



Custom Weather Forecast

2017 Chicago Yacht Club Race To Mackinac-Super Mac

Disclaimer: The user assumes all risk related to the use of this data. The crew of the participating yacht must determine their ability and willingness to accommodate weather-related challenges. Please consult the current National Weather Service forecast before and during the race.



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Thunderstorms

Special Note: *The forecast includes the potential for severe thunderstorms. The thresholds for a severe thunderstorm are winds exceeding 50 knots, hail greater than 1" in diameter, or the formation of a tornado.*

Both severe and non-severe thunderstorms can have a significant and unpredictable effect on wind speed, wind direction, and wave heights. Mac participants are encouraged to monitor the latest National Weather Service forecasts, watches, and warnings.

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Large-Scale Weather Pattern

Figure 1: Surface Forecast Valid 7:00 am Saturday

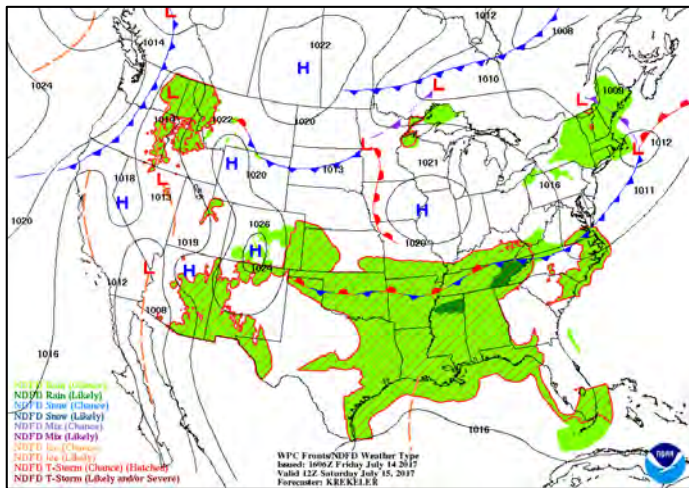


Figure 2: Surface Forecast Valid 7:00 am Sunday

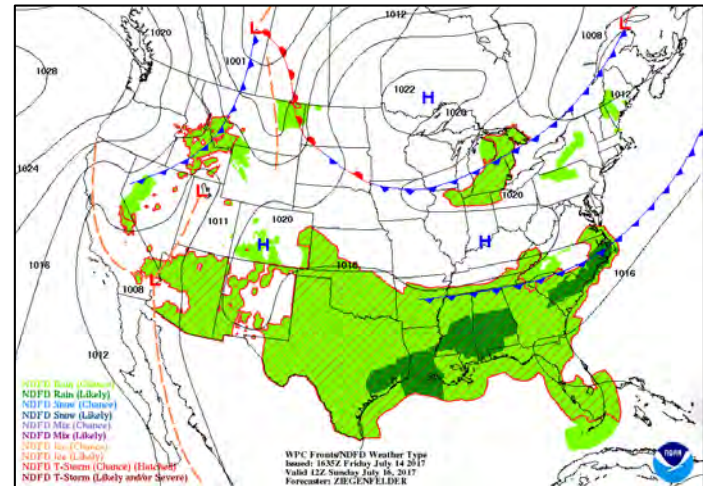


Figure 3: Surface Forecast Valid 7:00 am Monday

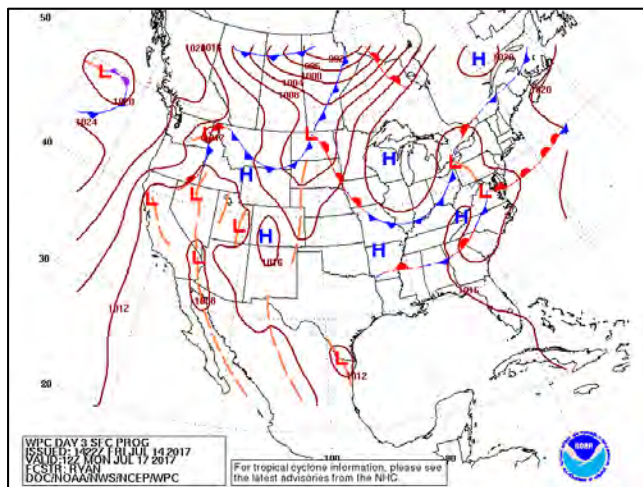
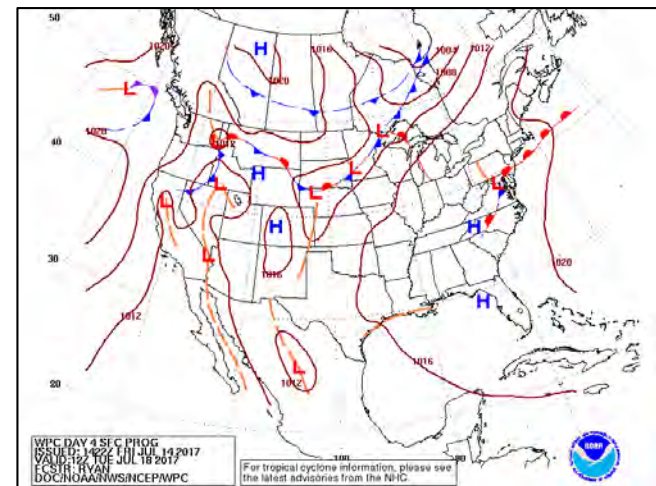


Figure 4: Surface Forecast Valid 7:00 am Tuesday





Saturday

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Saturday's Forecast

Discussion

Early on Saturday morning, an area of high pressure (1020 mb) is expected to be centered over the Iowa/Illinois border. This High, which extends its influence over the southern half of Lake Michigan, is forecast to slide southeast during the day on Saturday. In addition to the High, a cold front and associated surface trough extending from a Low in northeastern Canada will be north of Lake Superior. As the High shifts southeast, the cold front/surface trough is forecast to move south towards Lake Michigan. The current forecast suggests the boundary will reach northern Lake Michigan by 10:00 pm on Saturday evening. It will continue to sweep down the Lake overnight on Saturday reaching Milwaukee by early Sunday morning. Passage of the cold front and its associated trough will bring a period of light and variable winds as the winds transition from westerly south of the front and northerly north of the front. Depending on wind speed and direction, you should anticipate reaching the cold front after midnight.

Thunderstorms/Precipitation

Showers and thunderstorms are expected to develop south of the approaching cold front. The Storm Prediction Center suggests a slight risk of isolated severe thunderstorms are possible across Lake Michigan late on Saturday (after 5 pm). Rain is expected to reach the northern part of the fleet by 7:00 pm on Saturday with rain persisting through early Sunday morning. Total accumulation -- .10" to .25".

Figure 1: Surface Forecast Valid 7:00 am Saturday

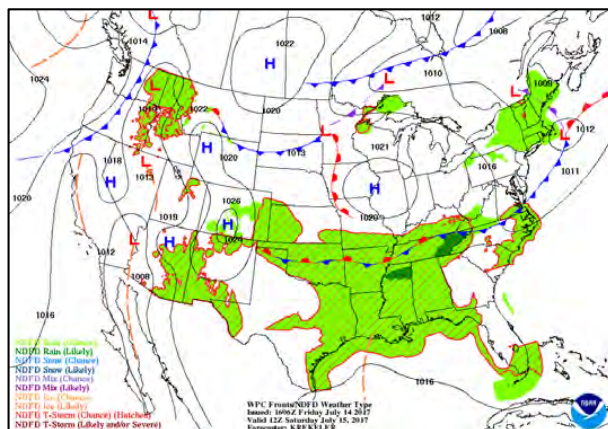


Figure 2: Convective Outlook For Saturday

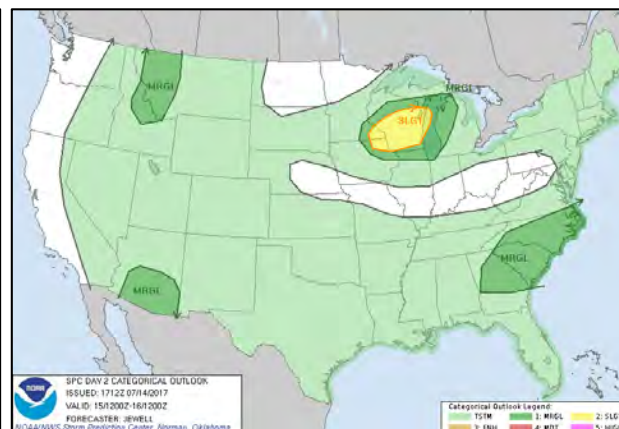
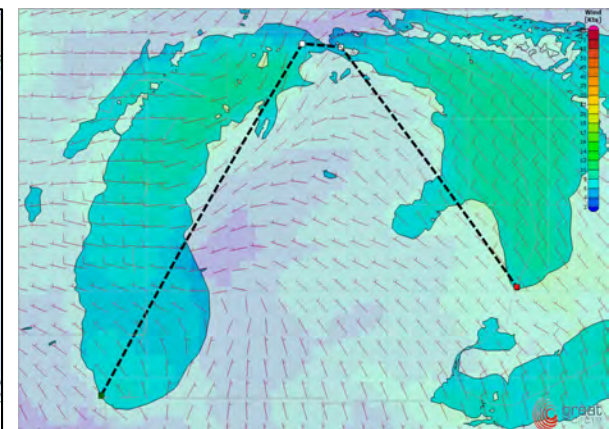


Figure 3: Wind Forecast Valid 7:00 am Saturday





Saturday's Forecast

Saturday Wind / Wave Forecast	
Upper Lake	Westerly winds 5 to 10 knots early will back to the southwest and increase to 10 to 15 knots by early afternoon. SW winds will increase to 15 to 20 through the afternoon/early evening. SW winds will veer to the W and diminish slightly late evening. West winds veer to the NW then N and build to 20 to 25 knots after midnight. Waves 3 to 5 feet building to 4 to 6 feet.
Lower Lake	High pressure across the extreme southern portion of Lake Michigan will result in light and variable winds from mid-morning through the afternoon. Look for development of onshore winds from the lake breeze. As the high moves away on Saturday evening, SW around 5 knots will build to 7-12 knots by midnight. Winds will veer to the N and increase to 15 to 20 knots after midnight. Waves 1 to 3 feet building 2 to 4 feet.



Saturday's Forecast

Forecast Time		Wind Direction	Wind Speed (kts)	Wave Heights (feet)	Comments
Local	UTC				
1:00 AM	6Z				
4:00 AM	9Z				
7:00 AM	12Z				
10:00 AM	15Z	Variable	<= 5	1 to 3	On shore lake breezes may develop.
1:00 PM	18Z	Variable	<= 5	1 to 3	On shore lake breezes may develop.
4:00 PM	21Z	Variable	<= 5	1 to 3	On shore lake breezes may develop.
7:00 PM	0Z	SW	7 to 12	1 to 3	Southwest gradient winds should replace the lake breeze.
10:00 PM	3Z	SW	7 to 12	2 to 4	Depending upon your progress up the Lake, you can expect to reach the cold front between 10:00 pm and 3:00 am.

Notes

- Wind and wave forecast is for the general location of the participating yacht as predicted by the routing solution. The wind speed forecast is at the standard meteorological height of 10 meters.
- Waves are the significant wave height - the average of the highest 1/3 of the wave spectrum. Occasional wave height is the average of the highest 1/10 of the wave spectrum.



Sunday



Sunday's Forecast

Discussion

At 7:00 am on Sunday morning, the cold front/surface trough will be draped across southern Lake Michigan near Milwaukee. As the front slides south, a strong area of high pressure centered over northern Lake Superior will build south over Lake Michigan.

Thunderstorms/Precipitation

On Sunday, a marginal risk of severe thunderstorm is associated with the continued southern movement of the cold front. This risk is limited to the southern portion of Lake Michigan. The fleet should be well north of this area. Light precipitation (.01" to .10") is expected over this same area.

Figure 1: Surface Forecast Valid 7:00 am Sunday

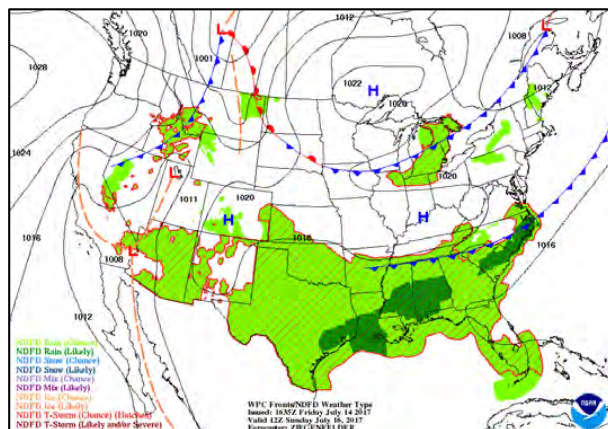


Figure 2: Convective Outlook For Sunday

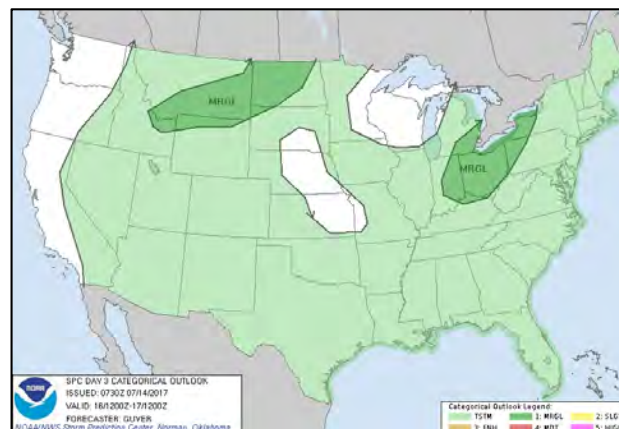
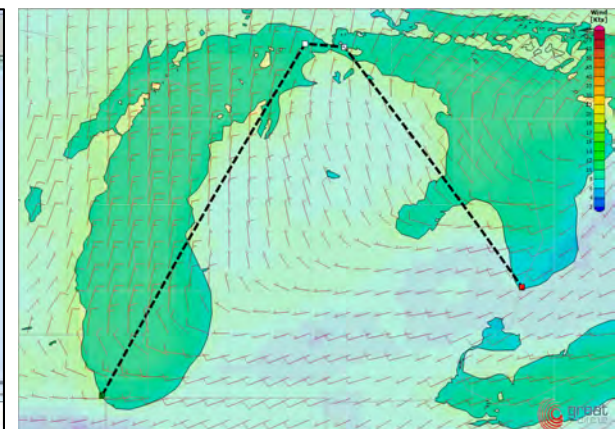


Figure 3: Wind Forecast Valid 7:00 am Sunday





Sunday's Forecast

Sunday Wind / Wave Forecast	
Upper Lake	Northerly winds building to 20 to 25 knots after midnight Saturday night. Winds should remain N at 20 to 25 knots before diminishing during early evening to 15 to 20 knots by midnight. Winds continue to weaken to 5 to 10 knots by early Monday morning. Waves 4 to 6 feet building to 5 to 7.
Lower Lake	Northerly winds building to 15 to 20 knots after midnight Saturday night. Northerly winds will build to 20 to 25 knots by mid morning on Sunday. Diminishing to 15 to 20 knots during Sunday evening. Waves 4 to 6 feet building to 5 to 7.



Sunday's Forecast

Forecast Time		Wind Direction	Wind Speed (kts)	Wave Heights (feet)	Comments
Local	UTC				
1:00 AM	6Z	W	9 to 14	2 to 4	Passage of the cold front/surface trough.
4:00 AM	9Z	NNE	15 to 20	3 to 5	Passage of the cold front/surface trough.
7:00 AM	12Z	NNE	17 to 22	4 to 6	
10:00 AM	15Z	NNE	17 to 22	5 to 7	
1:00 PM	18Z	NNE	17 to 22	5 to 7	
4:00 PM	21Z	NNE	17 to 22	5 to 7	
7:00 PM	0Z	NNE	15 to 20	5 to 7	
10:00 PM	3Z	NNE	10 to 15	4 to 6	

Notes

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- Waves are the significant wave height - the average of the highest 1/3 of the wave spectrum. Occasional wave height is the average of the highest 1/10 of the wave spectrum.



Monday

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Monday's Forecast

Discussion

High pressure will dominate Lake Michigan and Lake Huron on Monday.

Thunderstorms/Precipitation

No thunderstorms or precipitation is expected.

Figure 1: Surface Forecast Valid 7:00 am Monday

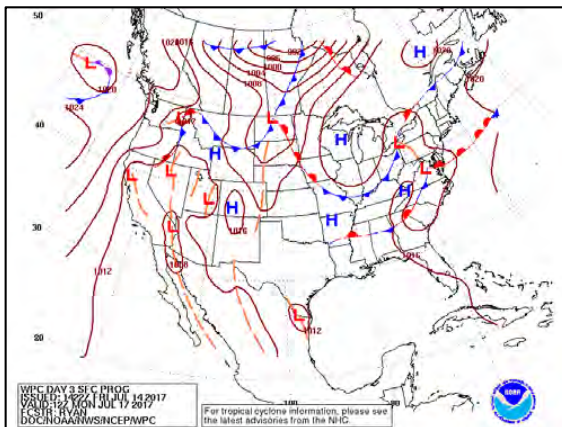
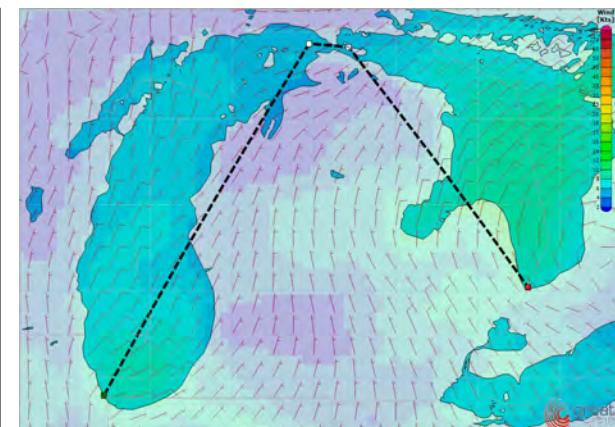


Figure 2: Convective Outlook For Monday



Figure 3: Wind Forecast Valid 7:00 am Monday





Monday's Forecast

Monday Wind / Wave Forecast – Lake Michigan	
Upper Lake	Northeasterly at 5 to 10 knots by early Monday morning. Winds diminish to light and variable by mid-morning and persist through the day. Waves 3 to 5 feet decreasing to 1 to 3 feet.
Lower Lake	Not Applicable

Monday Wind / Wave Forecast – Lake Huron	
Upper Lake	NE 10 to 15 knots. Decreasing to 5 to 10 knots by mid-day. Waves 2 feet or less.
Lower Lake	NE 15 to 20 knots. Decreasing to 10 to 15 knots by mid-day. Waves 2 to 4 feet.



Monday's Forecast

Forecast Time		Wind Direction	Wind Speed (kts)	Wave Heights (feet)	Comments
Local	UTC				
1:00 AM	6Z	NNE	10 to 15	4 to 6	
4:00 AM	9Z	NE	5 to 10	2 to 4	Reach Mackinac Island at approximately 8-9Z.
7:00 AM	12Z	NE	5 to 10	1 to 3	
10:00 AM	15Z	NE	5 to 10	1 to 3	
1:00 PM	18Z	NE	5 to 10	1 to 3	
4:00 PM	21Z	NE	5 to 10	1 to 3	
7:00 PM	0Z	NNE	5 to 10	1 to 3	
10:00 PM	3Z	N	5 to 10	1 to 3	

Notes

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- Waves are the significant wave height - the average of the highest 1/3 of the wave spectrum. Occasional wave height is the average of the highest 1/10 of the wave spectrum.



Tuesday



Tuesday's Forecast

Discussion

On Tuesday morning, Lake Huron is expected to be under the influence of a large area of high pressure dominating the eastern United States. At the same, a cold front draped across northern Lake Superior will be approaching northern Lake Huron. This boundary is not expected to cross Lake Huron until early morning on Wednesday.

Thunderstorms/Precipitation

No thunderstorms or precipitation is expected.

Figure 1: Surface Forecast Valid 7:00 am Tuesday

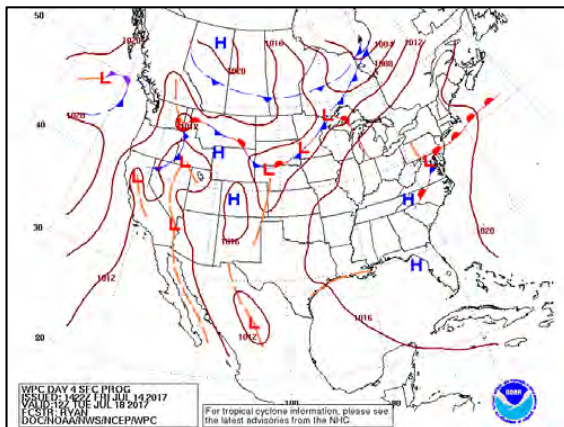


Figure 2: Convective Outlook For Tuesday

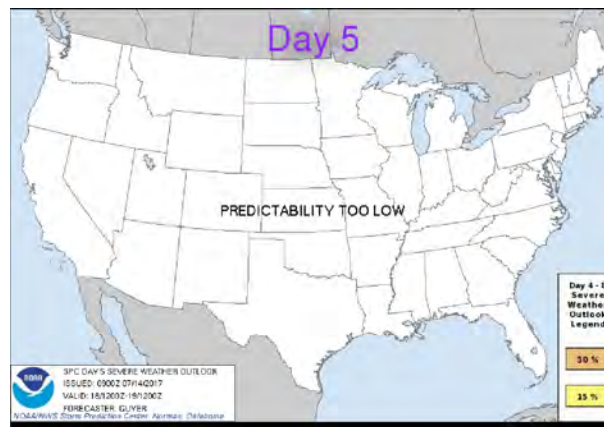
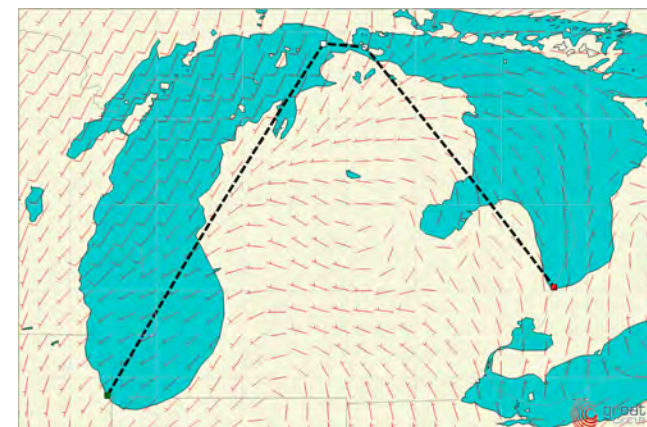


Figure 3: Wind Forecast Valid 7:00 am Tuesday





Tuesday's Forecast

Tuesday Wind / Wave Forecast – Lake Huron	
Upper Lake	Not Applicable
Lower Lake	N <= 5 knots to light a variable in the morning. Backing to the southeast at 3 to 7 knots in the early afternoon. Waves <= 2 feet.



Tuesday's Forecast

Forecast Time		Wind Direction	Wind Speed (kts)	Wave Heights (feet)	Comments
Local	UTC				
1:00 AM	6Z	NW	5 to 10	1 to 3	
4:00 AM	9Z	NW	5 to 10	1 to 3	
7:00 AM	12Z	NW	5 to 10	1 to 3	Arrive at Port Huron
10:00 AM	15Z				
1:00 PM	18Z				
4:00 PM	21Z				
7:00 PM	0Z				
10:00 PM	3Z				

Notes

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- Waves are the significant wave height - the average of the highest 1/3 of the wave spectrum. Occasional wave height is the average of the highest 1/10 of the wave spectrum.

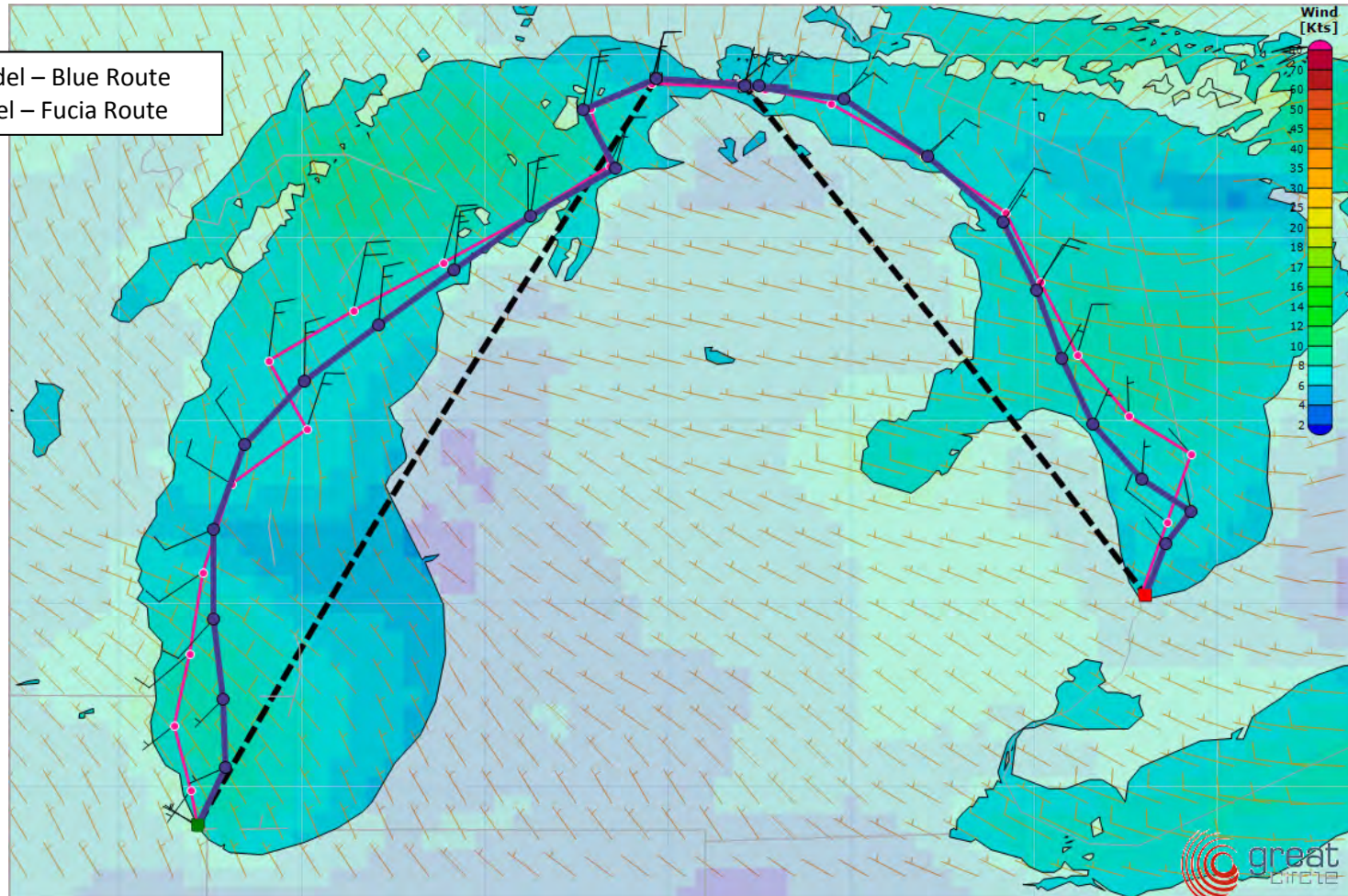


Forecast Model Routing



Forecast Model Routing Overview

Please Note: Waypoints on weather forecast maps and other imagery provided by LakeErieWX are not to be used for navigational purposes. Client and crew are responsible for avoiding all navigational hazards and operating the yacht in a safe manner.



GEFS Model – Blue Route
GEFS Model – Fucia Route



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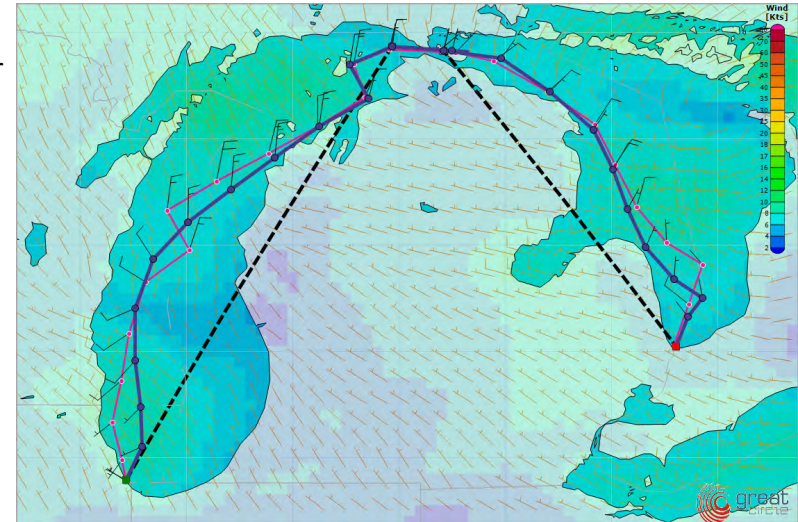
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Forecast Model Routing Overview

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Routing Comments

The basic weather forecast models are generally in agreement with the overall weather pattern over the next few days. There are variations in the predicted wind speeds and timing of shifts, but this is typically the case. Forecast models don't do a great job with thermal winds such as onshore lake breezes and this presents issues with the forecast for Saturday. The higher resolution models all suggest a small area of high pressure will form over southern Lake Michigan for most of Saturday. This seems realistic for mid-July with a large High nearby. The placement and strength of the high will have a profound effect on the wind early in the race. Because of this situation, I have included a route from both the GEFS and GFS models. The GEFS (in blue) and the track shows the model is more optimistic that the W to SW winds will develop much earlier in the day and sends you more offshore. The GFS model (in pink) seems to favor the formation of an onshore breeze and promotes a track along the shore. Once the SW winds fill in, the tracks are quite similar.





Forecast Model Routing Table

Please Note: Waypoints on weather forecast maps and other imagery provided by LakeErieWX are not to be used for navigational purposes. Client and crew are responsible for avoiding all navigational hazards and operating the yacht in a safe manner.

GEFS Forecast Model

Time	Name	Latitude	Longitude	DistToEnd	Speed Over Ground	True Wind Angle	True Wind	True Wind Speed	True Wind Direction
15 Jul 15:00	WP 0	41.79	-87.57	534.74		82° P	4 kts at 298°	4.12	298
15 Jul 18:00	WP 1	42.10	-87.42	514.87	6.62	112° P	4 kts at 246°	3.87	246
15 Jul 21:00	WP 2	42.48	-87.43	492.26	7.54	130° P	8 kts at 225°	7.58	225
16 Jul 00:00	WP 3	42.91	-87.49	466.08	8.73	138° P	11 kts at 222°	11.19	222
16 Jul 03:00	WP 4	43.40	-87.49	436.51	9.86	128° P	9 kts at 247°	9.23	247
16 Jul 06:00	WP 5	43.87	-87.32	407.82	9.56	67° P	8 kts at 327°	8.35	327
16 Jul 09:00	WP 6	44.21	-86.99	382.57	8.42	42° P	14 kts at 001°	13.82	1
16 Jul 12:00	WP 7	44.52	-86.58	357.20	8.46	38° P	18 kts at 005°	17.74	5
16 Jul 15:00	WP 8	44.82	-86.17	331.93	8.42	38° P	16 kts at 006°	16.31	6
16 Jul 18:00	WP 9	45.12	-85.75	306.80	8.38	42° P	14 kts at 008°	13.75	8
16 Jul 21:00	WP 10	45.38	-85.29	281.58	8.41	36° S	9 kts at 015°	9.18	15
17 Jul 00:00	WP 11	45.70	-85.46	261.19	6.80	49° P	9 kts at 009°	8.90	9
17 Jul 02:23	WP 12	45.87	-85.07	241.70	8.12	8° S	6 kts at 008°	5.86	8
17 Jul 02:23	WP 13	45.87	-85.07	241.70	8.12	86° P	6 kts at 008°	5.86	8
17 Jul 05:23	WP 14	45.83	-84.50	218.02	7.89	110° S	5 kts at 015°	4.98	15
17 Jul 05:50	WP 15	45.83	-84.58	214.59	7.80	14° S	5 kts at 014°	5.15	14
17 Jul 05:50	WP 16	45.83	-84.58	214.59	7.80	85° P	5 kts at 014°	5.15	14
17 Jul 08:50	WP 17	45.76	-84.04	191.29	7.77	98° P	8 kts at 036°	7.70	36
17 Jul 11:50	WP 18	45.44	-83.58	164.37	8.97	95° P	9 kts at 045°	9.19	45
17 Jul 14:50	WP 19	45.08	-83.17	136.60	9.26	127° P	8 kts at 033°	7.67	33
17 Jul 17:50	WP 20	44.71	-82.99	113.04	7.85	134° P	9 kts at 030°	8.52	30
17 Jul 20:50	WP 21	44.34	-82.85	89.61	7.81	131° P	7 kts at 029°	7.35	29
17 Jul 23:50	WP 22	43.98	-82.68	67.05	7.52	123° P	6 kts at 024°	6.06	24
18 Jul 02:50	WP 23	43.68	-82.41	45.36	7.23	127° P	5 kts at 004°	4.89	4
18 Jul 05:50	WP 24	43.50	-82.14	29.77	5.20	139° S	2 kts at 349°	2.30	349
18 Jul 08:50	WP 25	43.32	-82.28	17.52	4.08		3 kts at 322°	2.80	322
18 Jul 11:46	WP 26	43.04	-82.39	0.00	5.95				



Forecast Model Routing Table

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GFS Forecast Model

Time	Name	Latitude	Longitude	DistToEnd	TimeToGo	Speed Over Ground	True Wind Angle	True Wind	True Wind Speed	True Wind Direction
15 Jul 15:00	WP 0	41.78	-87.57	549.37	2d 20h 27m		48° P	3 kts at 304°	3.24	304
15 Jul 18:00	WP 1	41.98	-87.61	537.38	2d 17h 27m	4.00	133° P	3 kts at 216°	3.14	216
15 Jul 21:00	WP 2	42.33	-87.70	515.67	2d 14h 27m	7.24	137° P	7 kts at 232°	6.89	232
16 Jul 00:00	WP 3	42.73	-87.62	491.73	2d 11h 27m	7.98	137° P	9 kts at 230°	8.61	230
16 Jul 03:00	WP 4	43.17	-87.54	464.88	2d 08h 27m	8.95	137° P	12 kts at 236°	11.53	236
16 Jul 06:00	WP 5	43.65	-87.39	435.10	2d 05h 27m	9.93	103° P	9 kts at 302°	9.11	302
16 Jul 09:00	WP 6	43.95	-86.97	409.70	2d 02h 27m	8.47	40° S	17 kts at 018°	17.05	18
16 Jul 12:00	WP 7	44.33	-87.19	385.41	1d 23h 27m	8.10	43° P	17 kts at 007°	16.82	7
16 Jul 15:00	WP 8	44.60	-86.72	359.75	1d 20h 27m	8.55	41° P	20 kts at 011°	19.95	11
16 Jul 18:00	WP 9	44.86	-86.23	333.53	1d 17h 27m	8.74	37° P	15 kts at 014°	14.77	14
16 Jul 21:00	WP 10	45.12	-85.76	308.26	1d 14h 27m	8.42	48° P	9 kts at 000°	8.73	0
17 Jul 00:00	WP 11	45.39	-85.32	283.51	1d 11h 27m	8.25	36° S	7 kts at 023°	7.46	23
17 Jul 03:00	WP 12	45.71	-85.43	263.93	1d 08h 27m	6.53	49° P	14 kts at 010°	13.55	10
17 Jul 04:53	WP 13	45.84	-85.09	247.63	1d 06h 33m	8.58	14° S	9 kts at 014°	9.42	14
17 Jul 04:53	WP 14	45.84	-85.09	247.63	1d 06h 33m	8.58	79° P	9 kts at 014°	9.42	14
17 Jul 07:53	WP 15	45.81	-84.47	221.42	1d 03h 33m	8.73	117° S	8 kts at 044°	8.05	44
17 Jul 08:35	WP 16	45.84	-84.61	215.25	1d 02h 51m	8.91	50° S	7 kts at 050°	6.83	50
17 Jul 08:35	WP 17	45.84	-84.61	215.25	1d 02h 51m	8.91	57° P	7 kts at 050°	6.83	50
17 Jul 11:35	WP 18	45.73	-84.11	193.33	0d 23h 51m	7.31	74° P	11 kts at 054°	10.57	54
17 Jul 14:35	WP 19	45.44	-83.60	165.77	0d 20h 51m	9.18	84° P	8 kts at 049°	7.78	49
17 Jul 17:35	WP 20	45.14	-83.15	139.42	0d 17h 51m	8.79	127° P	8 kts at 033°	8.50	33
17 Jul 20:35	WP 21	44.76	-82.97	115.22	0d 14h 51m	8.07	125° P	9 kts at 034°	9.38	34
17 Jul 23:35	WP 22	44.36	-82.76	89.84	0d 11h 51m	8.46	132° P	9 kts at 016°	8.51	16
18 Jul 02:35	WP 23	44.03	-82.48	66.33	0d 08h 51m	7.84	133° P	7 kts at 358°	7.49	358
18 Jul 05:35	WP 24	43.81	-82.14	46.97	0d 05h 51m	6.45	124° S	3 kts at 319°	2.83	319
18 Jul 08:35	WP 25	43.44	-82.27	23.81	0d 02h 51m	7.72		9 kts at 308°	8.54	308
18 Jul 11:27	WP 26	43.06	-82.41	0.00	0d 00h 00m	8.33				

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Thank you for choosing LakeErieWX for your marine forecasting needs.