

Private Weather Forecast

2022 Bayview Mackinac Race

For The Exclusive Use of

Disclaimer: The user assumes all risk related to the use of this Private Weather Forecast. The forecast may include the potential for severe thunderstorms. The National Weather Service threshold 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. The crew of the participating yacht must determine their ability and willingness to manage all weather-related challenges. Please consult the current official National Weather Service forecast, watches, and warnings before and during the race. LakeErieWX Marine Weather does not issue watches or warnings or otherwise advise clients of approaching severe weather.

Reference Guide

Surface Weather Features	
Cold Front – leading edge of an advancing cooler and drier air mass.	
Warm Front – boundary between retreating cooler air and advancing warm air.	
Stationary Front – a boundary between air masses moving at 5 knots or less.	
Occluded Front – the location where a faster moving cold front has overtaken the warm front.	
Trough – an elongated area of low pressure.	

Meteorological Time

UTC / Zulu / GMT To Local Time Conversion				
UTC / Zulu / GMT	Eastern Time Zone		Central Time Zone	
	Daylight Saving	Standard	Daylight Saving	Standard
	(Subtract 4 hrs)	(Subtract 5 hrs)	(Subtract 5 hrs)	(Subtract 6 hrs)
0000Z	8:00 PM	7:00 PM	7:00 PM	6:00 PM
0300Z	11:00 PM	10:00 PM	10:00 PM	9:00 PM
0600Z	2:00 AM	1:00 AM	1:00 AM	12:00 AM
0900Z	5:00 AM	4:00 AM	4:00 AM	3:00 AM
1200Z	8:00 AM	7:00 AM	7:00 AM	6:00 AM
1500Z	11:00 AM	10:00 AM	10:00 AM	9:00 AM
1800Z	2:00 PM	1:00 PM	1:00 PM	12:00 PM
2100Z	5:00 PM	4:00 PM	4:00 PM	3:00 PM

GLOSSARY

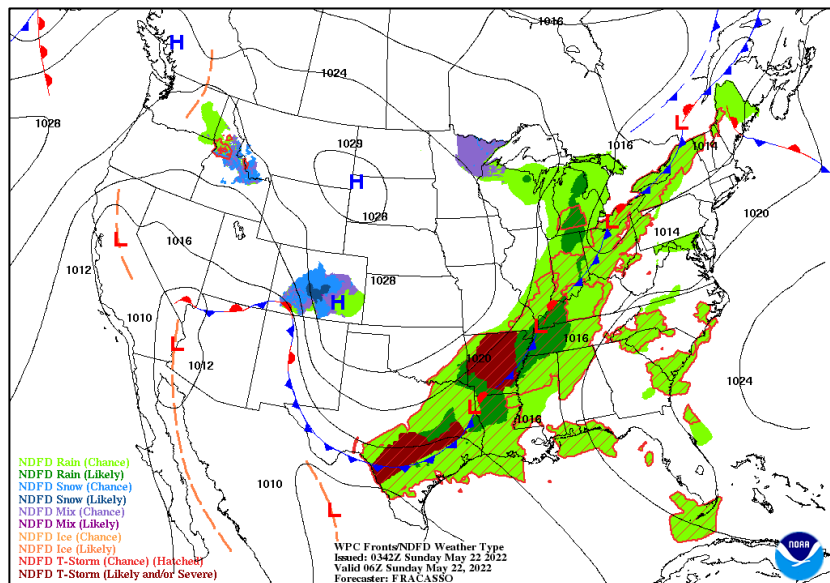
- **Severe Thunderstorm:** The National Weather Service thresholds for a severe thunderstorm are winds exceeding 50 knots, hail greater than 1" in diameter, or the formation of a tornado.
- **Convective Outlook:** A forecast graphic showing the risk of severe weather for a specific 24-hour period.

Understanding Severe Thunderstorm Risk Categories					
THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with all thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
• Winds to 40 mph • Small hail	• Winds 40-50 mph • Hail up to 1" • Low tornado risk	• One or two tornadoes • Reports of strong wind/damage • Hail - 1", isolated 2"	• A few tornadoes • Several reports of wind/damage • Damaging hail, 1-2"	• Strong tornadoes • Widespread wind damage • Destructive hail, 2"+	• Tornado outbreak • Derecho
* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.					
National Weather Service www.spc.noaa.gov					

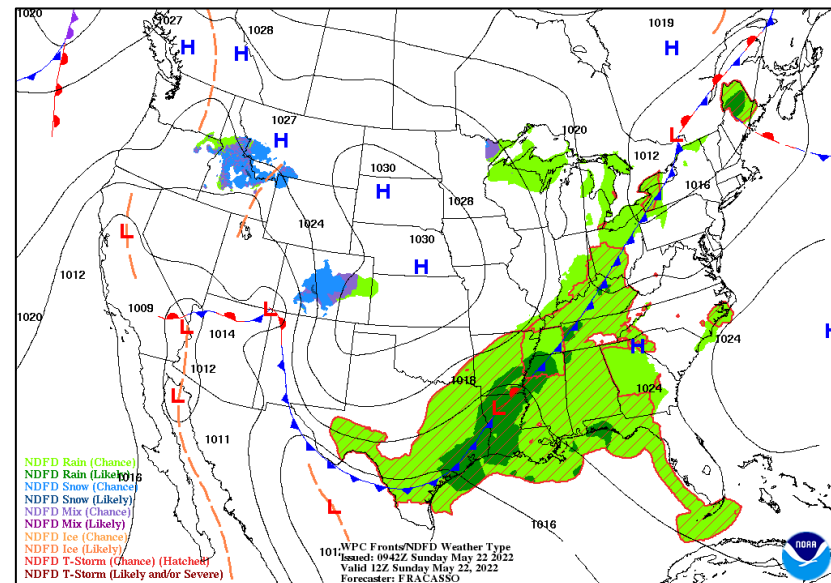
- **Hazardous Weather Outlook:** A text product from your local NWS office that describes the potential for severe weather in the forecast area. HWOs are written using non-technical terminology and offer a detailed description of where, when, and what type of severe weather is expected.
- **Thunderstorm Watch:** Issued when conditions become favorable for organized severe thunderstorms and tornadoes to develop.
- **Thunderstorm Warning:** Issued when either a severe thunderstorm is indicated by radar or a spotter reports a thunderstorm producing hail ≥ 1 " in diameter and/or winds ≥ 50 knots and/or a tornado.

Large Scale Weather Pattern-Summary

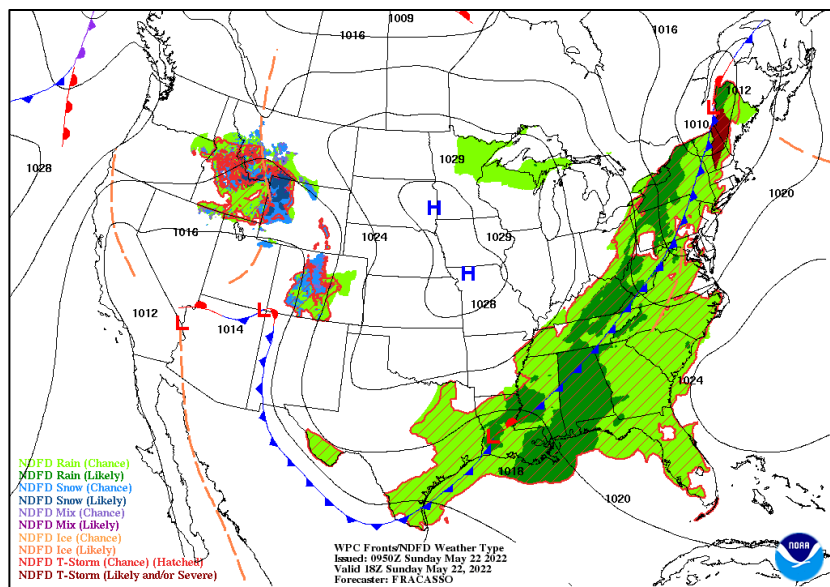
Surface Forecast Valid 8:00 am Saturday



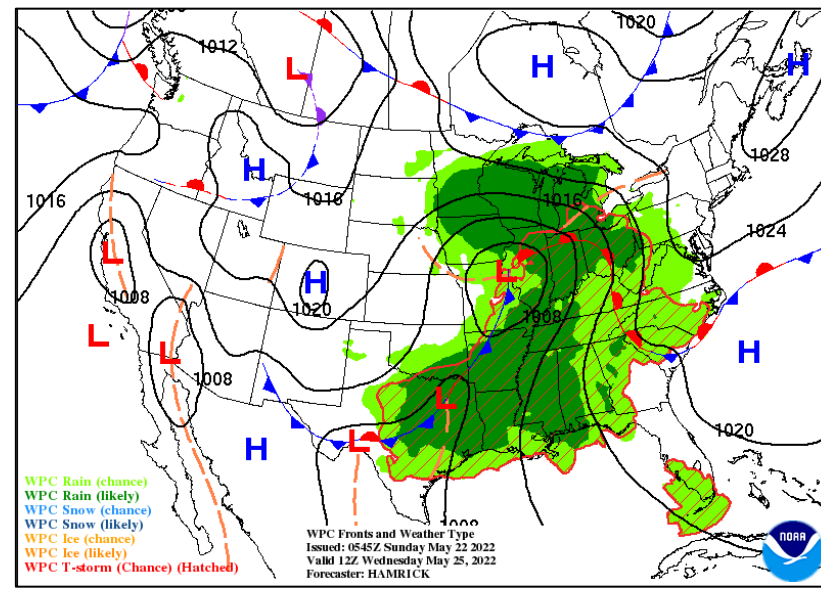
Surface Forecast Valid 8:00 am Sunday



Surface Forecast Valid 8:00 am Monday



Surface Forecast Valid 8:00 am Tuesday



Saturday

Saturday Forecast Discussion

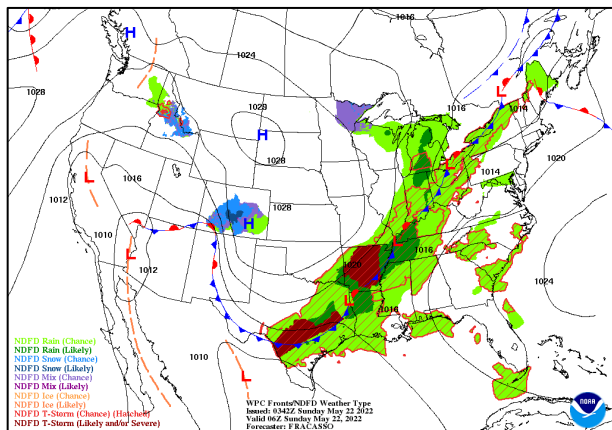
General

A warm front extending from an area of low pressure in south central Canada will approach Lake Huron on Friday. The latest forecast guidance suggests this boundary will reach Lake Huron early morning on Saturday. Although the arrival of the front is several hours faster than yesterday's forecast, the overall pattern is becoming more consistent. With the race less than 24 hours away, let's hope the current forecast trend persists. The low's trailing cold front will be near western Minnesota on Saturday morning and will move steadily east during the day. It is expected to reach northwestern Lake Huron in the very early hours of Sunday morning. The daytime high temperature in Port Huron will reach the low 80s. Cloudy conditions will prevail across all of Lake Huron.

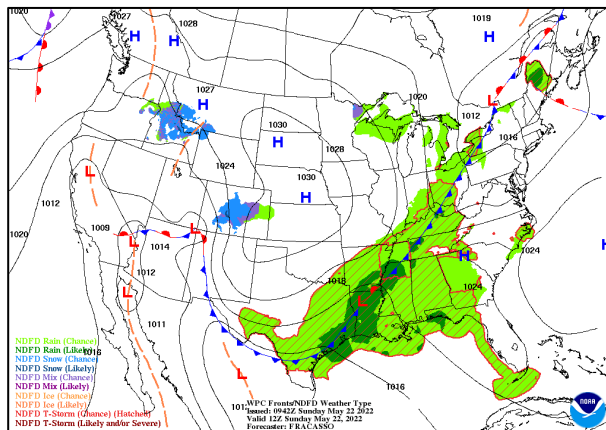
Precipitation-Thunderstorms

Severe thunderstorms are expected on Saturday. The approach and passage of the warm and cold fronts will produce widespread rain and thunderstorms from Saturday morning through Sunday morning. Ample moisture combined with moderate support for upward motion may result in .50" to 1.0" of rain across Lake Huron in the 24-hour period beginning at 8 am on Saturday morning. Conditions will be favorable for the development of organized severe thunderstorms. (The criteria for a severe thunderstorm are hail greater => 1" in diameter, or a wind gust => 50 knots, or a tornado). The Storm Prediction Center (SPC) has placed the southern half of Michigan and Lake Huron under a **Slight** risk of severe thunderstorms from 8 am on Saturday through 8 am on Sunday morning (see image in lower right). The thunderstorms are expected to produce damaging winds gusts accompanied by large hail. A SPC **Slight** risk means that severe thunderstorms are expected, but they "should be short-lived and/or not widespread. But more importantly, a **Slight** risk also mentions that "isolated intense storms are possible". Check out the SPC Thunderstorm Severe Thunderstorm Risk Categories graphic on page 2 for further details.

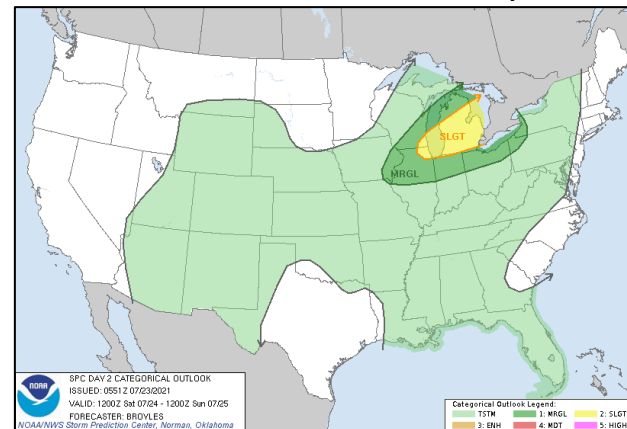
Surface Forecast Valid 8:00 am Saturday



Surface Forecast Valid at 8:00 pm Saturday



























SPC Convective Outlook For Saturday



Saturday Wind & Wave Forecast

Saturday Wind & Wave Forecast Summary

Central Lake Huron	South southwest at 13 to 18 knots. Slight veering toward southwest by late afternoon. Significant waves 3 to 5 feet subsiding to 2 to 4 feet. Patchy fog may develop.
Southern Lake Huron	South at 13 to 18 knots. Veering to southwest and decreasing to 11 to 16 knots by late evening. Significant waves 3 to 5 feet subsiding to 2 to 4 feet. Patchy fog may develop.
Starting Area	South southeast at 9 to 14 knots early. Veering to south at 10 to 15 knots by mid-morning. Veering to southwest at 10 to 15 knots during the evening. Significant waves 2 to 4 feet. Patchy fog may develop.

Saturday		Starting Area					Southern Lake Huron					Central Lake Huron				
Forecast Time		Wind		Wind	Gusts	Sig. Waves	Wind		Wind	Gusts	Sig. Waves	Wind		Wind	Gusts	Sig. Waves
Local	UTC	Direction		(kts)	(kts)	(ft)	Direction		(kts)	(kts)	(ft)	Direction		(kts)	(kts)	(ft)
2:00 AM	6Z		135 - 165	10 - 15	25	2 to 4		135 - 165	13 - 18	20	3 to 5		135 - 165	13 - 18	20	3 to 5
5:00 AM	9Z		135 - 165	10 - 15	20	2 to 4		155 - 185	13 - 18	20	3 to 5		155 - 185	13 - 18	20	3 to 5
8:00 AM	12Z		145 - 175	10 - 15	20	2 to 4		155 - 185	13 - 18	20	3 to 5		155 - 185	18 - 23	20	3 to 5
11:00 AM	15Z		155 - 185	13 - 18	20	2 to 4		155 - 185	18 - 23	25	3 to 5		165 - 195	18 - 23	20	3 to 5
2:00 PM	18Z		155 - 185	13 - 18	20	2 to 4		155 - 185	18 - 23	25	3 to 5		165 - 195	18 - 23	20	3 to 5
5:00 PM	21Z		165 - 195	13 - 18	20	2 to 4		155 - 185	18 - 23	25	3 to 5		165 - 195	18 - 23	25	3 to 5
8:00 PM	0Z		165 - 195	13 - 18	20	2 to 4		155 - 185	18 - 23	25	2 to 4		165 - 195	18 - 23	25	3 to 5
11:00 PM	3Z		165 - 195	13 - 18	20	2 to 4		165 - 195	18 - 23	25	2 to 4		185 - 215	13 - 18	25	2 to 4
Wind Speed Scale (kts)	<= 4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	27-30	31-35	36-40	> 40

Forecast Note: Thunderstorms typically produce much higher wind speeds and wave heights. These localized effects on wind speed and wave heights are not included in the forecast. Waves are the significant wave height - the average of the highest 1/3 of the total wave spectrum. Individual waves may be significantly higher than the forecast range.

Sunday

Sunday Forecast Discussion

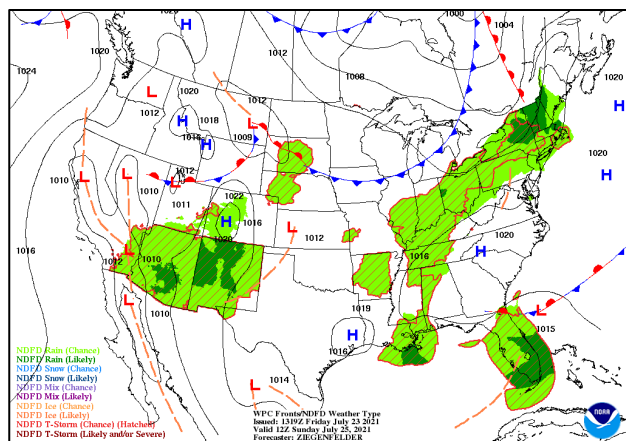
General

A cold front extending from a low in central Canada will reach northwestern Lake Huron a few hours after midnight. The current forecasts indicates that the front will reach central Lake Huron by 8 am on Sunday morning. High pressure will build across Lake Huron during the day on Sunday as the cold front moves east. Overcast skies should clear across much of Lake Huron by late morning.

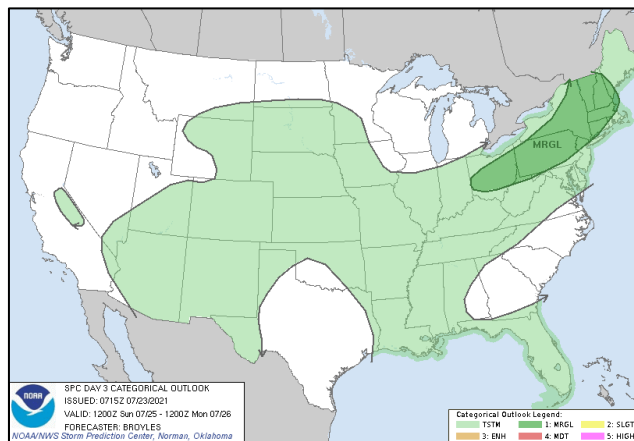
Precipitation/Thunderstorms

The passage of the cold front is expected to bring showers and perhaps a few thunderstorms to northern Lake Huron through early morning on Sunday. As mentioned in Saturday's forecast, the potential for organized severe thunderstorms will persist across Lake Huron through Sunday morning. The potential for rain and thunderstorms will quickly diminish following the passage of the cold front.

Surface Forecast Valid 8:00 am Sunday



























SPC Convective Outlook For Sunday



Sunday Wind & Wave Forecast

Sunday Wind & Wave Forecast Summary

NW Lake Huron	Light and variable early. West at 7 to 12 knots by early morning. Veering to northwest and increasing to 9 to 14 knots by late morning. Slight weakening to 6 to 11 knots and backing to westerly by late evening. Significant waves 1 to 3 feet.
Northern Lake Huron	Light and variable early. West at 5 to 10 knots by early morning. Veering to northwest and increasing to 8 to 13 knots by late afternoon. Weakening to 5 to 10 knots late. Significant waves 2 to 4 feet subsiding to 1 to 3 feet late.
Central Lake Huron	Southwest at 8 to 13 knots early. Veering to northwest and decreasing to 4 to 9 knots by early morning. Weakening to light and variable by mid-morning. Significant waves 2 to 4 feet subsiding to less than 2 feet by evening.

Sunday		Central Lake Huron					Northern Lake Huron					Northwestern Lake Huron				
Forecast Time		Wind		Wind	Gusts	Sig. Waves	Wind		Wind	Gusts	Sig. Waves	Wind		Wind	Gusts	Sig. Waves
Local	UTC	Direction		(kts)	(kts)	(ft)	Direction		(kts)	(kts)	(ft)	Direction		(kts)	(kts)	(ft)
2:00 AM	6Z		285 - 315	13 - 18	20	2 to 4		285 - 315	13 - 18	15	2 to 4		255 - 285	8 - 13	20	1 to 3
5:00 AM	9Z		285 - 315	13 - 18	15	2 to 4		285 - 315	8 - 13	10	2 to 4		210 - 240	8 - 13	20	1 to 3
8:00 AM	12Z		285 - 315	8 - 13	15	1 to 3		210 - 240	8 - 13	10	2 to 4		255 - 285	8 - 13	20	1 to 3
11:00 AM	15Z		30 - 60	6 - 11	15	1 to 3		285 - 315	8 - 13	10	2 to 4		255 - 285	8 - 13	20	1 to 3
2:00 PM	18Z		30 - 60	6 - 11	15	1 to 3		285 - 315	8 - 13	10	2 to 4		255 - 285	8 - 13	20	1 to 3
5:00 PM	21Z		30 - 60	6 - 11	15	1 to 3		285 - 315	3 - 8	10	2 to 4		285 - 315	8 - 13	20	1 to 3
8:00 PM	0Z		30 - 60	6 - 11	15	<= 2		285 - 315	3 - 8	10	2 to 4		285 - 315	8 - 13	20	1 to 3
11:00 PM	3Z		30 - 60	6 - 11	15	<= 2		285 - 315	8 - 13	10	1 to 3		15 - 45	8 - 13	20	1 to 3
Wind Speed Scale (kts)	<= 4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	27-30	31-35	36-40	> 40

Forecast Note: Thunderstorms typically produce much higher wind speeds and wave heights. These localized effects on wind speed and wave heights are not included in the forecast. Waves are the significant wave height - the average of the highest 1/3 of the total wave spectrum. Individual waves may be significantly higher than the forecast range.

Monday

Monday Forecast Discussion

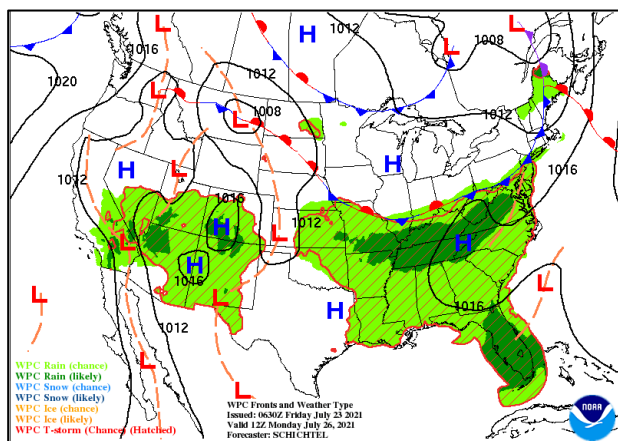
General

High pressure centered over Wisconsin will govern the condition on Lake Huron on Monday. This high is expected to shift east during the day on Monday. A cold front extending from a low in southern Canada will approach Lake Huron from the northwest, but it is not expected to reach the lake until early on Tuesday morning. Partly cloudy skies are expected across the northern half of Lake Huron.

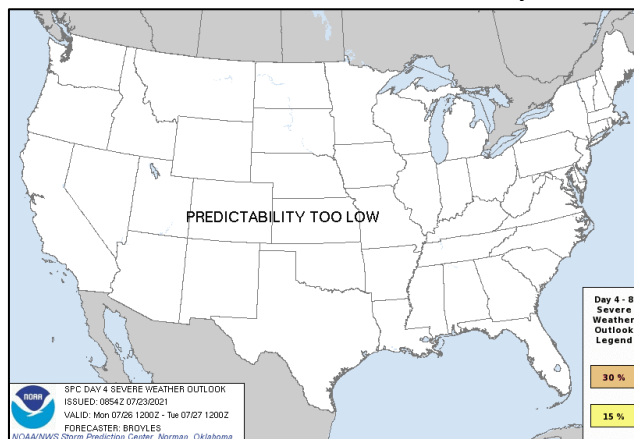
Precipitation/Thunderstorms

Showers and thunderstorms are not expected on Monday.

Surface Forecast Valid 8:00 am Monday



























SPC Convective Outlook For Monday



Monday Wind & Wave Forecast

Monday Wind & Wave Forecast Summary

NW Lake Huron	West at 6 to 11 knots early. Increasing to 8 to 13 knots by early morning. Veering to northwest at 8 to 13 knots by late morning. Slight weakening to 4 to 9 knots during the evening. Significant waves less than 2 feet.
Northern Lake Huron	West southeast at 5 to 10 knots. Veering to northwest at 5 to 10 knots by early afternoon. Slight increase to 8 to 13 knots by late afternoon. Significant waves 1 to 3 feet.
Central Lake Huron	Southwest at 7 to 12 knots. Weakening to light and variable by late afternoon. Significant waves less than 2 feet.

Monday		Central Lake Huron					Northern Lake Huron					Northwestern Lake Huron				
Forecast Time		Wind		Wind	Gusts	Sig. Waves	Wind		Wind	Gusts	Sig. Waves	Wind		Wind	Gusts	Sig. Waves
Local	UTC	Direction		(kts)	(kts)	(ft)	Direction		(kts)	(kts)	(ft)	Direction		(kts)	(kts)	(ft)
2:00 AM	6Z		135 - 165	8 - 13	15	<= 2		235 - 265	13 - 18	15	1 to 3		15 - 45	8 - 13	20	<= 2
5:00 AM	9Z		135 - 165	13 - 18	15	<= 2		235 - 265	13 - 18	15	1 to 3		15 - 45	13 - 18	20	<= 2
8:00 AM	12Z		135 - 165	18 - 23	15	<= 2		255 - 285	13 - 18	20	1 to 3		15 - 45	13 - 18	20	<= 2
11:00 AM	15Z		255 - 285	18 - 23	15	<= 2		255 - 285	18 - 23	20	1 to 3		15 - 45	18 - 23	20	<= 2
2:00 PM	18Z		255 - 285	13 - 18	15	<= 2		285 - 315	18 - 23	20	1 to 3		255 - 285	18 - 23	20	<= 2
5:00 PM	21Z		255 - 285	8 - 13	15	<= 2		285 - 315	18 - 23	20	1 to 3		255 - 285	18 - 23	20	<= 2
8:00 PM	0Z		285 - 315	8 - 13	15	<= 2		285 - 315	18 - 23	20	1 to 3		255 - 285	13 - 18	20	<= 2
11:00 PM	3Z		285 - 315	8 - 13	15	<= 2		285 - 315	18 - 23	20	1 to 3		285 - 315	8 - 13	20	<= 2
Wind Speed Scale (kts)	<= 4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	27-30	31-35	36-40	> 40

Forecast Note: Thunderstorms typically produce much higher wind speeds and wave heights. These localized effects on wind speed and wave heights are not included in the forecast. Waves are the significant wave height - the average of the highest 1/3 of the total wave spectrum. Individual waves may be significantly higher than the forecast range.

Forecast Summary By Zone

Forecast Summary By Zone

Finish	Sat 8am	Sat 11am	Sat 2pm	Sat 5pm	Sat 8pm	Sat 11pm	Sun 2am	Sun 5am	Sun 8am	Sun 11am	Sun 2pm	Sun 5pm	Sun 8pm	Sun 11pm	Mon 2am	Mon 5am	Mon 8am	Mon 11am	Mon 2pm	Mon 5pm	Mon 8pm	Mon 11pm
Direction	No Forecasts For These Periods																					
Speed (kts)							8 - 13	8 - 13	8 - 13	8 - 13	8 - 13	8 - 13	8 - 13	8 - 13	8 - 13	13 - 18	13 - 18	18 - 23	18 - 23	18 - 23	13 - 18	8 - 13
Speed Trend																						
Sig. Waves (ft)							1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2
North	Sat 8am	Sat 11am	Sat 2pm	Sat 5pm	Sat 8pm	Sat 11pm	Sun 2am	Sun 5am	Sun 8am	Sun 11am	Sun 2pm	Sun 5pm	Sun 8pm	Sun 11pm	Mon 2am	Mon 5am	Mon 8am	Mon 11am	Mon 2pm	Mon 5pm	Mon 8pm	Mon 11pm
Direction	No Forecasts For These Periods																					
Speed (kts)							13 - 18	8 - 13	8 - 13	8 - 13	8 - 13	3 - 8	3 - 8	8 - 13	13 - 18	13 - 18	13 - 18	18 - 23	18 - 23	18 - 23	18 - 23	18 - 23
Speed Trend																						
Sig. Waves (ft)							2 to 4	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Central	Sat 8am	Sat 11am	Sat 2pm	Sat 5pm	Sat 8pm	Sat 11pm	Sun 2am	Sun 5am	Sun 8am	Sun 11am	Sun 2pm	Sun 5pm	Sun 8pm	Sun 11pm	Mon 2am	Mon 5am	Mon 8am	Mon 11am	Mon 2pm	Mon 5pm	Mon 8pm	Mon 11pm
Direction																						
Speed (kts)	18 - 23	18 - 23	18 - 23	18 - 23	18 - 23	13 - 18	13 - 18	13 - 18	8 - 13	6 - 11	6 - 11	6 - 11	6 - 11	6 - 11	8 - 13	13 - 18	18 - 23	18 - 23	13 - 18	8 - 13	8 - 13	8 - 13
Speed Trend																						
Sig. Waves (ft)	3 to 5	3 to 5	3 to 5	3 to 5	3 to 5	2 to 4	2 to 4	2 to 4	1 to 3	1 to 3	1 to 3	1 to 3	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2	<= 2
South	Sat 8am	Sat 11am	Sat 2pm	Sat 5pm	Sat 8pm	Sat 11pm	Sun 2am	Sun 5am	Sun 8am	Sun 11am	Sun 2pm	Sun 5pm	Sun 8pm	Sun 11pm	Mon 2am	Mon 5am	Mon 8am	Mon 11am	Mon 2pm	Mon 5pm	Mon 8pm	Mon 11pm
Direction							No Forecasts For These Periods															
Speed (kts)	13 - 18	18 - 23	18 - 23	18 - 23	18 - 23	18 - 23																
Speed Trend																						
Sig. Waves (ft)	3 to 5	3 to 5	3 to 5	3 to 5	2 to 4	2 to 4																
Start	Sat 8am	Sat 11am	Sat 2pm	Sat 5pm	Sat 8pm	Sat 11pm	Sun 2am	Sun 5am	Sun 8am	Sun 11am	Sun 2pm	Sun 5pm	Sun 8pm	Sun 11pm	Mon 2am	Mon 5am	Mon 8am	Mon 11am	Mon 2pm	Mon 5pm	Mon 8pm	Mon 11pm
Direction							No Forecasts For These Periods															
Speed (kts)	10 - 15	13 - 18	13 - 18	13 - 18	13 - 18	13 - 18																
Speed Trend																						
Sig. Waves (ft)	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4	2 to 4																

Speed Trend Key:



= Speed Steady



= Speed Increasing



= Speed Decreasing

Forecast Model Routing

Forecast Model Routing-Summary

HO 0600 Fri 20 May 2022 UTC

086 00 00 W

084 00 00 W

082 00 00 W

080 00 00 W

Route 1 Summary

Duration: 52.77 hrs Distance: 297.1 nm

Waypoint Number	Local Time	Direction	Speed (kts)	Direction
Opt 65	Sun 9:52		9.8	307
Opt 61	Sun 5:54		11.4	326
Opt 57	Sun 3:11		9.2	338
Opt 53	Sat 22:49		4.1	289
Opt 49	Sat 18:05		7.3	7
Opt 45	Sat 14:36		4.8	178
Opt 41	Sat 10:49		8.9	264
Opt 37	Sat 7:09		14.6	274
Opt 33	Sat 5:08		14.5	286
Opt 29	Sat 3:07		15.2	263
Opt 25	Sat 1:21		19.3	206
Opt 21	Fri 23:06		21.1	173
Opt 17	Fri 21:04		20.8	169
Opt 13	Fri 19:07		19.0	166
Opt 9	Fri 17:03		15.8	169
Opt 5	Fri 14:35		13.1	186
Opt 1	Fri 12:00		12.9	180



Forecast Model Routing - Comments

H0 0600 Fri 20 May 2022 UTC

Cove Island Course Comments

This is where the comments go.

Forecast Model Routing – Heat Map & Graphs

Route 1 Heat Map

Duration: 1d 22h 52m 02s

Avg. Wind Speed: 13.1 kts

Time (hrs): 46.9

Avg. Boat Speed: 6.9 kts

Distance: 308.8

Avg. Wind Direction: 229

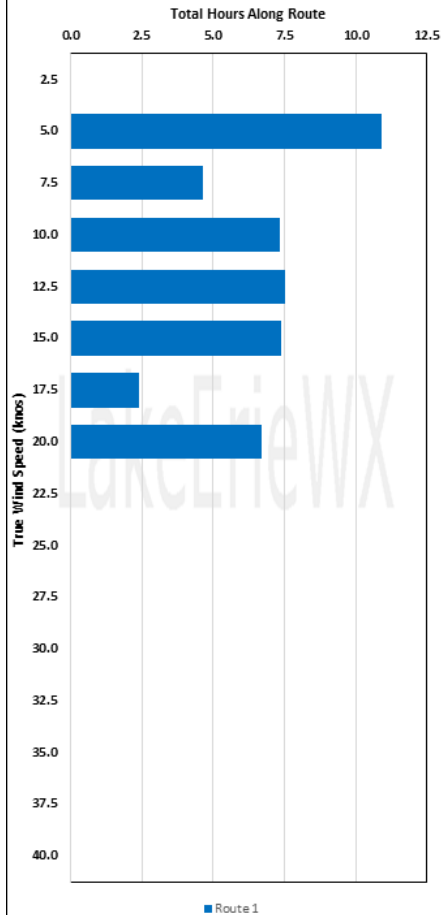
Optimal Route 1 - Total Hours During Route By True Wind Speed and True Wind Angle																							
		True Wind Speed (kts)																Angle	Angle	Angle	Angle		
		2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	Tot. (hrs)	Tot. %	Grp. (hrs)	Grp. %		
True Wind Angle (degrees)	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.7	48.5%		
	50	0.0	6.5	2.7	6.7	3.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.2			45.2%	
	60	0.0	0.4	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5			3.2%	
	70	0.0	0.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	3.1%	4.0	8.6%	
	80	0.0	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	3.5%			
	90	0.0	0.4	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.0%			
	100	0.0	1.9	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	9.0%	5.9	12.5%	
	110	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.0%			
	120	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.6%			
	130	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.4%	14.2	30.3%	
	140	0.0	0.0	0.0	0.0	0.0	0.0	1.3	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	13.7%			
	150	0.0	0.0	0.0	0.0	4.5	0.8	0.3	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	15.2%			
	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0	0.0%
	170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Speed Total:		0.0	10.9	4.6	7.4	7.5	7.4	2.4	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.9	100%	46.9	100%		
Speed Grp (hrs)		10.9		12.0		14.9		9.1		0.0		0.0		0.0		0.0							
Speed Grp %		23.2%		25.6%		31.8%		19.3%		0.0%		0.0%		0.0%		0.0%							

How To Use The Heat Map

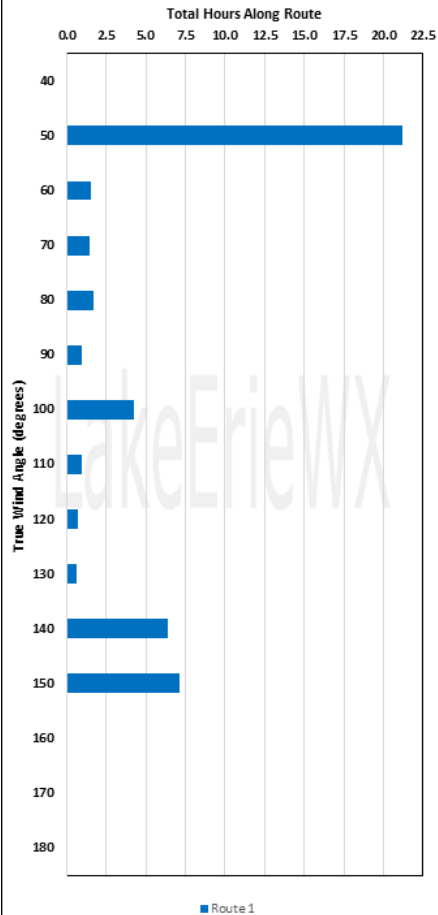
The heat map displays a table of predicted total hours sailed by true wind speed and true wind angle. Each cell is color-coded to allow a quick assessment of the predominant wind speed and direction you will encounter during the race. The total hours for each true wind angle are located in the 'Angle Tot. (hrs)' column along the right side of the table. The overall percentage of total hours for each wind angle and groupings are also along the right side of the table. The total hours for each wind speed category can be found along the bottom of the table. The overall percentage of total hours for each wind speed and groupings are also located along the bottom of the chart.

Forecast Model Routing – Heat Map & Graphs

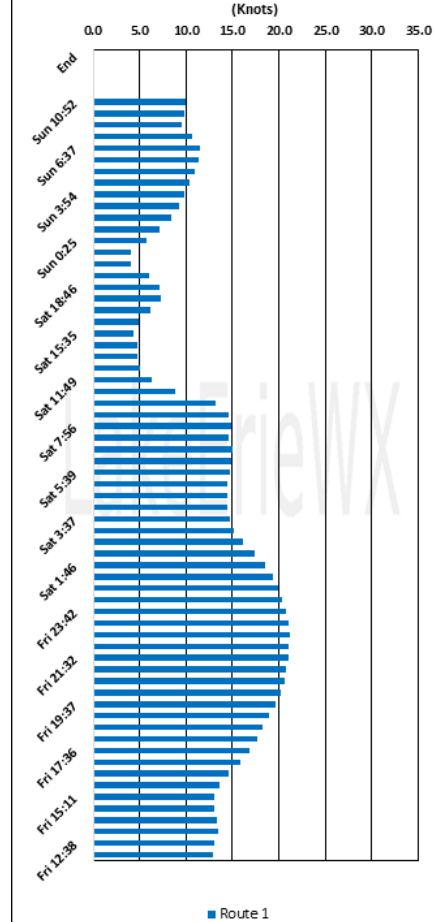
Route 1 - Hours By True Wind Speed



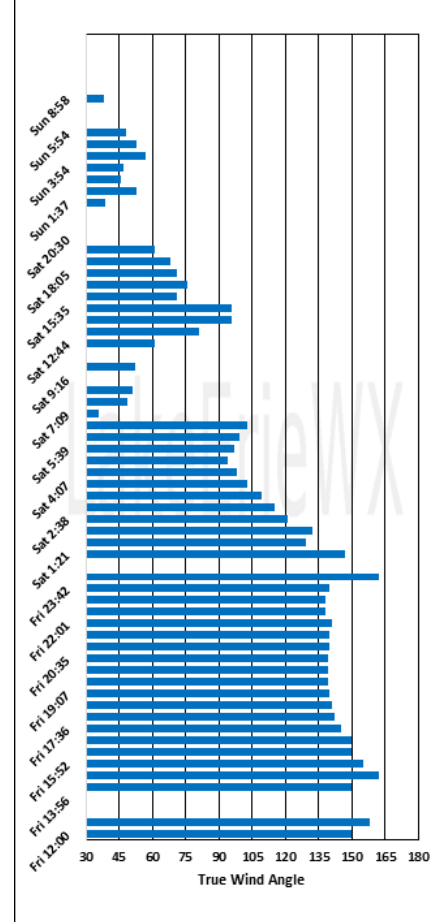
Route 1 - Hours By True Wind Angle


































Route 1 - Wind Speed Along Route



Route 1 - True Wind Angle Along Route



Forecast Model Routing-Waypoint Details-Part 1

Route 1 Local Time	Wind Direction Arrow (Degrees)	True Wind Speed & Trend	True Wind Angle	Port / Starboard Tack	Boat Speed (kts)	Bearing	Latitude	Longitude	Waypoint Number
Fri 12:00		180	12.9	Starboard	6.8	30	43 1.855n	082 24.223w	Opt 1
Fri 13:16		182	13.4 	Best VMG	6.9	335	43 9.827n	082 20.573w	Opt 3
Fri 14:35		186	13.1 	Port	6.9	336	43 17.285n	082 27.137w	Opt 5
Fri 15:52		180	13.6 	Port	6.9	25	43 24.999n	082 28.611w	Opt 7
Fri 17:03		169	15.8 	Starboard	7.2	19	43 32.995n	082 25.408w	Opt 9
Fri 18:07		165	17.7 	Starboard	7.8	23	43 40.787n	082 23.182w	Opt 11
Fri 19:07		166	19.0 	Starboard	8.1	26	43 48.494n	082 20.266w	Opt 13
Fri 20:06		167	20.2 	Starboard	8.3	28	43 56.106n	082 16.827w	Opt 15
Fri 21:04		169	20.8 	Starboard	8.3	29	44 3.628n	082 13.028w	Opt 17
Fri 22:01		171	21.1 	Starboard	8.3	30	44 11.078n	082 9.033w	Opt 19
Fri 23:06		173	21.1 	Starboard	8.4	35	44 19.226n	082 4.074w	Opt 21
Sat 0:20		182	20.3 	Port	7.8	20	44 28.274n	081 57.724w	Opt 23
Sat 1:21		206	19.3 	Port	7.8	352	44 35.446n	081 57.806w	Opt 25
Sat 2:09		238	17.4 	Port	8.2	10	44 41.643n	082 0.492w	Opt 27
Sat 3:07		263	15.2 	Port	7.9	18	44 49.469n	081 59.894w	Opt 29
Sat 4:07		277	14.5 	Port	7.8	21	44 57.136n	081 57.955w	Opt 31

Please Note: Waypoints on weather forecast maps and other imagery provided by LakeErieWX Marine Weather are provided for yacht racing strategy only. Routing waypoints 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 and seamanlike manner.

True Wind Angle Legend

- Positive Numbers = Starboard Tack
- Negative Numbers = Port Tack
- Numbers In Parenthesis = Tacking or Jibing For Best VMG

Forecast Model Routing-Waypoint Details-Part 2

Route 1 Local Time	Wind Direction Arrow	(Degrees)	True Wind Speed & Trend		True Wind Angle	Port / Starboard Tack	Boat Speed (kts)	Bearing	Latitude	Longitude	Waypoint Number
Sat 5:08		286	14.5	■	-94	Port	7.6	21	45 4.766n	081 55.702w	Opt 33
Sat 6:09		282	14.9	+	-99		7.8	21	45 12.370n	081 53.246w	Opt 35
Sat 7:09		274	14.6	■	-36		7.0	237	45 20.000n	081 51.000w	Opt 37
Sat 8:36		282	14.6	■	-51		7.0	230	45 13.743n	081 59.767w	Opt 39
Sat 10:49		264	8.9	■	-52		6.3	316	45 14.910n	082 13.904w	Opt 41
Sat 12:44		228	5.1	■	-61		4.6	290	45 20.418n	082 26.490w	Opt 43
Sat 14:36		178	4.8	■	-96		4.5	274	45 20.980n	082 38.311w	Opt 45
Sat 16:33		349	4.9	+	71	Starboard	4.5	278	45 20.306n	082 50.243w	Opt 47
Sat 18:05		7	7.3	+	71	Starboard	6.2	296	45 21.113n	083 2.084w	Opt 49
Sat 19:31		0	6.0	■	61	Starboard	5.4	300	45 23.939n	083 13.677w	Opt 51
Sat 22:49		289	4.1	■	(-36)	Best VMG	3.4	326	45 32.785n	083 23.699w	Opt 53
Sun 1:37		313	7.2	+	-39	Port	5.6	275	45 40.774n	083 32.290w	Opt 55
Sun 3:11		338	9.2	+	-46	Port	6.4	292	45 40.550n	083 45.457w	Opt 57
Sun 4:37		336	10.4	+	57	Starboard	6.8	278	45 42.594n	083 56.946w	Opt 59
Sun 5:54		326	11.4	+	-48	Port	6.8	279	45 42.720n	084 9.105w	Opt 61
Sun 7:50		317	10.7	■	(-3)	Best VMG	6.7	320	45 46.677n	084 19.947w	Opt 63

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True Wind Angle Legend

- Positive Numbers = Starboard Tack
- Negative Numbers = Port Tack
- Numbers In Parenthesis = Tacking or Jibing For Best VMG

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