

# Passage Planning and Weather Routing



“Why and How”

- [Fastseas.com](http://Fastseas.com)
- [PredictWind.com](http://PredictWind.com)
- OpenCPN
- Others



*Sherry McCampbell*  
*s/v Soggy Paws*

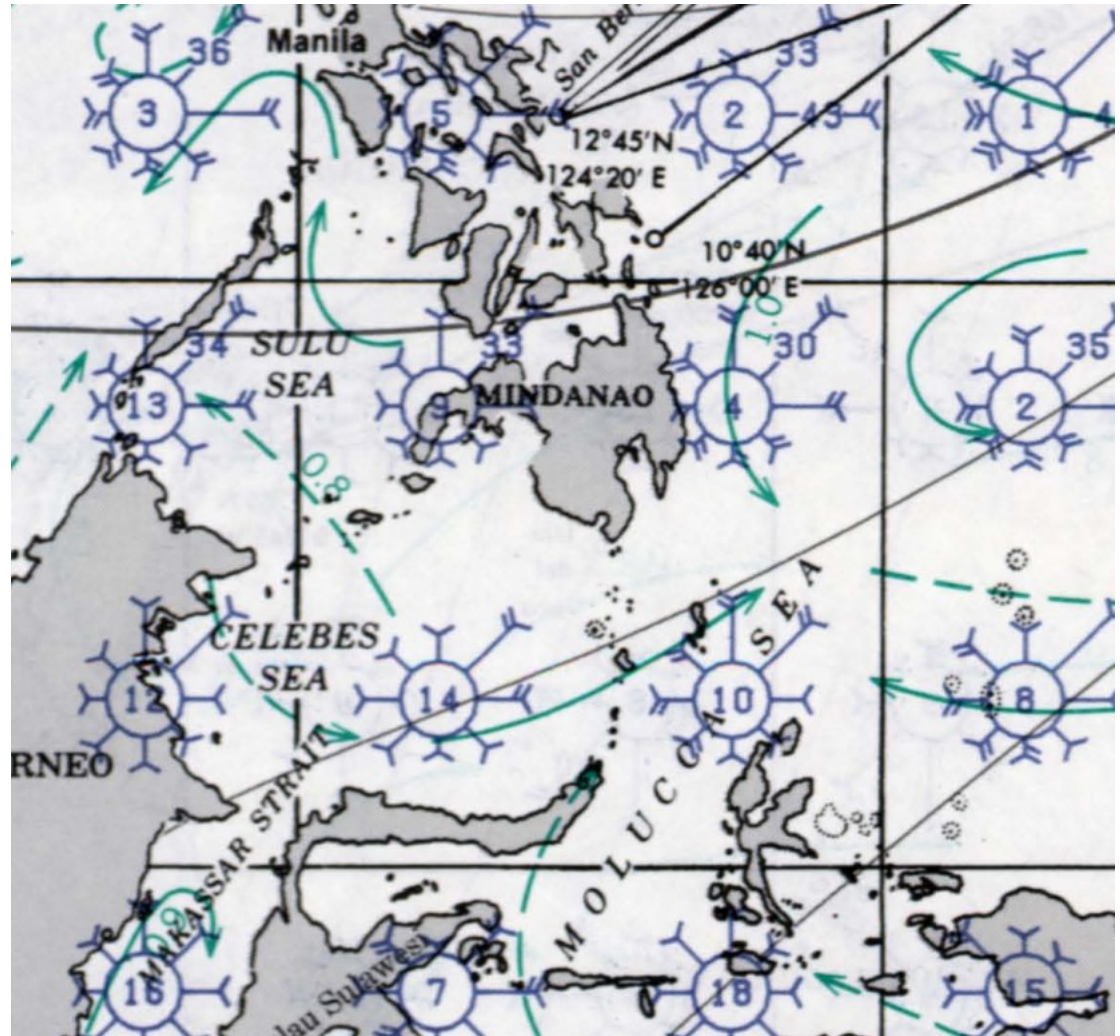
# Passage Planning Tools

- Historical weather patterns
- Your boat characteristics
- Weather forecast (grib files)
- Current and tidal data

# High Level Passage Planning

(What Time of Year to Make My Passage)

Traditional  
Tools  
Pilot Charts

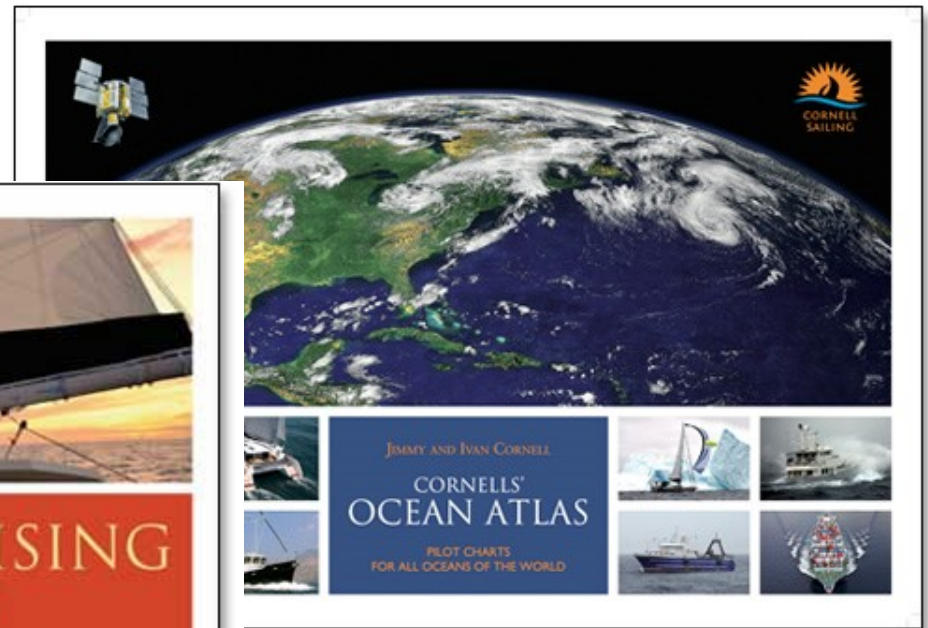
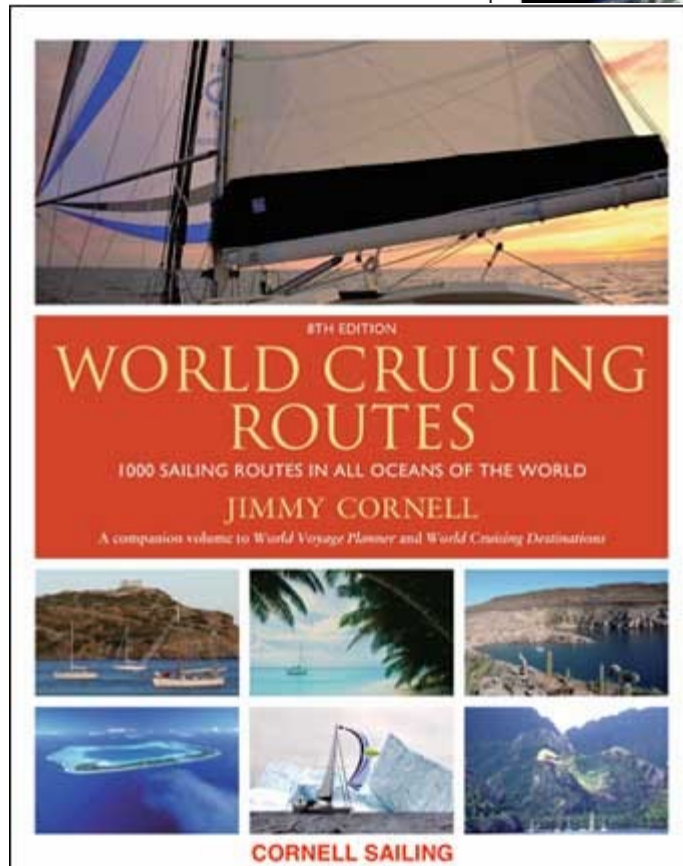


# High Level Passage Planning

(What Time of Year to Make My Passage)

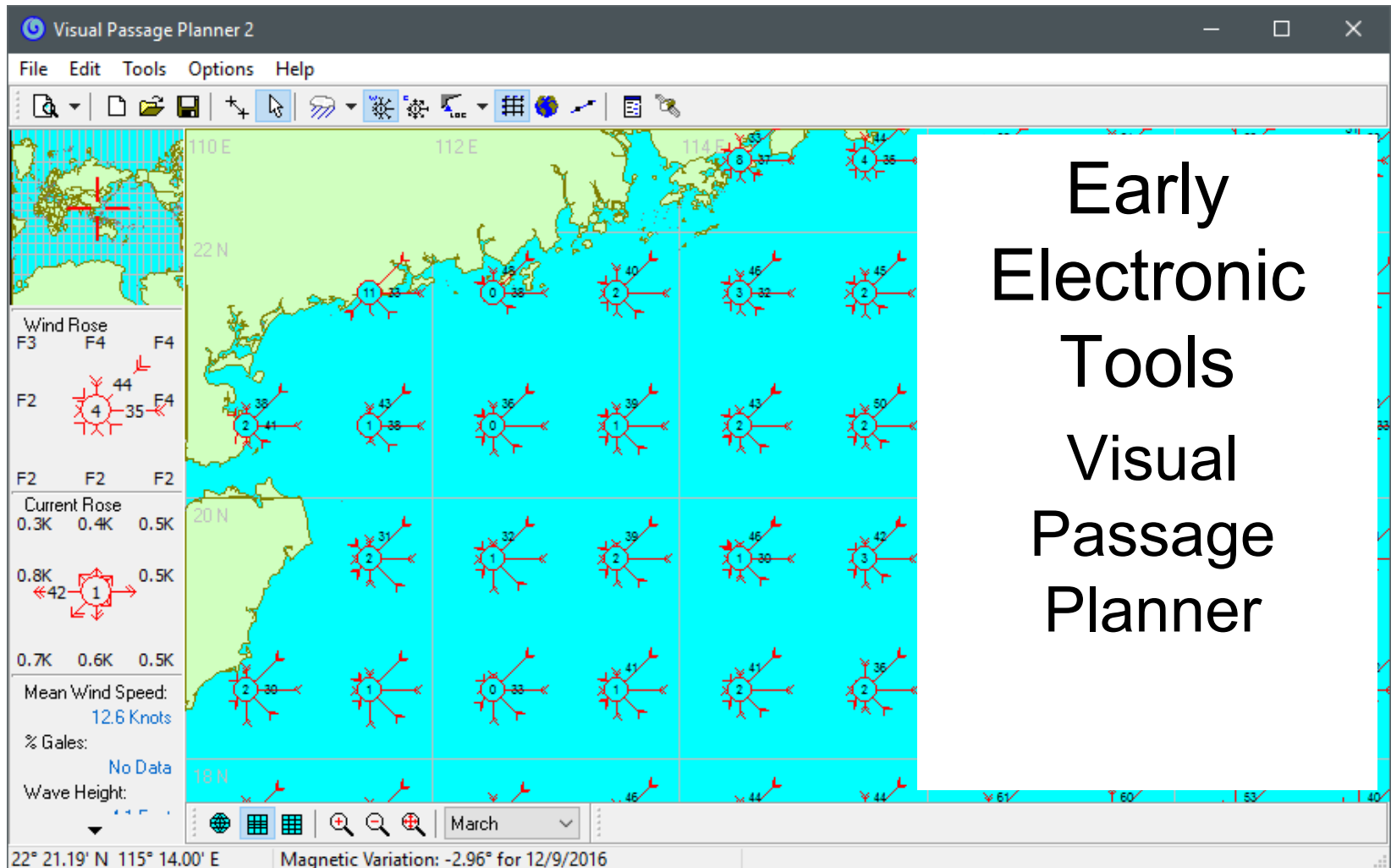
## Jimmy Cornell

- Pilot Charts
- Passage Planning Info



# High Level Passage Planning

(What Time of Year to Make My Passage)





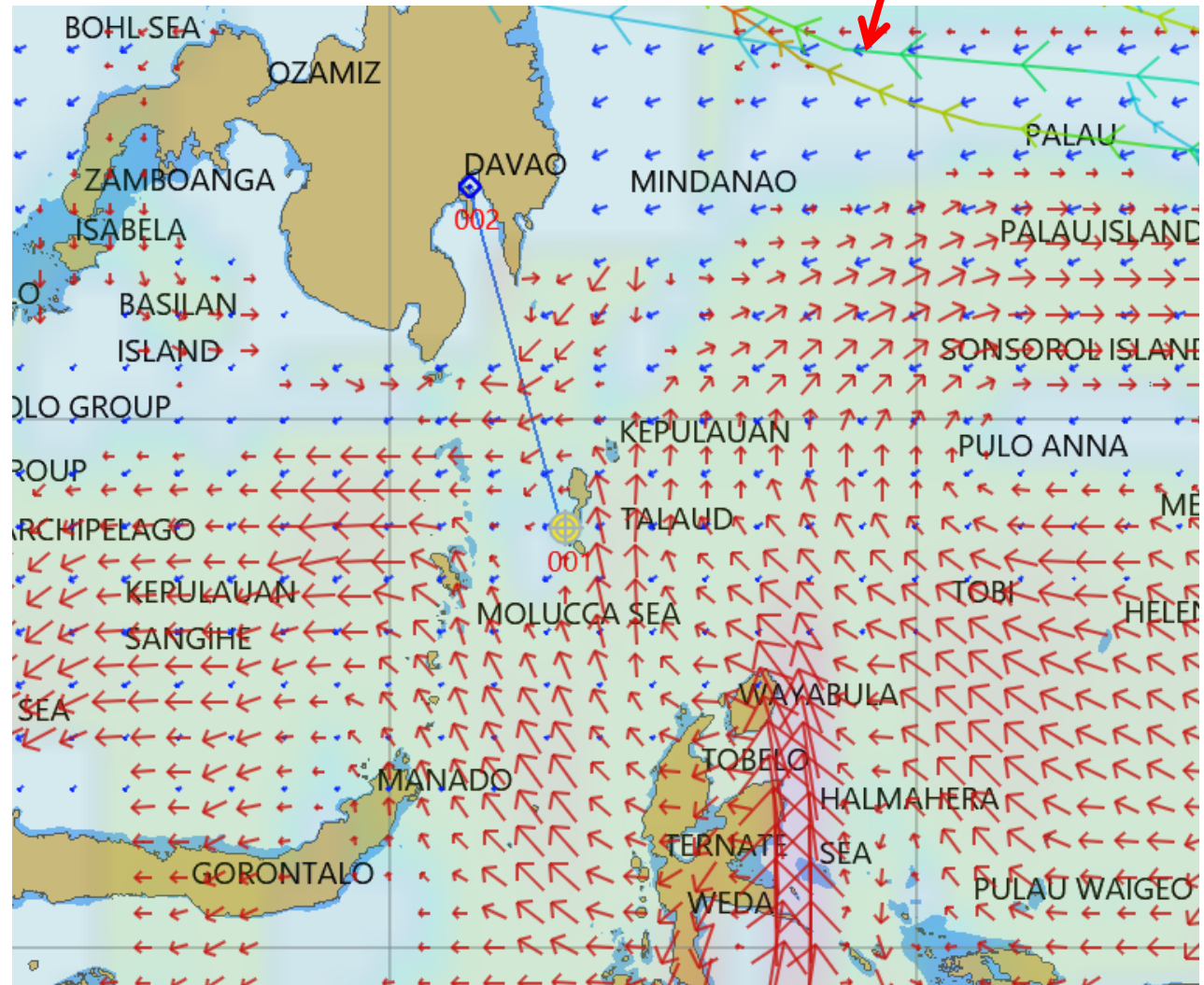
# High Level Passage Planning

(What Time of Year to Make My Passage)

**Cyclone Tracks**

## Now OpenCPN Climatology

- Cyclone tracks
- Wind (Blue)
- Current (Red)
- Not just by month, but by date
- RECENT data (last 30 years)



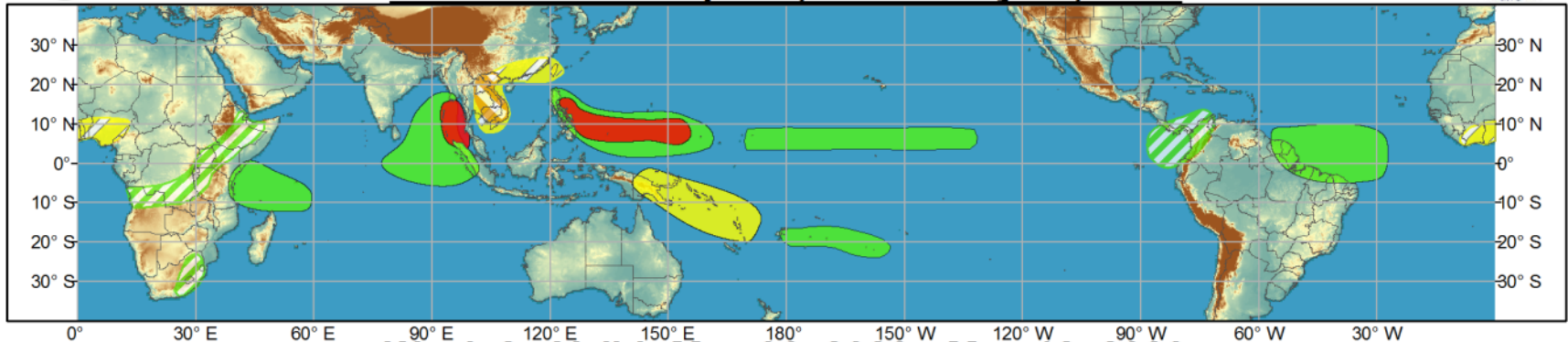
# Near Term Passage Planning



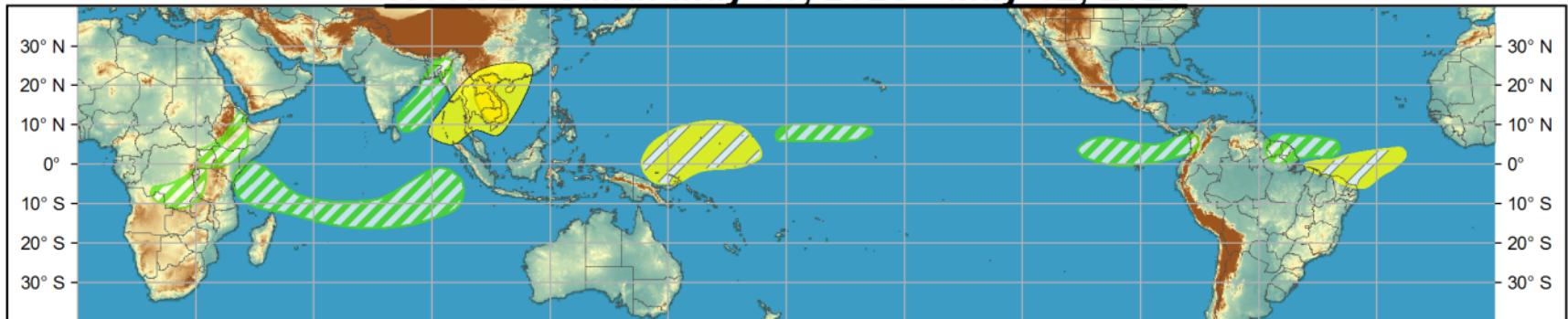
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



**Week 1 - Valid: Apr 29, 2020 - May 05, 2020**



**Week 2 - Valid: May 06, 2020 - May 12, 2020**



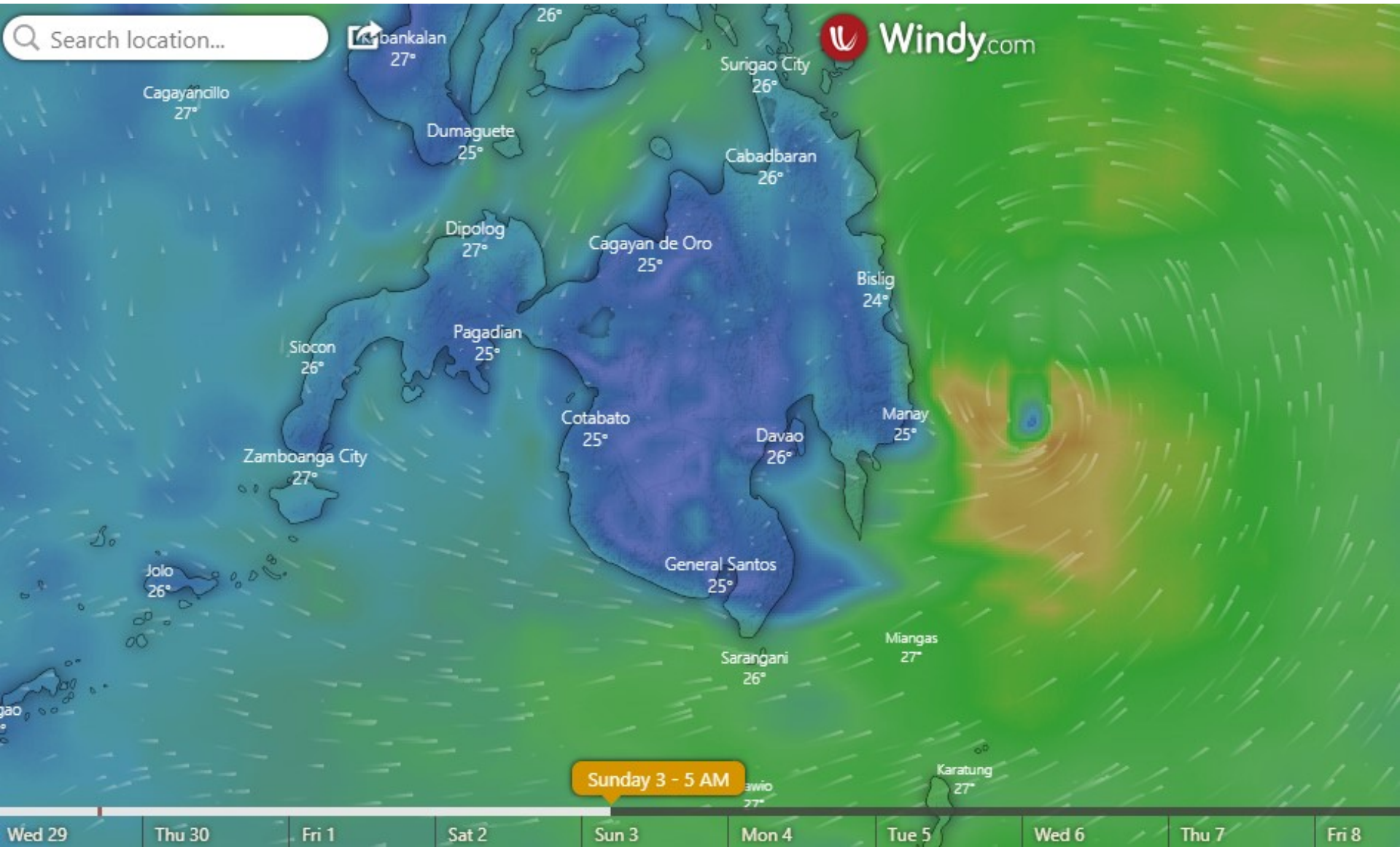
**Confidence**  
High Moderate

- |                                   |  |  |
|-----------------------------------|--|--|
| <b>Tropical Cyclone Formation</b> |  | Development of a tropical cyclone (tropical depression - TD, or greater strength). |
| <b>Above-average rainfall</b>     |  | Weekly total rainfall in the upper third of the historical range.                  |
| <b>Below-average rainfall</b>     |  | Weekly total rainfall in the lower third of the historical range.                  |
| <b>Above-normal temperatures</b>  |  | 7-day mean temperatures in the upper third of the historical range.                |
| <b>Below-normal temperatures</b>  |  | 7-day mean temperatures in the lower third of the historical range.                |

Produced: 04/28/2020

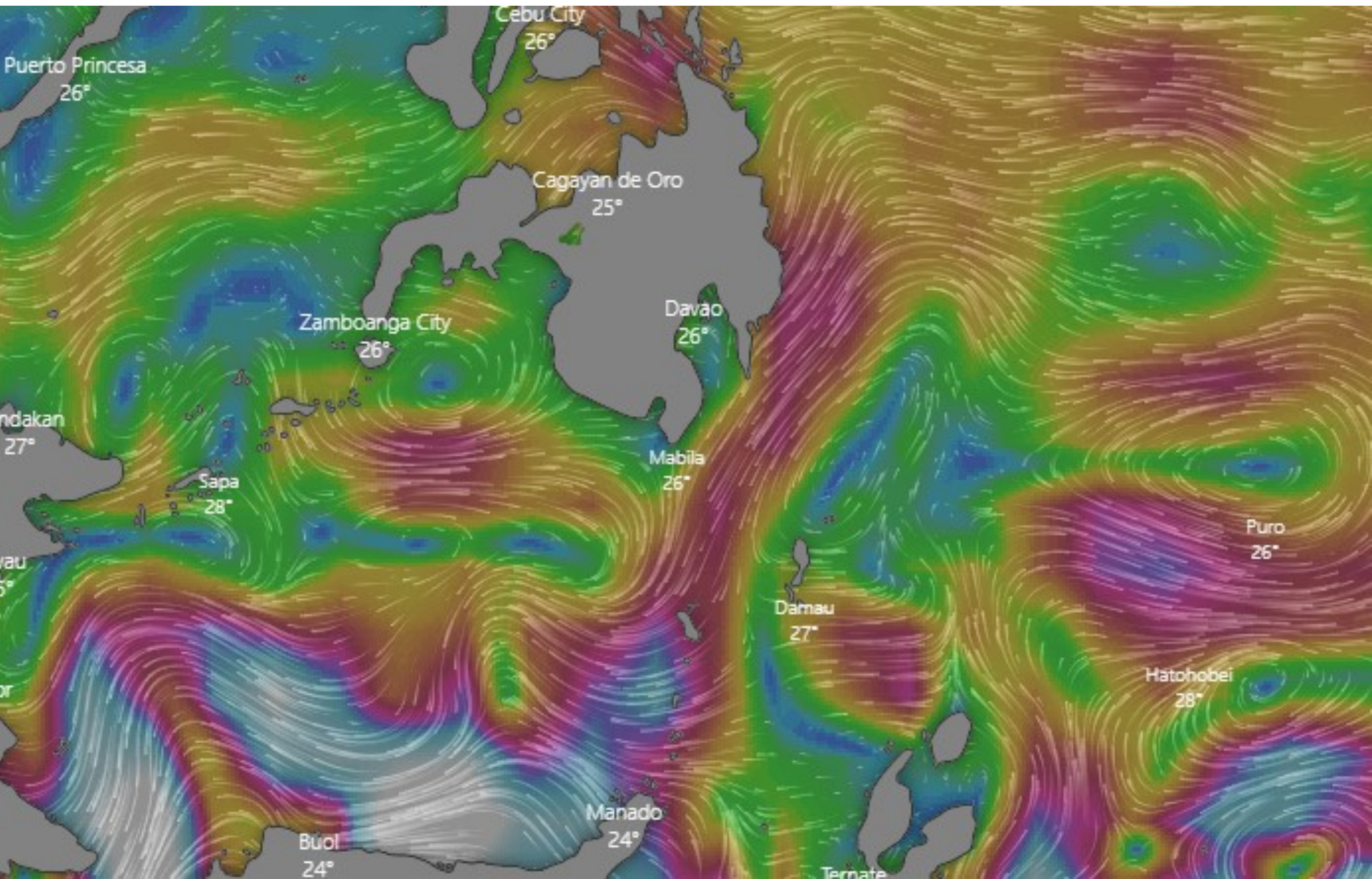
Forecaster: MacRitchie

# Windy – Wind Forecast

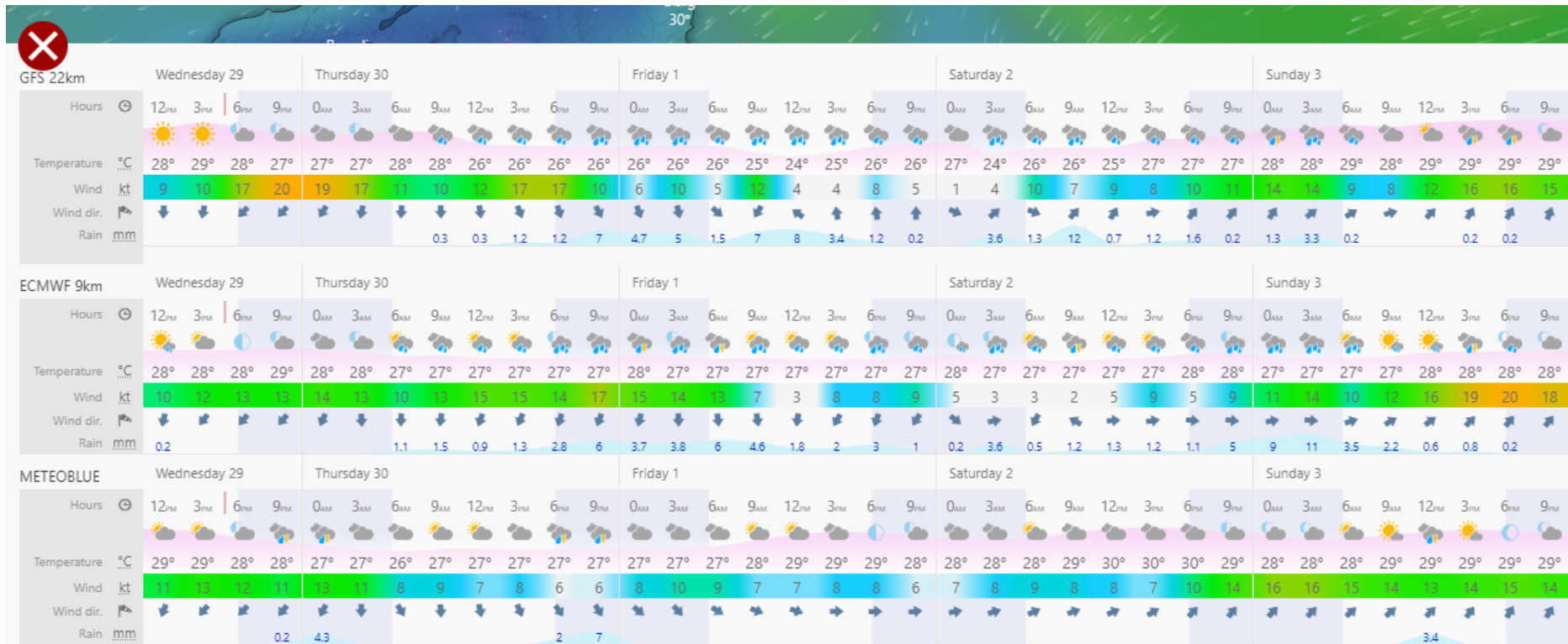




# Windy – Currents

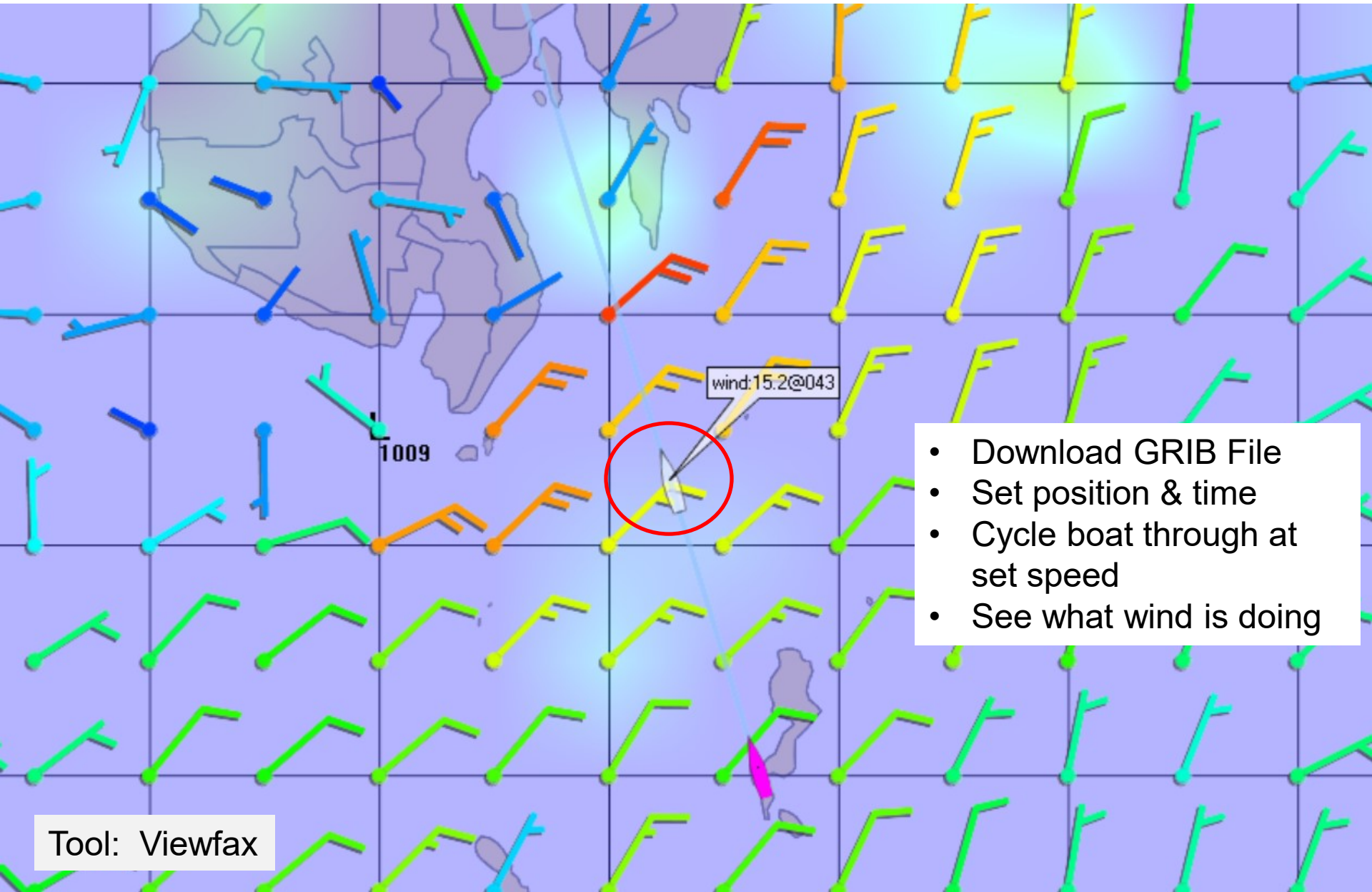


# Windy - Comparative





# Grib Files in Viewfax



- Download GRIB File
- Set position & time
- Cycle boat through at set speed
- See what wind is doing

Tool: Viewfax

# True “Weather Routing”

What you need to get started

- A Polar File for your boat
- A Route
- A Weather Forecast (GRIB file)
- Planned Start Date and Time

The Result

- The “optimum” route for you to take



# What is a Polar File?

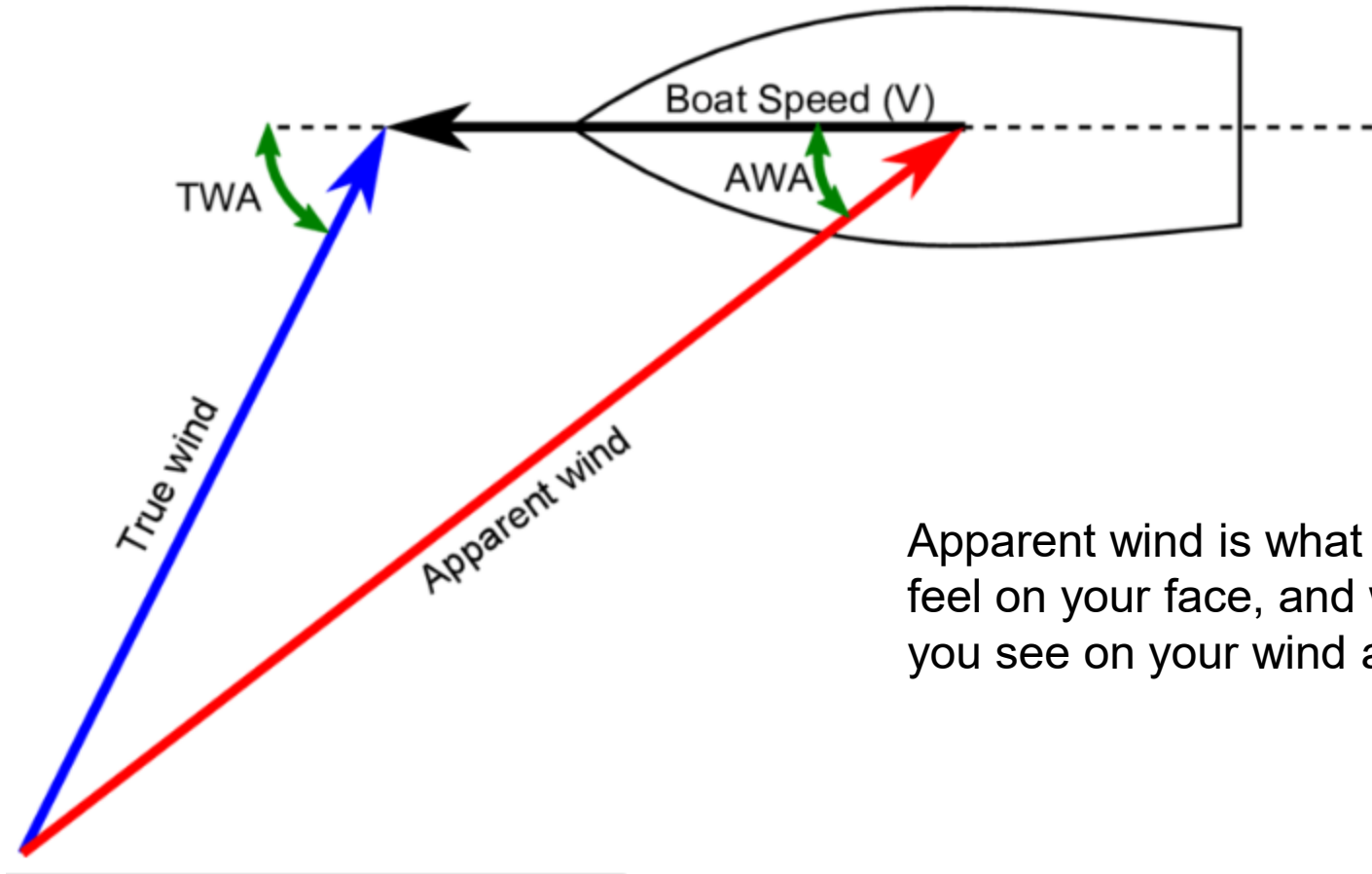
- A table of how fast your boat will go in specific wind speed and angle situations

# What is a Polar File?

WIND SPEED-→ (TRUE wind)

TWA\TWS	0	4	6	8	10	12	14	16	20	25
0	0	0	0	0	0	0	0	0	0	0
W 48	0	2	3	4	5	6	6.1	6.2	6.3	6.5
I 52	0	2.5	4	5.5	6.6	7.3	7.6	7.8	7.9	8
D 60	0	3	5	5.8	7	7.6	7.8	8	8.1	8.3
75	0	3	5.5	6.2	7.3	7.8	8.1	8.3	8.4	8.8
A 90	0	3	5.5	6.2	7.4	7.9	8.2	8.4	8.6	9.3
N 110	0	2.5	5.5	6.2	7.4	7.9	8.3	8.5	8.7	9.5
G 120	0	2	5	5.9	7.2	7.8	8.2	8.6	8.8	10
L 135	0	1	3	5.2	6.4	7.4	7.9	8.3	8.7	10
E 150	0	0	2	4.3	5.4	6.5	7.3	7.8	8.2	9.8
180	0	0	0	2	4	6	7	7.5	8	9.5

# True Wind vs Apparent Wind



Apparent wind is what you feel on your face, and what you see on your wind arrow

Most Polars are TRUE wind speed/angle, not APPARENT wind

# How Do I Get A Polar File?

- Ask your boat designer  
(usually unrealistic speed values!)
- Copy one from a similar boat
- Create one based on your own experience
- FastSeas – Mono's – Input a few boat characteristics, voila

*I started with one from a similar boat, and over time tweaked it to match our own sailing style*

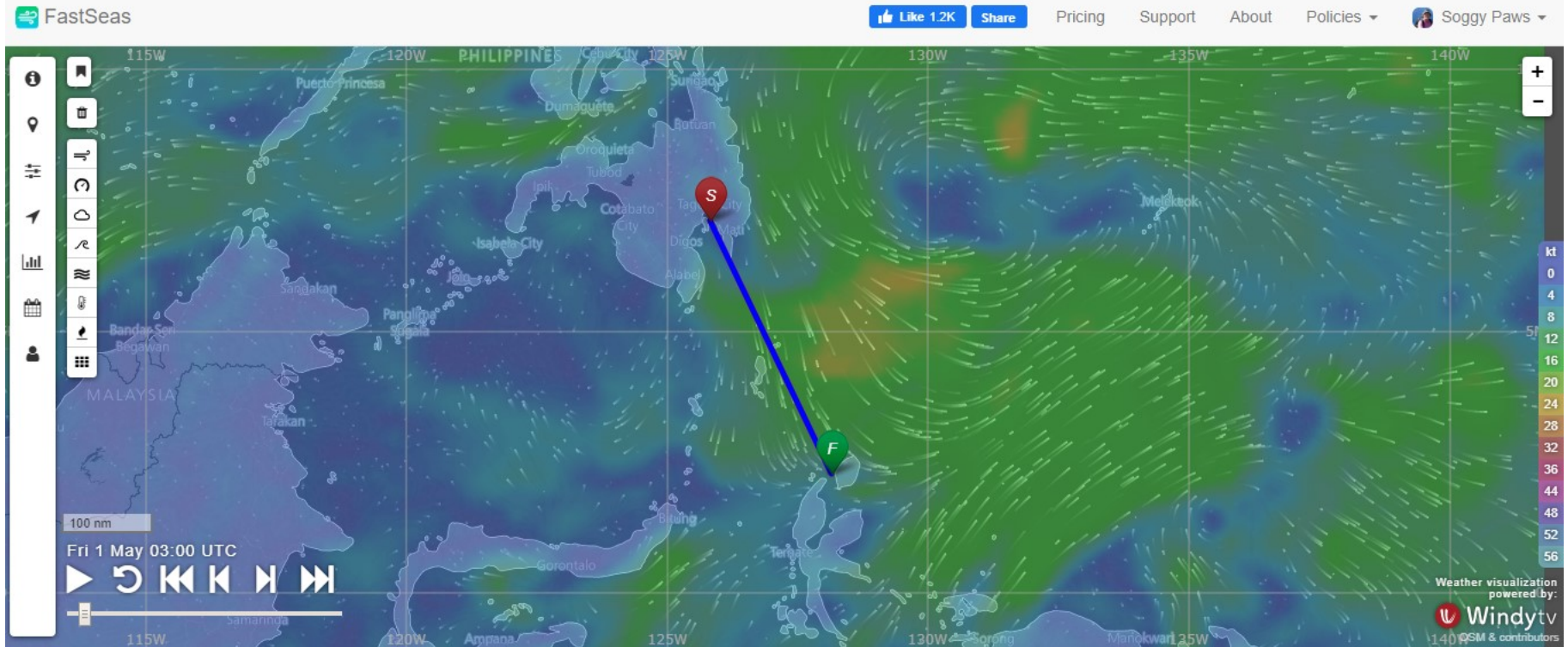


# Getting Started

- Easiest Tool: Fast Seas
- Simplest to get started
- Best documented
- Most intuitive
- Uses “Windy.com” for weather visualization
- Can be used on very low bandwidth connections



# Fast Seas Main Window





# Fast Seas Menu



Help and Getting Started information



Fine Tune Routing Information



Set Vessel Performance Information (ie polars and comfort settings)



See a table with the results of the routing



See statistics regarding the results of the routing



Departure Planning (which day should I go?) out to 14 days



Account information, subscription status, and authorized email addresses



# FastSeas Quick Start: Create a Simple Polar

## Create a Simple Polar

You can create a simple polar diagram for your vessel by providing the waterline length (LWL) and closest point of sail (this is half of what you tack through) below. Click the "Create" button and FastSeas will generate a simple polar diagram from these two data points. You can then refine the resulting polar diagram by selecting the Edit option below.

### Vessel Waterline Length (LWL)

 ft ▾

### Closest Point of Sail (True Wind Angle)

 °

Create

## Edit My Polar

## Import/Export Polar





# Check Boat Parameters

FastSeas Like 1.2K Share [Pricing](#) [Support](#) [About](#) [Policies](#) Soggy Paws

## Vessel Performance

A polar diagram is a common way of depicting vessel performance in various wind conditions. The diagram plots boat speed at various true wind angles and wind speeds. The true wind angle is indicated around the edge of the semicircle. Boat speed is then plotted at various true wind speeds - different color lines representing different true wind speeds. The boat speed is indicated as the distance from the center of the circle. Concentric circles indicate boat speed starting at zero in the center of the circle and extending out at 2, 4, 6, 8, and 10 knots boat speed.

**Performance Adjustment**

%

**Start Motoring When Speed Falls Below** Set to 0 if you never want to motor

kn

**Motoring Speed**

kn

Weather widget powered by Windy



# Create a Simple Route

FastSeas Like 1.2K Share Pricing

50 nm  
Tue 28 Apr 06:00 UTC

Map locations: Nabunturan, Cotabato City, Shariff Aguak, Davao, Digos, Malita, Alabel, Isabela City, Jolo, Sogala, Tobelo.



# Set up Route Parameters

FastSeas

**Routing**

**Departure Date/Time (Local Time)**  
Wed 29 Apr 12:00 PM +0800

**Start Latitude** 6.839 °N      **Start Longitude** 125.793 °E

**Finish Latitude** 2.241 °N      **Finish Longitude** 128.145 °E

**Distance** 310.2 NM      **Max Wind Gust** 30 kn

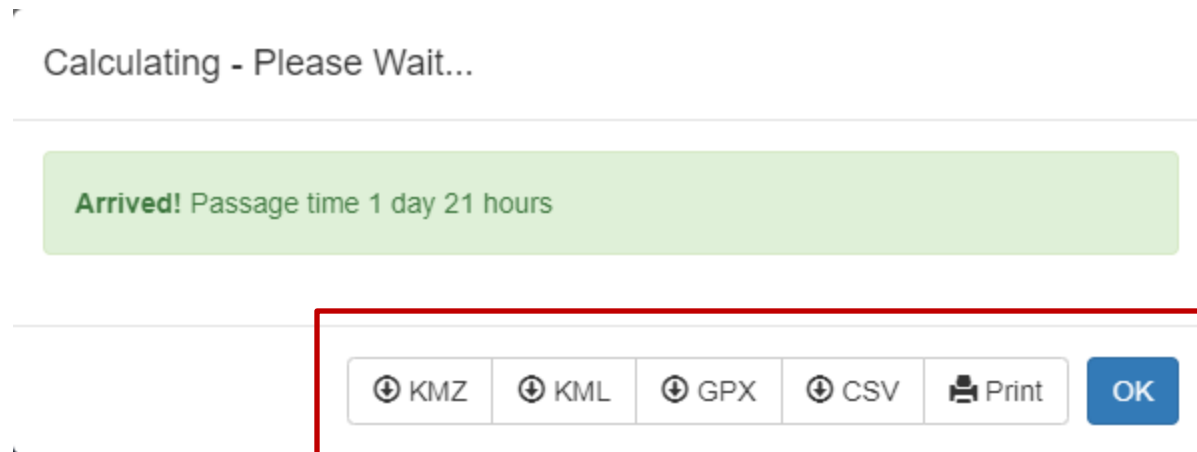
**Max Wind Beating** 20 kn      **Max Wind Reaching** 25 kn

Enable ocean current effects

**Calculate Route**



# Click “Calculate Route”



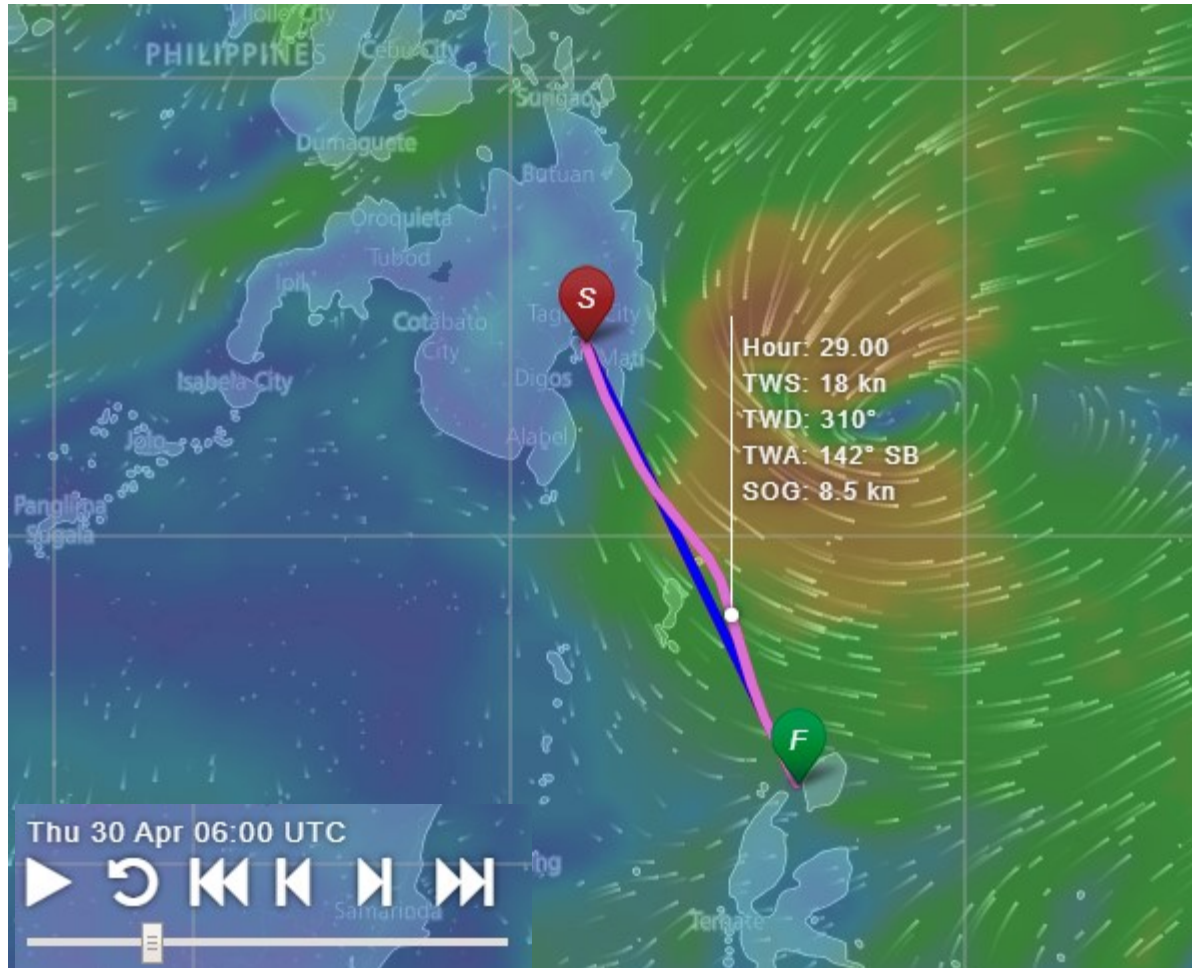
Can export routing info in various formats







# Step Through The Route







# Review Passage Stats

Route Calculated On	Tue 28 Apr 08:21 UTC
Departure Time	Wed 29 Apr 01:00 UTC
Arrival Time	Thu 30 Apr 21:36 UTC
Passage Time	1 day 21 hours
Motoring Time	7 hours
Performance Adjustment (%)	100.0%
Start Motoring When Speed Falls Below (kn)	3.0
Motoring Speed (kn)	4.8
% Time Beyond Weather Forecast	0%
Departure Location	7°7.5'N 125°49.1'E
Destination	2°17.4'N 128°8.7'E
Great Circle Distance (NM)	321.9
Distance Traveled (NM)	325.0



Desired Max Wind Beating (kn)	20
Desired Max Wind Reaching (kn)	25
Desired Max Gust (kn)	30
Actual Min Wind (kn)	1
Actual Max Wind Beating (kn)	5
Actual Max Wind Reaching (kn)	18
Actual Max Gust (kn)	21
Actual Avg Wind (kn)	11
% Time Wind <10 kn	29%
% Time Wind 10 - 15 kn	42%
% Time Wind 15 - 20 kn	29%
% Time Wind 20 - 25 kn	0%
% Time Wind 25 - 30 kn	0%
% Time Wind 30 - 40 kn	0%
% Time Wind >40 kn	0%

% Time Beating	2%
% Time Close Reaching	0%
% Time Beam Reaching	24%
% Time Broad Reaching	62%
% Time Running	11%
Min Boat Speed (kn)	4.4
Max Boat Speed (kn)	8.3
Avg Boat Speed (kn)	7.1
Max Ocean Current Speed (kn)	1.2



# Route Details

## Route Positions

⊕ KMZ ⊕ KML ⊕ GPX ⊕ CSV Print

Elapsed Hours	Date/Time	Latitude	Longitude	Heading	Speed	COG	SOG	Wind Speed	Gusting	Wind Dir	TWA	Ocean Current Speed
0.00	Wed 29 Apr 01:00 UTC	7°7.5'N	125°49.1'E	160°	4.8	160°	4.8	2	3	294°	133° SB	-
1.00	Wed 29 Apr 02:00 UTC	7°3.0'N	125°50.7'E	159°	4.8	159°	4.8	3	3	274°	115° SB	-
2.00	Wed 29 Apr 03:00 UTC	6°58.5'N	125°52.4'E	160°	4.8	160°	4.8	4	4	269°	109° SB	-
3.00	Wed 29 Apr 04:00 UTC	6°54.0'N	125°54.1'E	160°	4.8	160°	4.8	2	4	268°	108° SB	-
4.00	Wed 29 Apr 05:00 UTC	6°49.5'N	125°55.7'E	160°	4.8	160°	4.8	1	4	250°	90° SB	-
5.00	Wed 29 Apr 06:00 UTC	6°45.0'N	125°57.4'E	160°	4.8	160°	4.2	1	4	106°	-54° PT	-
6.00	Wed 29 Apr 07:00 UTC	6°41.1'N	125°58.8'E	160°	4.8	160°	4.8	3	6	76°	-83° PT	-

Motoring



# More Route Details

Elapsed Hours	Date/Time	Latitude	Longitude	Heading	Speed	COG	SOG	Wind Speed	Gusting	Wind Dir	TWA	Ocean Current Speed	Ocean Current Direction
20.00	UTC	5°11.3'N	126°51.7'E	150°	7.5	149°	8.2	16	18	333°	PT	0.8	135°
21.00	Wed 29 Apr 22:00 UTC	5°4.3'N	126°55.9'E	147°	7.5	144°	8.2	16	19	330°	-177° PT	0.9	111°
22.00	Wed 29 Apr 23:00 UTC	4°57.7'N	127°0.8'E	148°	7.5	142°	8.2	16	19	328°	-180° PT	1.1	96°
23.00	Thu 30 Apr 00:00 UTC	4°51.2'N	127°5.9'E	145°	7.3	138°	8.0	15	18	325°	-180° PT	1.2	86°
24.00	Thu 30 Apr 01:00 UTC	4°45.4'N	127°11.3'E	156°	7.6	146°	7.0	16	19	318°	-62° SB	1.2	81°
25.00	Thu 30 Apr 02:00 UTC	4°39.5'N	127°15.1'E	168°	8.0	160°	8.1	16	19	312°	144° SB	1.2	81°

**The Effect of Current**

**Gybe**





# FastSeas

## Departure Planning

### “What Day Should I Leave”?

Departure Planning

Departure planning will calculate estimated route statistics based on the departure date/time, start location, and finish location that you configure on the Routing tab. It will calculate these stats on one day departure intervals starting with the departure date you specify on the Routing tab. These stats are rough estimates and intended for comparison of potential departure dates.

Calculate

Statistic	Plan 1	Plan 2	Plan 3
No data available in table			

TWA 4425 BB  
SFO 3,500 km

Computes Route Statistics for up to 14 days in the future



# Departure Planning Results

Statistic	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9	Plan 10
Departure Time	Wed 29 Apr 01:00 UTC	Thu 30 Apr 01:00 UTC	Fri 1 May 01:00 UTC	Sat 2 May 01:00 UTC	Sun 3 May 01:00 UTC	Mon 4 May 01:00 UTC	Tue 5 May 01:00 UTC	Wed 6 May 01:00 UTC	Thu 7 May 01:00 UTC	Fri 8 May 01:00 UTC
Arrival Time	Thu 30 Apr 21:59 UTC	Fri 1 May 20:51 UTC	Sun 3 May 01:31 UTC	Mon 4 May 17:23 UTC	Wed 6 May 01:59 UTC	Wed 6 May 14:23 UTC	Thu 7 May 14:58 UTC	Fri 8 May 07:03 UTC	Sat 9 May 05:48 UTC	Sun 10 May 03:32 UTC
Passage Time	1 day 21 hours	1 day 20 hours	2 days 1 hour	2 days 16 hours	3 days 1 hour	2 days 13 hours	2 days 14 hours	2 days 6 hours	2 days 5 hours	2 days 3 hours
Motoring Time	7 hours	8 hours	11 hours	1 day 19 hours	1 day 5 hours	1 day 5 hours	1 day 11 hours	22 hours	18 hours	11 hours
% Time Beyond Weather Forecast	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Great Circle Distance (NM)	321.9	321.9	321.9	321.9	321.9	321.9	321.9	321.9	321.9	321.9
Actual Min Wind (kn)	1	1	2	2	2	1	0	2	1	0
Actual Max Wind Beating (kn)	3	12	15	12	7	6	7	11	11	12
Actual Max Wind Reaching (kn)	17	22	16	7	9	10	9	11	10	9
Actual Max Gust (kn)	20	27	20	15	11	11	11	13	12	14
Actual Avg Wind (kn)	11	12	9	5	6	7	6	6	7	7



# Departure Planning Results

Statistic	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9	Plan 10
% Time Wind <10 kn	29%	30%	63%	92%	100%	100%	100%	84%	79%	73%
% Time Wind 10 - 15 kn	53%	41%	24%	8%	0%	0%	0%	16%	21%	27%
% Time Wind 15 - 20 kn	18%	14%	12%	0%	0%	0%	0%	0%	0%	0%
% Time Wind 20 - 25 kn	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%
% Time Wind 25 - 30 kn	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Time Wind 30 - 40 kn	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Time Wind >40 kn	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Time Beating	2%	0%	24%	43%	23%	6%	0%	9%	19%	27%
% Time Close Reaching	0%	18%	16%	5%	1%	3%	8%	2%	15%	33%
% Time Beam Reaching	20%	25%	41%	5%	10%	16%	16%	60%	53%	33%
% Time Broad Reaching	53%	32%	18%	28%	36%	53%	50%	22%	8%	6%
% Time Running	24%	25%	0%	20%	30%	21%	26%	7%	6%	0%
Min Boat Speed (kn)	4.4	3.2	3.9	3.2	3.0	3.0	3.0	3.0	3.9	3.9
Max Boat Speed (kn)	8.3	8.4	8.5	7.6	5.5	6.1	6.9	7.7	7.7	7.8
Avg Boat Speed (kn)	6.9	7.1	6.4	4.9	4.5	4.9	4.9	5.7	6.0	6.1
Max Ocean Current Speed (kn)	1.4	1.3	1.3	1.4	1.4	1.3	1.4	1.4	1.3	1.4



# FastSeas “at sea” Use

- Send email with info request

```
SEND_ROUTE:02-17N,128-11E,06-12N,126-08E,GPX,  
DEPARTURE_DELAY_HOURS=24
```

- Receive routing in small “text” file (don’t need to download the grib file)
  - Format as GPX (import result into OpenCPN)
  - Format as CSV (import result into Excel)
- Must come from a registered email address

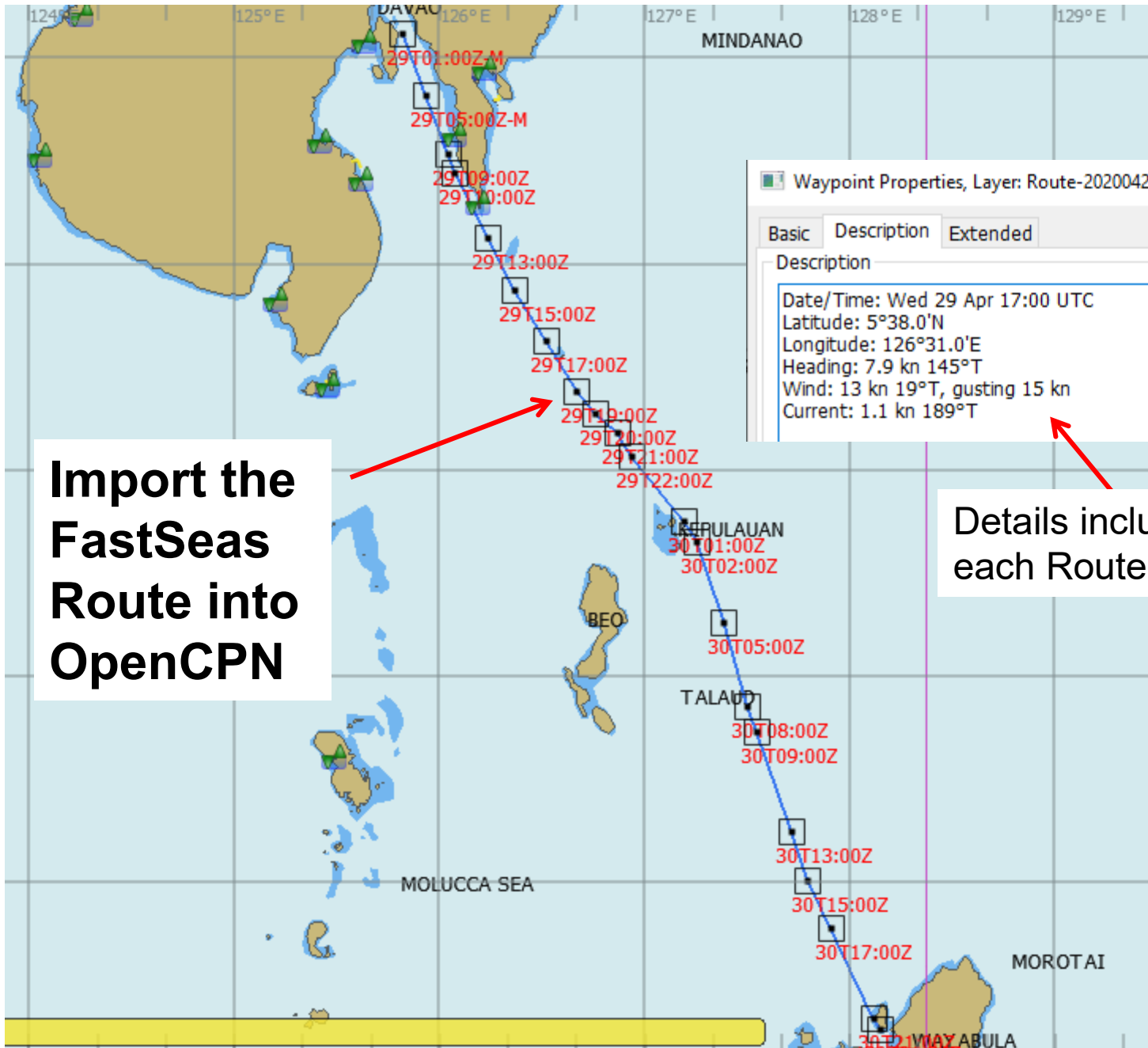


From: "Fast Seas" <query@fastseas.com>  
To: "Soggy Paws" <WDI5677@sailmail.com>  
Subject: Re: From SW Morotai to Talaud 12th

Your route is attached to this email.

Route Calculated On: Sun 10 Nov 22:21 UTC  
Departure Time: Mon 11 Nov 22:21 UTC  
Arrival Time: Wed 13 Nov 11:07 UTC  
Passage Time: 1 day 13 hours  
Motoring Time: 1 hour  
Performance Adjustment (%): 100.0%  
Start Motoring When Speed Falls Below (kn): 4.3  
Motoring Speed (kn): 4.8  
% Time Beyond Weather Forecast: 0%  
Departure Location: 2°17.0'N 128°11.0'E  
Destination: 6°12.0'N 126°8.0'E  
Great Circle Distance (NM): 265.3  
Distance Traveled (NM): 267.0  
GFS Forecast Used: Sun 10 Nov 12:00 UTC  
OSCAR Data: Wed 6 Nov 00:00 UTC  
Desired Max Wind Beating (kn): 20  
Desired Max Wind Reaching (kn): 25  
Desired Max Gust (kn): 30  
Actual Min Wind (kn): 7  
Actual Max Wind Beating (kn): 13  
Actual Max Wind Reaching (kn): 17  
Actual Max Gust (kn): 19  
Actual Avg Wind (kn): 11  
% Time Wind <10 kn: 41%  
% Time Wind 10 - 15 kn: 54%  
% Time Wind 15 - 20 kn: 5%





**Import the  
FastSeas  
Route into  
OpenCPN**

**Details included in  
each Route Point**



# Using FastSeas with Garmin Inreach

InReach messages are limited to 160 characters, so FastSeas will by default send a single compact reply message - consisting of the next 4 positions along the optimum route at 6 hour intervals. For example:

HOUR,LAT,LNG,WIND,COG

H0,11.58N,67.75W,15G18@78,126

H6,11.17N,67.16W,16G19@81,126

H12,11.04N,66.65W,10G14@110,59

H18,11.34N,66.02W,12G15@114,54



# Fast Seas Pricing

## *By Cruisers for Cruisers*

Pricing



Basic

Free

AS IN BEER

- **Weather Routing** using GFS wind forecast and ocean current  
Limit 5 requests per month
- **Departure Planning**  
Limit 5 requests per month

Try Now

Premium

\$5/month

BILLED \$60 ANNUALLY

- **Unlimited** Weather Routing requests
- **Unlimited** Departure Planning requests
- **Email Responder** supporting Iridium GO!, Sailmail, Winlink, and Garmin/DeLorme inReach

- Yearly \$60/year
- Monthly \$10/month
- 6-Months \$45



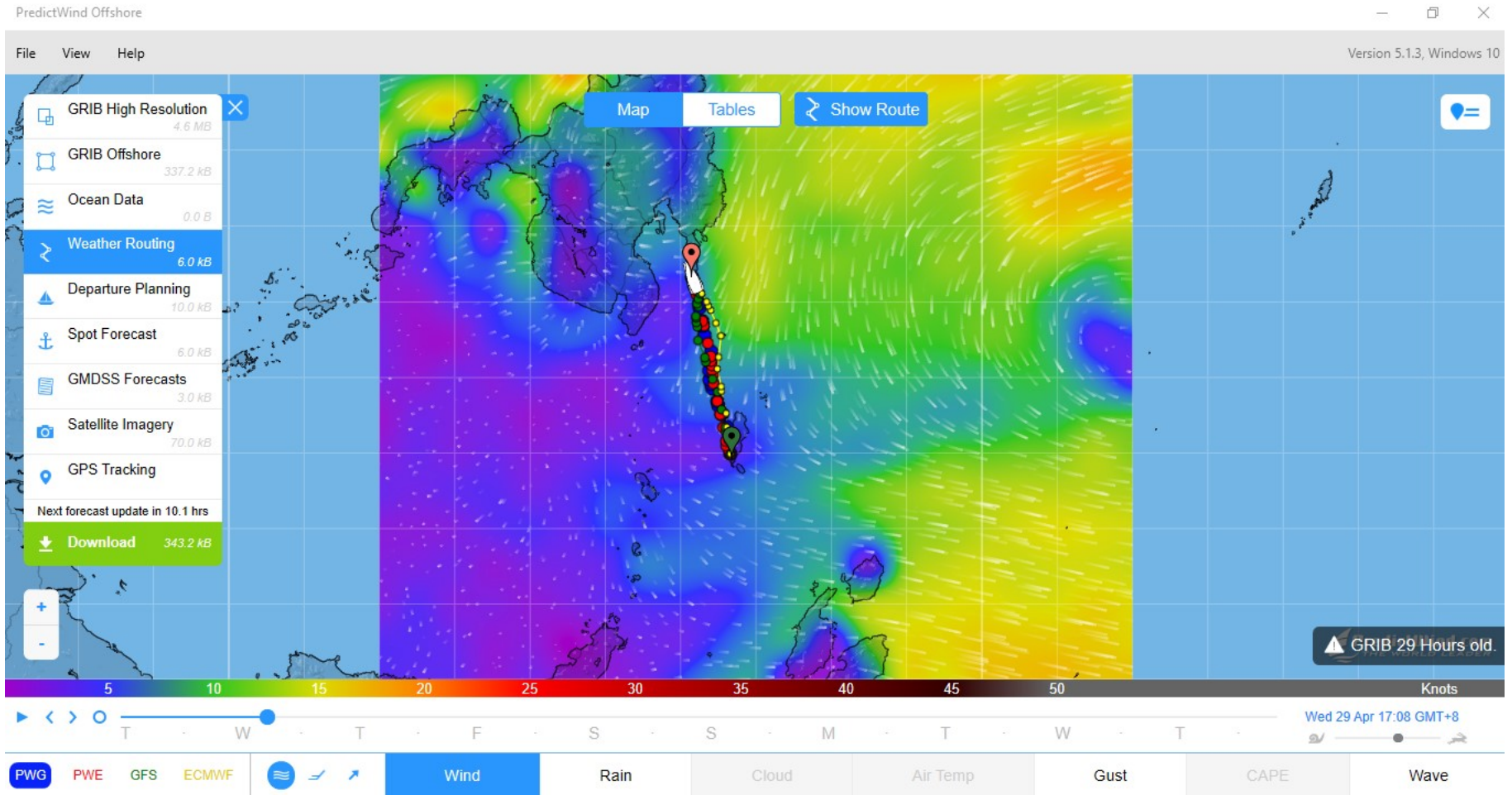
# PredictWind

- Multiple models for GRIB files
  - GFS, ECMWF, PWG, PWE
- Optimized for Iridium Go
- To take full advantage of PW
  - Go! Unlimited Plan at \$140/mo
  - PW Professional Subscription at \$499 per year (or \$249 for 3 months)
- Configure Boat Info on website, then rest of weather routing can be done on offline program/app with sat/email connection
- Can get routing via SSB email, but not GRIB files (files too big)





# PredictWind “Offshore” App







# PredictWind Weather Request

GRIB High Resolution (Standard/Professional)

PWG & PWE  Wind

8km resolution  Wind, Rain, Cloud, Temperature

---

GRIB Offshore (Free on Standard Internet Connection)

PWG & PWE   Wind  Gust

3 Hourly   Pressure  CAPE

For 10 Days   Rain  Temperature

50 km resolution   Wave  Cloud

---

Ocean Data (Professional)

Sea Surface Temperature Observations 4km resolution

High Resolution Tidal Currents

RTOFS Currents



HyCom Currents


Mercator Currents

---

**Total** 608.1 kB



Weather Routing & Departure Planning (Standard/Professional)  

Start Time:  Now  
 17:04 PM 4/28/2020 

Route Type:  Weather Routing  
 Departure Planning  
 Destination Spot Forecast Only

---

GMDSS Forecast (Free)

---

Satellite Imagery (Free)

Black & White  
 Color

---

Tracking Data

---

**Total** **608.1 kB**



# Request Screen

How are you going to request  
And receive the result

The screenshot shows the PredictWind Offshore software interface. A red arrow points to the 'Web' tab in the top navigation bar. Below the navigation bar, a table displays a list of requests with columns for Update Time, Weather Route, and Estimated file size. The table includes a 'Close' button and a 'Download All' button. The background shows a map of the North Atlantic and a forecast panel at the bottom.

Update Time	Weather Route	Estimated: 6.0 kB	
---	Weather Route	Estimated: 6.0 kB	!
2020-04-28 15:00	ECMWF Global 50km Gust	60.9 kB	✓
2020-04-28 13:25	GFS Global 50km Gust	32.4 kB	✓
2020-04-28 14:20	PWE Global 50km Wind, Rain, Press	152.8 kB	✓
2020-04-28 12:00	PWG Global 50km Wind, Rain, Press	157.3 kB	✓
2020-04-28 12:40	PWG Global Wave 50km	113.2 kB	✓
2020-04-28 15:00	PWE Global Wave 50km	109.1 kB	✓



# Weather Models used by Predict Wind

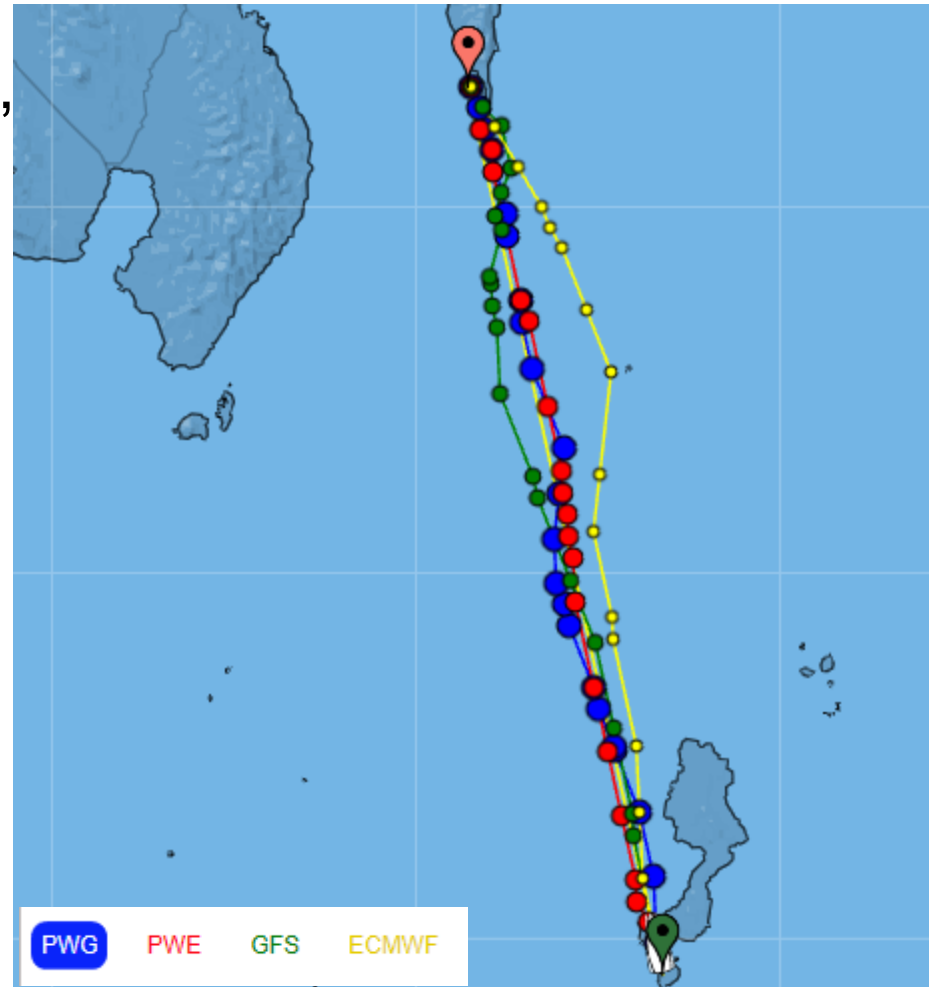
- ECMWF – The European Global model
- GFS – The American Global model
- PWE – Predict Wind ECMWF model
- PWG – Predict Wind GFS model

The PredictWind models use the ECMWF and GFS world forecast data and add “local weather model enhancements” for popular areas of the world.



# Predict Wind Output

- Up to 4 different results, one for each model
- For new users...  
“OMG, which one do I use?”



# Predict Wind Output

	<b>PWG</b>	<b>PWE</b>	<b>GFS</b>	<b>ECMWF</b>
<b>Timezone</b>	GMT+08:00	GMT+08:00	GMT+08:00	GMT+08:00
<b>Start Time</b>	19 Nov 12:46	19 Nov 12:46	19 Nov 12:46	19 Nov 12:46
<b>Finish Time</b>	20 Nov 12:53	20 Nov 11:02	20 Nov 10:46	20 Nov 14:22
<b>Time Taken</b>	1 day 0h 7m 31s	22h 16m 19s	22h 0m 16s	1 day 1h 36m 22s
<b>Distance Traveled</b>	145.6 NM	144.5 NM	147.5 NM	147.1 NM
<b>Average Speed (knots)</b>	6.0	6.5	6.7	5.7

## **PWG**

<b>Time</b>	<b>TWS</b>	<b>TWD</b>	<b>TWA</b>	<b>SOG</b>	<b>COG</b>
19 Nov 12:46	8.1	245	P113	6.8	357
19 Nov 14:25	9.8	227	P120	7.0	348
19 Nov 15:56	10.2	225	P114	7.4	338
19 Nov 17:28	6.8	228	P120	5.8	348
19 Nov 17:34	7.5	229	P108	6.6	337
19 Nov 18:35	7.8	232	P116	6.5	348
19 Nov 19:08	7.8	232	P106	6.7	338
19 Nov 20:46	6.3	238	P110	6.0	348
19 Nov 21:22	6.3	238	P101	6.0	338
19 Nov 21:59	3.1	237	P120	5.0	357
19 Nov 23:26	3.7	251	P115	5.0	6
20 Nov 00:57	4.0	241	P126	5.0	6
20 Nov 02:27	5.9	226	P112	5.6	338



# PredictWind Pricing

	Free	Basic	<b>MOST POPULAR</b> Standard	Professional
	Free	US\$12 / 3 Months US\$29 / 1 Year	US\$99 / 3 Months US\$249 / 1 Year	US\$249 / 3 Months US\$499 / 1 Year
		<a href="#">BUY NOW</a>	<a href="#">BUY NOW</a>	<a href="#">BUY NOW</a>
Features				
Unique Model: #1 for accuracy	✓	✓	✓	✓
4 Forecasts for Confidence	✓	✓	✓	✓
<u>PWG: PredictWind Model</u>	✓	✓	✓	✓
<u>PWE: PredictWind Model</u>	✓	✓	✓	✓
<u>GFS: GFS Model</u>	✓	✓	✓	✓
<u>ECMWF: ECMWF Model</u>	✓	✓	✓	✓
Weather Routing	✗	✗	✓	✓
Departure Planning	✗	✗	✓	✓
Destination Forecast	✗	✗	✓	✓
Sea Temp GRIB	✗	✗	✗	✓
<u>Ocean/Tidal Current GRIB</u>	✗	✗	✗	✓
Email Delivery - Satellite & SSB	✗	✗	✓	✓

# PredictWind Pros & Cons

## Pro

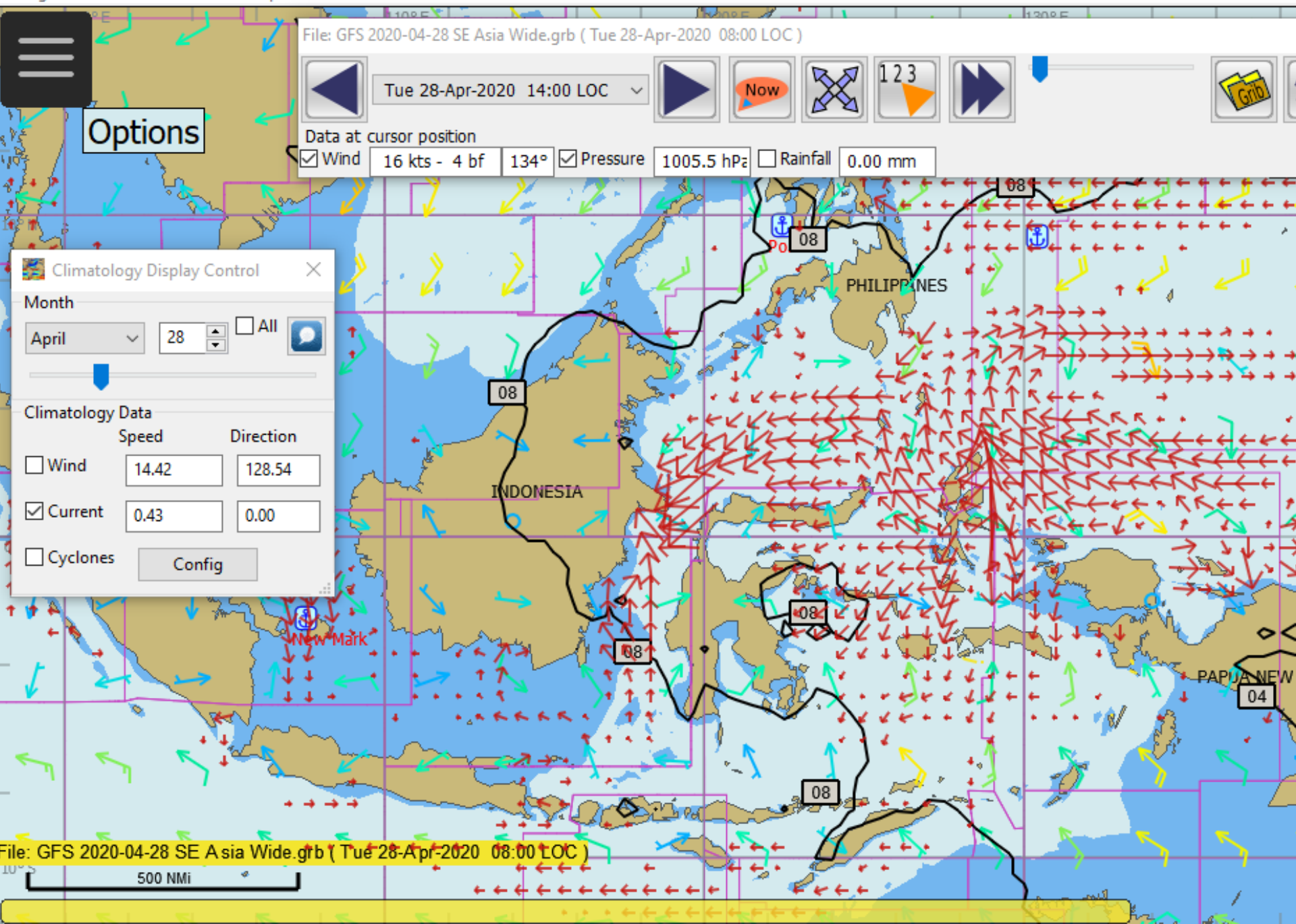
- Best selection of weather models
- Seamless integration with Iridium Go!

## Con

- Pro subscription required to include currents in routing determination \$\$\$
- Standard subscription required to be able to email for routing \$\$
- When to motor depends on wind speed, not boat speed (6kts upwind <> 6kts downwind)
- Multiple models can be confusing when they don't agree!
- Exporting a route to GPX and importing into OpenCPN doesn't work well.

# OpenCPN Weather Routing Plugin

- Download the plugin from OpenCPN Downloads
- Install the plugin
- Enable the plugin (Options/Plugins)
- Load GRIB File(s) (Wind & Current)
- Load up Climatology



# The Weather Routing Screen

Weather Routing - WeatherRoutingConfiguration.xml

File Position Configuration View Help

Weather Routing

Positions

- Name
- Lizard-Pt-ENG
- Provincetown-MA
- La-Palma-Canaries
- St-Lucia
- San Augustine Pt
- INDO-Talaud NW
- INDO - Wayag
- INDO-SW Morotai
- PH-San Agustin
- INDO-WaigeoE
- INDO-Biak
- INDO-WaigeoE-NE
- INDO-WaigeoE-NN
- PNG-NE Hermit
- PNG-Lorengau
- PNG-HermitE
- INDO-Talaud S

Configurations

Start	Start Time (lo...	End	En...	Ti...	Distance	Avg Spe...	M...	Avg Wind	M...	Avg Cur...	Upwind P...	T...	C
Provincetown-MA	6/10/2018 10:40	Lizard-Pt-ENG	N/A	N/A	-nan(ind)/2668	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	M
Lizard-Pt-ENG	9/7/2017 08:00	La-Palma-Canaries	N/A	N/A	-nan(ind)/1405	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	M
La-Palma-Canaries	11/7/2017 08:00	St-Lucia	N/A	N/A	-nan(ind)/2562	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	M
PH-Davao Samal S	4/29/2020 08:00	INDO-SW Morotai	N/A	N/A	-nan(ind)/321	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	M

Routes (and Results, after Calculating)

The "Go" button

Compute Export

Possible Route Points

# Routing Results

## Configurations

Start	Start Time (lo...	End	End Time (lo...	Time	Distance	Avg Spe...	Max ...	Avg Wind	Max ...
👁 Provincetown-MA	6/10/2018 10:40	Lizard-Pt-ENG	N/A	N/A	-nan(ind)/2668	-nan(ind)	0.00	-nan(ind)	0.00
👁 Lizard-Pt-ENG	9/7/2017 08:00	La-Palma-Canaries	N/A	N/A	-nan(ind)/1405	-nan(ind)	0.00	-nan(ind)	0.00
👁 La-Palma-Canaries	11/7/2017 08:00	St-Lucia	N/A	N/A	-nan(ind)/2562	-nan(ind)	0.00	-nan(ind)	0.00
👁 PH-Davao Samal S	4/29/2020 12:00	INDO-SW Morotai	5/1/2020 19:02	2d 07:02	344/321	6.56	8.70	14.53	23.03

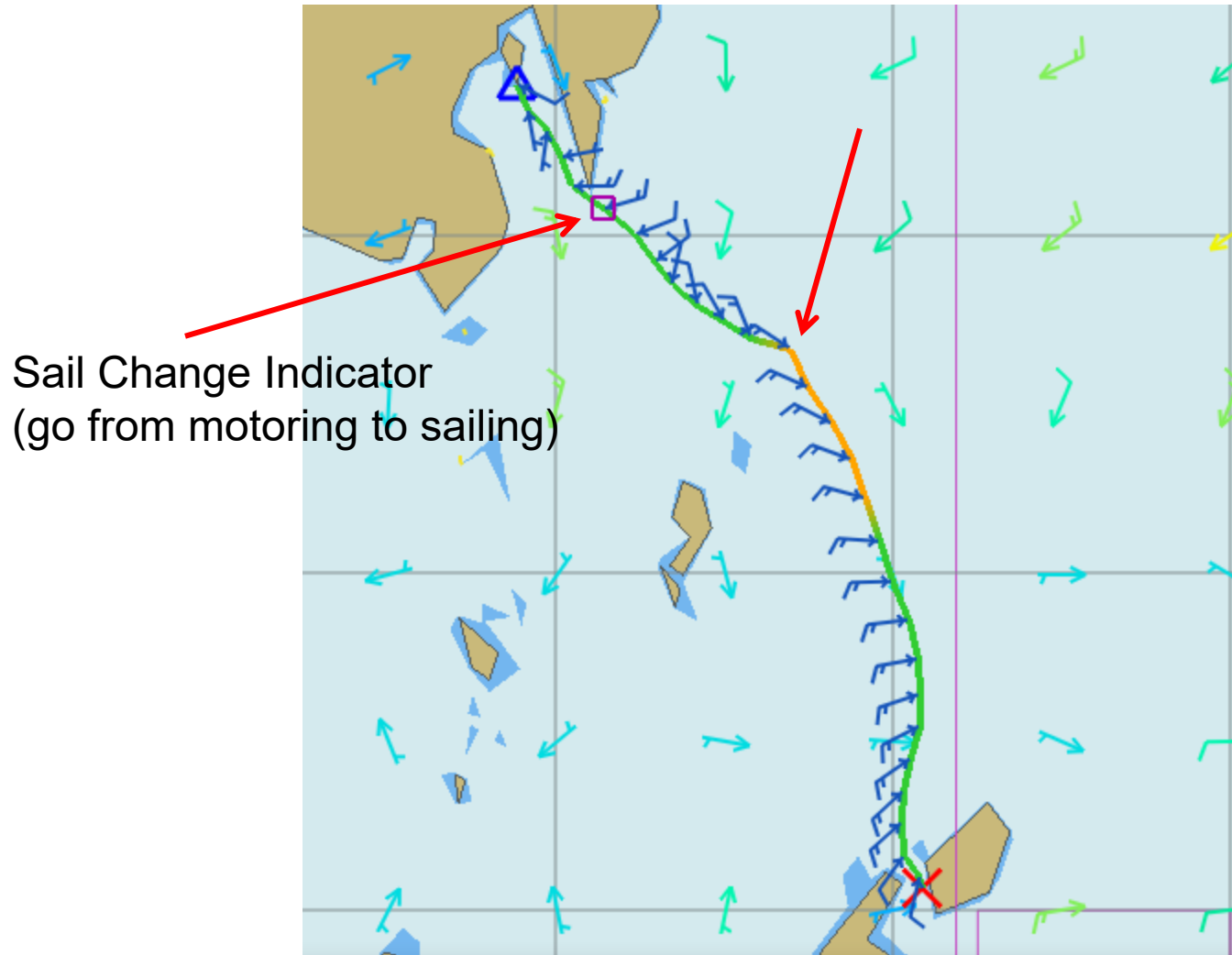
Calculated Route Data

Scroll for more columns

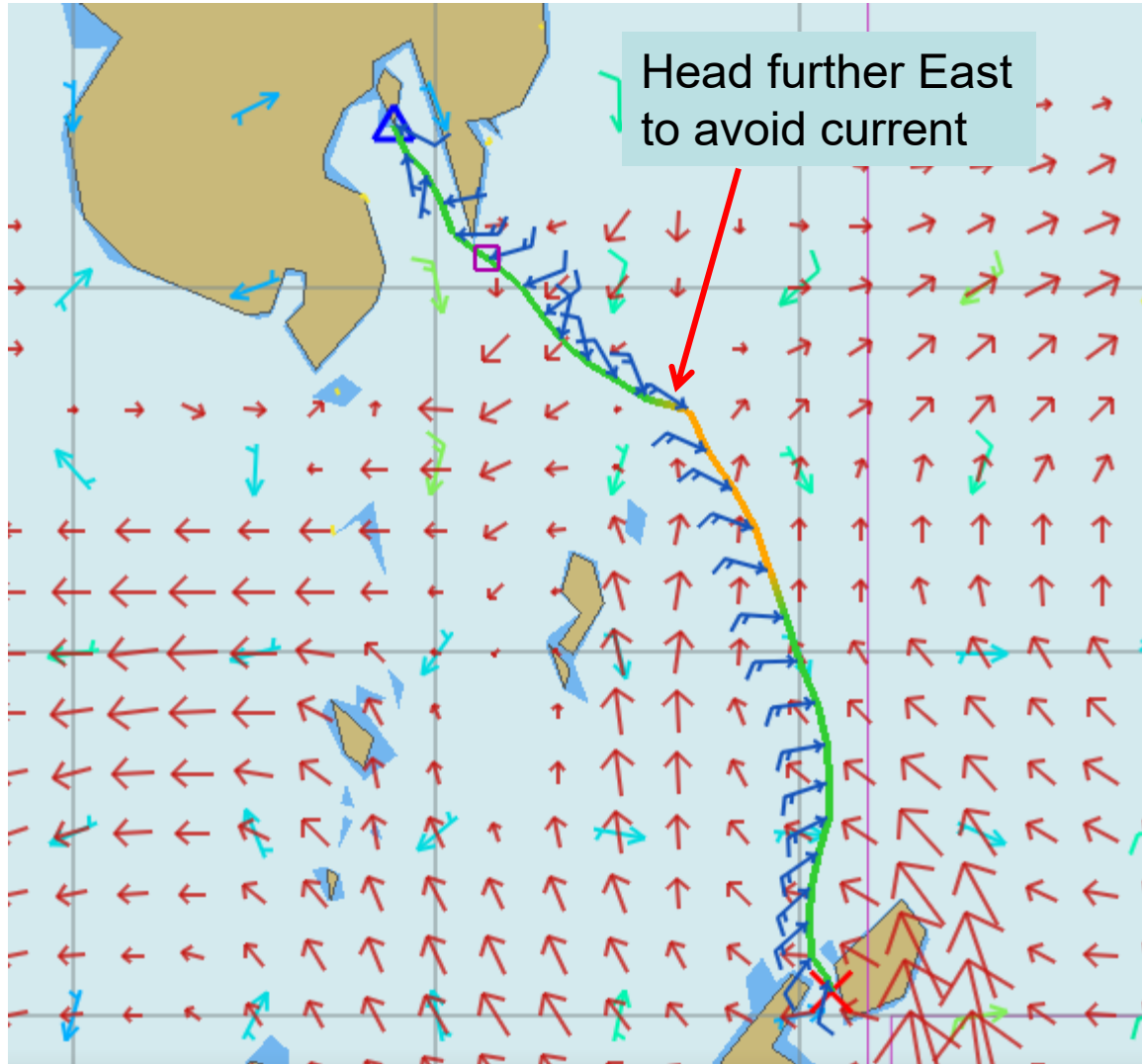




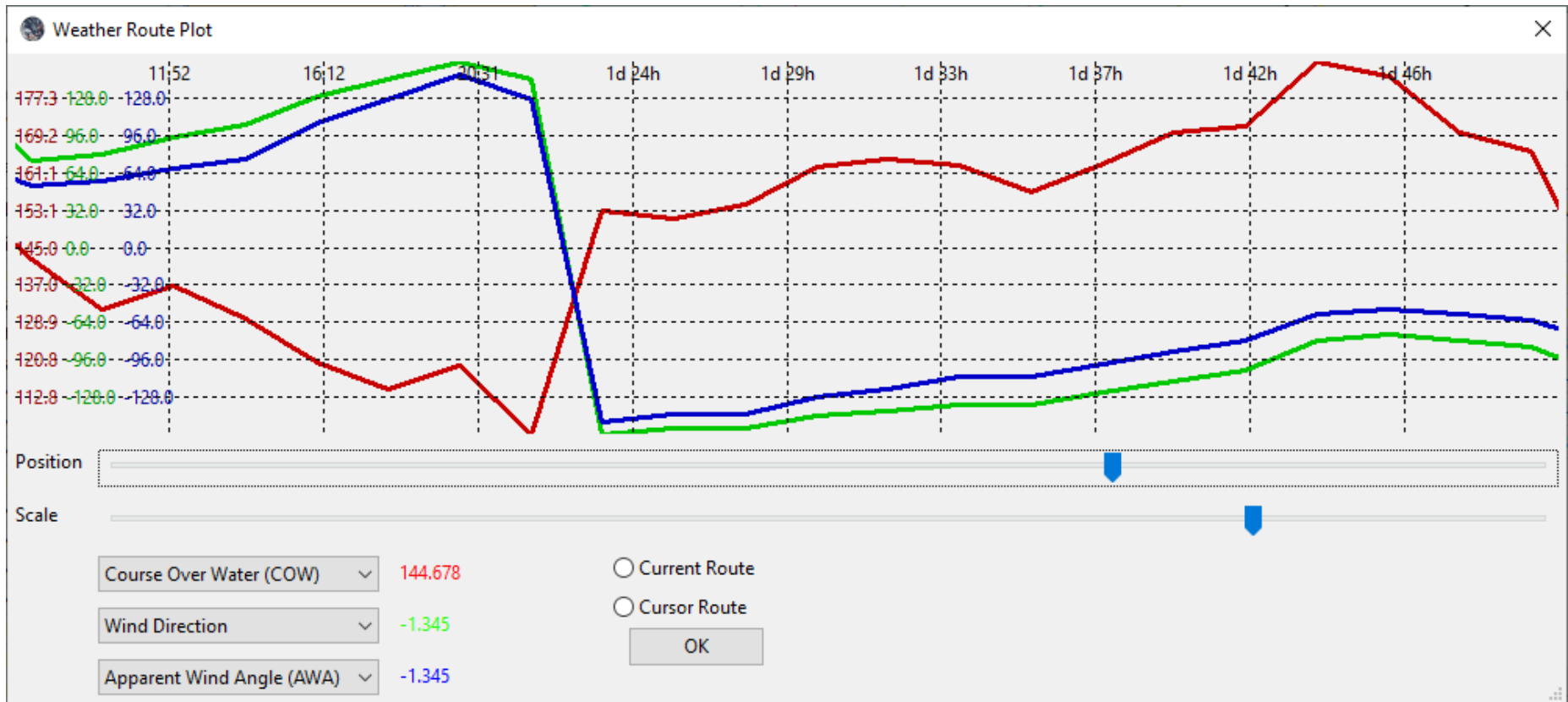
# Routing Results



# Routing Results




# Routing Results Plot Screen



# Routing Results

## (Report Screen)

 Weather Route Report ✕

**Current Configuration**

Distance sailed: 344.46 NMi : 23.70 NMi or 7.39% longer than great circle route  
Average Speed Over Water (SOW): 6.56 knots  
Average Speed Over Ground (SOG): 6.20 knots  
Average Wind: 14.53 knots  
Maximum Wind: 23.03 knots  
Average Swell: 0.00 meters  
Upwind: 32.14%  
Port/Starboard: 35/65  
Number of tacks: 1  
Sailing comfort: Bumpy

**Routes**

PH-Davao Samal S to INDO-SW Morotai (4 configurations)  
Fastest configuration 4/30/2020 12:00:00 PM avg speed: 6.49 knots  
Best Times (mostly downwind): any  
Best Sailing Comfort: Good on 5/2/2020 12:00:00 PM  
Cyclones: none  
Start times for cyclone safe routes: 4/29/2020 and 4/30/2020 and 5/1/2020 and 5/2/2020

# Departure Planning

## Configurations

Start	Start Time (lo...	End	End Time (lo...	Time	Distance	Avg Spe...	Max ...	Avg Wind	Max ...	Avg Cur...
👁 Provincetown-MA	6/10/2018 10:40	Lizard-Pt-ENG	N/A	N/A	-nan(ind)/2668	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)
👁 Lizard-Pt-ENG	9/7/2017 08:00	La-Palma-Canaries	N/A	N/A	-nan(ind)/1405	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)
👁 La-Palma-Canaries	11/7/2017 08:00	St-Lucia	N/A	N/A	-nan(ind)/2562	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)
👁 PH-Davao Samal S	4/29/2020 12:00	INDO-SW Morotai	5/1/2020 19:02	2d 07:02	344/321	6.56	8.70	14.53	23.03	0.84
👁 PH-Davao Samal S	4/30/2020 12:00	INDO-SW Morotai	5/2/2020 18:12	2d 06:12	333/321	6.49	8.72	13.72	26.65	0.89
👁 PH-Davao Samal S	5/1/2020 12:00	INDO-SW Morotai	5/4/2020 04:55	2d 16:56	338/321	5.65	8.77	9.41	24.31	0.88
👁 PH-Davao Samal S	5/2/2020 12:00	INDO-SW Morotai	5/5/2020 08:39	2d 20:39	325/321	5.28	6.00	6.15	13.33	0.97

## Configurations

End	End Time (lo...	Time	Distance	Avg Spe...	Max ...	Avg Wind	Max ...	Avg Cur...	Upwind P...	Tacks	Comf...	State
Lizard-Pt-ENG	N/A	N/A	-nan(ind)/2668	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	N/A	Not Compu
La-Palma-Canaries	N/A	N/A	-nan(ind)/1405	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	N/A	Not Compu
St-Lucia	N/A	N/A	-nan(ind)/2562	-nan(ind)	0.00	-nan(ind)	0.00	-nan(ind)	-nan(ind)%	0	N/A	Not Compu
INDO-SW Morotai	5/1/2020 19:02	2d 07:02	344/321	6.56	8.70	14.53	23.03	0.84	32.14%	1	Bumpy	Complete
INDO-SW Morotai	5/2/2020 18:12	2d 06:12	333/321	6.49	8.72	13.72	26.65	0.89	42.86%	0	Bumpy	Complete
INDO-SW Morotai	5/4/2020 04:55	2d 16:56	338/321	5.65	8.77	9.41	24.31	0.88	42.42%	1	Bumpy	Complete
INDO-SW Morotai	5/5/2020 08:39	2d 20:39	325/321	5.28	6.00	6.15	13.33	0.97	31.43%	0	Good	Complete

# OpenCPN Pricing

- FREE FREE FREE
- (You have to acquire the GRIB file(s) from somewhere)



# OpenCPN Pros & Cons

## Pro

- Can route in the future or in the past, in addition to “next week”.
- Extremely flexible once you understand how to use it.
- Very affordable (FREE)
- Can use PredictWind GRIB files, too.
- Can use “Climatology” data to substitute for missing info (currents, beyond forecast)

## Con

- Way too complicated for newbies (too many very advanced concepts).
- A little buggy
- Routing results not available in tabular form (see Fast Seas excellent tabular result)

# Comparing Options

Tool	Ease of Use	Presentation of Result	Forecasts Used	Cost
PredictWind	Moderate	Good	ECMWF, GFS, PW, Current (\$\$\$)	Free to \$\$\$
FastSeas	Easy	Excellent	GFS, OSCAR	Free to \$
OpenCPN	Difficult	Good	Any GRIB plus Climatology	Free Free
QTVLM				
Maxsea Pro				
Ocens				

# Other Notes

- FastSeas and PredictWind, you don't **HAVE** to get the GRIB file
- OpenCPN, you **MUST** get the GRIB file



The End  
[www.SVSoggyPaws.com](http://www.SVSoggyPaws.com)

# Questions?