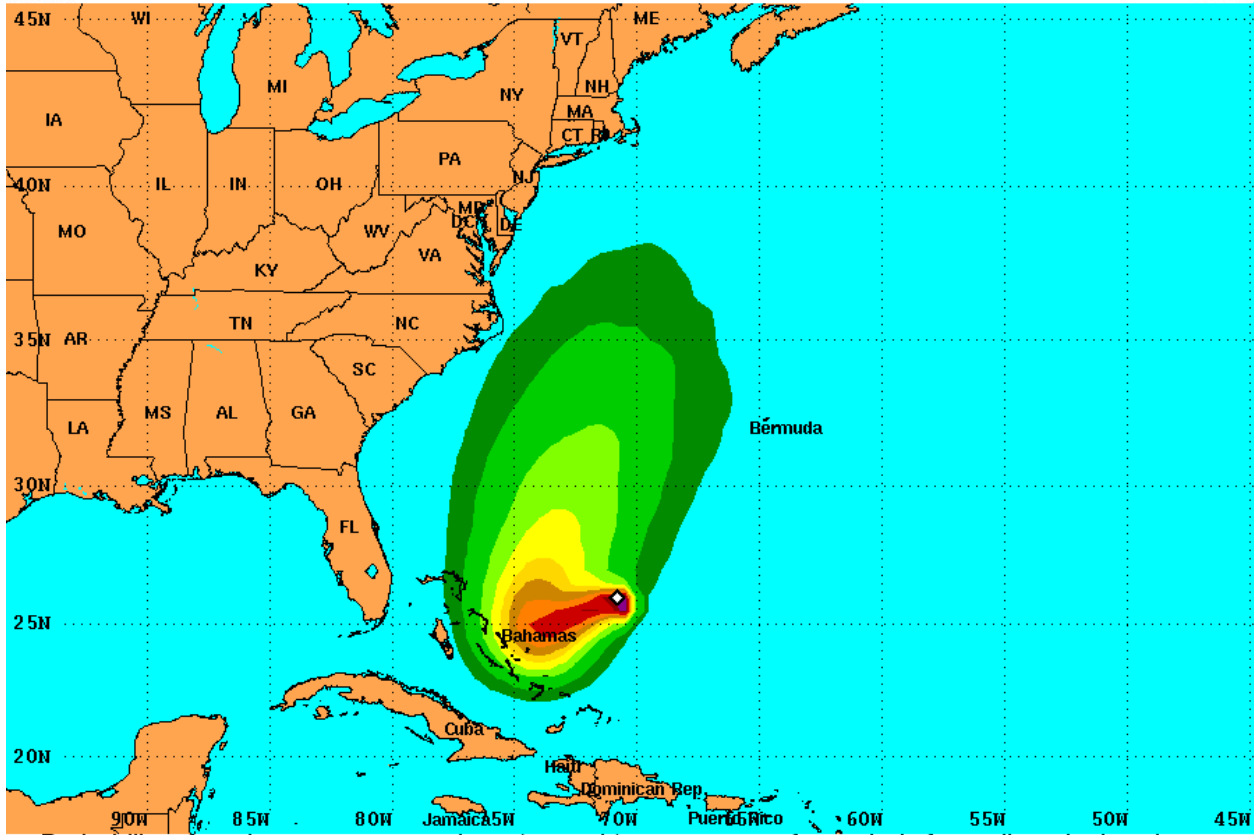
◇ indicates TROPICAL STORM JOAQUIN center location at 2 PM EDT Tue Sep 29 2015 (Forecast/Advisory #8)





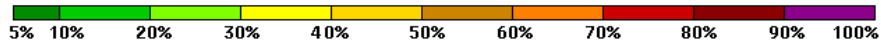
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Tue Sep 29 to 2 PM EDT Sun Oct 4



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

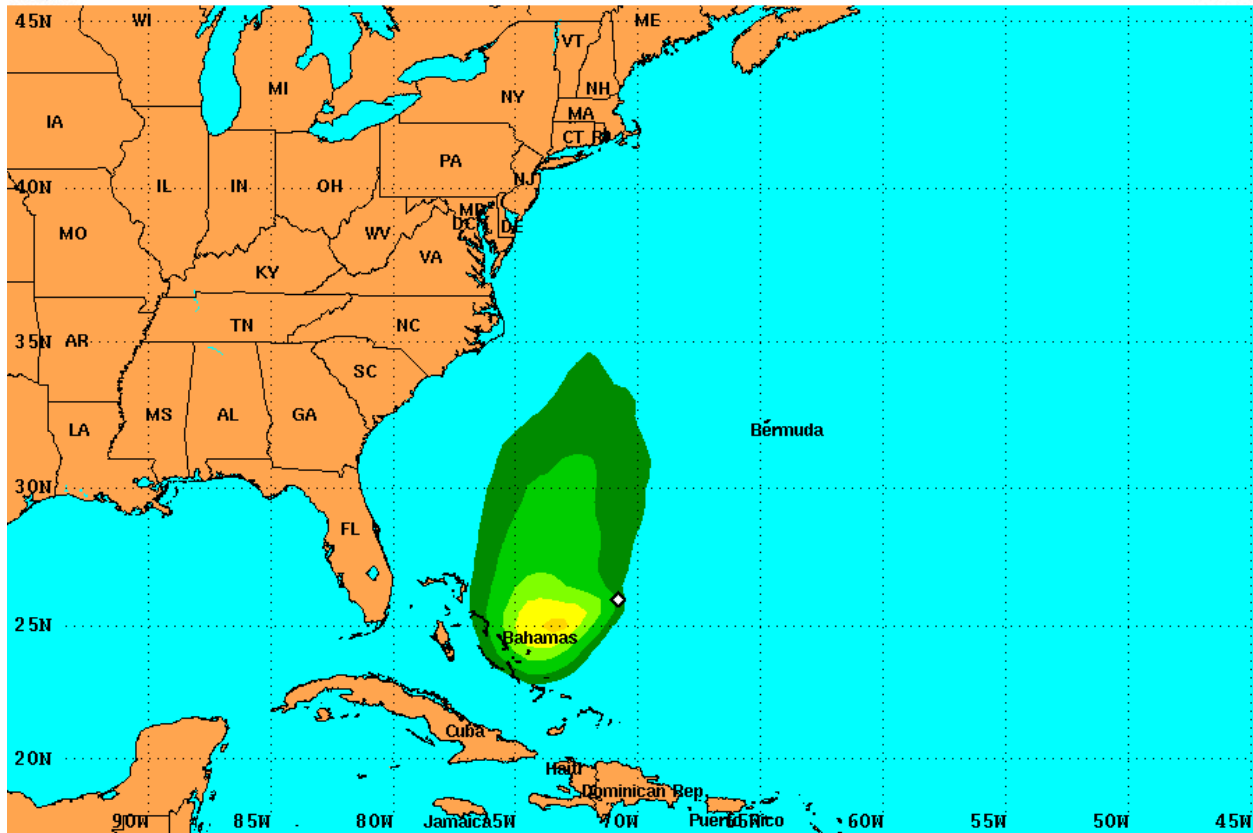
◇ indicates TROPICAL STORM JOAQUIN center location at 2 PM EDT Tue Sep 29 2015 (Forecast/Advisory #8)





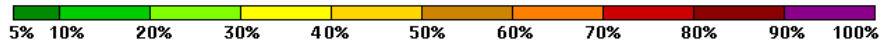
# Hurricane Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Tue Sep 29 to 2 PM EDT Sun Oct 4

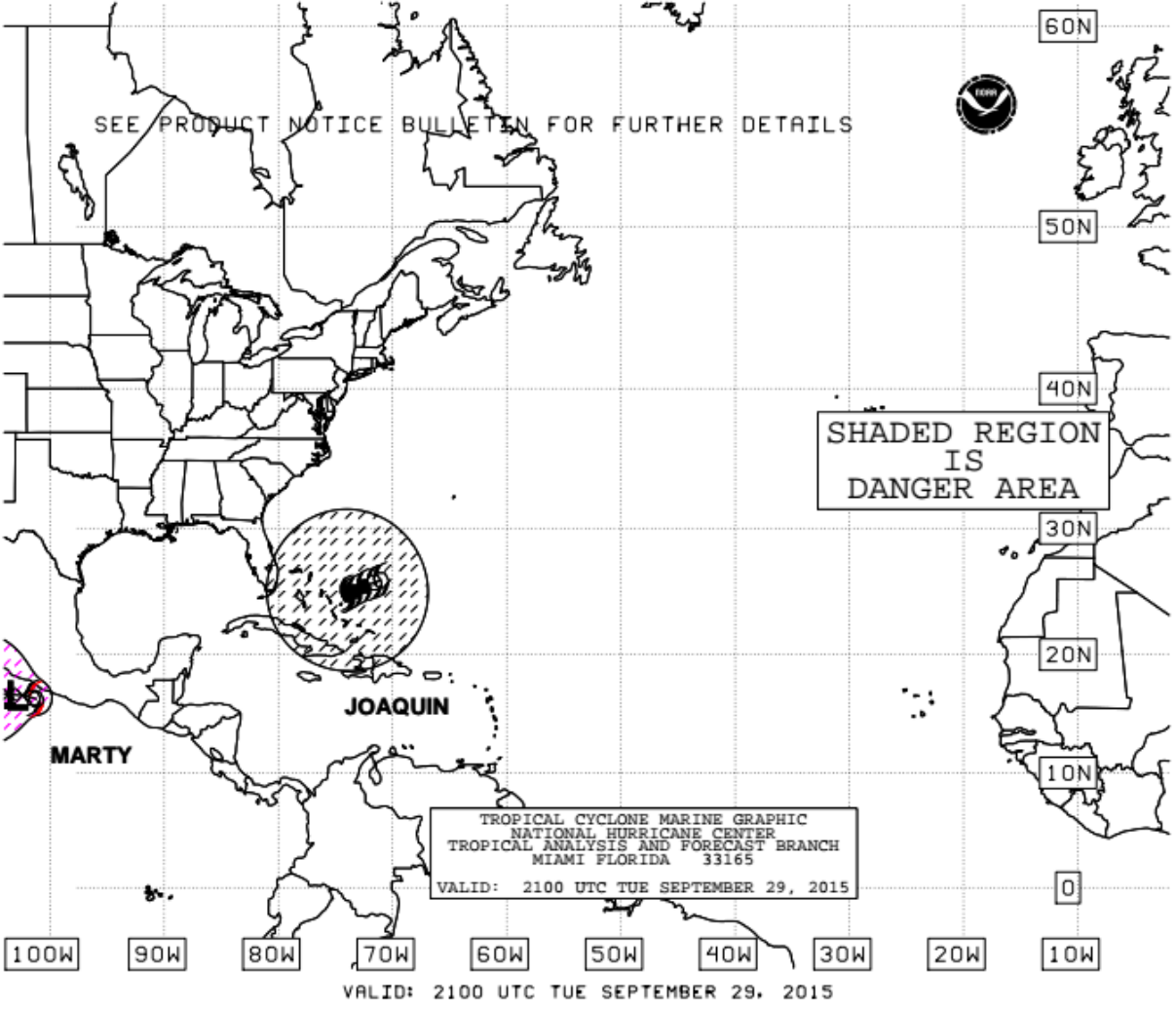


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

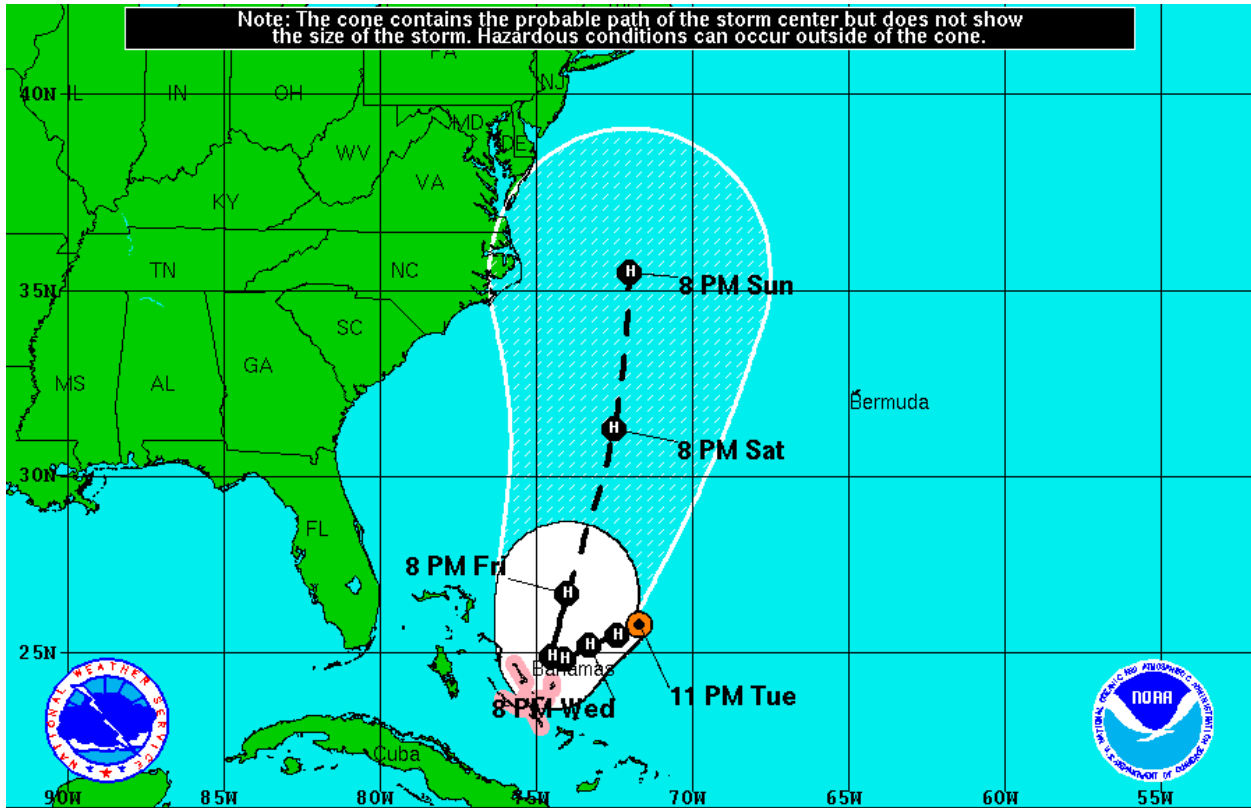
◇ indicates TROPICAL STORM JOAQUIN center location at 2 PM EDT Tue Sep 29 2015 (Forecast/Advisory #8)







Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Tropical Storm Joaquin**  
 Tuesday September 29, 2015  
 11 PM EDT Advisory 9  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 25.8 N 71.7 W  
 Max Sustained Wind 70 mph  
 Movement WSW at 5 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▽ Day 1-3 ◁ Day 4-5

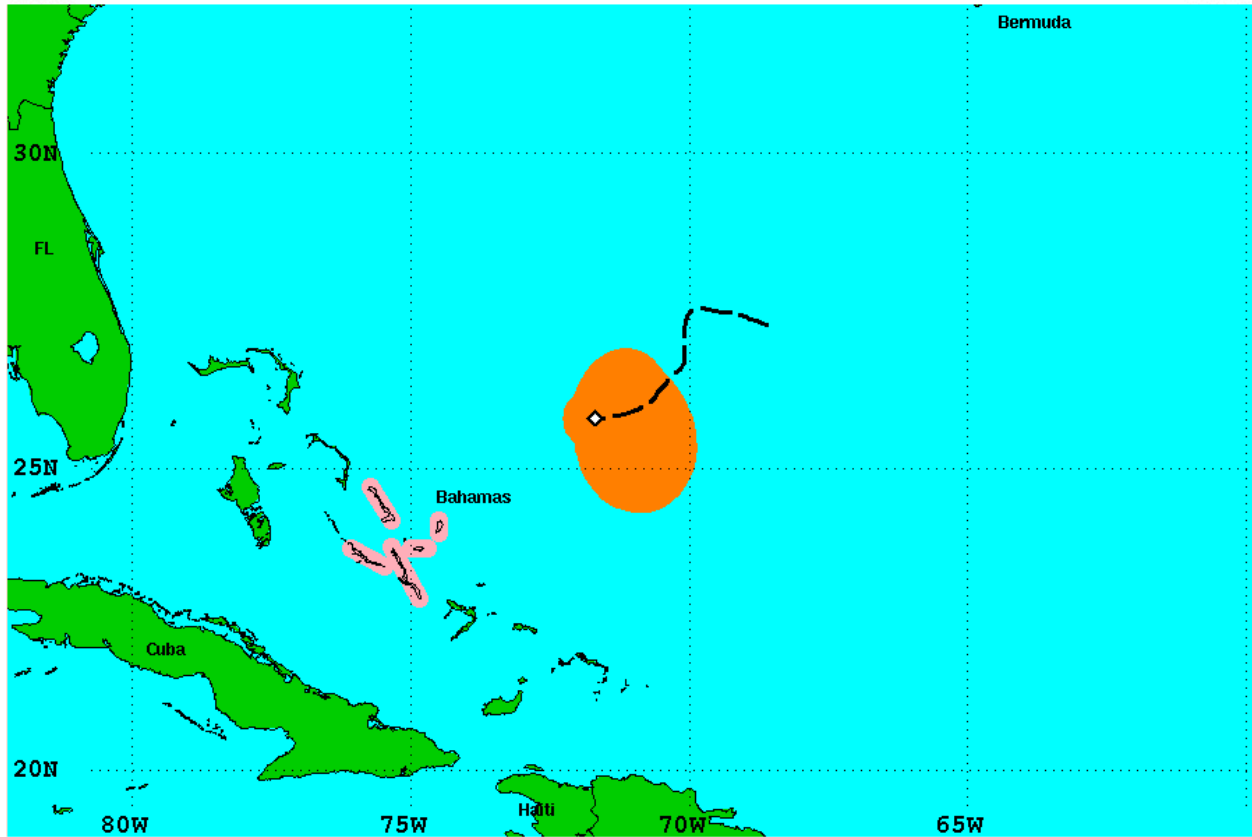
**Watches:**  
 ■ Hurricane ■ Trop.Storm

**Warnings:**  
 ■ Hurricane ■ Trop.Storm



# Surface Wind Field of Tropical Storm Joaquin

Sustained Winds as of 1100 PM EDT Tue Sep 29, 2015 Advisory Number 9



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

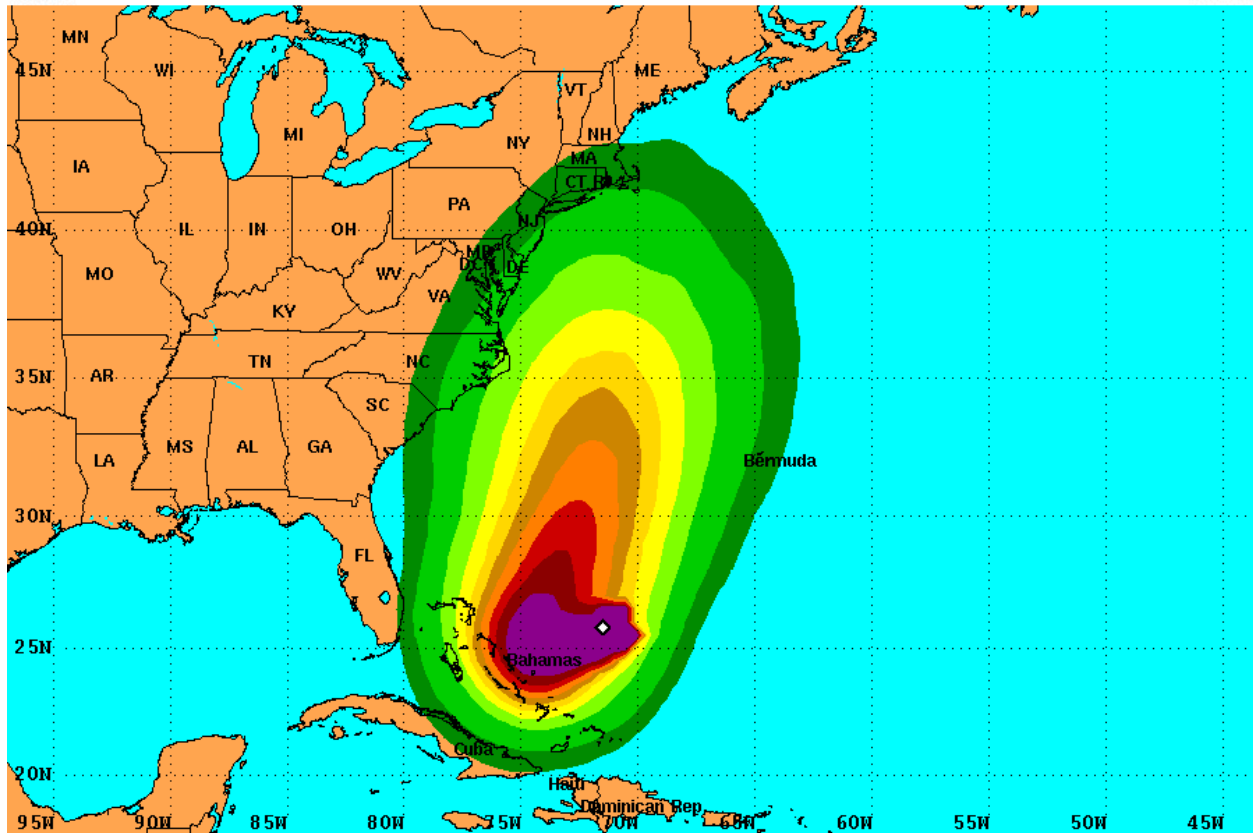
**Position:**

- Center as of 1100 PM EDT
- Past Track



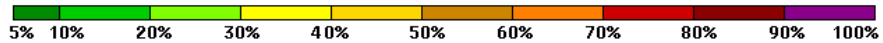
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Tue Sep 29 to 8 PM EDT Sun Oct 4



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

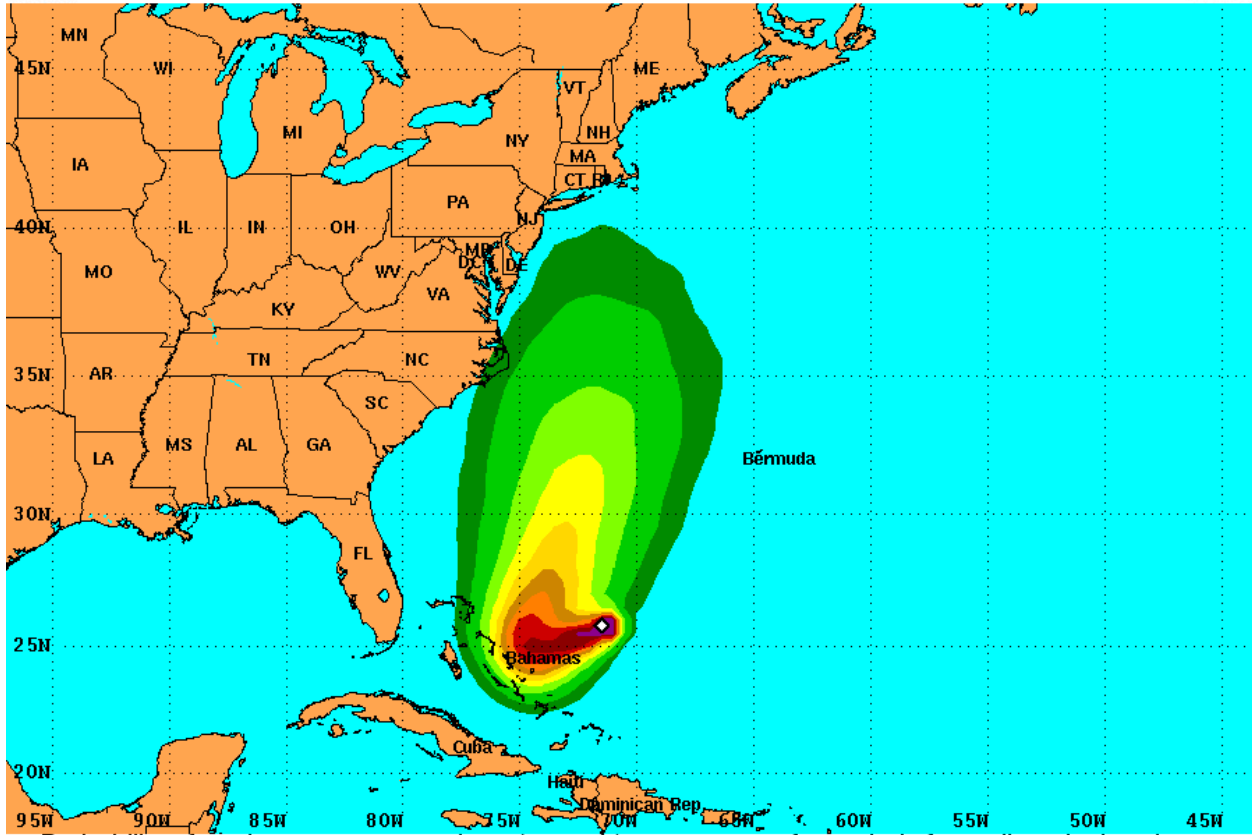
◇ indicates TROPICAL STORM JOAQUIN center location at 8 PM EDT Tue Sep 29 2015 (Forecast/Advisory #9)





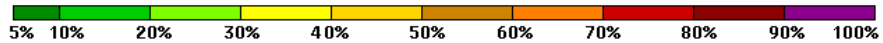
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Tue Sep 29 to 8 PM EDT Sun Oct 4



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

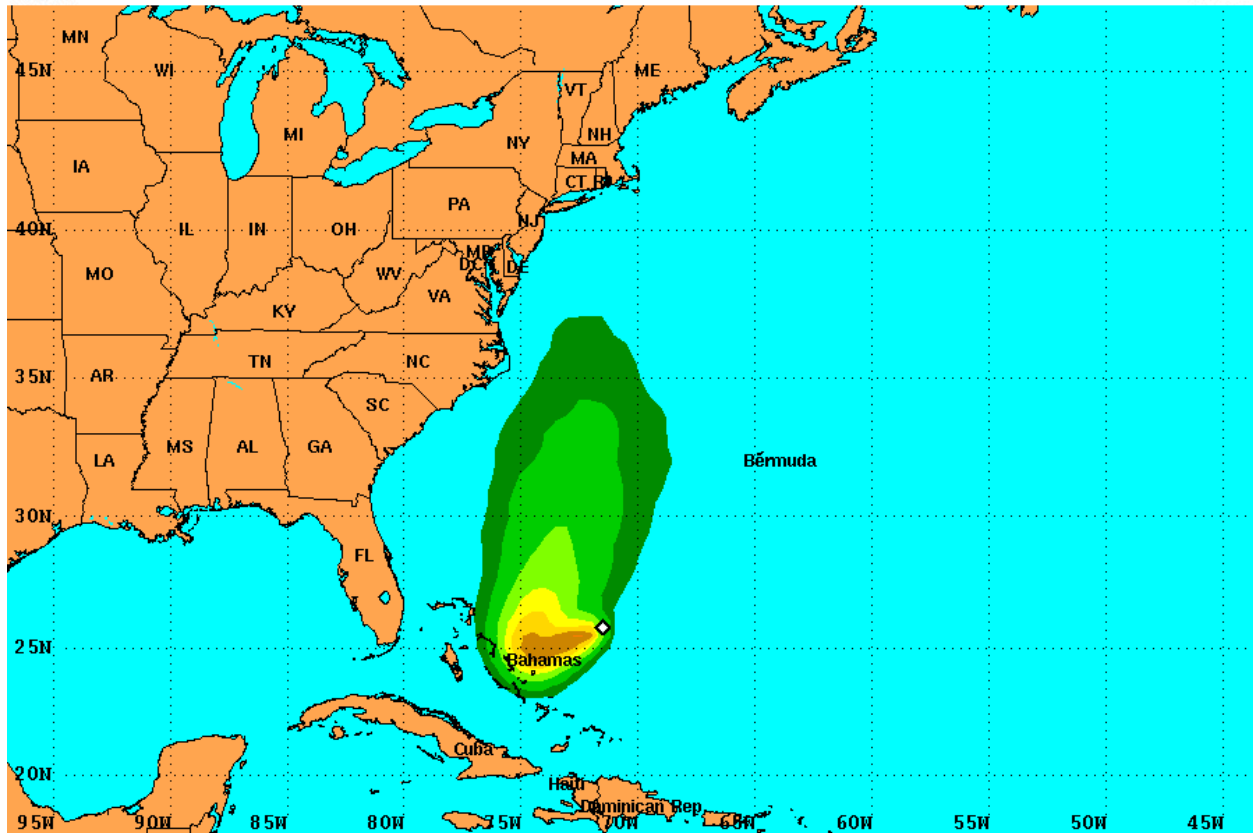
◇ indicates TROPICAL STORM JOAQUIN center location at 8 PM EDT Tue Sep 29 2015 (Forecast/Advisory #9)





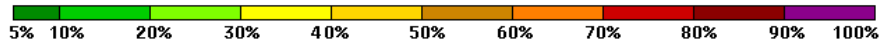
# Hurricane Force Wind Speed Probabilities

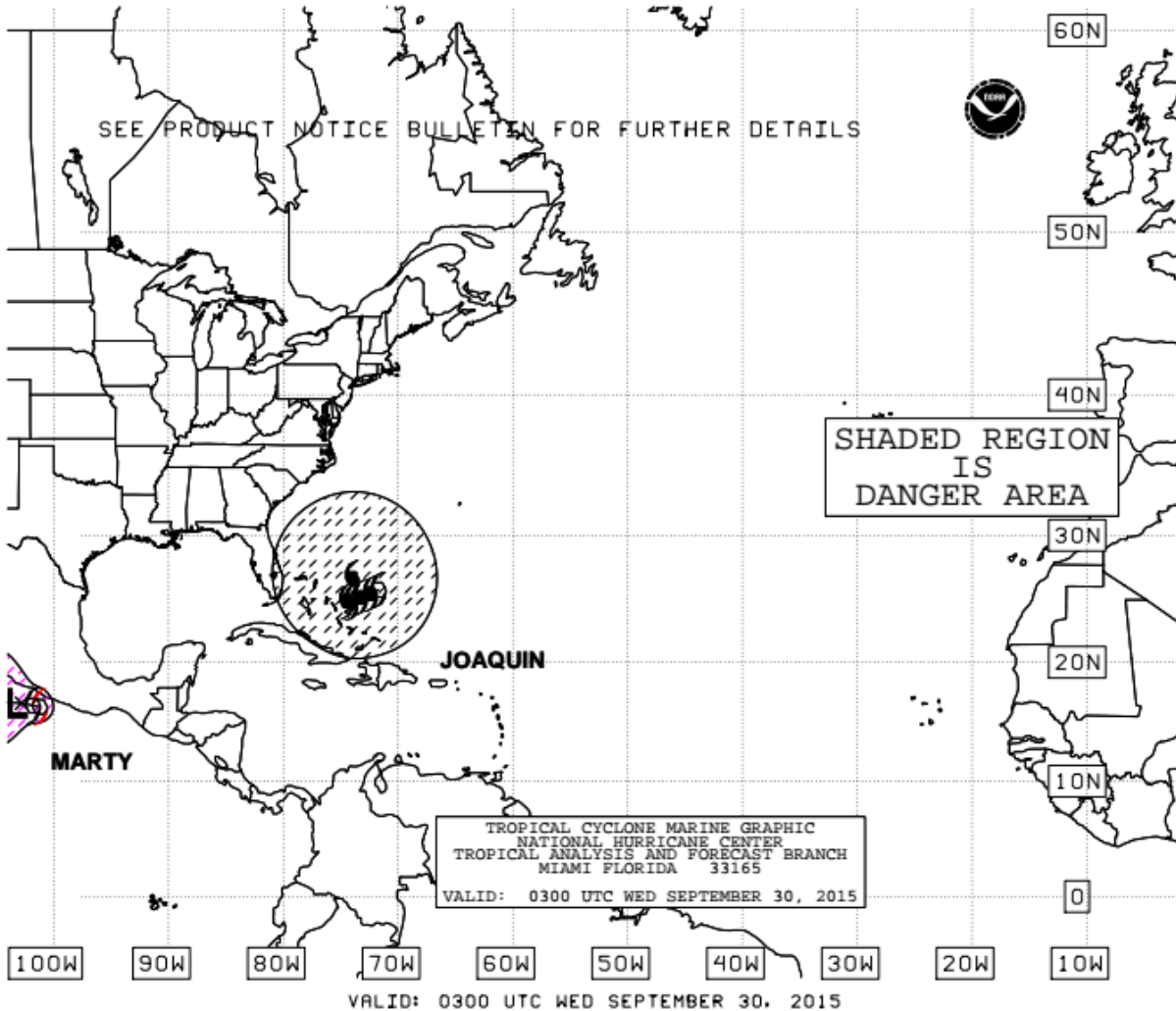
For the 120 hours (5 days) from 8 PM EDT Tue Sep 29 to 8 PM EDT Sun Oct 4



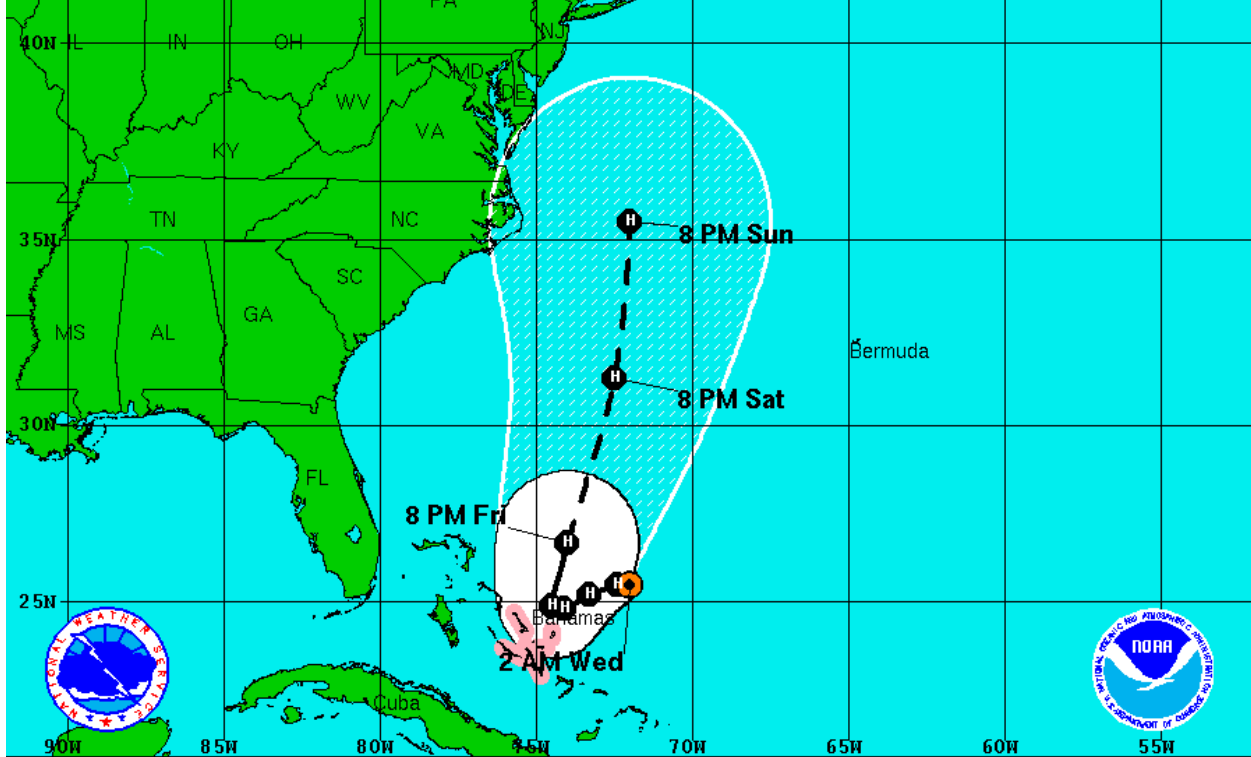
Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

◇ indicates TROPICAL STORM JOAQUIN center location at 8 PM EDT Tue Sep 29 2015 (Forecast/Advisory #9)





Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Tropical Storm Joaquin**  
 Wednesday September 30, 2015  
 2 AM EDT Intermediate Advisory 9A  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 25.5 N 72.0 W  
 Max Sustained Wind 70 mph  
 Movement WSW at 5 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

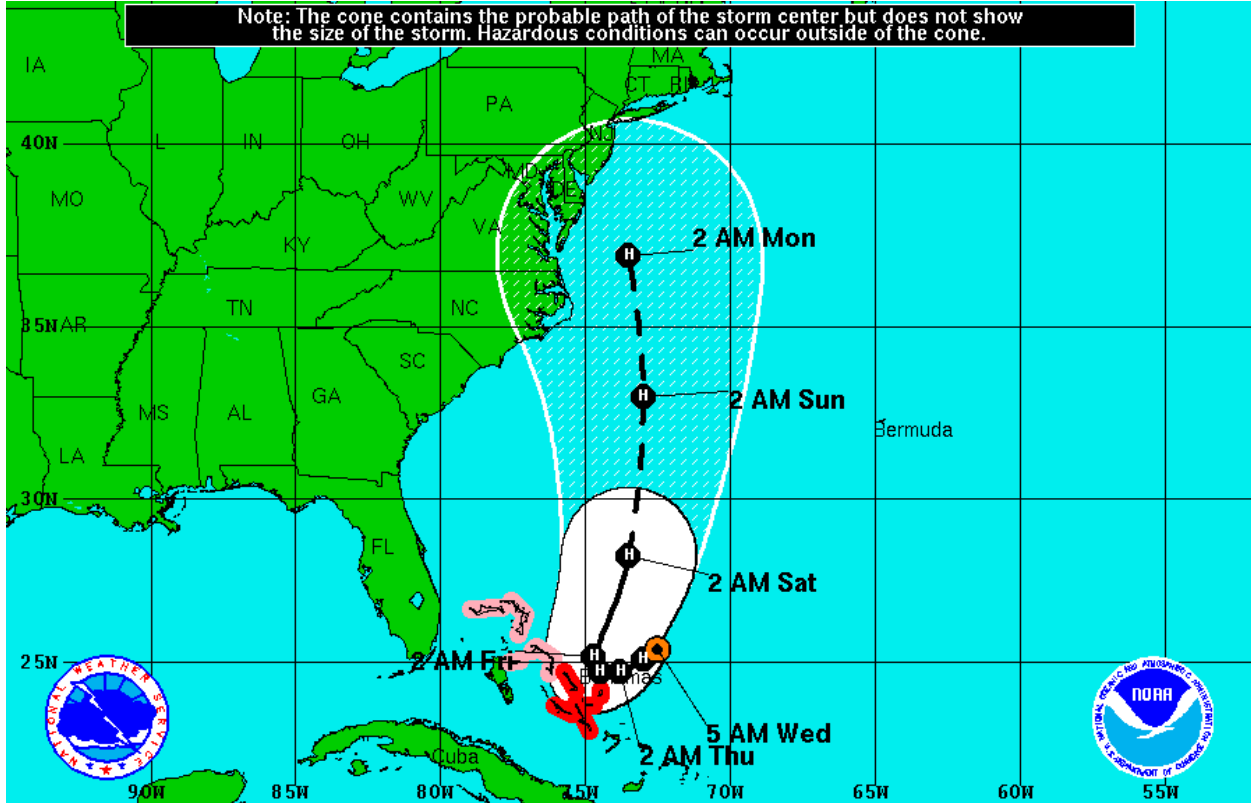
**Potential Track Area:**  
 Day 1-3 Day 4-5

**Watches:**  
 Hurricane Trop.Storm

**Warnings:**  
 Hurricane Trop.Storm



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Tropical Storm Joaquin**  
 Wednesday September 30, 2015  
 5 AM EDT Advisory 10  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 25.4 N 72.5 W  
 Max Sustained Wind 70 mph  
 Movement WSW at 6 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 Day 1-3 Day 4-5

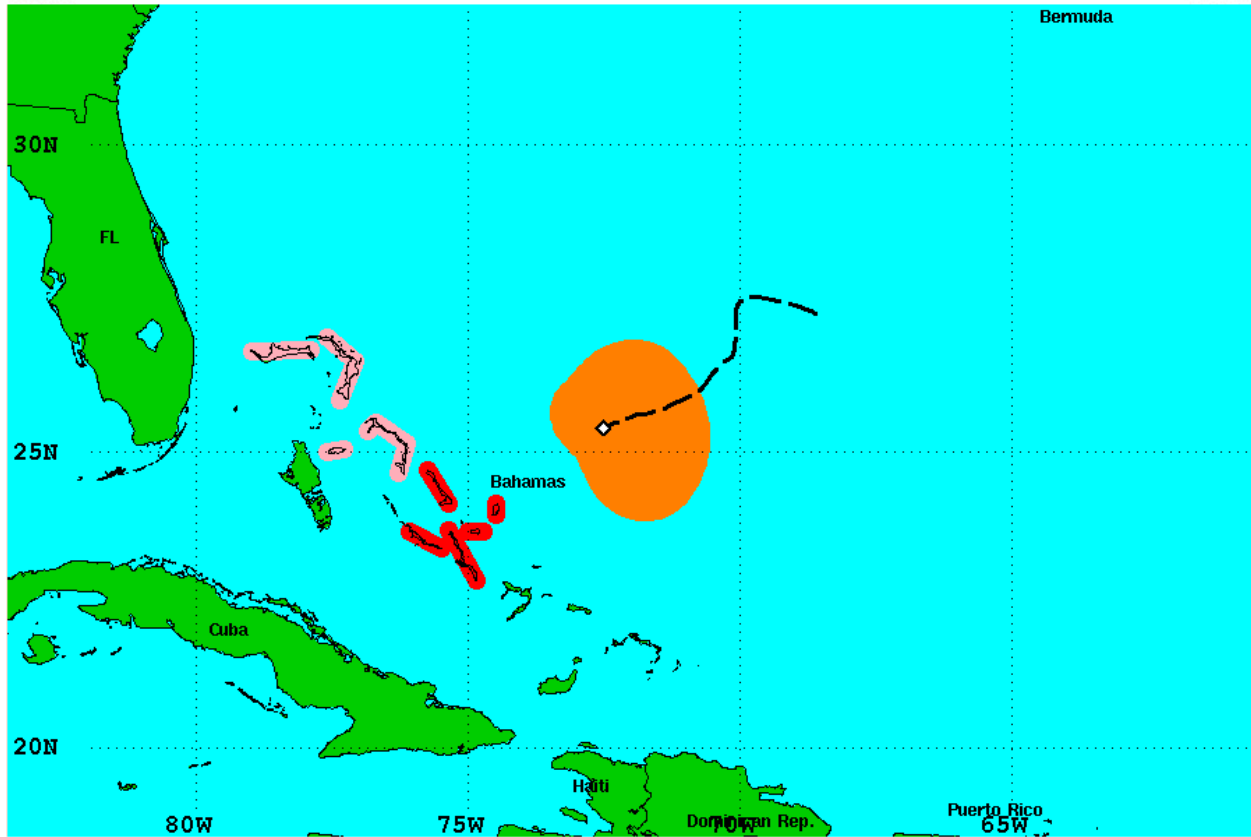
**Watches:**  
 Hurricane Trop.Storm

**Warnings:**  
 Hurricane Trop.Storm



# Surface Wind Field of Tropical Storm Joaquin

Sustained Winds as of 500 AM EDT Wed Sep 30, 2015 Advisory Number 10



### Watches:

- Hurricane Watch
- Tropical Storm Watch

### Warnings:

- Hurricane Warning
- Tropical Storm Warning

### Sustained Winds:

- Hurricane Force
- Tropical Storm Force

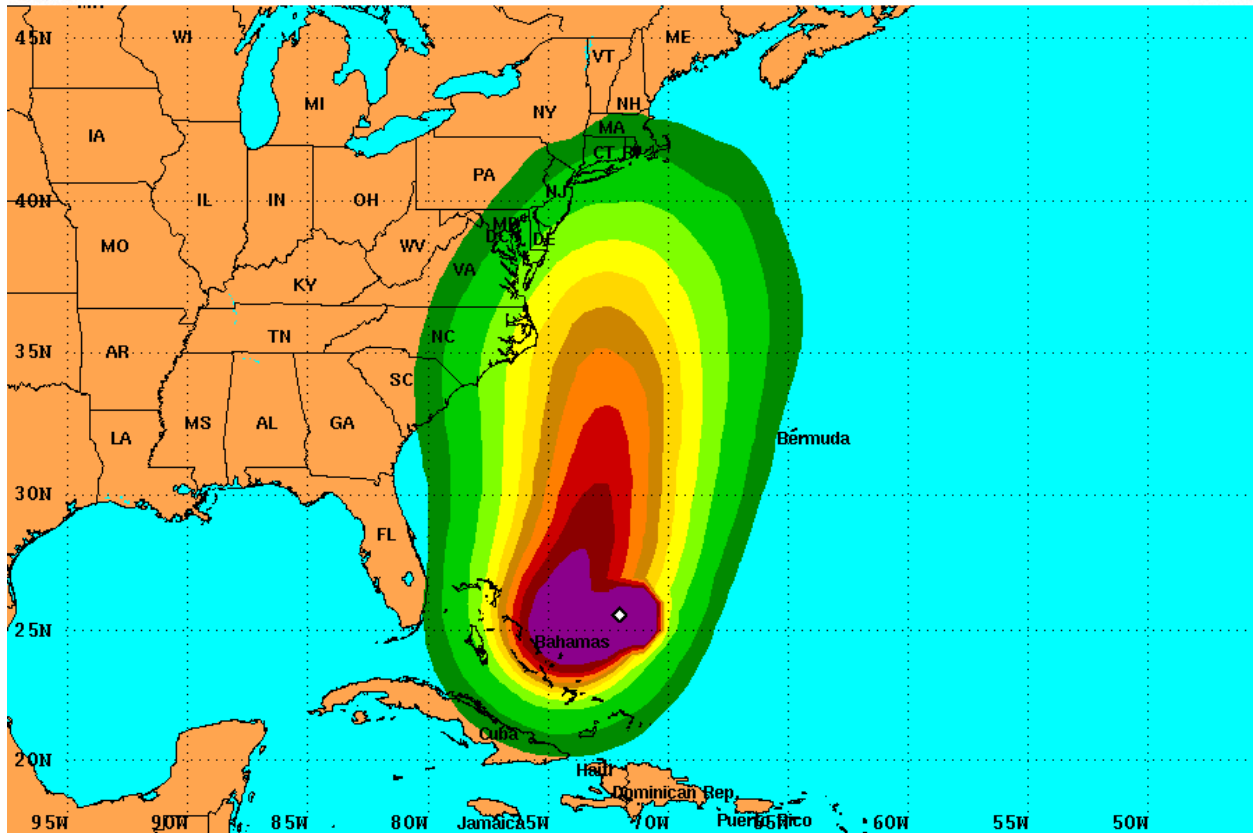
### Position:

- Center as of 500 AM EDT
- Past Track



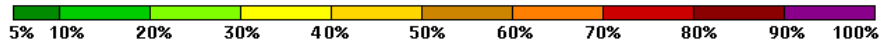
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Wed Sep 30 to 2 AM EDT Mon Oct 5



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

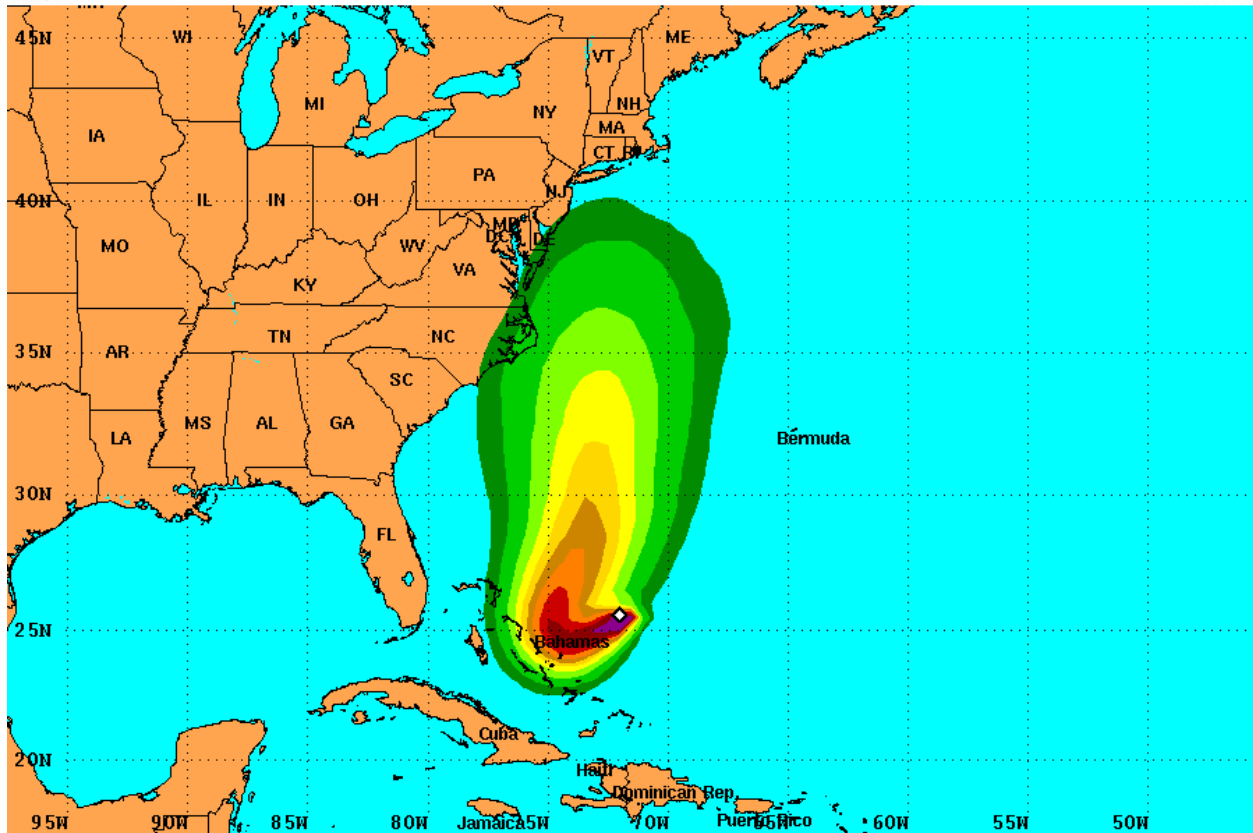
◇ indicates TROPICAL STORM JOAQUIN center location at 2 AM EDT Wed Sep 30 2015 (Forecast/Advisory #10)





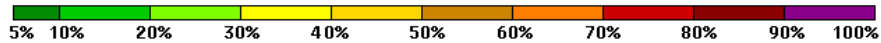
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Wed Sep 30 to 2 AM EDT Mon Oct 5



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

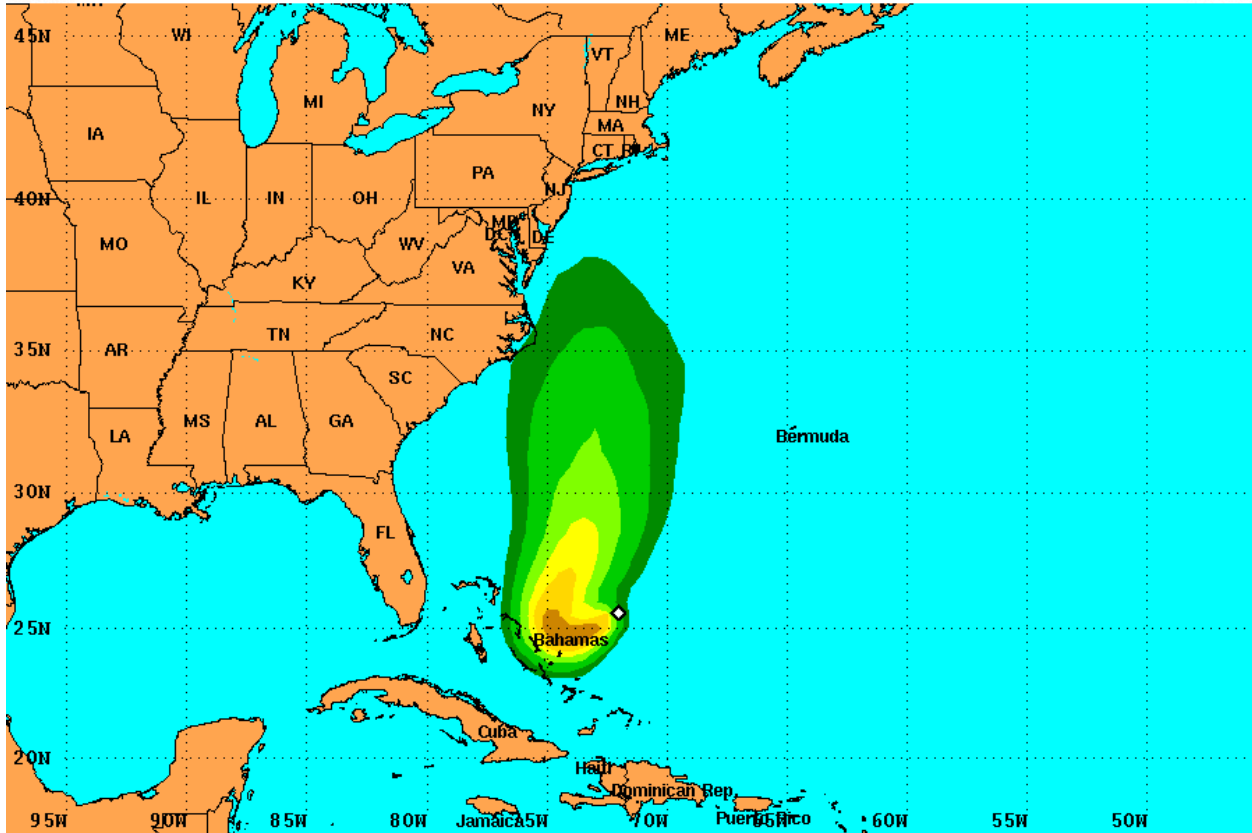
◇ indicates TROPICAL STORM JOAQUIN center location at 2 AM EDT Wed Sep 30 2015 (Forecast/Advisory #10)





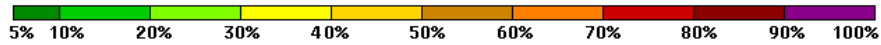
# Hurricane Force Wind Speed Probabilities

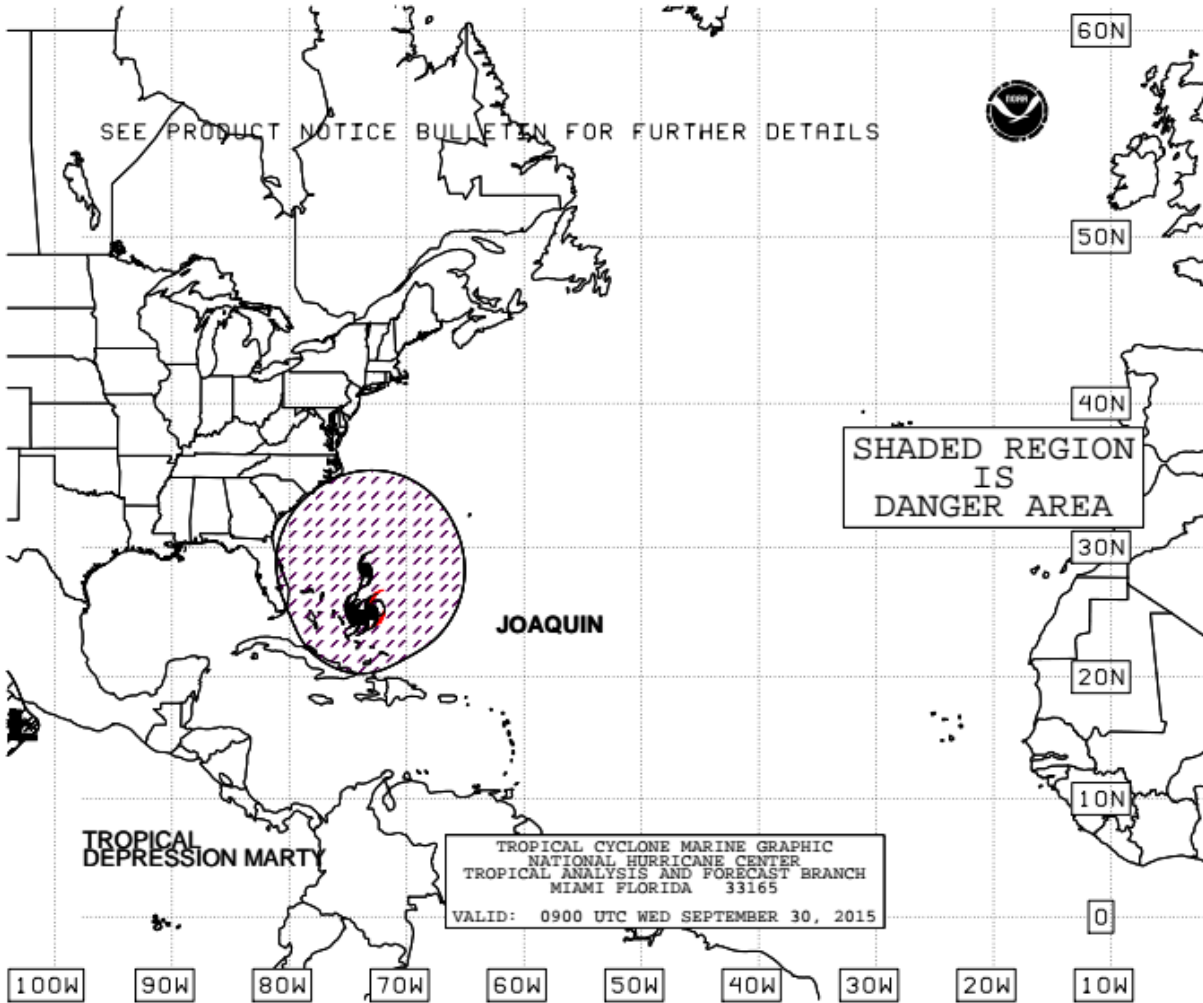
For the 120 hours (5 days) from 2 AM EDT Wed Sep 30 to 2 AM EDT Mon Oct 5



Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

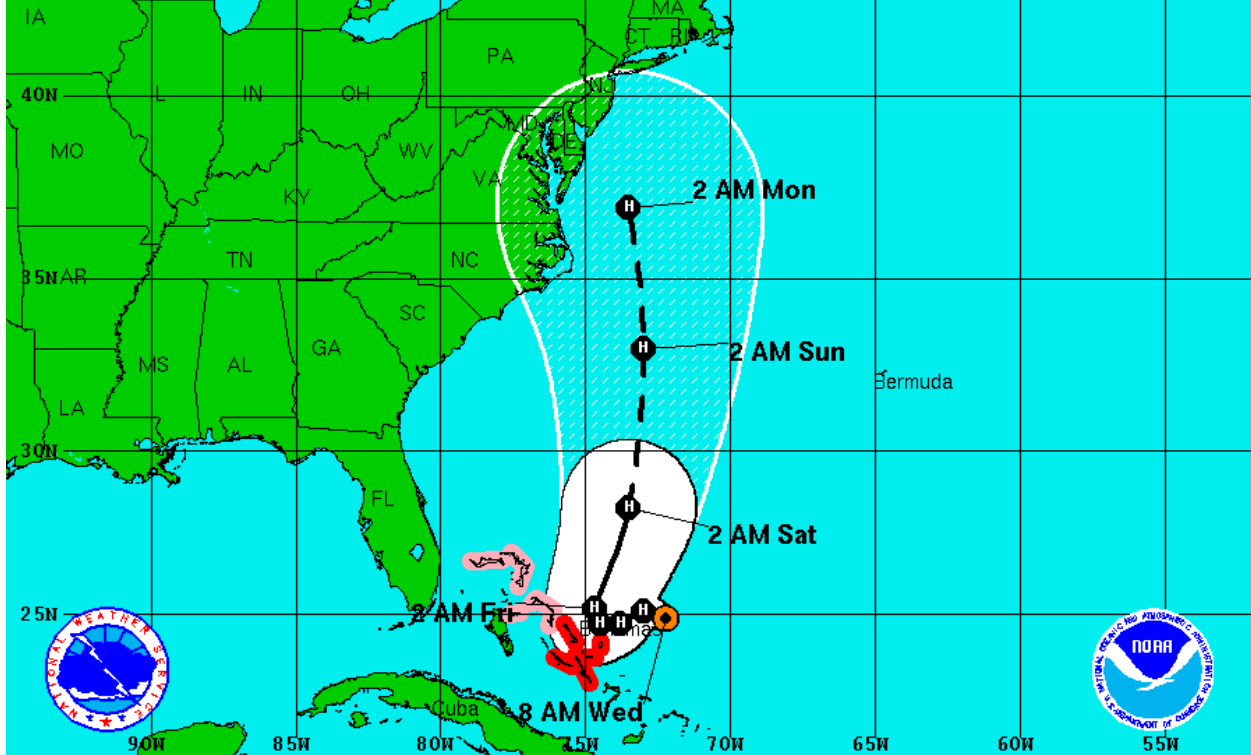
◇ indicates TROPICAL STORM JOAQUIN center location at 2 AM EDT Wed Sep 30 2015 (Forecast/Advisory #10)





VALID: 0900 UTC WED SEPTEMBER 30, 2015

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



**Hurricane Joaquin**

Wednesday September 30, 2015  
 8 AM EDT Intermediate Advisory 10A  
 NWS National Hurricane Center

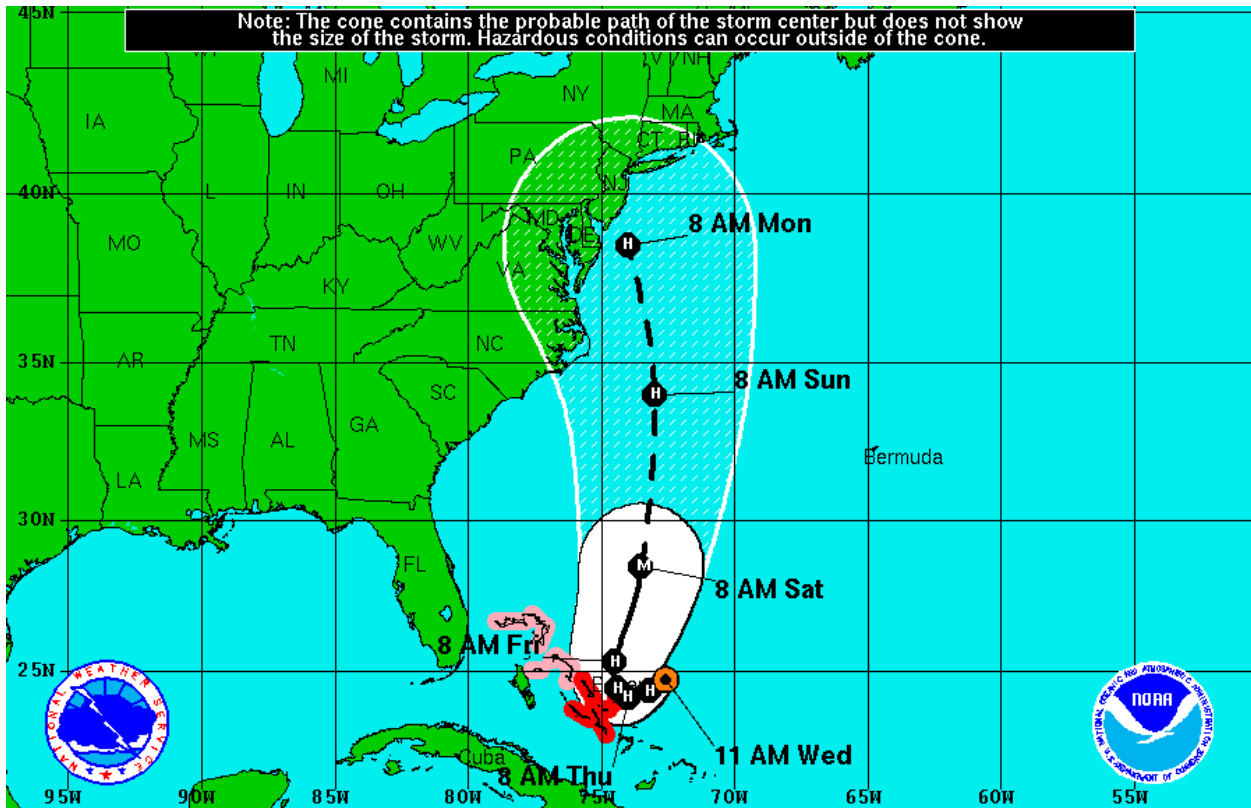
**Current Information:** ●  
 Center Location 24.9 N 72.2 W  
 Max Sustained Wind 75 mph  
 Movement SW at 6 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 Day 1-3 Day 4-5

**Watches:**  
 Hurricane Trop.Storm

**Warnings:**  
 Hurricane Trop.Storm



**Hurricane Joaquin**  
 Wednesday September 30, 2015  
 11 AM EDT Advisory 11  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 24.7 N 72.6 W  
 Max Sustained Wind 80 mph  
 Movement SW at 6 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▨ Day 1-3 ▨ Day 4-5

**Watches:**  
 ■ Hurricane ■ Trop.Storm

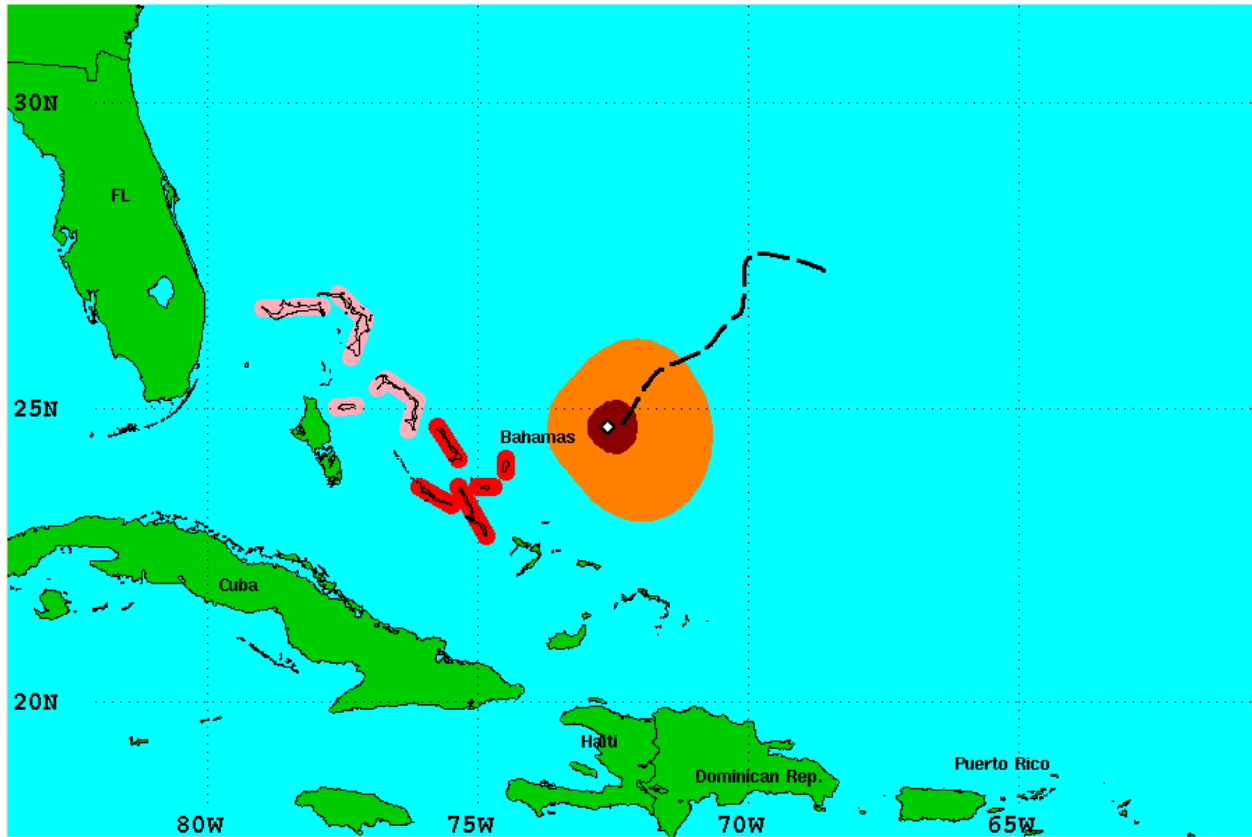
**Warnings:**  
 ■ Hurricane ■ Trop.Storm





# Surface Wind Field of Hurricane Joaquin

Sustained Winds as of 1100 AM EDT Wed Sep 30, 2015 Advisory Number 11



### Watches:

- Hurricane Watch
- Tropical Storm Watch

### Warnings:

- Hurricane Warning
- Tropical Storm Warning

### Sustained Winds:

- Hurricane Force
- Tropical Storm Force

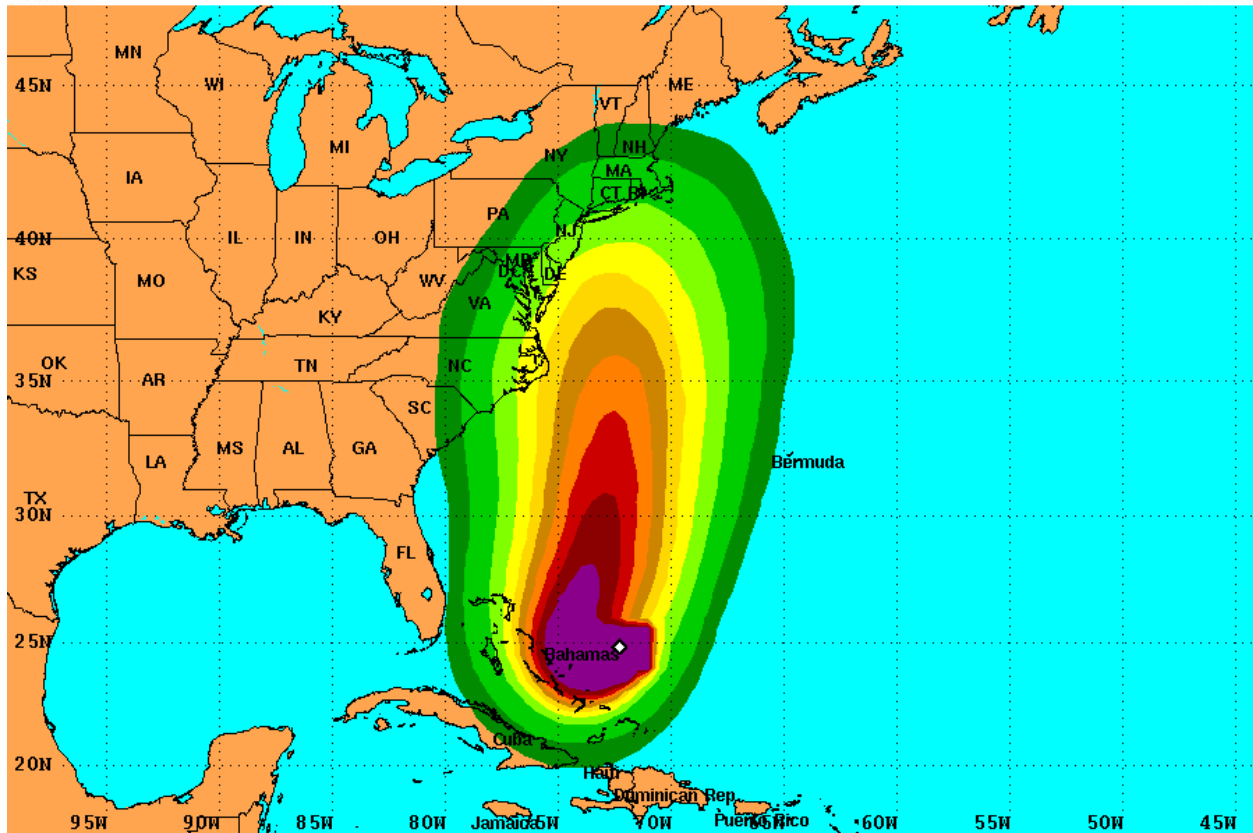
### Position:

- Center as of 1100 AM EDT
- Past Track



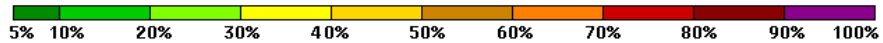
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Wed Sep 30 to 8 AM EDT Mon Oct 5



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

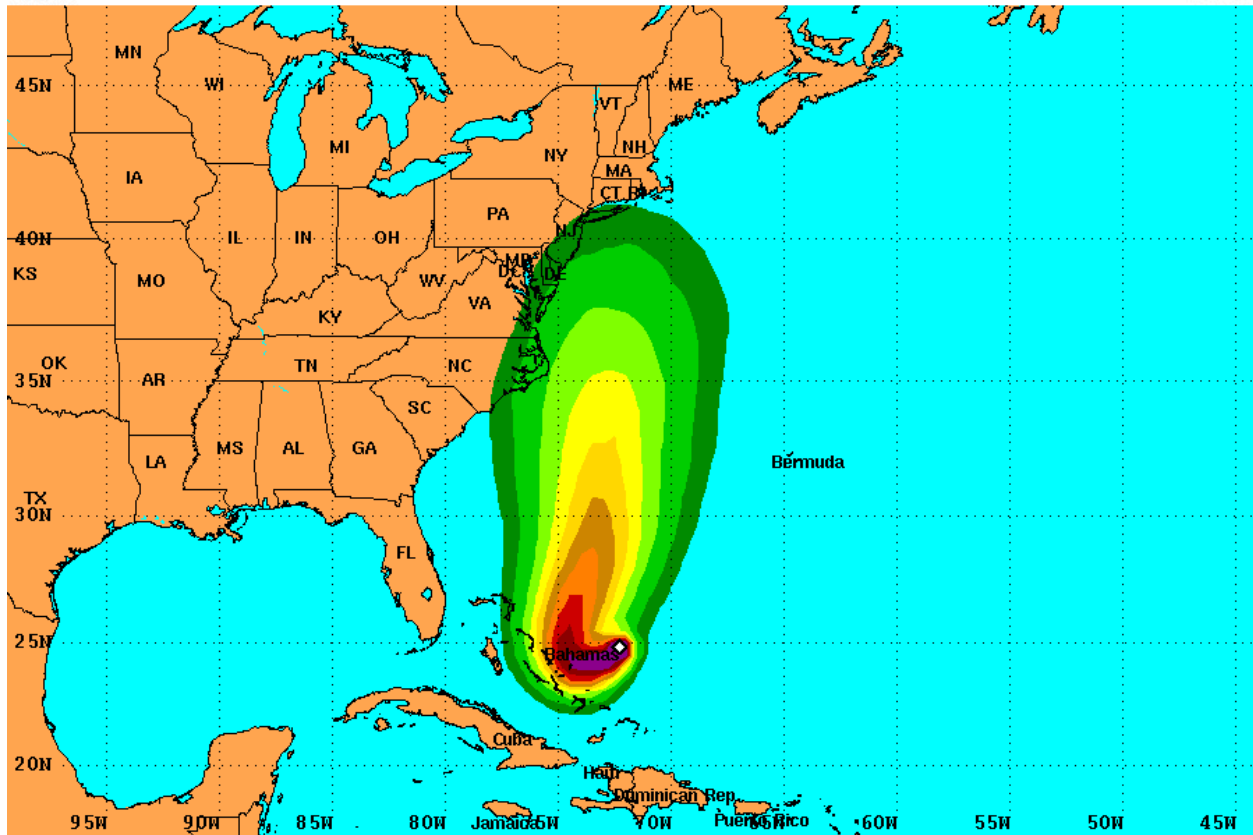
◇ indicates HURRICANE JOAQUIN center location at 8 AM EDT Wed Sep 30 2015 (Forecast/Advisory #11)





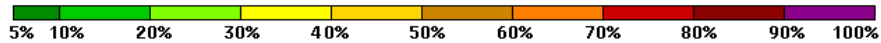
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Wed Sep 30 to 8 AM EDT Mon Oct 5



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

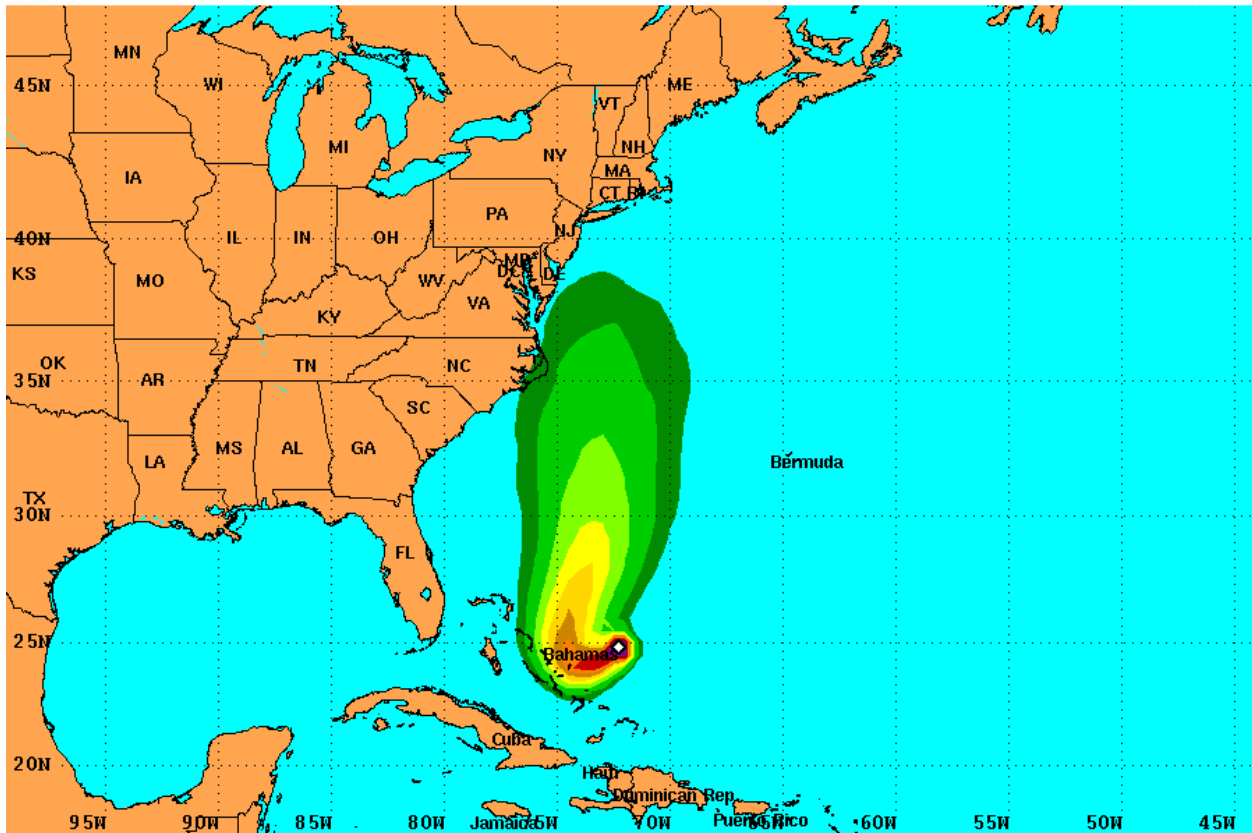
◇ indicates HURRICANE JOAQUIN center location at 8 AM EDT Wed Sep 30 2015 (Forecast/Advisory #11)





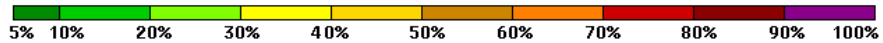
# Hurricane Force Wind Speed Probabilities

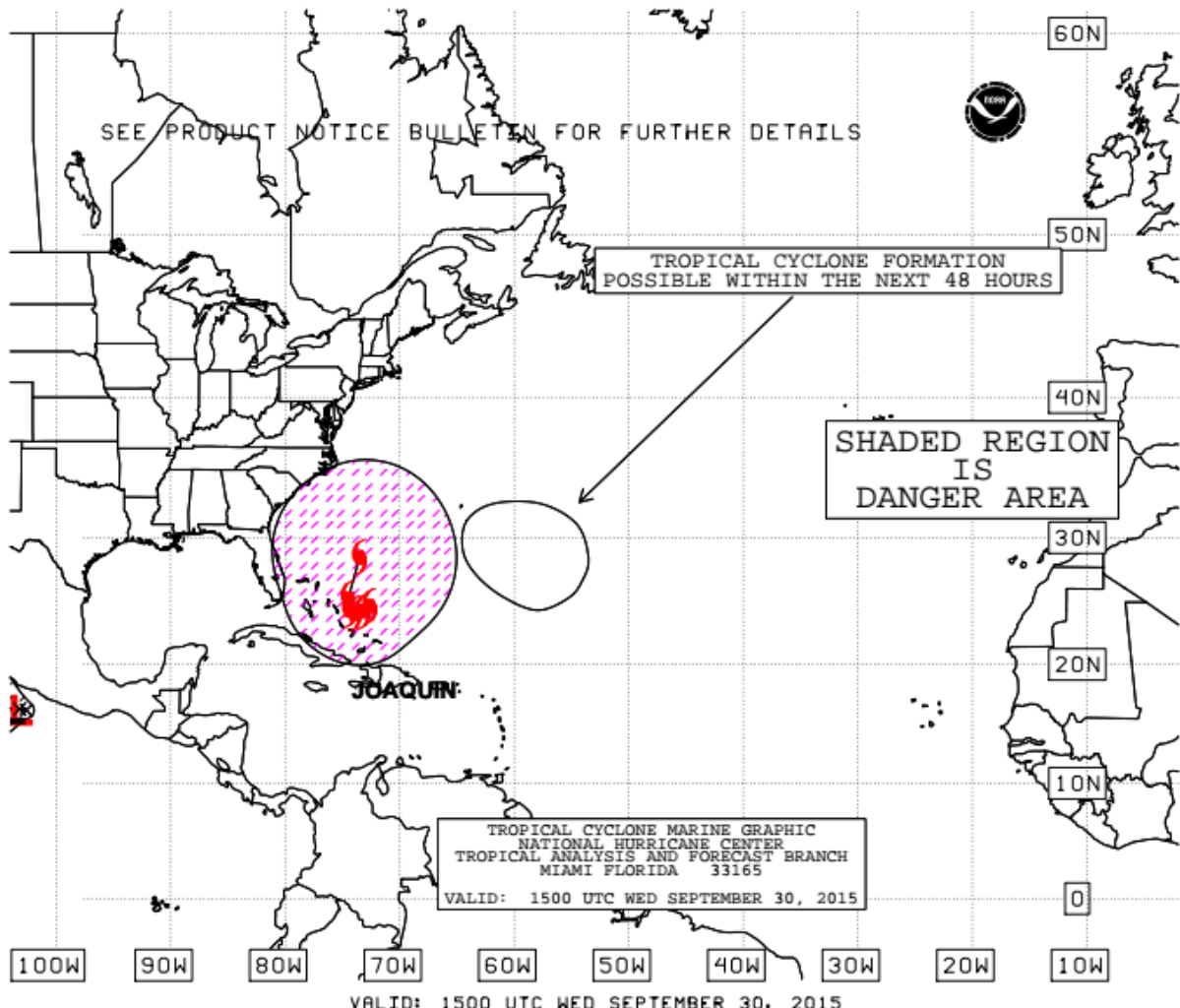
For the 120 hours (5 days) from 8 AM EDT Wed Sep 30 to 8 AM EDT Mon Oct 5

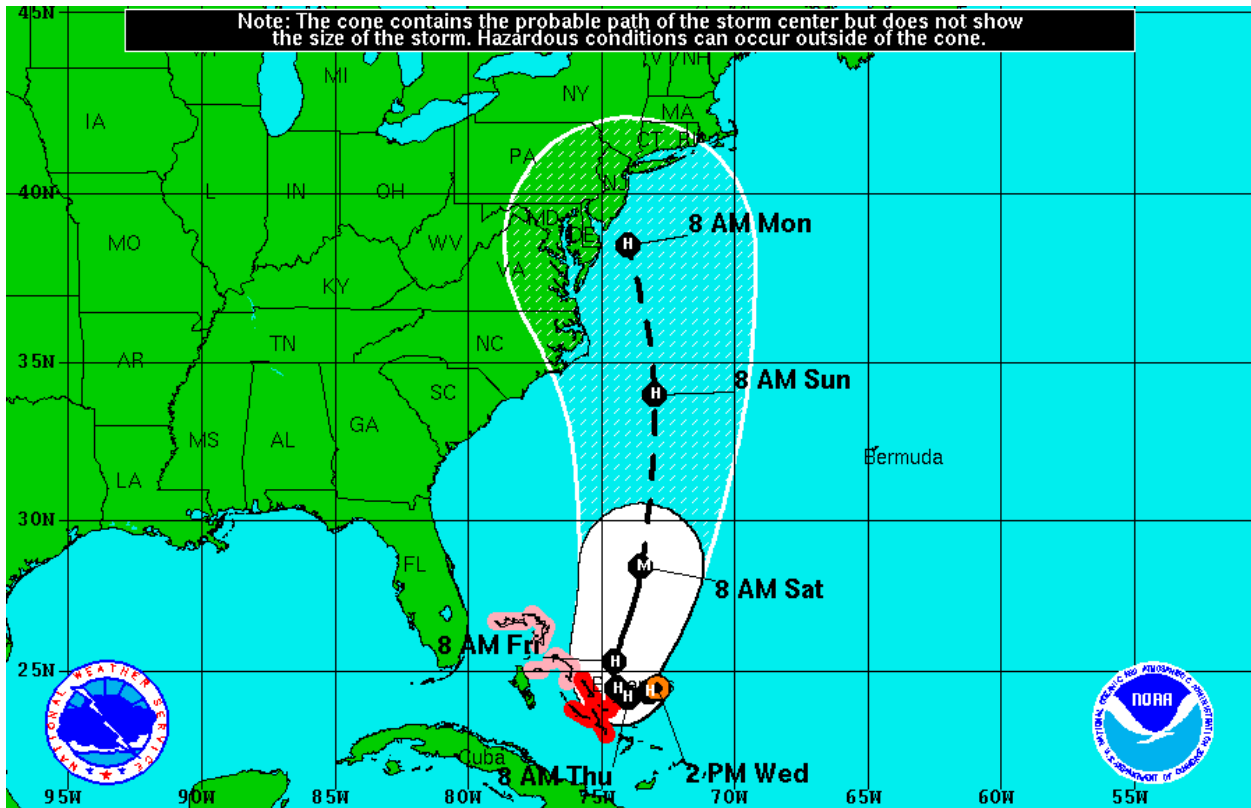








Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

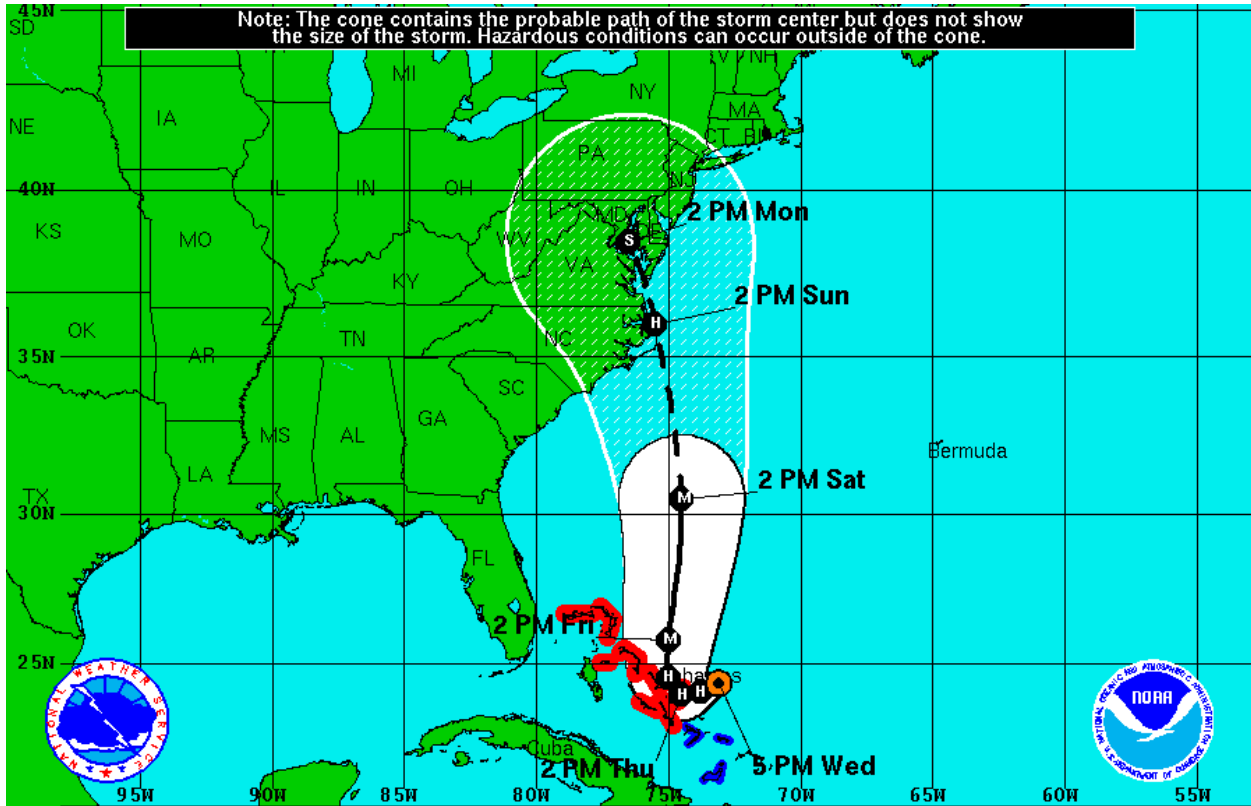
◇ indicates HURRICANE JOAQUIN center location at 8 AM EDT Wed Sep 30 2015 (Forecast/Advisory #11)







<p><b>Hurricane Joaquin</b>  <i>Wednesday September 30, 2015</i>  <b>2 PM EDT Intermediate Advisory 11A</b>          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 24.4 N 72.9 W          Max Sustained Wind 85 mph          Movement SW at 6 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>   Day 1-3  Day 4-5</p>	<p><b>Watches:</b>   Hurricane  Trop.Storm</p>	<p><b>Warnings:</b>   Hurricane  Trop.Storm</p>

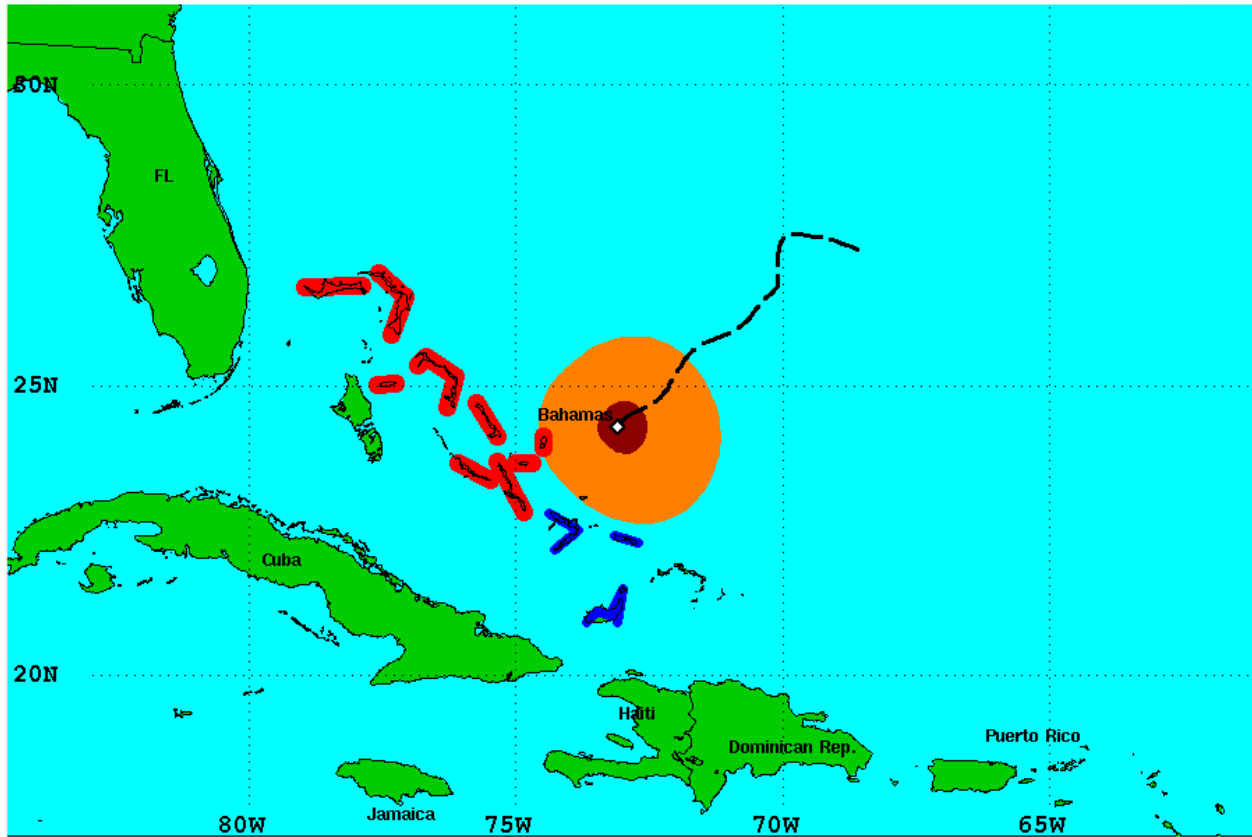


<p><b>Hurricane Joaquin</b>          Wednesday September 30, 2015          5 PM EDT Advisory 12          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 24.3 N 73.1 W          Max Sustained Wind 85 mph          Movement SW at 8 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>          ▽ Day 1-3    ⚡ Day 4-5</p>	<p><b>Watches:</b>          ■ Hurricane    ■ Trop.Storm</p>	<p><b>Warnings:</b>          ■ Hurricane    ■ Trop.Storm</p>



# Surface Wind Field of Hurricane Joaquin

Sustained Winds as of 500 PM EDT Wed Sep 30, 2015 Advisory Number 12



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

**Position:**

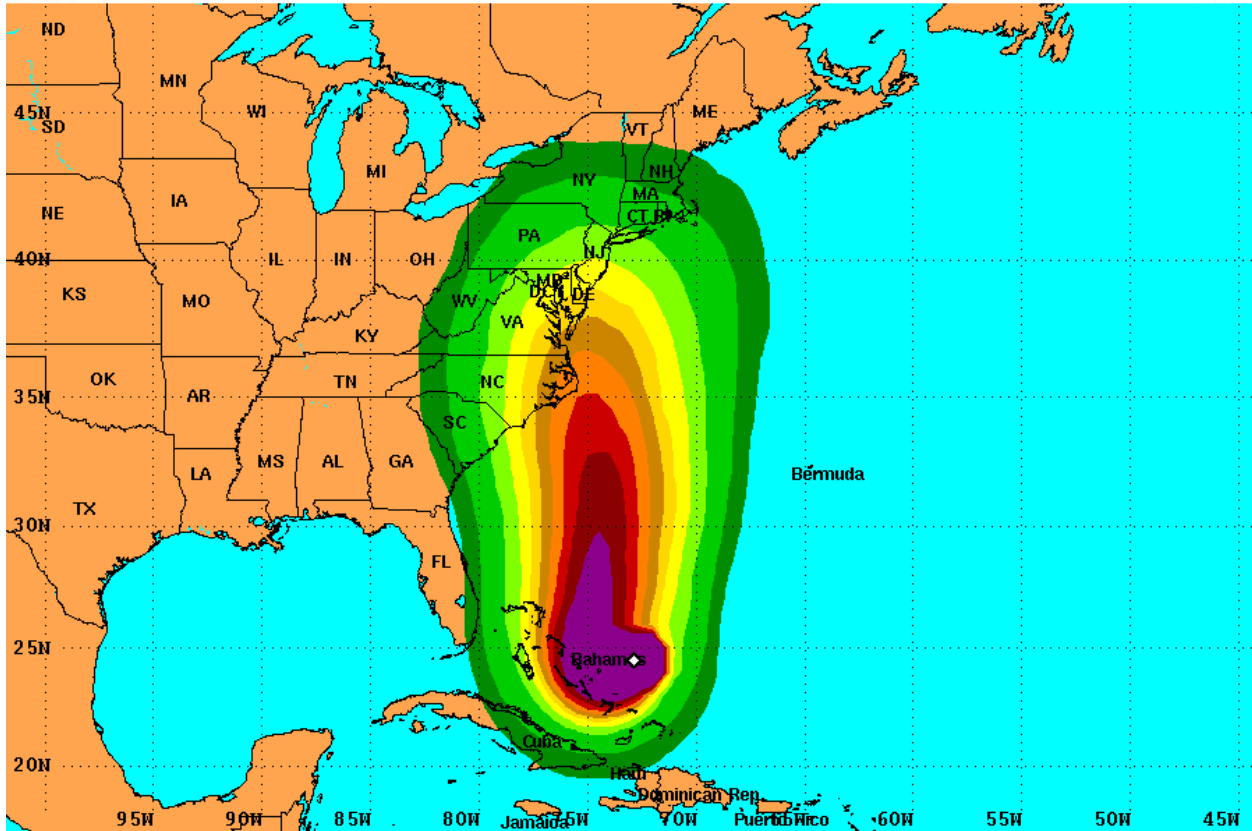
- Center as of 500 PM EDT
- Past Track





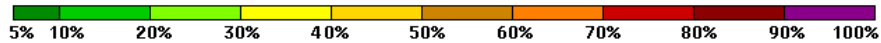
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Wed Sep 30 to 2 PM EDT Mon Oct 5



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

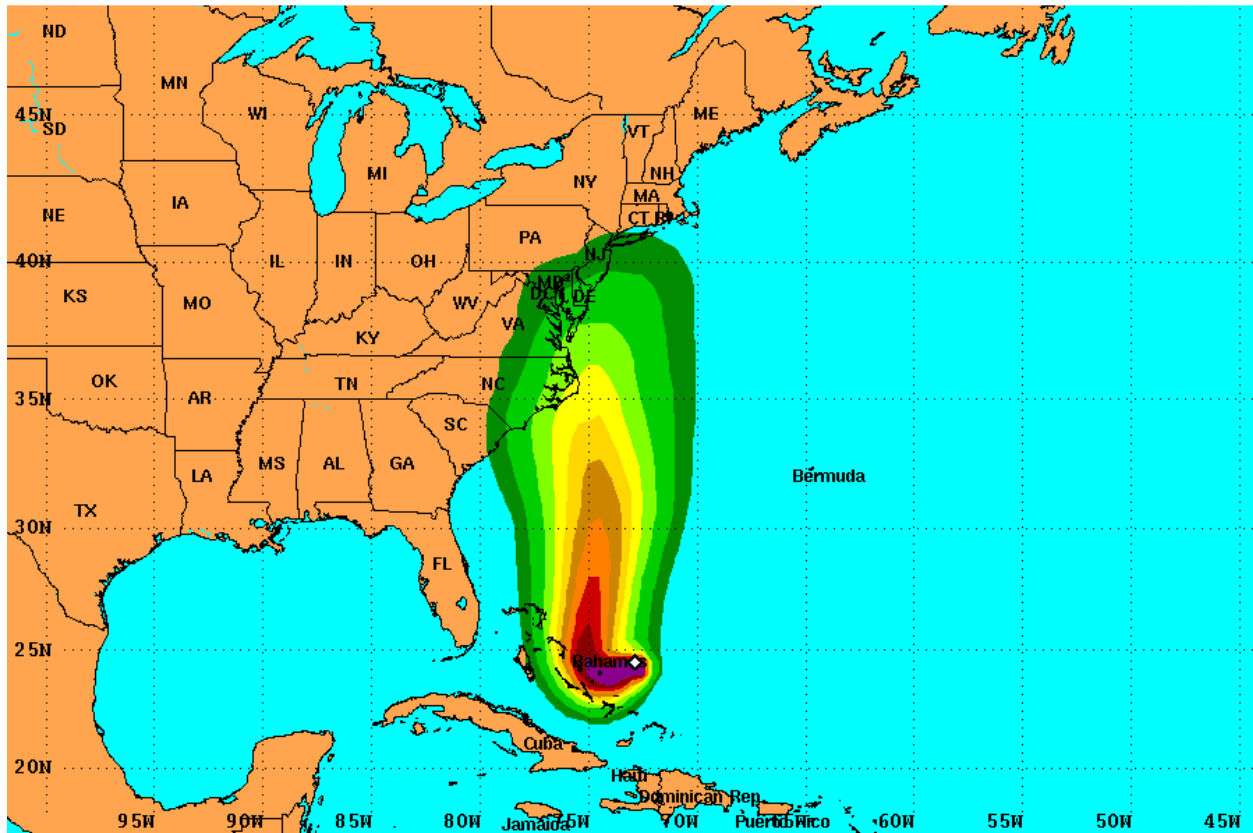
◇ indicates HURRICANE JOAQUIN center location at 2 PM EDT Wed Sep 30 2015 (Forecast/Advisory #12)





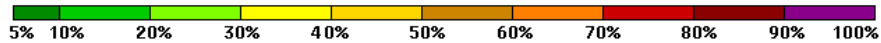
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 PM EDT Wed Sep 30 to 2 PM EDT Mon Oct 5



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

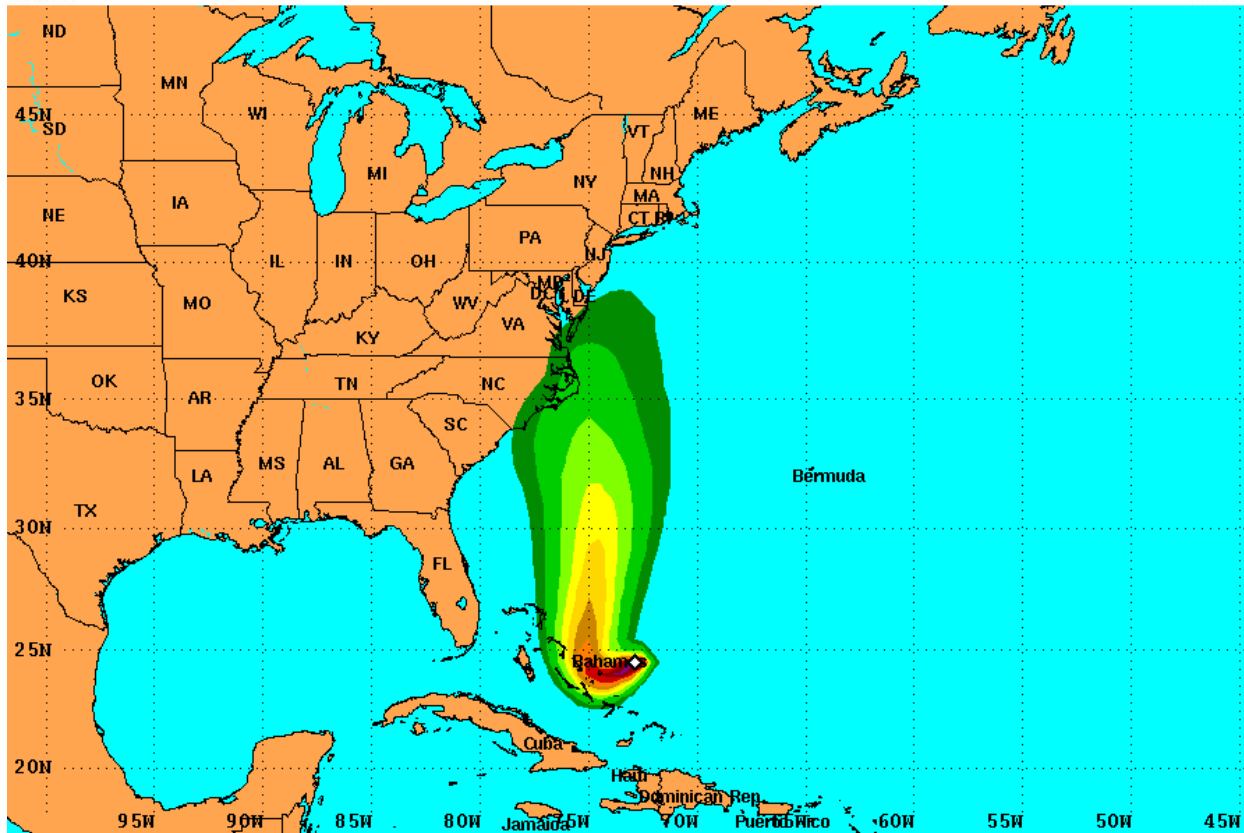
◇ indicates HURRICANE JOAQUIN center location at 2 PM EDT Wed Sep 30 2015 (Forecast/Advisory #12)





# Hurricane Force Wind Speed Probabilities

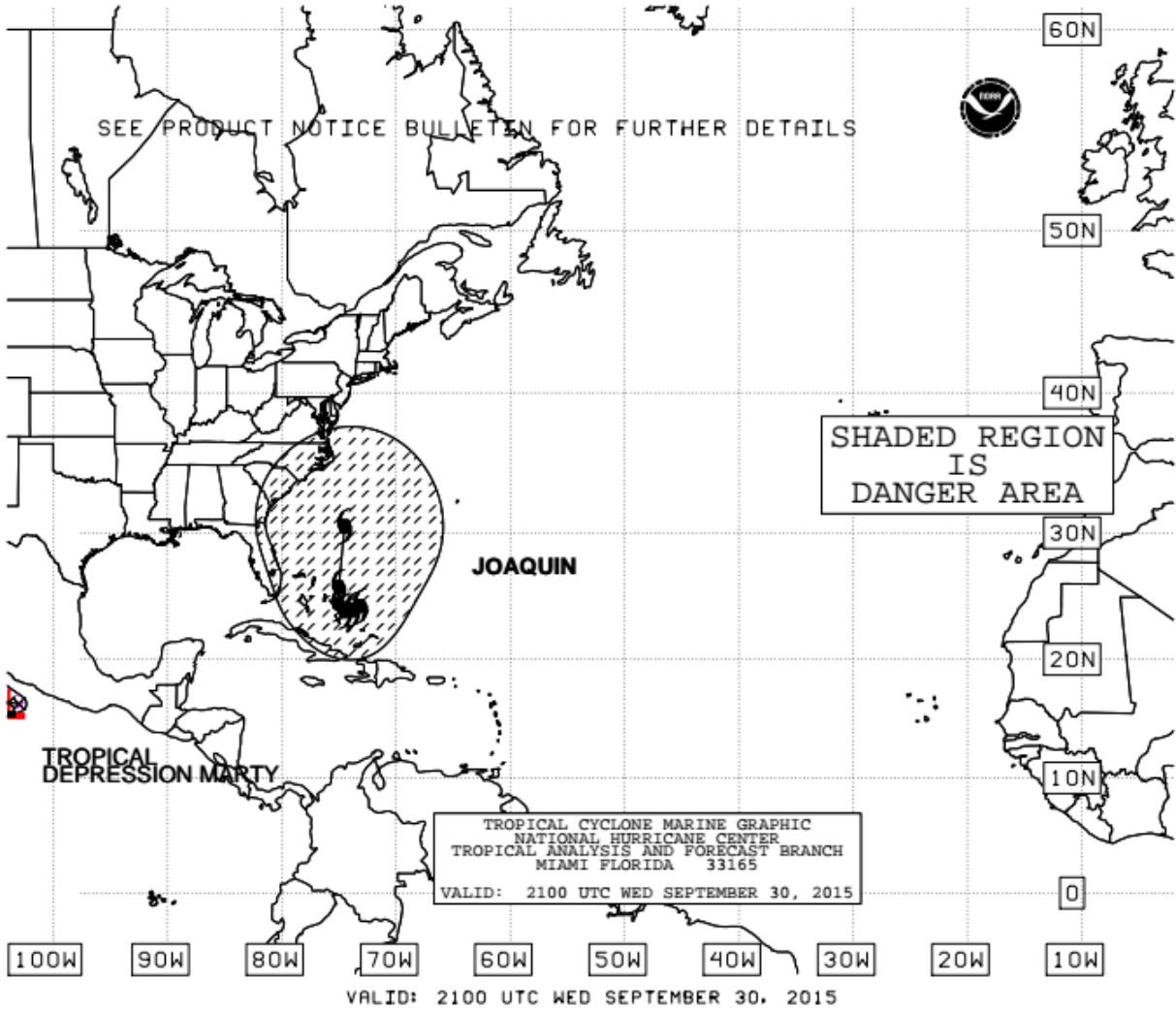
For the 120 hours (5 days) from 2 PM EDT Wed Sep 30 to 2 PM EDT Mon Oct 5

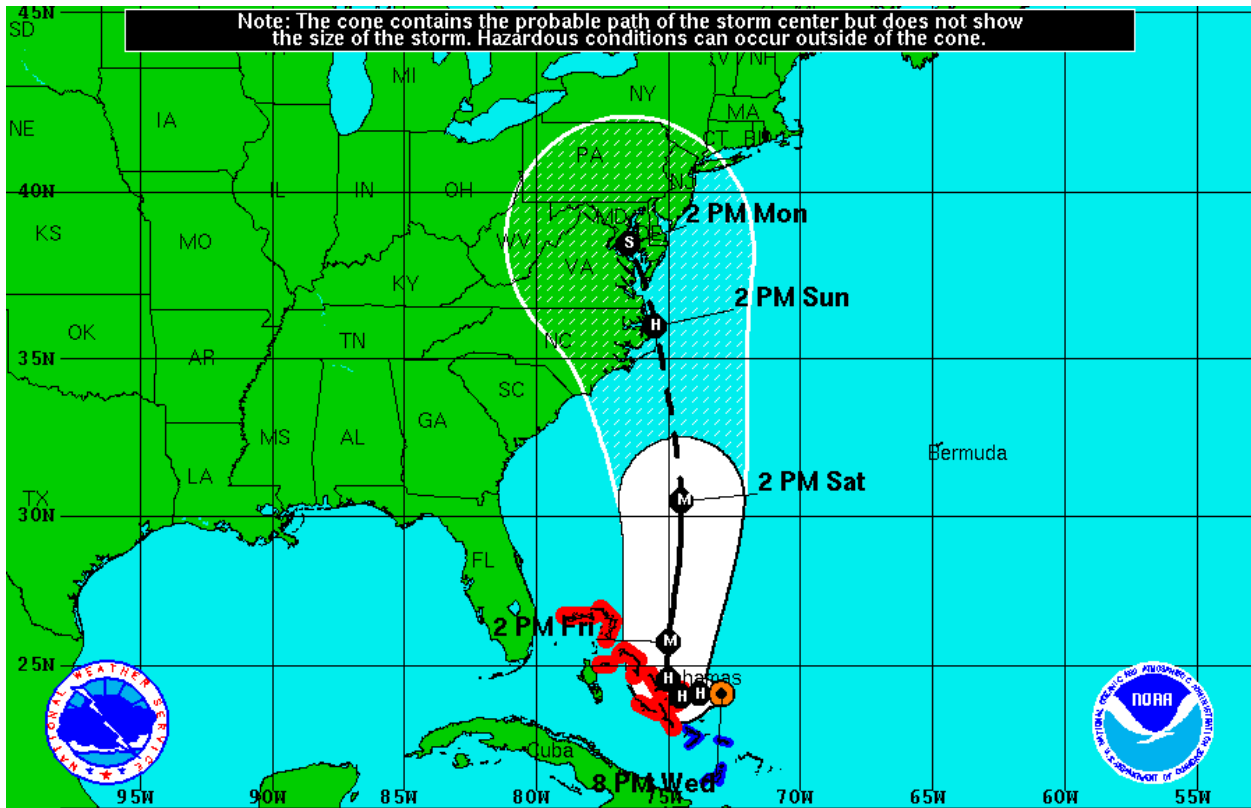


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

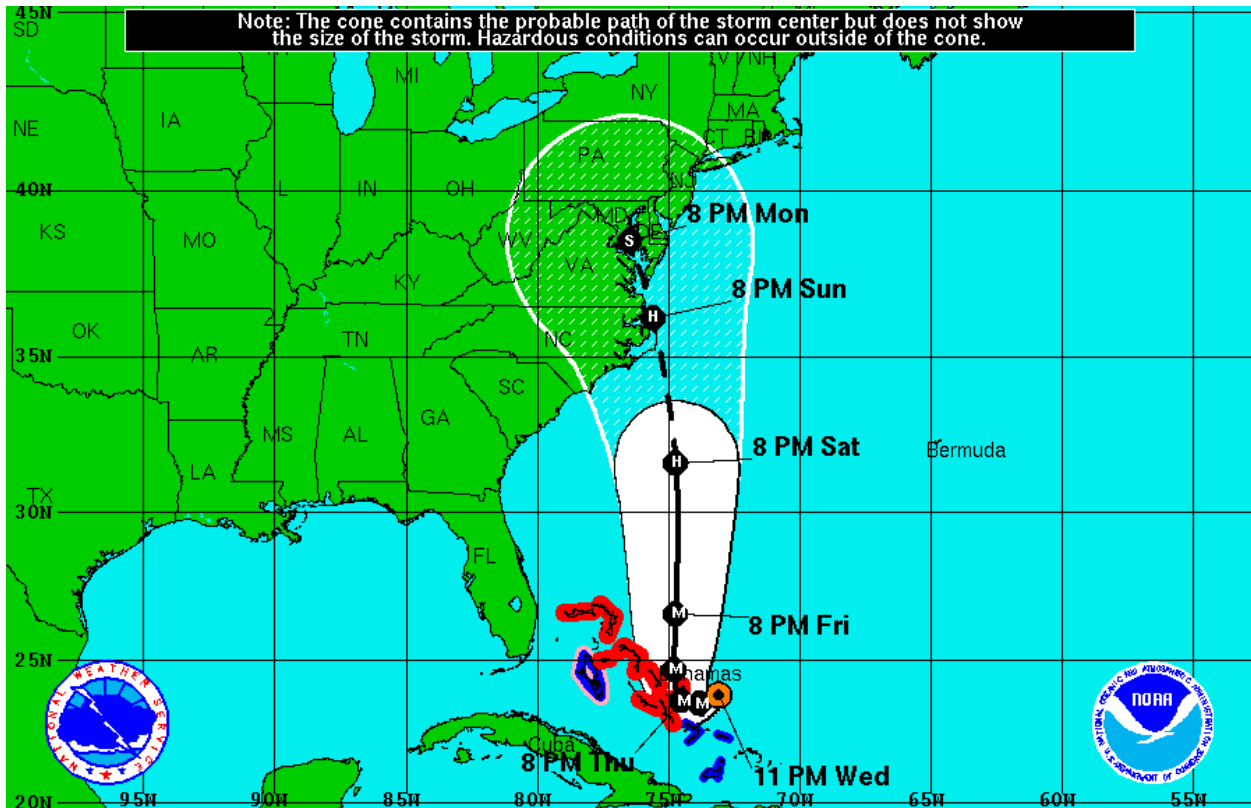
◇ indicates HURRICANE JOAQUIN center location at 2 PM EDT Wed Sep 30 2015 (Forecast/Advisory #12)







<p><b>Hurricane Joaquin</b>          Wednesday September 30, 2015          8 PM EDT Intermediate Advisory 12A          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 24.0 N 73.0 W          Max Sustained Wind 105 mph          Movement SW at 7 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>          ▽ Day 1-3 ◁ Day 4-5</p>	<p><b>Watches:</b>          ■ Hurricane ■ Trop.Storm</p>	<p><b>Warnings:</b>          ■ Hurricane ■ Trop.Storm</p>

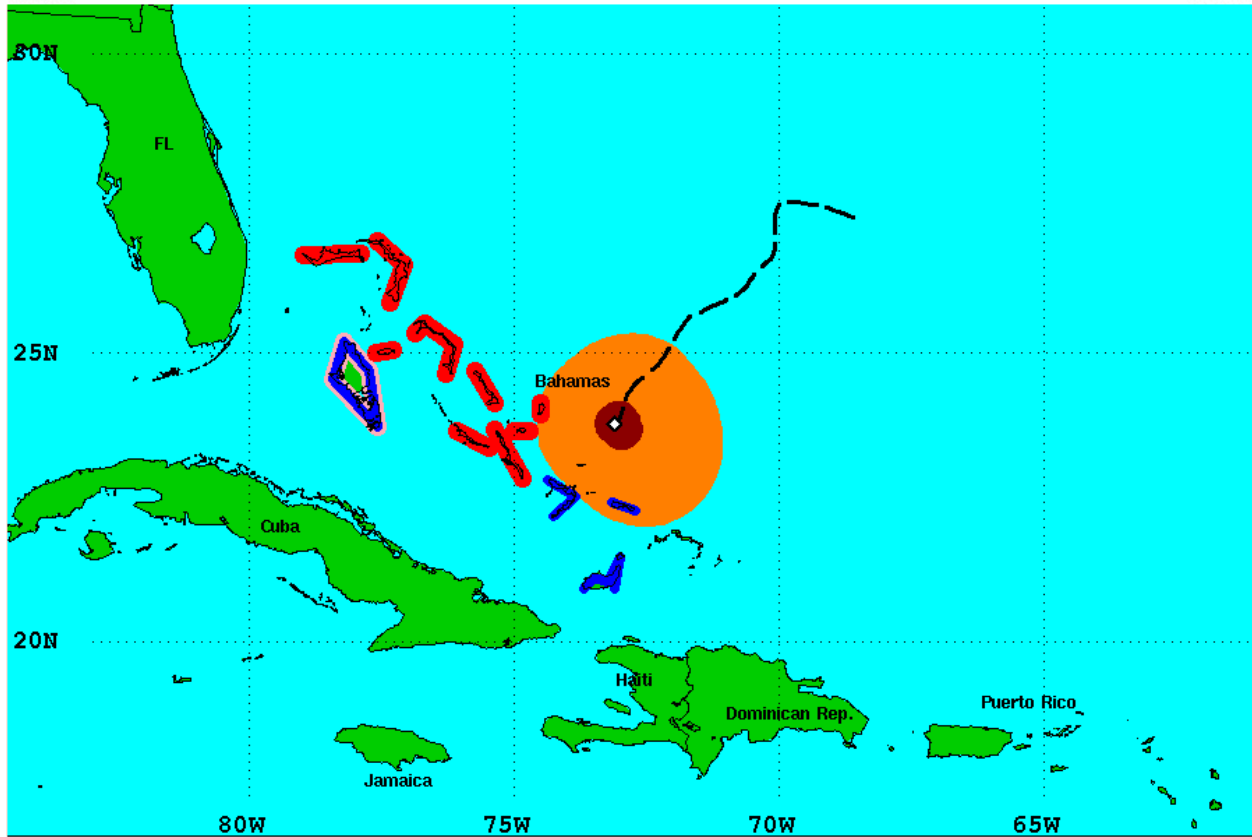


<p><b>Hurricane Joaquin</b>  <i>Wednesday September 30, 2015</i>          11 PM EDT Advisory 13          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 23.8 N 73.1 W          Max Sustained Wind 115 mph          Movement SW at 6 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>          ▽ Day 1-3 ◁ Day 4-5</p>	<p><b>Watches:</b>          ■ Hurricane ■ Trop.Storm</p>	<p><b>Warnings:</b>          ■ Hurricane ■ Trop.Storm</p>



# Surface Wind Field of Hurricane Joaquin

Sustained Winds as of 1100 PM EDT Wed Sep 30, 2015 Advisory Number 13



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

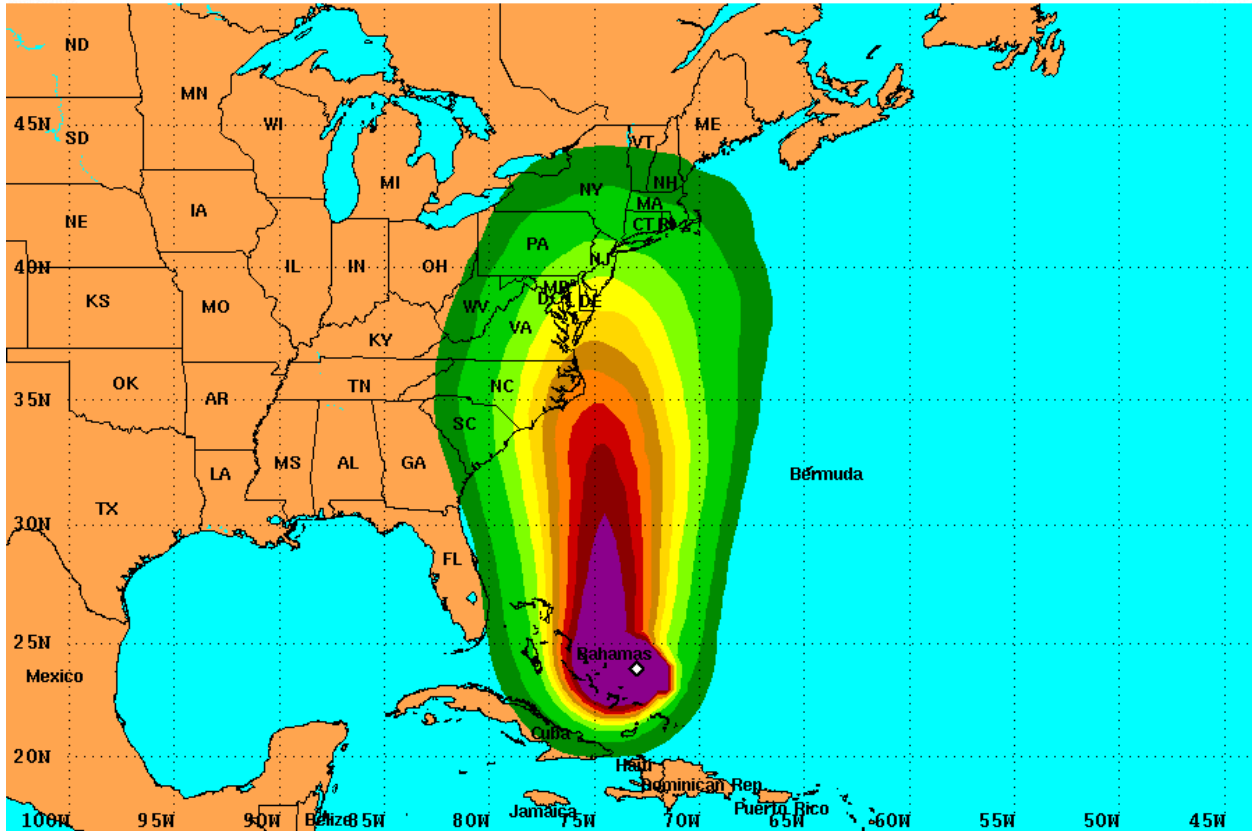
**Position:**

- Center as of 1100 PM EDT
- Past Track



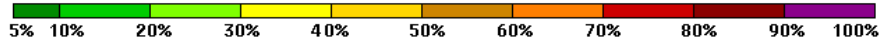
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Wed Sep 30 to 8 PM EDT Mon Oct 5



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

◇ indicates HURRICANE JOAQUIN center location at 8 PM EDT Wed Sep 30 2015 (Forecast/Advisory #13)

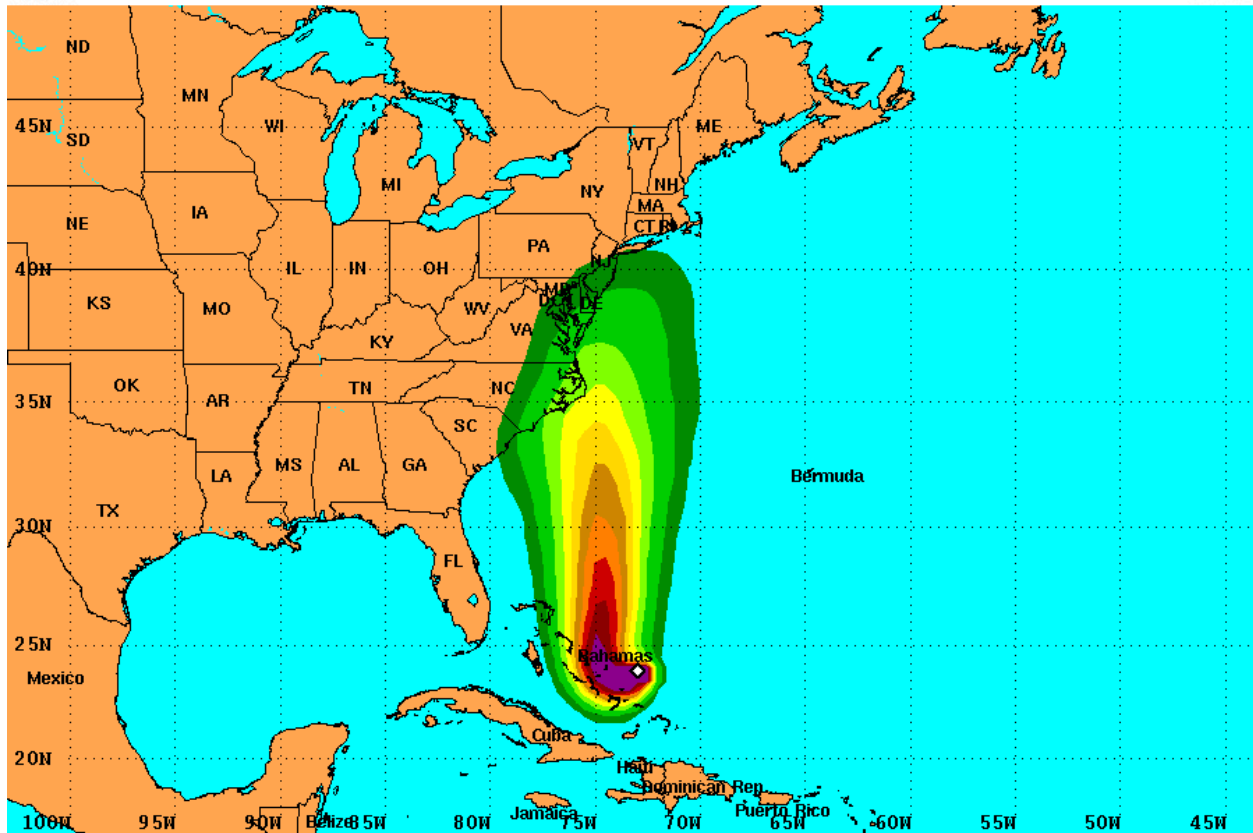






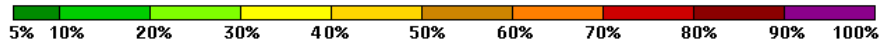
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Wed Sep 30 to 8 PM EDT Mon Oct 5



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

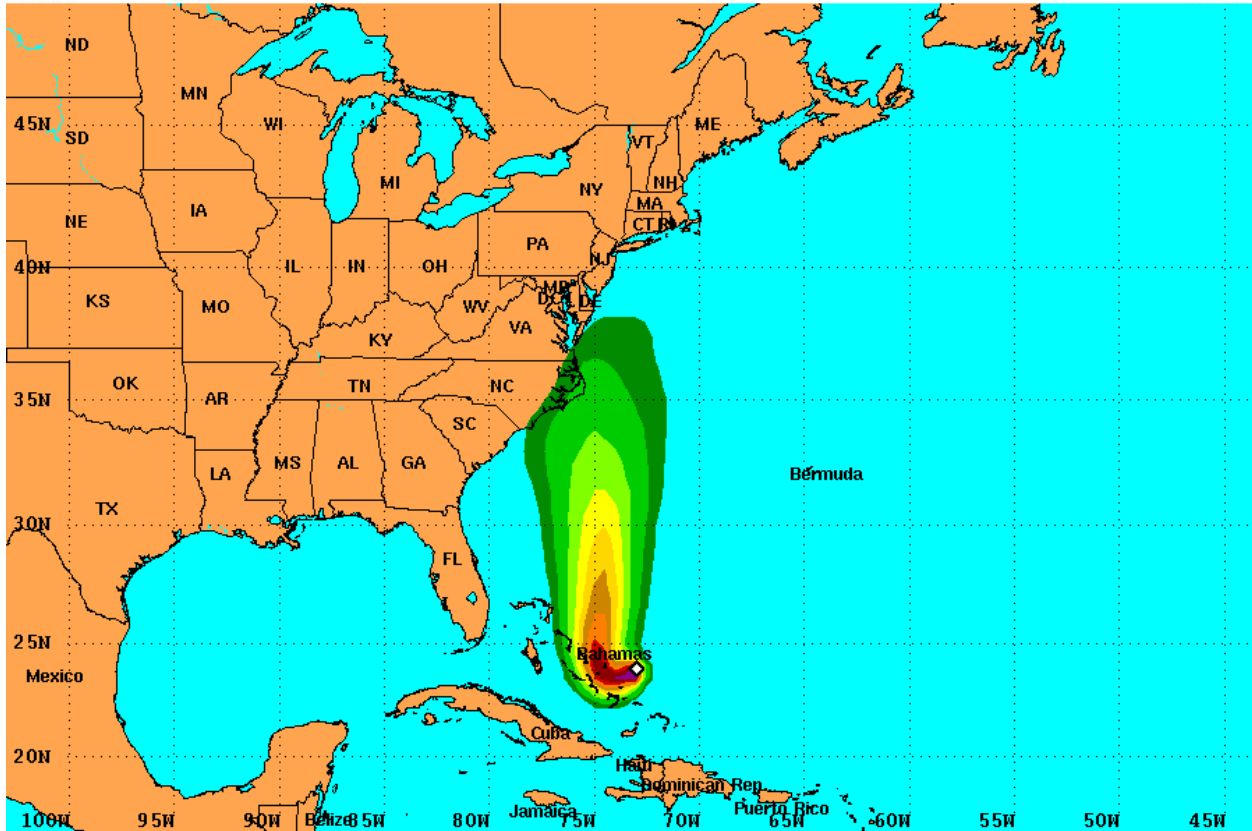
◇ indicates HURRICANE JOAQUIN center location at 8 PM EDT Wed Sep 30 2015 (Forecast/Advisory #13)





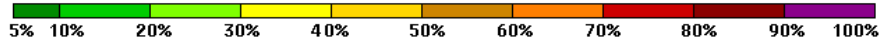
# Hurricane Force Wind Speed Probabilities

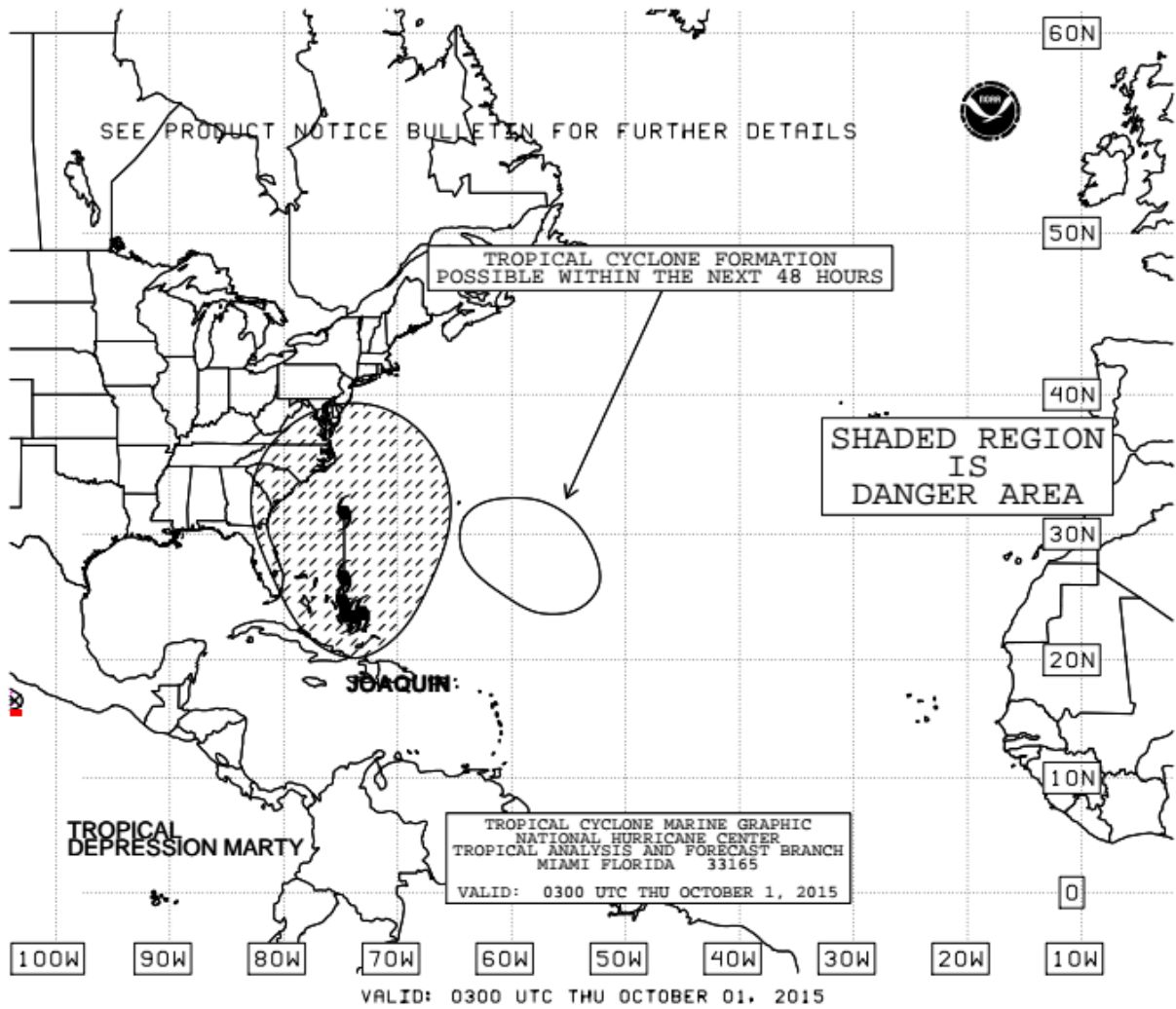
For the 120 hours (5 days) from 8 PM EDT Wed Sep 30 to 8 PM EDT Mon Oct 5

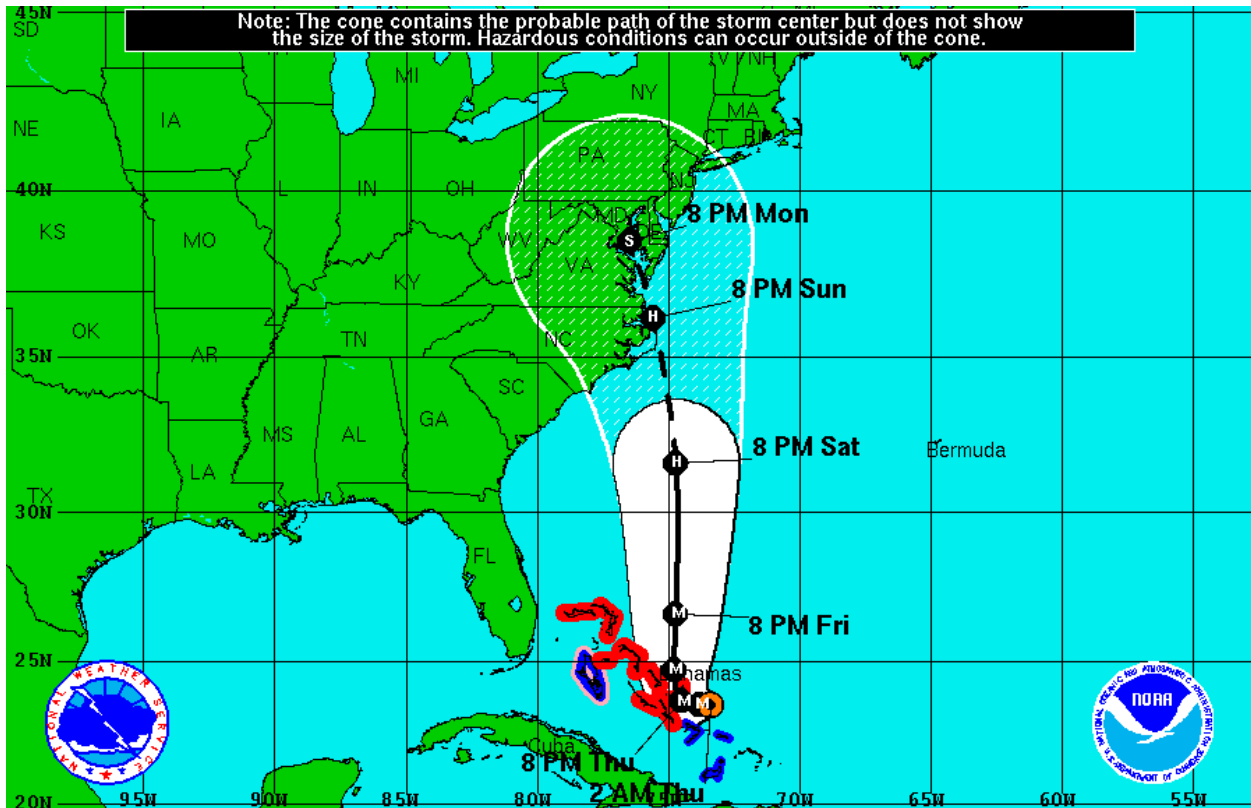


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

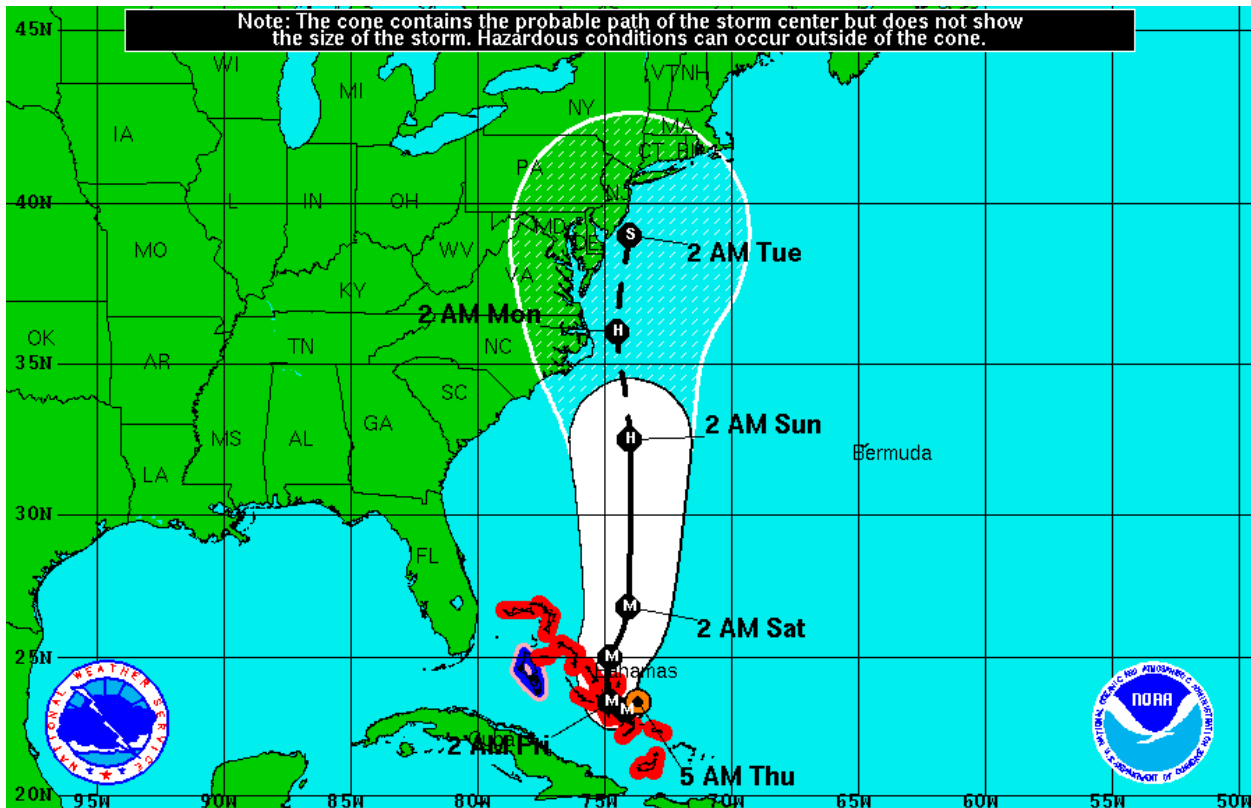
◇ indicates HURRICANE JOAQUIN center location at 8 PM EDT Wed Sep 30 2015 (Forecast/Advisory #13)







<p><b>Hurricane Joaquin</b>          Thursday October 1, 2015          2 AM EDT Intermediate Advisory 13A          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 23.5 N 73.4 W          Max Sustained Wind 120 mph          Movement SW at 6 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>          ▽ Day 1-3 ◁ Day 4-5</p>	<p><b>Watches:</b>          ■ Hurricane ■ Trop.Storm</p>	<p><b>Warnings:</b>          ■ Hurricane ■ Trop.Storm</p>



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

**Hurricane Joaquin**  
 Thursday October 1, 2015  
 5 AM EDT Advisory 14  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 23.4 N 73.7 W  
 Max Sustained Wind 120 mph  
 Movement WSW at 5 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▽ Day 1-3 ◁ Day 4-5

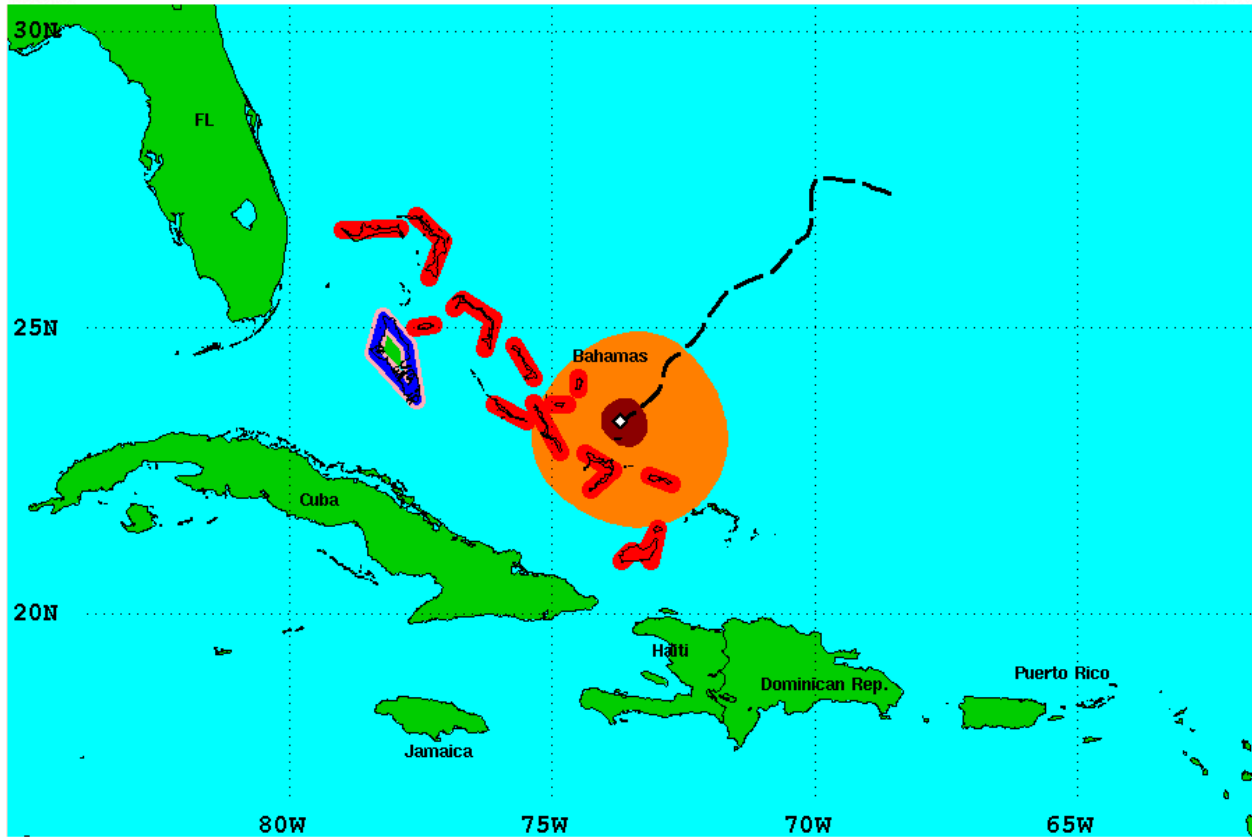
**Watches:**  
 ■ Hurricane ■ Trop.Storm

**Warnings:**  
 ■ Hurricane ■ Trop.Storm



# Surface Wind Field of Hurricane Joaquin

Sustained Winds as of 500 AM EDT Thu Oct 1, 2015 Advisory Number 14



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

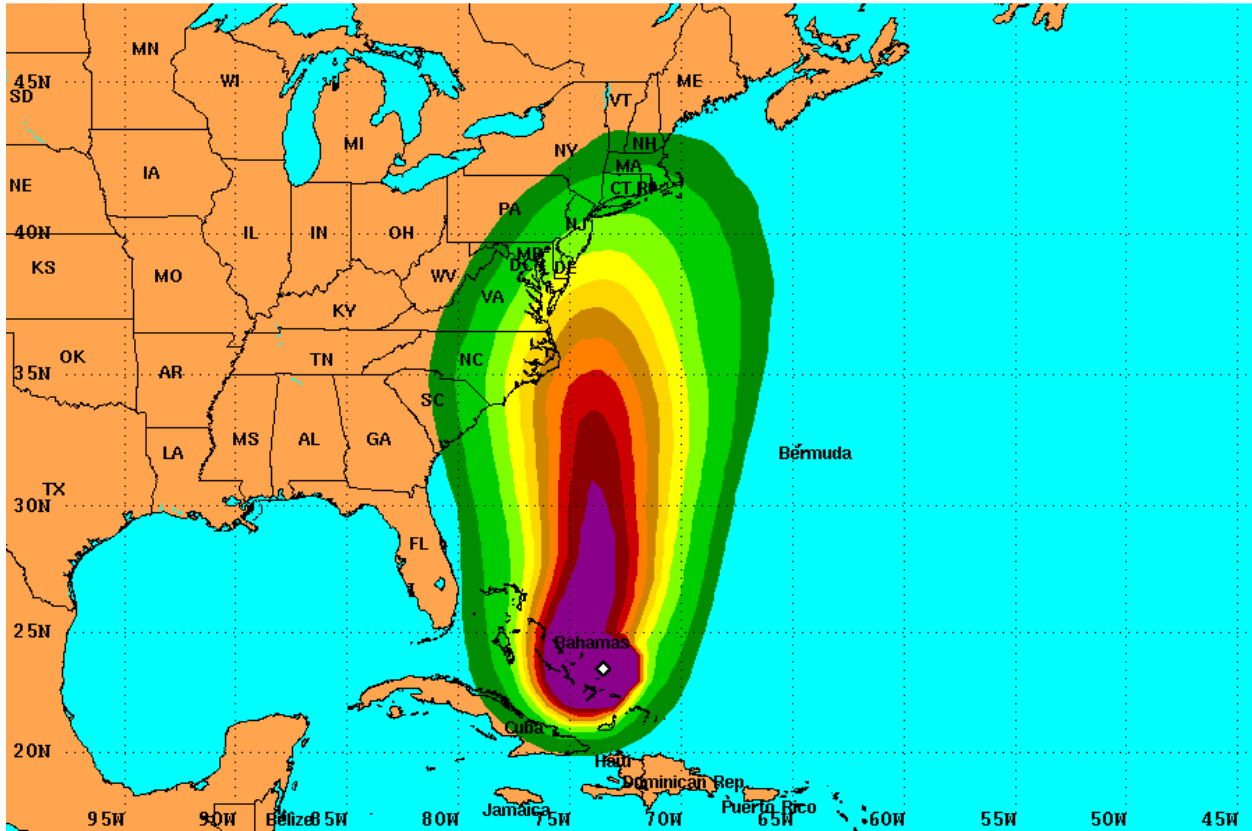
**Position:**

- Center as of 500 AM EDT
- Past Track



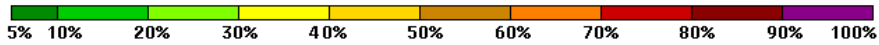
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Thu Oct 1 to 2 AM EDT Tue Oct 6



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

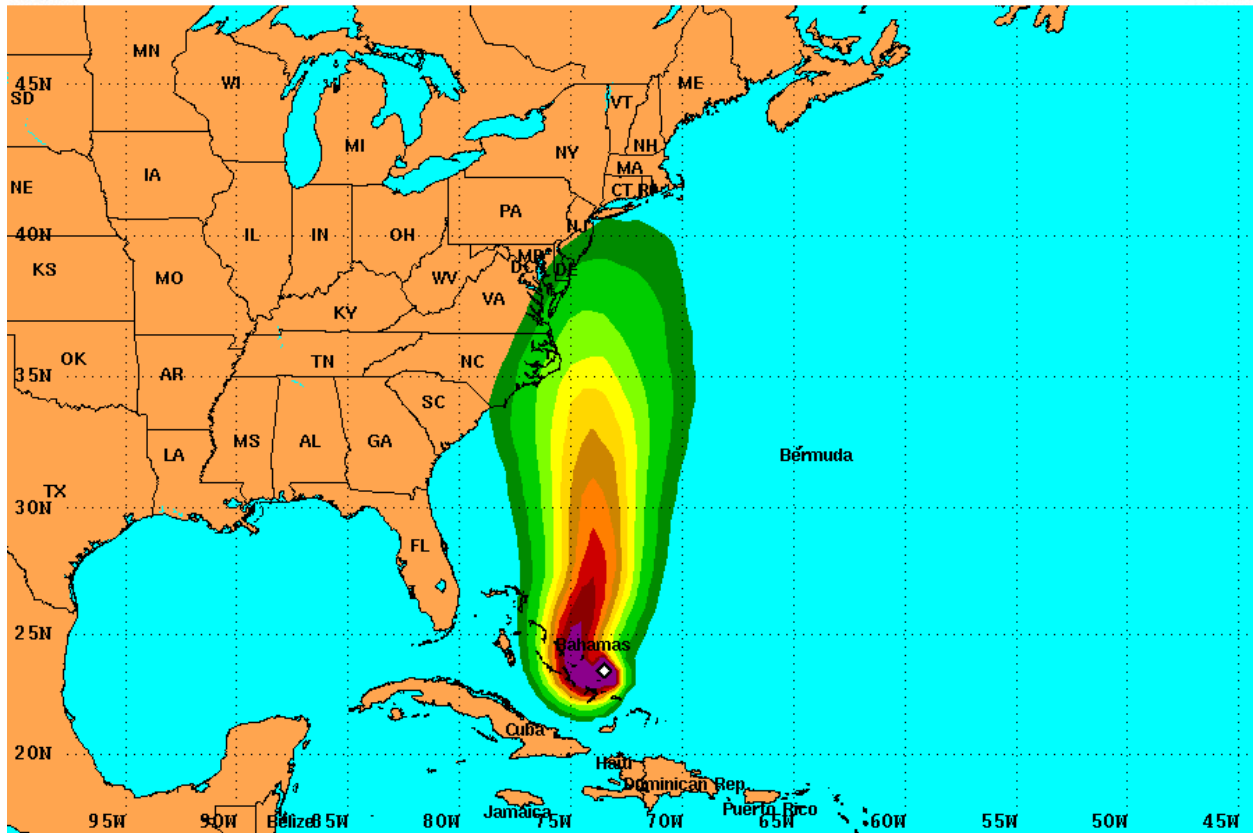
◇ indicates HURRICANE JOAQUIN center location at 2 AM EDT Thu Oct 1 2015 (Forecast/Advisory #14)





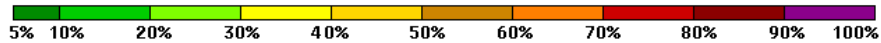
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Thu Oct 1 to 2 AM EDT Tue Oct 6



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

◇ indicates HURRICANE JOAQUIN center location at 2 AM EDT Thu Oct 1 2015 (Forecast/Advisory #14)

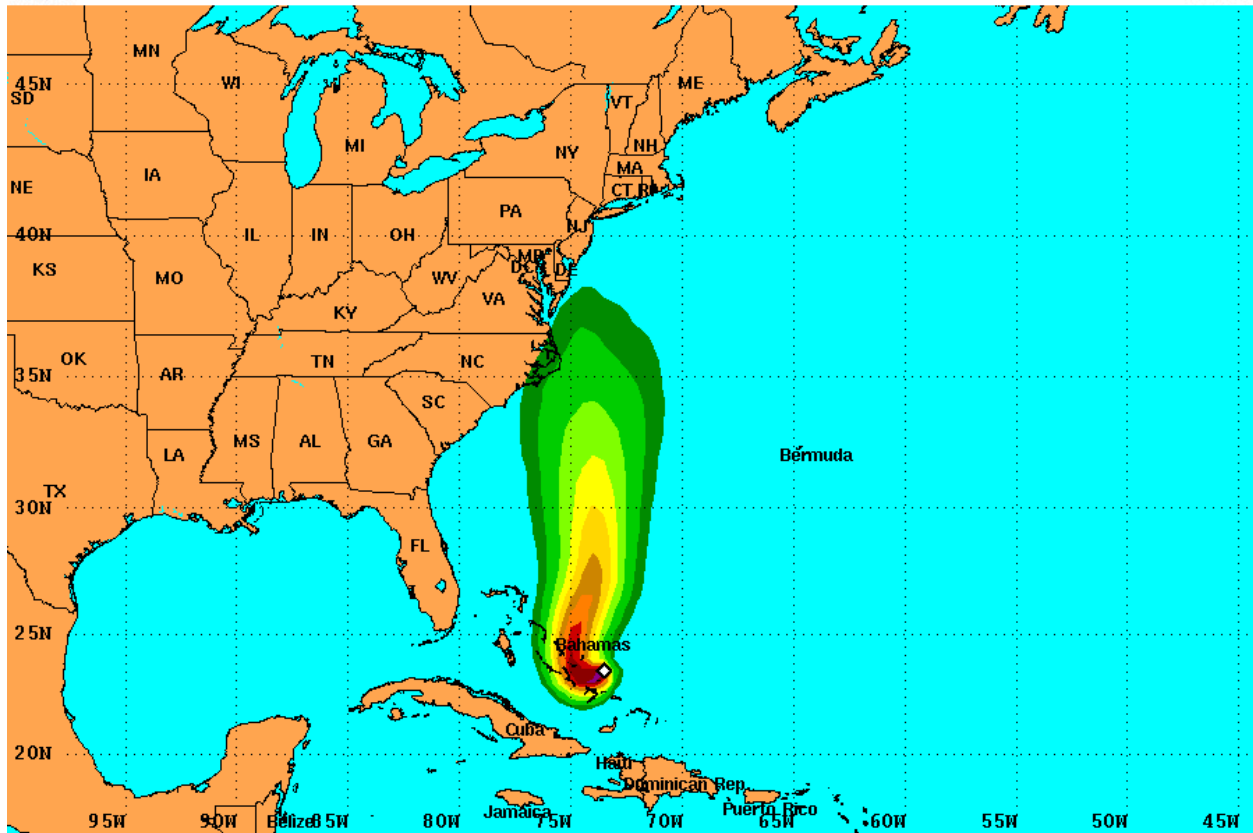






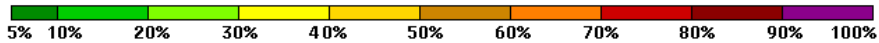
# Hurricane Force Wind Speed Probabilities

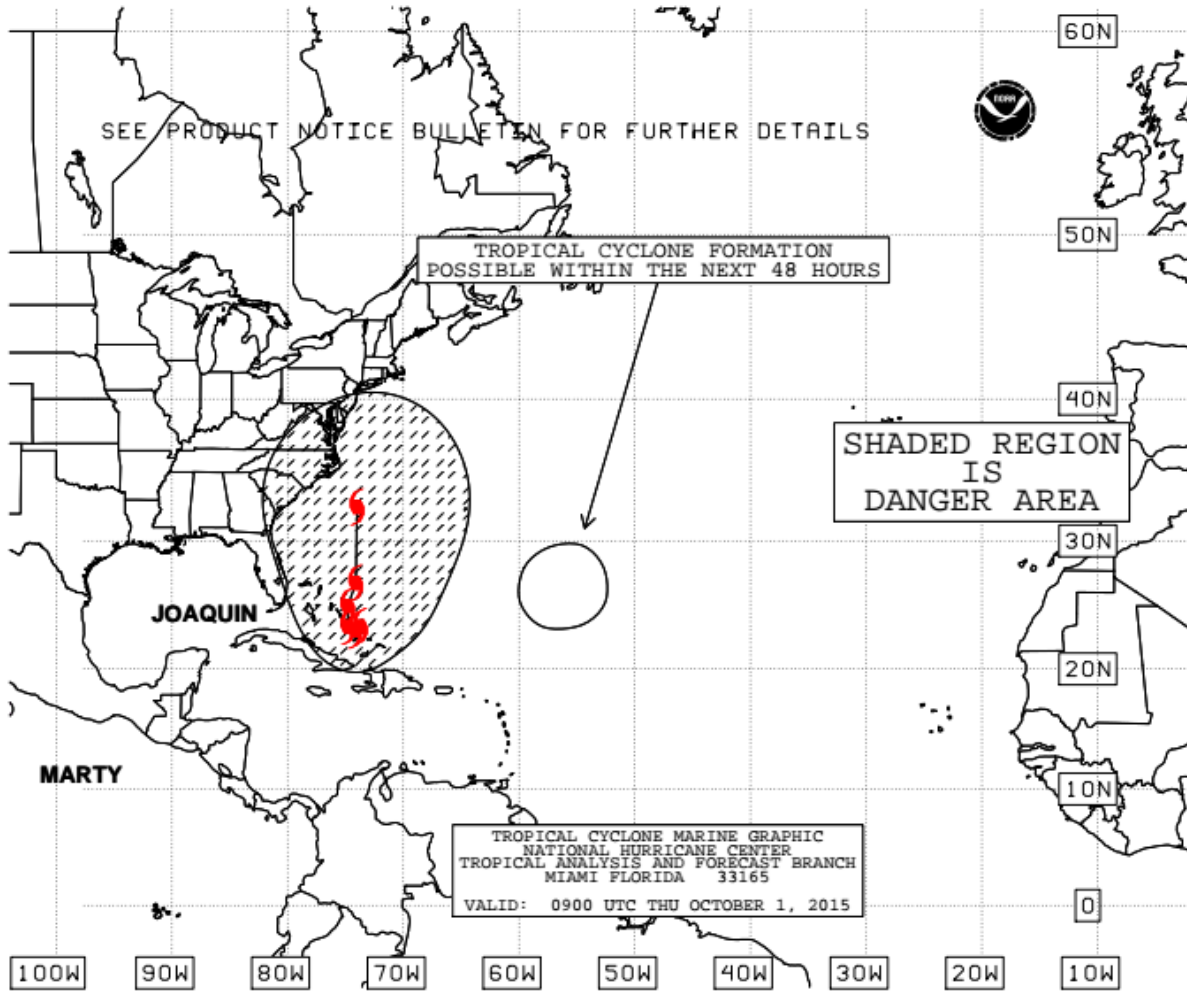
For the 120 hours (5 days) from 2 AM EDT Thu Oct 1 to 2 AM EDT Tue Oct 6



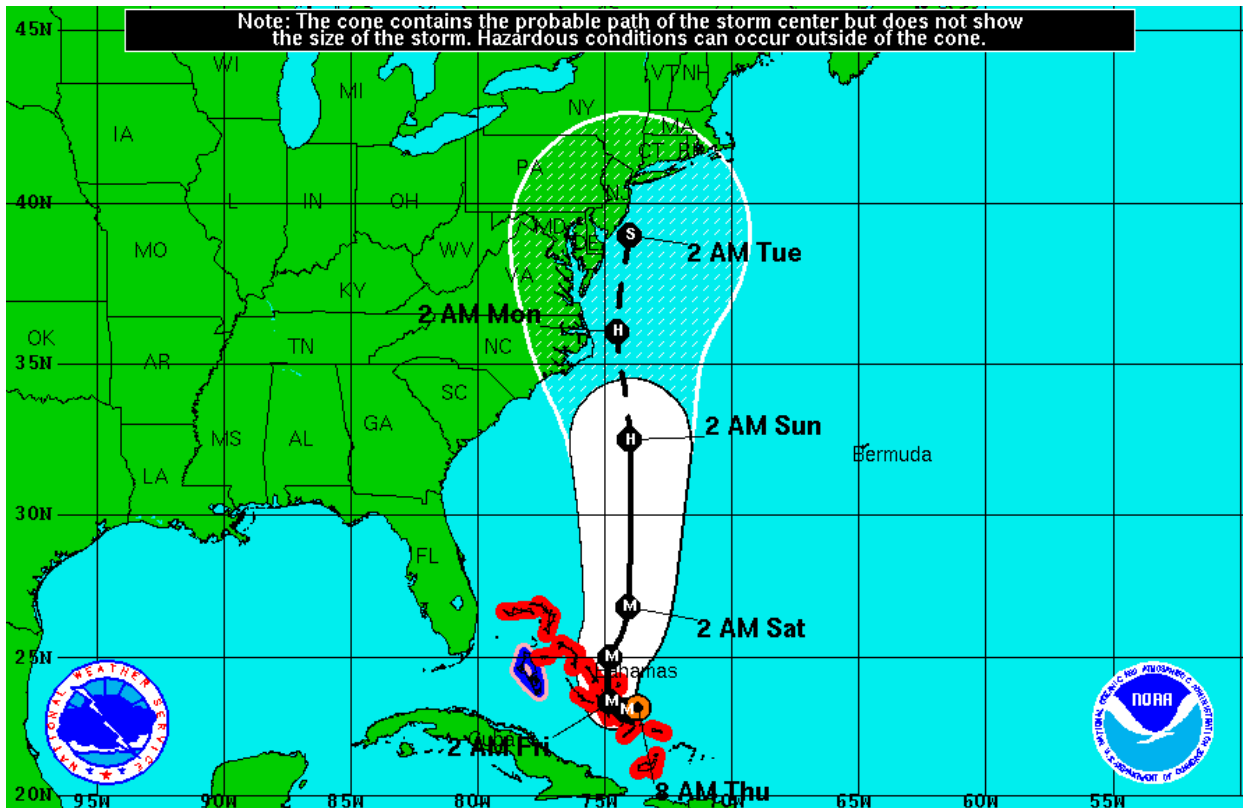
Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

◇ indicates HURRICANE JOAQUIN center location at 2 AM EDT Thu Oct 1 2015 (Forecast/Advisory #14)



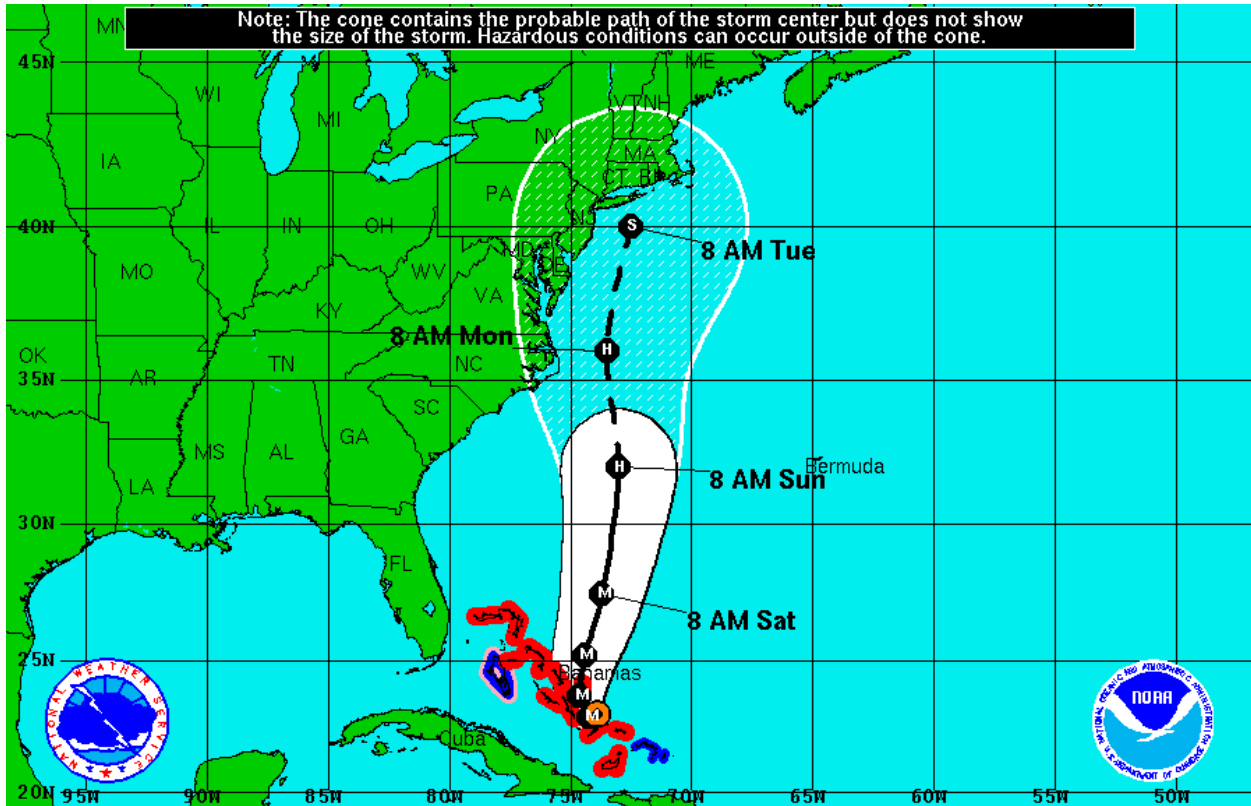


VALID: 0900 UTC THU OCTOBER 01, 2015



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

<p><b>Hurricane Joaquin</b>          Thursday October 1, 2015          8 AM EDT Intermediate Advisory 14A          NWS National Hurricane Center</p>	<p><b>Current Information:</b> ●          Center Location 23.2 N 73.7 W          Max Sustained Wind 120 mph          Movement WSW at 5 mph</p>	<p><b>Forecast Positions:</b>          ● Tropical Cyclone ○ Post-Tropical          Sustained Winds: D &lt; 39 mph          S 39-73 mph H 74-110 mph M &gt; 110mph</p>
<p><b>Potential Track Area:</b>          ▽ Day 1-3 ◁ Day 4-5</p>	<p><b>Watches:</b>          ■ Hurricane ■ Trop.Storm</p>	<p><b>Warnings:</b>          ■ Hurricane ■ Trop.Storm</p>



**Hurricane Joaquin**  
 Thursday October 1, 2015  
 11 AM EDT Advisory 15  
 NWS National Hurricane Center

**Current Information:** ●  
 Center Location 23.0 N 73.9 W  
 Max Sustained Wind 125 mph  
 Movement SW at 6 mph

**Forecast Positions:**  
 ● Tropical Cyclone ○ Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 ▽ Day 1-3 ◁ Day 4-5

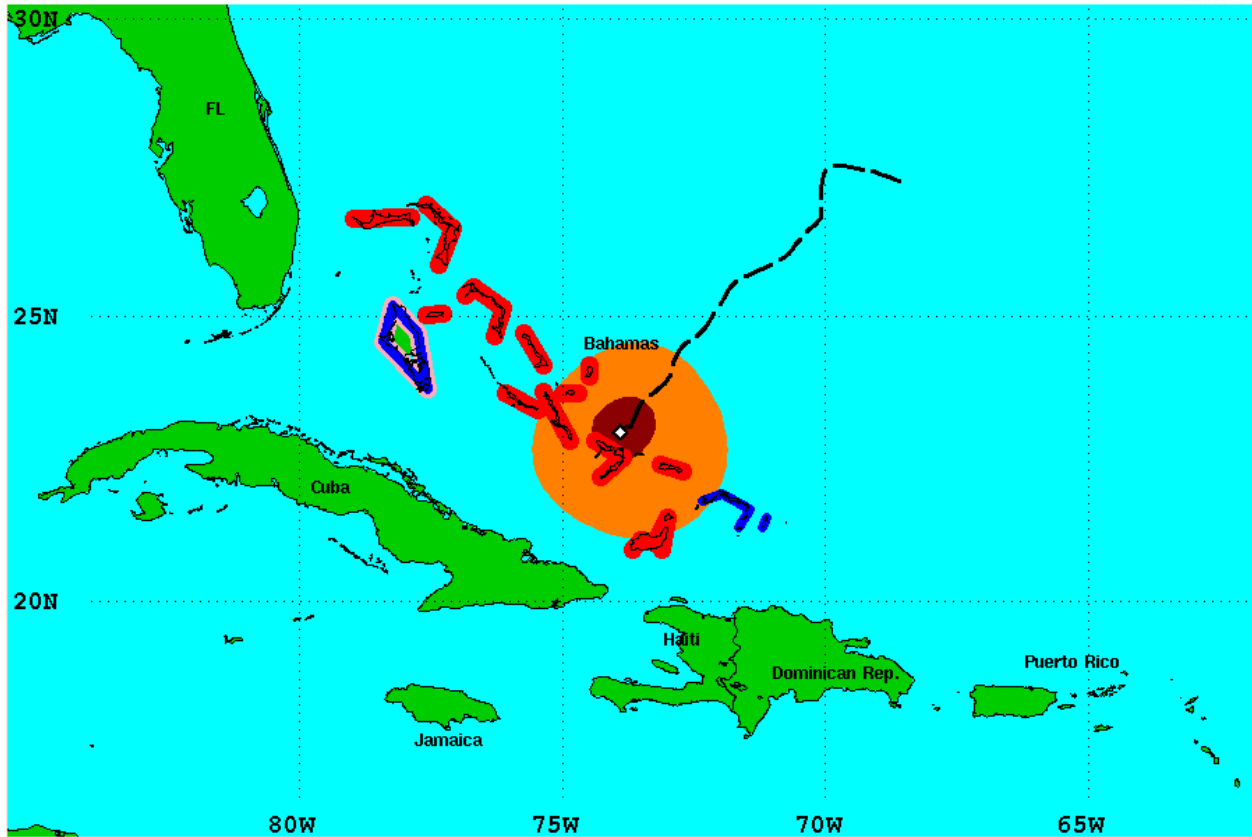
**Watches:**  
 ■ Hurricane ■ Trop.Storm

**Warnings:**  
 ■ Hurricane ■ Trop.Storm



# Surface Wind Field of Hurricane Joaquin

Sustained Winds as of 1100 AM EDT Thu Oct 1, 2015 Advisory Number 15



**Watches:**

- Hurricane Watch
- Tropical Storm Watch

**Warnings:**

- Hurricane Warning
- Tropical Storm Warning

**Sustained Winds:**

- Hurricane Force
- Tropical Storm Force

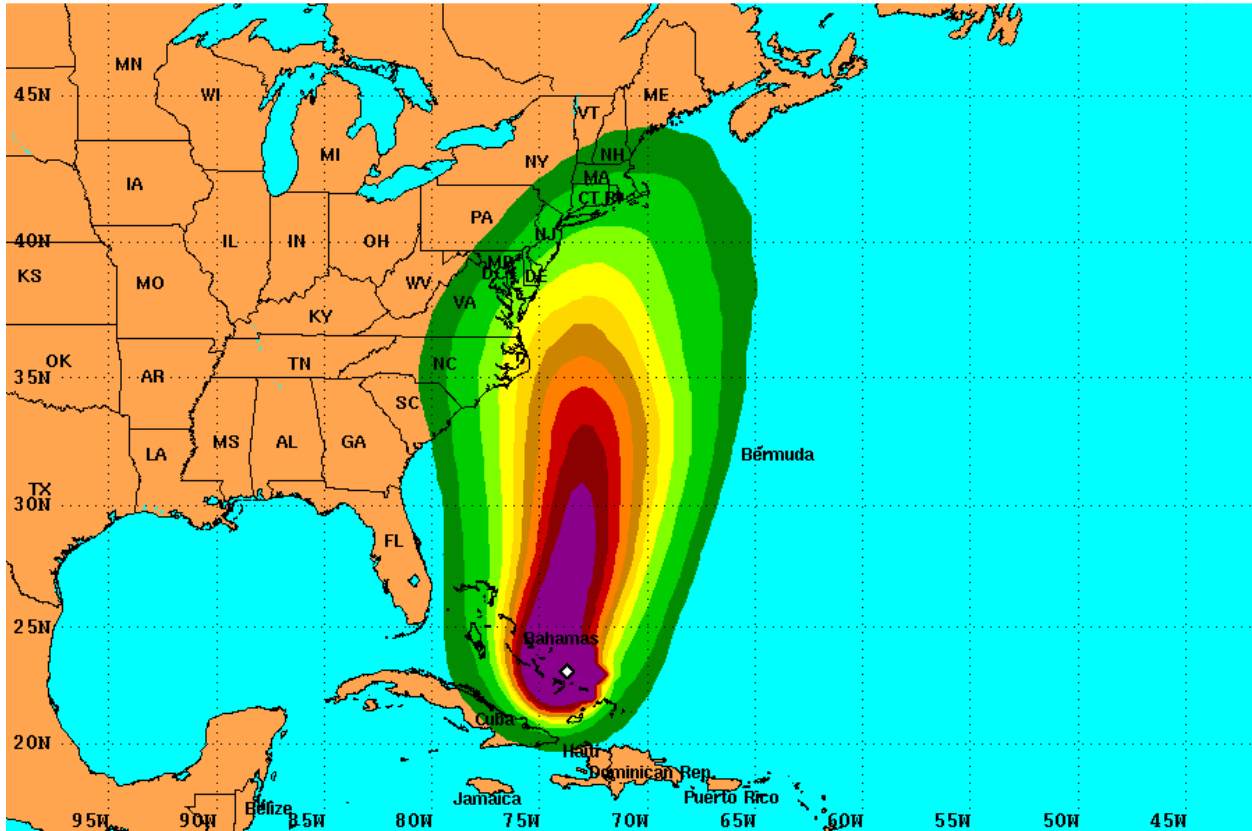
**Position:**

- Center as of 1100 AM EDT
- Past Track



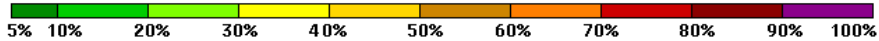
# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Thu Oct 1 to 8 AM EDT Tue Oct 6



Probability of tropical storm force surface winds (1-minute average  $\geq$  39 mph) from all tropical cyclones

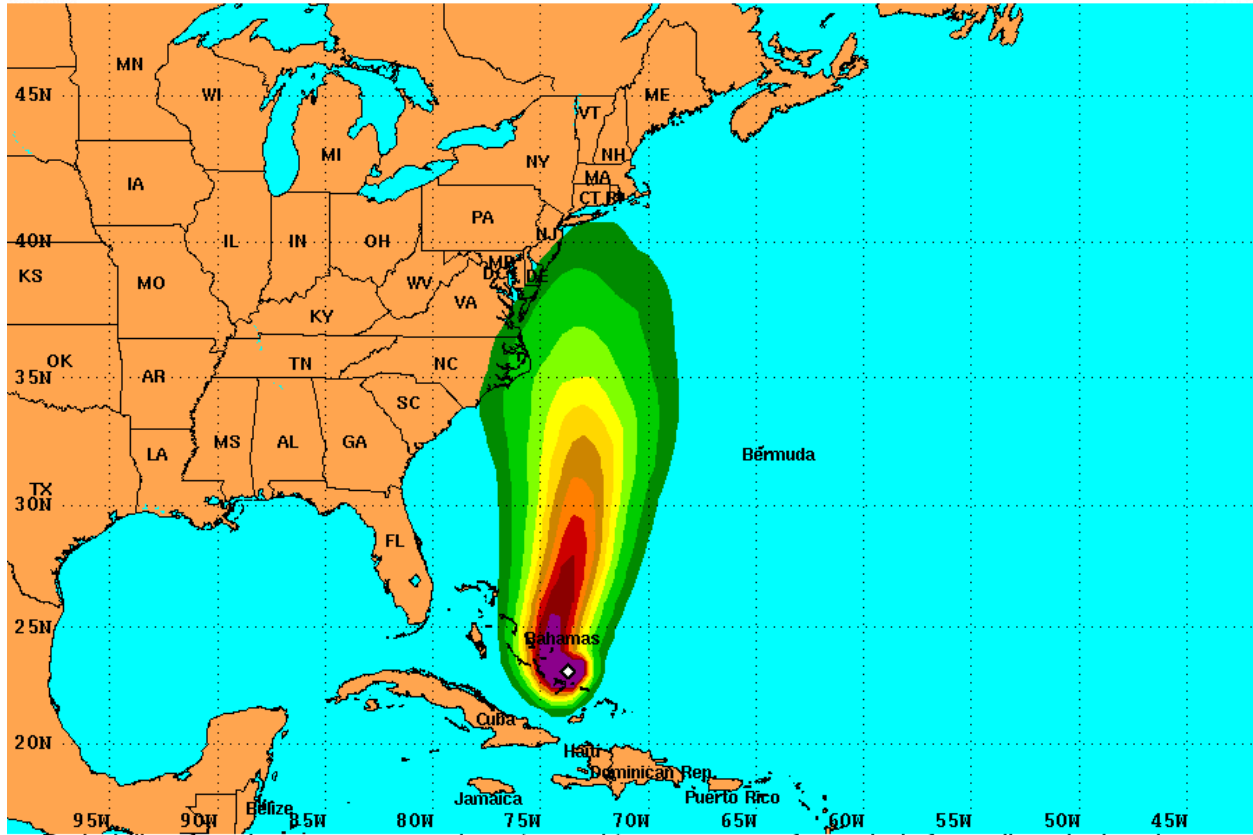
◇ indicates HURRICANE JOAQUIN center location at 8 AM EDT Thu Oct 1 2015 (Forecast/Advisory #15)





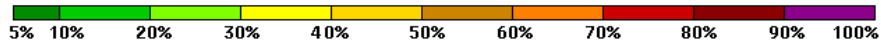
# 50-knot Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Thu Oct 1 to 8 AM EDT Tue Oct 6



Probability of 1-minute average 50-knot (58 mph) or greater surface winds from all tropical cyclones

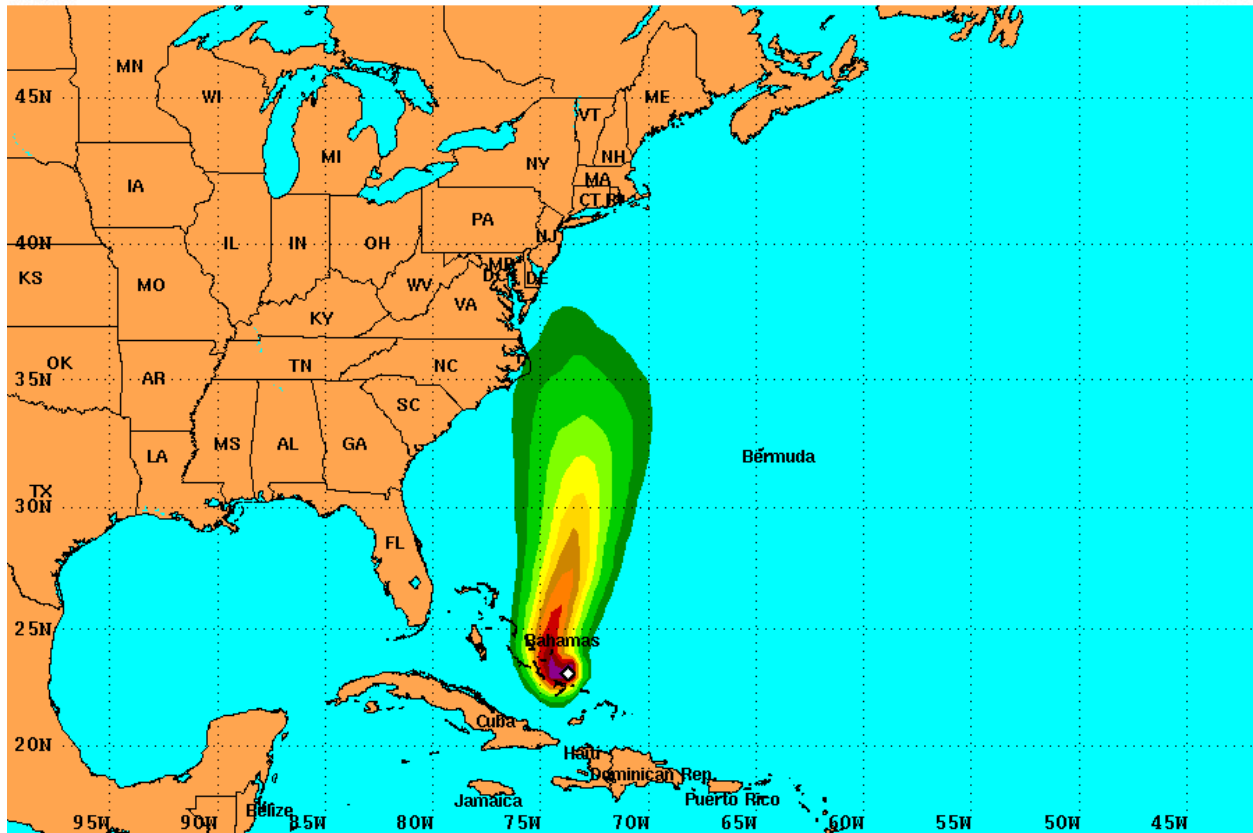
◇ indicates HURRICANE JOAQUIN center location at 8 AM EDT Thu Oct 1 2015 (Forecast/Advisory #15)





# Hurricane Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 AM EDT Thu Oct 1 to 8 AM EDT Tue Oct 6



Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

◇ indicates HURRICANE JOAQUIN center location at 8 AM EDT Thu Oct 1 2015 (Forecast/Advisory #15)

