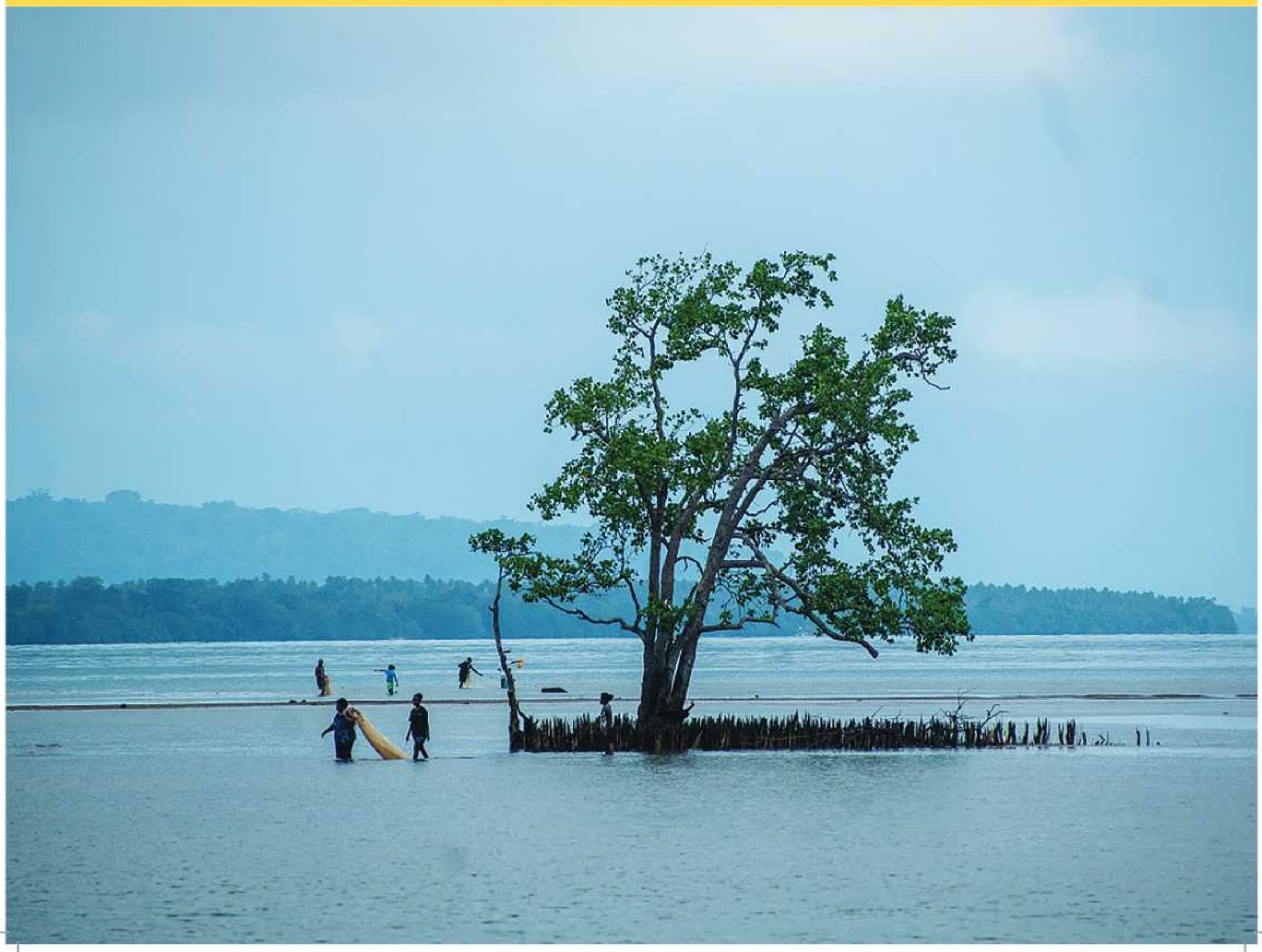
Vanuatu - Luganville

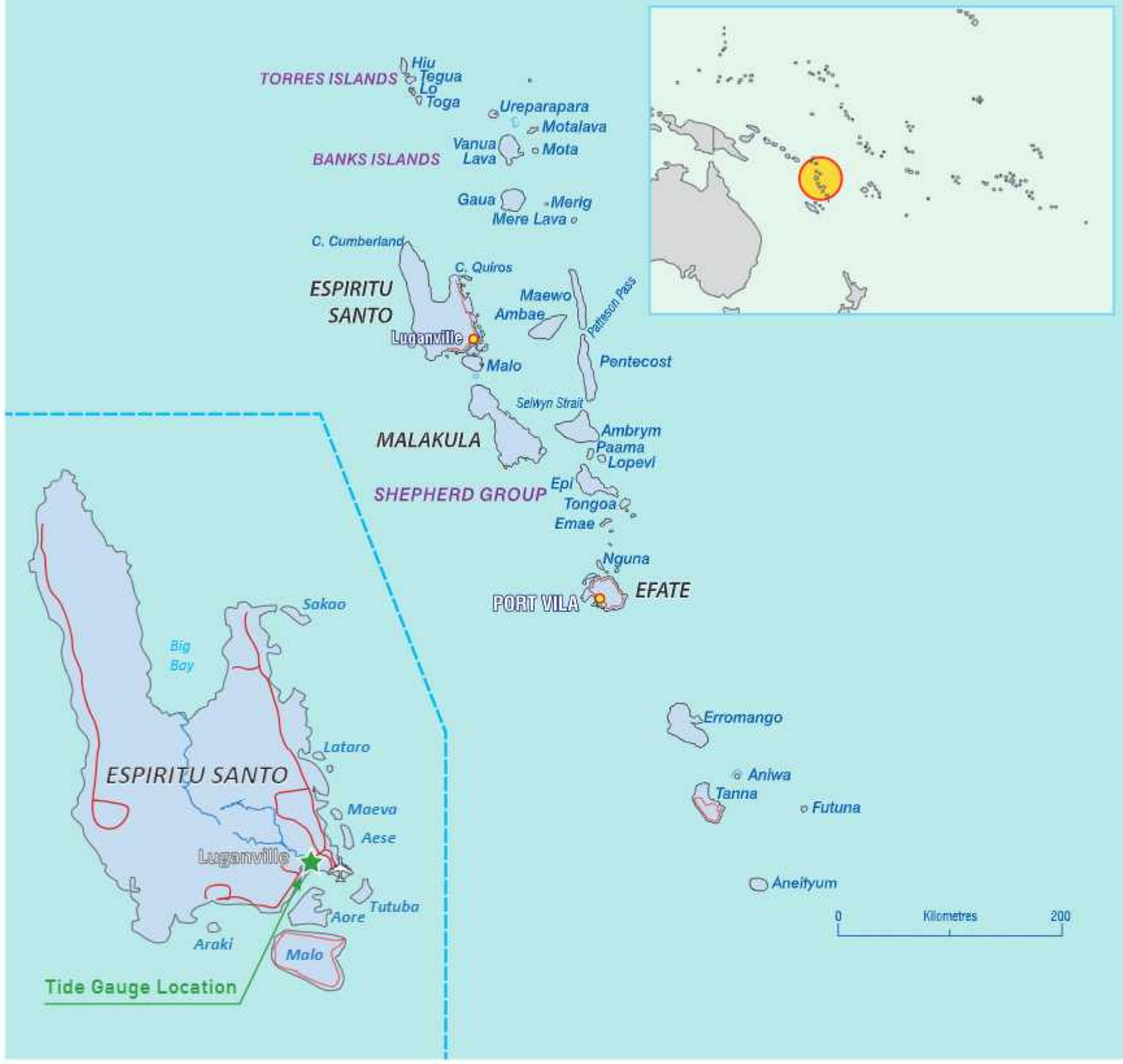
2024 Tide Predictions Calendar

Climate and Oceans Support Program in the Pacific

A Pacific Islands Program supported by the Australian Government



Vanuatu - Luganville Wharf



Meteorological and seasonal effects

Tide predictions are based on the effects of the gravitational forces exerted by the moon, the sun, and the rotation of the earth, as well as average seasonal changes.

The actual tide height will be a combination of these effects and the weather conditions at the time. The effects of the weather are not included in tide predictions.

Fishing remains a daily activity for coastal communities in Santo, Vanuatu.

10 highest tides for 2024			10 lowest tides for 2024		
Date	Time	Height (m)	Date	Time	Height (m)
15-Nov	15:53	1.95	10-Feb	23:45	0.07
16-Nov	16:32	1.93	09-Feb	23:04	0.09
18-Oct	16:59	1.93	09-Mar	22:38	0.09
17-Oct	16:22	1.92	10-Mar	23:15	0.1
14-Nov	15:15	1.91	12-Feb	0:25	0.12
10-Feb	17:02	1.91	13-Jan	0:06	0.13
14-Dec	15:36	1.89	20-Aug	11:18	0.13
19-Oct	17:38	1.89	08-Mar	22:00	0.13
11-Feb	17:47	1.88	22-Jul	11:45	0.14
15-Dec	16:19	1.88	23-Jul	12:26	0.15

Traditional Knowledge and our Ocean

What is Traditional Knowledge?

Traditional knowledge is the knowledge held by those living off the land and ocean, be they indigenous or non-indigenous. This knowledge is not static and can evolve over time and is often imbedded in practice and belief.

By closely observing their local environment, communities in the Pacific have developed skills that enable them to build coping strategies for variable weather and climate conditions, including oceans and tides.

Giant Reef Ray. Photo E.Dorson. In Fiji, if the elders are sailing and they see the sting ray jump, they know, bad weather is coming soon. (Fiji Traditional Knowledge, Fiji Met Office)

Using tidal information

Having an understanding of local tidal fluctuations is an important component of knowing when to travel and where and when to gather food from the oceans. Being familiar with the natural rhythm of the tides can also help to identify signs that may precede a tsunami, including an unusually low and receding waterline.

Tidal variations impact on the life cycles of animals that inhabit the coastal zone and influence their patterns of activities and behaviour. This, in turn, influences the fishing strategies of coastal communities. Based on accumulated knowledge, some fishermen construct calendars and mental maps in order to predict fish locations based on the phases of the moon.

Kiu (Pluvialis fulva) walking along the shoreline (PC: Neil Fifer) http://www.birdersmarket.com/acatalog/PacificGoldenPloveremPluvialisfulvaem.html

Terminology used to describe tide conditions can derive from birds and animals that are habitants of coastal areas.

The Kiu (*Pluvialis fulva*) is a bird found in Tonga that is often seen fishing or searching for food near shallow waters.

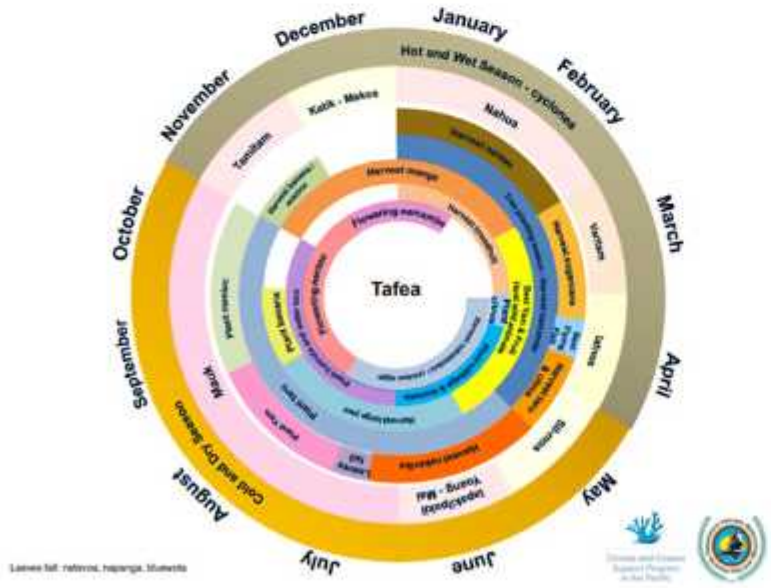
Tu'u'anga Kiu: refers to the time of tide where rocks appear over water and often used by these birds to stand on for fishing and hence the term Tu'u'anga Kiu (Tu'u'anga means stand). The term is also used during a Kava ceremony to refer to when the kava inside the tanoa is very low.

In Fiji, the 'Gogo', Brown Noddy (Anous stolidus) and Black Noddy (Anous minutus) birds, if elders wake up in the morning and see these birds soaring high up in the air, then they know the weather is not so favorable for sailing to the mainland [story from a Vatuele Island elder].

Black and Brown Noddy flying around on Vatulele Island (Photo: Arieta Daphne)

Traditional Seasonal Calendar

In some communities, annual tidal cycles (determining reef accessibility) combined with seasonal resource abundance give rise to local customs prescribing when the season for communal harvest of fish will be. The exact dates of the harvest period are determined by community specialists who understand the movement of fish in relation to lunar phases and optimal tidal conditions.



Recent Publications

Chambers, L., Plotz, R.D., Lui, S., Aiono, F., Tofaeono, T.I., Hiriasia, D., Tahani, L., Fa'anunu, O., Finaulahi, S., & Willy, A. (2020). Seasonal Calendars Enhance Climate Communication in the Pacific. Weather, Climate, and Society. https://doi.org/10.1175/WCAS-D-20-0035.1

Chambers LE, Plotz RD, Lui S, Natapei M, Malsale P, Waiwai M, Hiriasia D, Tahani L, Sanau N, Waiaraha LS, Seuseu S, Mitiepo R, Tofaeono T 2019 Traditional or contemporary weather and climate forecasts: reaching Pacific communities. Regional Environmental Change DOI: 10.1007/s10113-019-01487-7

Malsale P, Sanau N, Tofaeono TI, Kavisi Z, Willy A, Mitiepo R, Lui S, Chambers LE, Plotz RD 2018 Protocols and partnerships for engaging communities in the preservation of traditional climate knowledge. BAMS 99: 2471-2489

For further information on the use of traditional knowledge in the Pacific, please contact:
Secretariat of the Pacific Regional Environment Programme Website: http://www.sprep.org
Pacific Meteorological Desk Partnership
https://www.pacificmet.net/
Email: PacMetDesk@sprep.org

Australian AID

Climate and Oceans Support Program in the Pacific

Australian Government
Bureau of Meteorology

SPREP
Secretariat of the Pacific Regional Environment Programme

Pacific Community
Communauté du Pacifique

COSPPac
Climate and Oceans Support Program in the Pacific

Understanding Tides and Sea Level

Many factors contribute to sea level at the coast

Sea level is the height of the sea at any one time. It is controlled by: mean sea level changes, tides, storm surge and waves/swell.

The factor that changes sea level the most on daily timescales is usually tides.

Figure 1. Low and high tide at Betio, Kiribati.
Photo by Zulfikar Begg.

Tide gauges are the main way we monitor sea level

The tide gauge records the parts of the total sea level that vary on timescales of minutes to hours. This includes mean sea level, tides and storm surges.

Tide gauges aren't usually designed to measure components of the sea level that vary more quickly, such as swell and waves. To capture these components, we need to use other instruments such as wave buoys.

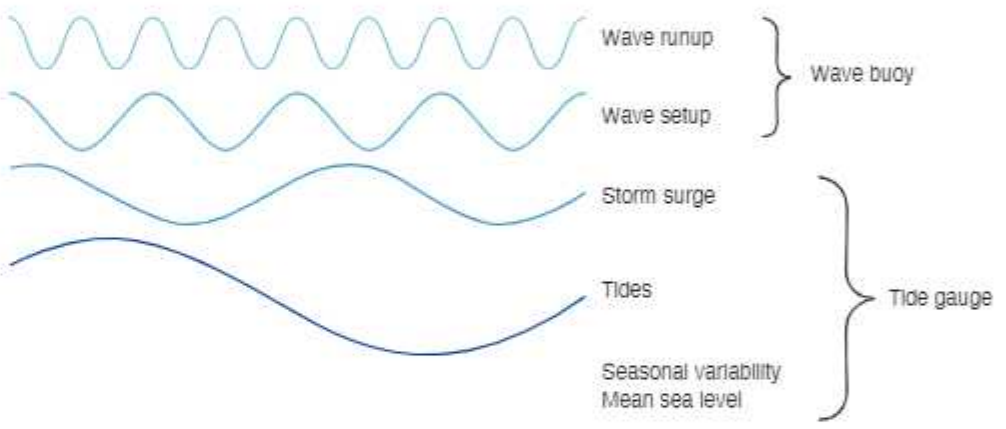


Figure 2. Tide gauges do not record all the factors that control sea level.

What causes tides?

Tides are the daily rise and fall of sea levels. Tides are mainly caused by the gravitational pull of the moon and sun on the Earth. Most locations tend to have two high and two low tides per day.

The timing of high tides is also dependent on the shapes of bays and geographies, varying in highly complex ways.

Spring and neap tides are part of the normal tidal cycle.

They usually occur twice per month.

Spring tides are very high tides that occur during full and new moon phases, when the gravitational forces of the sun and moon combine to exert a stronger pull on the oceans.

Neap tides are lower high tides and higher low tides that occur during the moon's quarter phases, when the gravitational forces between the sun and moon are not aligned.

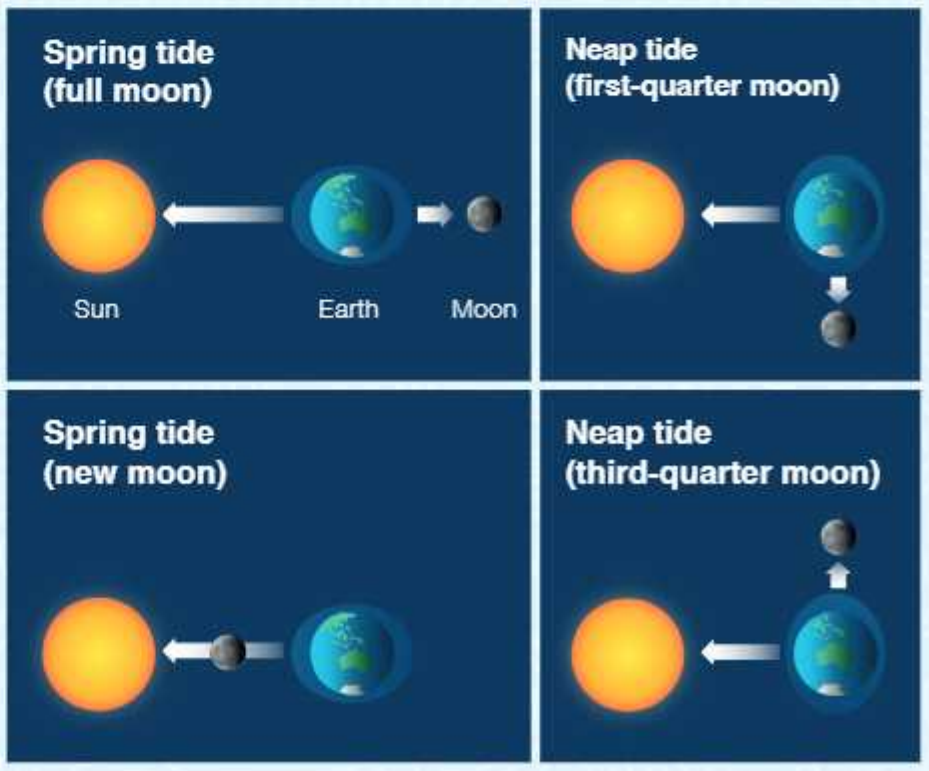


Figure 3. Spring and neap tides occur every month and correspond with the phases of the moon.

King tides are very high spring tides

King tides occur a few times every year, when the gravitational pull of the sun and moon upon the earth is strongest. This happens when the sun and moon are closest to the earth in their orbits.

In the Pacific, king tides are likely to occur during the months of November to March.

King tides can cause coastal flooding, even on a clear, sunny day.

When king tides coincide with cyclones, floods or storms, sea levels can rise even higher, potentially flooding low-lying coastal areas and causing damage to property and the coastline. The actual height reached by a king tide will depend on the local weather and ocean conditions on the day.

Sea level rise means that king tides now reach higher levels than they used to. Sea level rise also means that other moderate or high tides can now reach levels that king tides used to.

Figure 4. King tide event in Funafuti, Tuvalu. Photo by Moritz Wandres.

The time and heights of tides are very predictable

Tides follow the laws of physics and can be calculated with mathematical formulas.

By recording sea level over many years, we can understand how tides and sea level change over time. The Pacific Sea Level and Geodetic Monitoring Project has recorded sea level and weather statistics in 13 Pacific countries as far back as 1993.

These observations tell stories. How high was the highest tide in Apia? How does El Niño impact sea levels in Kiribati? All of this information is also used to verify and improve tide predictions.

Why are some tides higher or lower than predicted?

Tides are only one of many factors that control sea levels. Sea levels may differ from predicted tide levels due to:

1. **Storm surge:** Higher water levels due to weather conditions or storms. This can result from wind speed and direction, air temperature, barometric pressure and other weather conditions that can greatly affect water levels.
2. **Sea level rise:** Sea level rise can contribute to higher tides.
3. **Climate drivers:** El Niño or La Niña conditions in the Pacific can raise or lower sea level by as much as 50 cm.
4. **Waves:** Both nearby and faraway events, such as storms, landslides and earthquakes can create large waves that lead to coastal flooding.
5. **Geography:** The shape of bays and coastal geography can influence water levels.

For more information

To access tide calendars, wave and weather maps, and climate data for your location visit: www.bom.gov.au/pacific/index.shtml and https://oceanportal.spc.int/portal/ocean.html

For Real-Time Display of tide gauge data, visit: http://www.bom.gov.au/cosppac/rtdd/q1c7o0hj48yu/

Australian Government
Geoscience Australia

Pacific Community
Communauté du Pacifique

Australian Government
Bureau of Meteorology

Tides and Sea Level for Coastal Development and Safe Navigation

What is a Tide Datum?

A Tide Datum is a fixed level against which sea level can be measured in a given location. A tide station datum was established when the sea level monitoring station featured in this calendar was first installed. The tide predictions in this calendar are all relative to Tide Prediction Datum.

Why do we need a Tide Datum?

Tide records must be referenced to a common datum to ensure consistency. This is important if the tide gauges are moved or in the event they are damaged or destroyed. In this case, tide readings from replacement gauges can be referenced to the same datum as before and continue to contribute to our understanding of tides.

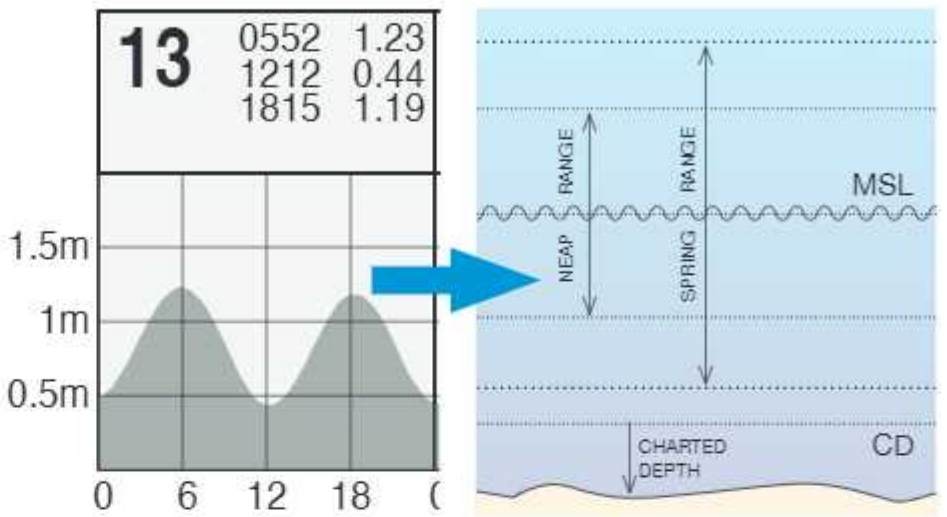


Figure 1. How does THIS..... relate to THIS?

Figure 2. An elevation sign from Tarawa, Kiribati. © SPC

What is the relationship between tides and sea level?

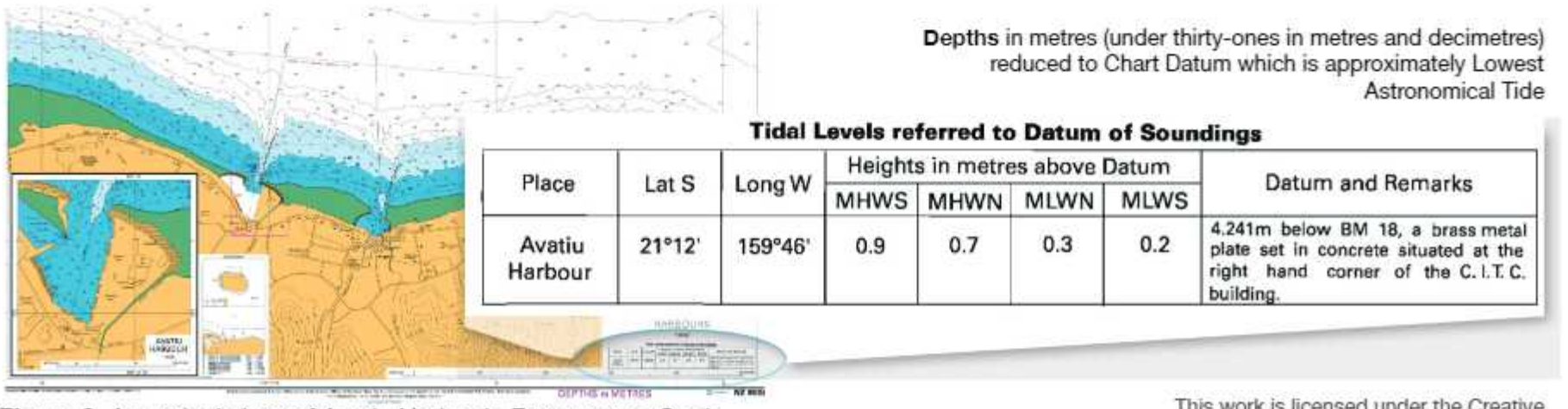
When the range of highest and lowest tides are averaged over a long period (usually at least 19 years), we can establish Mean Sea Level as an important reference level, as all heights on land are measured in metres or feet above mean sea level as in Figure 2.

All sea level monitoring stations are tide gauges, but not all tide gauges can accurately measure changes in sea level. The Pacific Sea Level and Geodetic Monitoring stations include specialised weather, ocean, and land monitoring sensors that have been operating since 1991, allowing us to measure the extent to which sea level is affected by natural variability and man-made climate change at those locations.

Who uses this information?

Makers of maps and nautical charts, land surveyors, engineers and geospatial specialists need this information to ensure the accuracy of their maps and charts. Coastal developers need it as well, to ensure roads, bridges, wharfs, sea walls, buildings and other infrastructure are built at an appropriate height above sea level.

It is especially important for the safety of navigation in ports and coastal areas, so ships can sail safely . The depths marked on a nautical chart are in relation to a Chart Datum. Every chart indicates the datum to which it refers, as in Figure 3.



Depths in metres (under thirty-ones in metres and decimetres) reduced to Chart Datum which is approximately Lowest Astronomical Tide

Tidal Levels referred to Datum of Soundings

Place	Lat S	Long W	Heights in metres above Datum				Datum and Remarks
			MHWS	MHWN	MLWN	MLWS	
Avatiu Harbour	21°12'	159°46'	0.9	0.7	0.3	0.2	4.241m below BM 18, a brass metal plate set in concrete situated at the right hand corner of the C. I. T. C. building.

Figure 3. A nautical chart of Avatiu Harbor in Rarogtonga, Cook Islands. Zooming into the key, we can see Chart Datum for this chart is about the same as Lowest Astronomical Tide.

Tides and Extreme Tide Events

How are tides predicted?

The time and approximate heights of tides are very predictable. They follow the laws of physics and can be calculated with mathematical formulas.

By observing and recording tides at a single location over many years, we can gain a better understanding of tides and sea level changes over time.

The Pacific Sea Level and Geodetic Monitoring Project has been recording sea level and weather statistics at 13 Pacific countries for more than 25 years.

These observations tell a story about the sea levels at these locations, such as: How high was the highest tide in Apia? What effect does El Niño have on sea levels in Kiribati? All of this information is also used to verify and improve tide predictions.

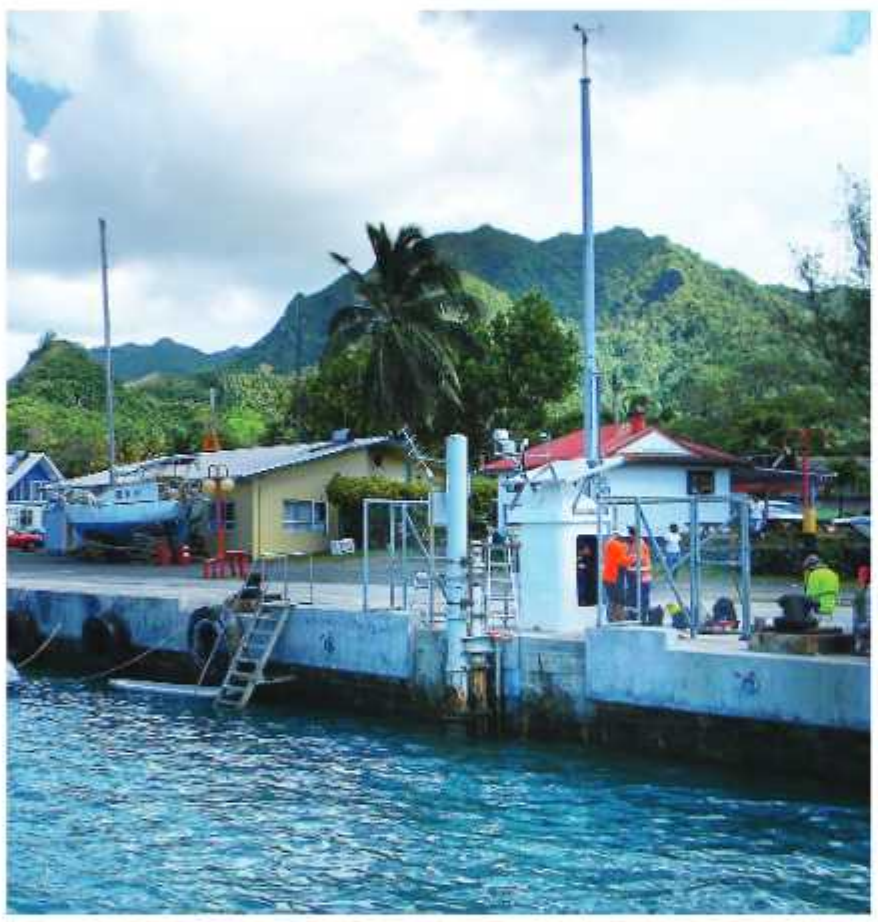


Figure 4. Technicians working on the Cook Islands tide gauge, which has been monitoring sea level and weather conditions in Rarotonga for over 25 years.
Photo: Stamy Criticos (2012).

Why are some tides higher or lower than predicted?

Tide levels can vary from predicted levels for a number of reasons, including:

1. **Geography:** The shape of bays and other coastal geography can magnify or otherwise influence water levels.
2. **Weather:** Wind speed and direction, air temperature, barometric pressure and other weather conditions can greatly affect water levels.
3. **Waves:** Both nearby and faraway events such as storms, landslides and earthquakes can create large waves that lead to coastal flooding.
4. **Climate drivers:** El Niño or La Niña conditions in the Pacific can raise or lower sea level by as much as 50 cm.
5. **Sea-level rise:** Through assessing observations and research, the Intergovernmental Panel on Climate Change (IPCC) concluded that global average sea levels have been rising at a rate of about 3 mm per year since 1993. Levels were 225 mm higher in 2012 compared to 1880. Sea-level rise can contribute to higher tides, but the rates are not the same at all locations.

Figure 5. Predicted vs actual sea level at the Apia tide gauge Samoa, 3 May 2018.

The Pacific Sea Level and Geodetic Monitoring Project provides sea level and meteorological information for 13 countries and tide predictions for 25 locations in the Pacific region. It is an important resource for those involved in disaster mitigation and adaptation planning, coastal development, and the shipping, fishing and tourism industries.

To access tide calendars, wave and weather maps, and climate data for your location visit:
www.bom.gov.au/pacific/index.shtml

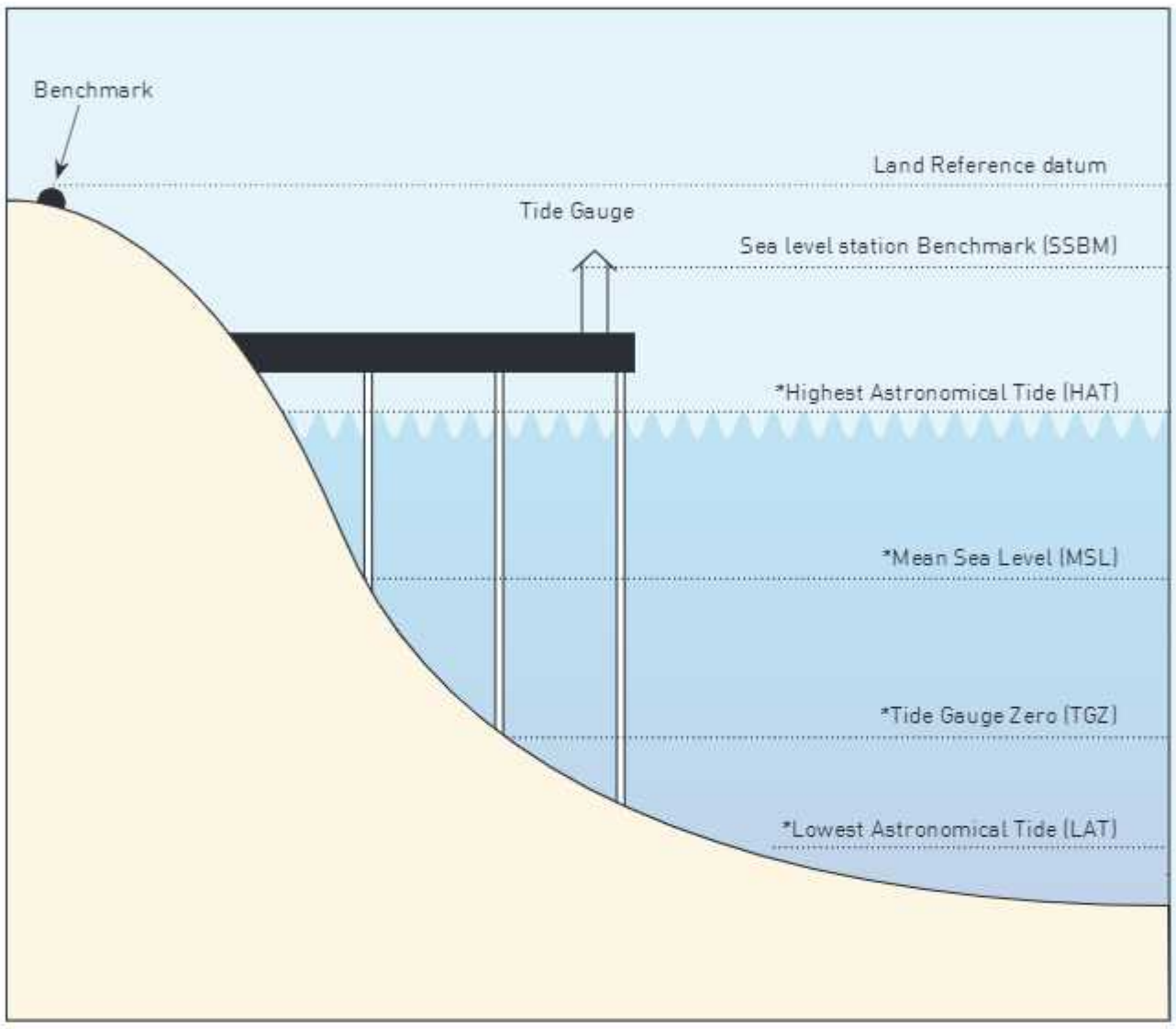
For Real-Time Display of tide gauge data, visit: http://www.bom.gov.au/cosppac/rtdd/q1c7o0hj48yu/

How do the predicted water levels on this calendar relate to chart depths in my country?

The tide predictions in this calendar are not intended to be used directly with hydrographic charts, as the prediction datum and hydrographic chart datum may not coincide. However, the tidal levels listed below are provided to help put the tide predictions into context for use with other information.

Luganville Wharf

The diagram below includes the predicted heights of key tide components based on analysis of the data available.



BMB	2.681m
HAT	1.948m
MSL	1.009m
TGZ	0.174m
LAT	0.021m

Useful Tide Definitions

The water levels to the left are calculated using actual observations/data over many years.

Highest Astronomical Tide

The highest tide level predicted over 19 years under normal weather conditions

Mean Sea Level

The average level of the sea surface expected for the year*

Lowest Astronomical Tide

The lowest tide level predicted over 19 years under normal weather conditions

Tide Gauge Zero

The datum of sea level observations measured by a tide gauge

Prediction Datum

The datum of tide predictions and tidal levels listed in this tide calendar.

**Updated every year as part of the tide prediction and tidal level calculations. Distinct from any historic MSL, LAT or HAT values established as fixed height datum.*

For more information about Tide Datum and Sea Level Monitoring,
you can email: cosppac@spc.int or tides@bom.gov.au

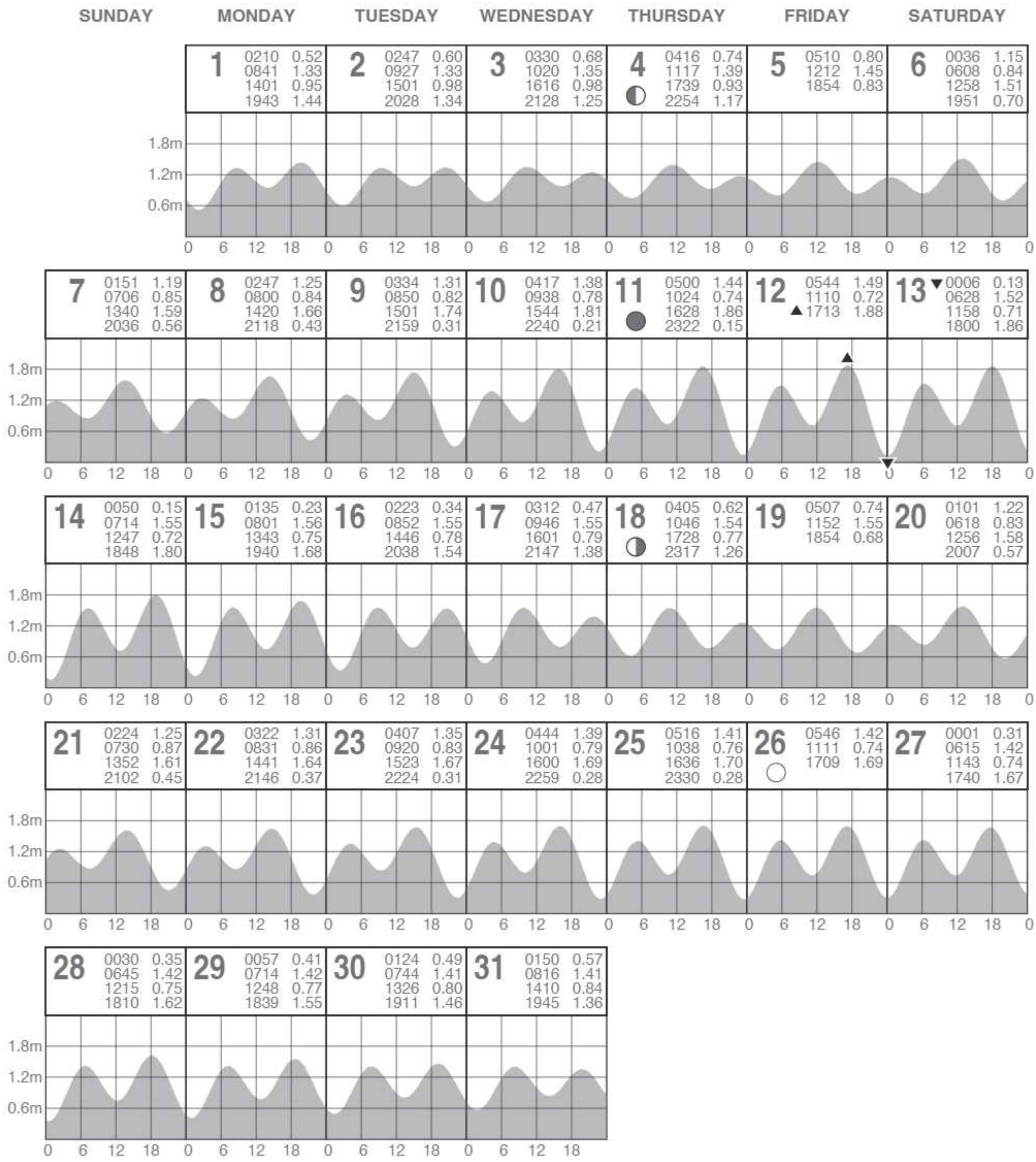
Australian Government
Geoscience Australia

Pacific Community
Communauté du Pacifique

Australian Government
Bureau of Meteorology

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

JANUARY 2024 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

FEBRUARY 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 0218 0.66 0855 1.40 1506 0.86 2029 1.24	2 0251 0.75 0941 1.39 1621 0.86 2139 1.13	3 0336 0.84 1040 1.39 1751 0.80 ◐ 2345 1.06
4 0446 0.91 1153 1.42 1915 0.69	5 0144 1.11 0623 0.93 1301 1.48 2015 0.55	6 0243 1.20 0745 0.90 1358 1.58 2101 0.40	7 0326 1.30 0843 0.82 1447 1.69 2144 0.26	8 0405 1.40 0931 0.73 1533 1.80 2224 0.15	9 0444 1.50 1016 0.65 1618 1.87 2304 0.09	10 0522 1.58 1101 0.58 ▲ 1702 1.91 ● ▽ 2345 0.07
11 0601 1.63 1146 0.54 1747 1.88	12 0025 0.12 0642 1.66 1234 0.53 1834 1.79	13 0106 0.22 0723 1.66 1325 0.56 1923 1.65	14 0147 0.37 0807 1.63 1422 0.60 2018 1.47	15 0230 0.55 0855 1.57 1530 0.66 2127 1.28	16 0319 0.72 0951 1.50 1658 0.68 2313 1.15	17 0425 0.87 1104 1.44 1841 0.63 ◑
18 0122 1.15 0601 0.95 1231 1.43 2001 0.54	19 0236 1.22 0736 0.93 1343 1.47 2055 0.44	20 0322 1.29 0837 0.87 1435 1.52 2135 0.37	21 0356 1.34 0919 0.79 1515 1.57 2208 0.33	22 0424 1.39 0953 0.73 1550 1.61 2238 0.31	23 0450 1.42 1025 0.67 1622 1.64 2305 0.31	24 0515 1.45 1054 0.64 1651 1.64 ○ 2330 0.33
25 0540 1.47 1123 0.62 1719 1.62 2354 0.37	26 0603 1.48 1153 0.61 1747 1.58	27 0016 0.43 0627 1.49 1224 0.62 1815 1.51	28 0039 0.50 0652 1.49 1257 0.63 1845 1.42	29 0101 0.58 0718 1.47 1335 0.66 1918 1.31		

▲ Highest tide of the month
▼ Lowest tide of the month
▽ Lowest tide of the year

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

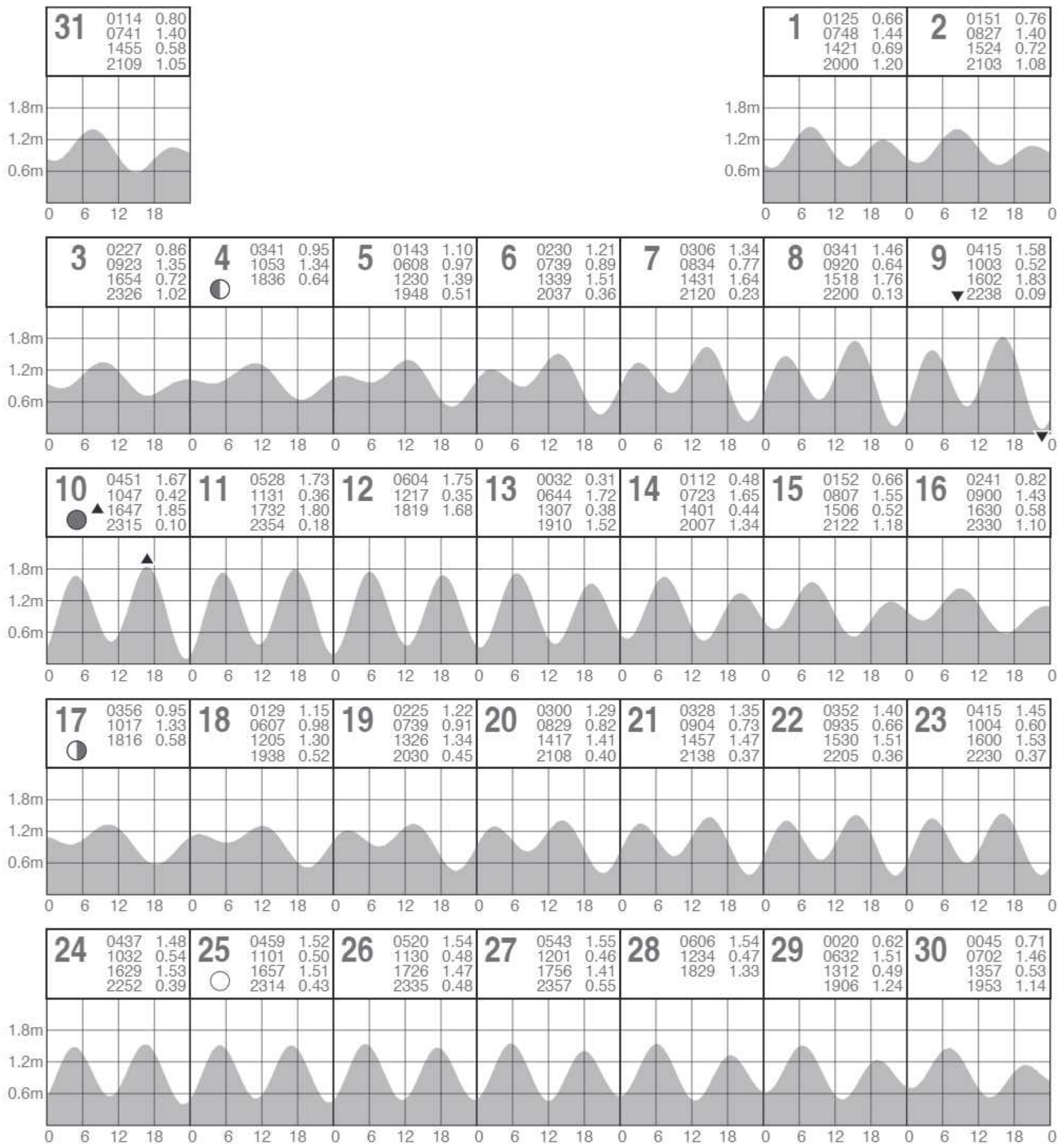
Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

MARCH 2024

Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31					**1**	**2**
0114 0.80 0741 1.40 1455 0.58 2109 1.05					0125 0.66 0748 1.44 1421 0.69 2000 1.20	0151 0.76 0827 1.40 1524 0.72 2103 1.08
3	**4**	**5**	**6**	**7**	**8**	**9**
0227 0.86 0923 1.35 1654 0.72 2326 1.02	0341 0.95 1053 1.34 1836 0.64	0143 1.10 0608 0.97 1230 1.39 1948 0.51	0230 1.21 0739 0.89 1339 1.51 2037 0.36	0306 1.34 0834 0.77 1431 1.64 2120 0.23	0341 1.46 0920 0.64 1518 1.76 2200 0.13	0415 1.58 1003 0.52 1602 1.83 ▼2238 0.09
10	**11**	**12**	**13**	**14**	**15**	**16**
0451 1.67 1047 0.42 ▲1647 1.85 2315 0.10	0528 1.73 1131 0.36 1732 1.80 2354 0.18	0604 1.75 1217 0.35 1819 1.68	0032 0.31 0644 1.72 1307 0.38 1910 1.52	0112 0.48 0723 1.65 1401 0.44 2007 1.34	0152 0.66 0807 1.55 1506 0.52 2122 1.18	0241 0.82 0900 1.43 1630 0.58 2330 1.10
17	**18**	**19**	**20**	**21**	**22**	**23**
0356 0.95 1017 1.33 1816 0.58	0129 1.15 0607 0.98 1205 1.30 1938 0.52	0225 1.22 0739 0.91 1326 1.34 2030 0.45	0300 1.29 0829 0.82 1417 1.41 2108 0.40	0328 1.35 0904 0.73 1457 1.47 2138 0.37	0352 1.40 0935 0.66 1530 1.51 2205 0.36	0415 1.45 1004 0.60 1600 1.53 2230 0.37
24	**25**	**26**	**27**	**28**	**29**	**30**
0437 1.48 1032 0.54 1629 1.53 2252 0.39	0459 1.52 1101 0.50 1657 1.51 2314 0.43	0520 1.54 1130 0.48 1726 1.47 2335 0.48	0543 1.55 1201 0.46 1756 1.41 2357 0.55	0606 1.54 1234 0.47 1829 1.33	0020 0.62 0632 1.51 1312 0.49 1906 1.24	0045 0.71 0702 1.46 1357 0.53 1953 1.14



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

APRIL 2024

Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 0155 0.89 0839 1.33 1620 0.60 2343 1.04	**2** ◐ 0335 0.98 1019 1.29 1800 0.56	**3** 0118 1.14 0611 0.95 1205 1.34 1913 0.45	**4** 0200 1.27 0728 0.83 1316 1.45 2004 0.34	**5** 0235 1.41 0819 0.68 1411 1.57 2048 0.24	**6** 0309 1.54 0904 0.53 1500 1.66 2128 0.19
7 0343 1.65 0948 0.40 1545 1.71 ▼2206 0.18	**8** 0417 1.74 1031 0.29 1631 1.69 2244 0.23	**9** ▲0452 1.78 1116 0.23 1719 1.63 2322 0.33	**10** 0529 1.78 1202 0.21 1809 1.52	**11** 0000 0.46 0606 1.72 1251 0.25 1903 1.38	**12** 0041 0.61 0646 1.63 1345 0.32 2005 1.25	**13** 0123 0.76 0730 1.50 1445 0.41 2123 1.14
14 0215 0.89 0822 1.37 1600 0.49 2325 1.11	**15** 0342 0.98 0937 1.26 1731 0.53	**16** ◑ 0059 1.16 0552 0.97 1123 1.22 1851 0.52	**17** 0148 1.22 0715 0.89 1248 1.25 1945 0.50	**18** 0221 1.29 0802 0.79 1344 1.30 2024 0.47	**19** 0247 1.36 0839 0.70 1426 1.35 2055 0.46	**20** 0312 1.42 0911 0.62 1501 1.38 2122 0.46
21 0333 1.47 0941 0.54 1533 1.40 2146 0.47	**22** 0355 1.52 1010 0.47 1605 1.40 2210 0.50	**23** 0416 1.56 1039 0.41 1637 1.38 2232 0.53	**24** ○ 0439 1.58 1110 0.37 1710 1.35 2258 0.57	**25** 0503 1.59 1143 0.34 1745 1.31 2324 0.63	**26** 0531 1.57 1218 0.34 1824 1.25 2353 0.69	**27** 0602 1.53 1259 0.36 1909 1.19
28 0027 0.76 0639 1.47 1346 0.41 2007 1.13	**29** 0108 0.84 0726 1.40 1447 0.46 2130 1.09	**30** 0213 0.92 0832 1.34 1603 0.49 2318 1.13				

▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

MAY 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 ◐ 0406 0.96 1006 1.30 1724 0.47	**2** 0033 1.23 0558 0.89 1139 1.33 1831 0.42	**3** 0119 1.35 0707 0.76 1250 1.40 1925 0.37	**4** 0158 1.48 0800 0.61 1349 1.47 2011 0.33
5 0233 1.60 0847 0.46 1442 1.52 2054 0.33	**6** 0309 1.70 0933 0.32 1532 1.53 2134 0.36	**7** 0344 1.76 1018 0.22 1623 1.51 2215 0.42	**8** ▲ ● 0420 1.78 1104 0.16 1715 1.46 2256 0.51	**9** ▼ 0459 1.75 1151 0.15 1808 1.39 2337 0.61	**10** 0538 1.68 1240 0.18 1902 1.30	**11** 0020 0.72 0620 1.59 1330 0.26 2001 1.22
12 0106 0.82 0705 1.47 1425 0.35 2108 1.16	**13** 0202 0.90 0757 1.36 1525 0.44 2231 1.14	**14** 0318 0.95 0900 1.26 1631 0.51 2354 1.17	**15** ◑ 0453 0.95 1021 1.20 1740 0.55	**16** 0049 1.22 0623 0.89 1146 1.19 1838 0.57	**17** 0128 1.29 0720 0.81 1254 1.20 1923 0.57	**18** 0158 1.36 0803 0.71 1345 1.23 2000 0.58
19 0224 1.43 0840 0.62 1430 1.26 2031 0.59	**20** 0248 1.49 0914 0.52 1509 1.27 2100 0.60	**21** 0313 1.54 0945 0.43 1546 1.28 2129 0.62	**22** 0337 1.58 1018 0.36 1624 1.28 2159 0.64	**23** 0405 1.61 1052 0.30 1702 1.28 2230 0.67	**24** ○ 0436 1.61 1129 0.26 1743 1.27 2305 0.70	**25** 0511 1.60 1209 0.25 1828 1.25 2344 0.74
26 0549 1.57 1253 0.27 1917 1.22	**27** 0029 0.79 0635 1.52 1343 0.31 2015 1.21	**28** 0122 0.85 0730 1.46 1440 0.36 2122 1.22	**29** 0233 0.89 0835 1.41 1542 0.40 2234 1.26	**30** 0404 0.89 0952 1.36 1646 0.43 2340 1.34	**31** ◐ 0531 0.82 1112 1.34 1747 0.45	

▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

JUNE 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30 0621 0.67 1212 1.26 1804 0.63						**1** 0033 1.44 0643 0.71 1226 1.34 1844 0.47
2 0118 1.54 0742 0.57 1332 1.36 1935 0.49	**3** 0200 1.63 0834 0.43 1433 1.37 2023 0.53	**4** 0239 1.70 0923 0.30 1531 1.38 2110 0.57	**5** 0318 1.73 1011 0.21 1626 1.38 2155 0.61	**6** ▲ 0359 1.74 1057 0.16 1717 1.37 2239 0.66 ●	**7** ▼ 0440 1.71 1143 0.15 1807 1.34 2324 0.71	**8** 0522 1.65 1229 0.18 1855 1.31
9 0008 0.76 0605 1.58 1314 0.25 1943 1.27	**10** 0053 0.81 0648 1.49 1359 0.34 2031 1.23	**11** 0142 0.86 0733 1.41 1445 0.43 2124 1.21	**12** 0238 0.90 0821 1.32 1531 0.51 2223 1.22	**13** 0347 0.92 0917 1.24 1620 0.58 2322 1.25	**14** 0504 0.90 1026 1.18 1712 0.64 ◑	**15** 0014 1.30 0620 0.84 1148 1.14 1803 0.68
16 0055 1.36 0720 0.75 1301 1.14 1852 0.71	**17** 0130 1.43 0807 0.64 1401 1.16 1936 0.73	**18** 0202 1.49 0846 0.53 1451 1.19 2017 0.74	**19** 0234 1.54 0924 0.43 1535 1.22 2057 0.74	**20** 0307 1.59 1000 0.34 1616 1.25 2136 0.73	**21** 0343 1.63 1038 0.26 1658 1.28 2217 0.73	**22** 0420 1.66 1118 0.21 1740 1.31 2259 0.72 ○
23 0502 1.67 1200 0.19 1824 1.33 2344 0.73	**24** 0546 1.66 1245 0.20 1911 1.35	**25** 0032 0.75 0635 1.63 1331 0.23 2000 1.36	**26** 0126 0.77 0728 1.58 1421 0.29 2053 1.38	**27** 0230 0.80 0826 1.50 1513 0.37 2149 1.41	**28** 0344 0.80 0931 1.40 1607 0.46 2248 1.45	**29** 0504 0.75 1047 1.32 1704 0.55 2346 1.50 ◐

▲ Highest tide of the month
▼ Lowest tide of the month

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

JULY 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 0042 1.56 0730 0.55 1332 1.26 1906 0.69	**2** 0133 1.61 0829 0.43 1443 1.28 2005 0.72	**3** 0220 1.65 0921 0.32 1542 1.32 2100 0.74	**4** 0305 1.68 1008 0.24 1631 1.35 2148 0.73	**5** 0349 1.69 1052 0.20 1715 1.37 2233 0.72	**6** ● 0431 1.68 1132 0.19 1756 1.37 2315 0.72
7 0512 1.66 1212 0.22 1833 1.37 2354 0.73	**8** 0551 1.61 1249 0.28 1910 1.35	**9** 0033 0.76 0628 1.55 1325 0.35 1946 1.33	**10** 0113 0.79 0704 1.48 1400 0.44 2023 1.32	**11** 0157 0.83 0742 1.39 1433 0.53 2102 1.31	**12** 0249 0.86 0824 1.30 1510 0.62 2147 1.32	**13** 0355 0.87 0917 1.20 1550 0.71 2240 1.33
14 ◑ 0509 0.84 1033 1.11 1639 0.78 2337 1.36	**15** 0627 0.77 1217 1.08 1738 0.84	**16** 0031 1.41 0731 0.67 1344 1.11 1845 0.86	**17** 0119 1.46 0821 0.55 1443 1.16 1946 0.86	**18** 0203 1.53 0904 0.44 1528 1.23 2039 0.82	**19** 0245 1.60 0944 0.33 1608 1.30 2126 0.78	**20** 0328 1.67 1024 0.24 1645 1.36 2209 0.73
21 ○ 0410 1.74 1103 0.17 1725 1.43 2252 0.68	**22** ▼ 0453 1.78 1145 0.14 1804 1.48 2337 0.65	**23** ▲ 0538 1.79 1226 0.15 1845 1.52	**24** 0024 0.64 0625 1.75 1308 0.20 1929 1.55	**25** 0115 0.65 0715 1.67 1351 0.29 2015 1.56	**26** 0213 0.68 0809 1.54 1437 0.42 2104 1.55	**27** 0320 0.70 0913 1.39 1527 0.57 2159 1.53
28 ◐ 0439 0.69 1034 1.26 1624 0.71 2302 1.52	**29** 0605 0.64 1217 1.20 1735 0.82	**30** 0013 1.53 0726 0.54 1351 1.23 1857 0.86	**31** 0118 1.56 0830 0.43 1457 1.29 2008 0.85			

▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

AUGUST 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 0215 1.60 0920 0.34 1545 1.35 2102 0.81	2 0302 1.64 1002 0.28 1625 1.39 2147 0.76	3 0344 1.67 1040 0.25 1659 1.43 2225 0.71
4 ● 0422 1.69 1114 0.25 1730 1.44 2300 0.69	5 0458 1.68 1146 0.28 1800 1.45 2334 0.68	6 0530 1.65 1216 0.33 1830 1.45	7 0008 0.69 0601 1.60 1245 0.41 1858 1.45	8 0042 0.71 0632 1.52 1311 0.49 1926 1.44	9 0118 0.74 0705 1.43 1336 0.58 1957 1.43	10 0201 0.78 0741 1.32 1402 0.68 2031 1.41
11 0255 0.80 0827 1.21 1433 0.78 2115 1.38	12 0405 0.81 0937 1.11 1514 0.87 2212 1.36	13 ◑ 0530 0.77 1146 1.06 1623 0.94 2328 1.37	14 0655 0.69 1342 1.11 1809 0.97	15 0044 1.43 0756 0.57 1435 1.20 1934 0.93	16 0141 1.52 0842 0.44 1513 1.29 2030 0.85	17 0230 1.62 0923 0.32 1547 1.39 2115 0.76
18 0314 1.73 1001 0.22 1621 1.49 2157 0.67	19 0356 1.82 1040 0.15 1657 1.58 2239 0.59	20 ▲▼ ○ 0439 1.87 1118 0.13 1733 1.65 2322 0.53	21 0522 1.86 1157 0.16 1811 1.70	22 0008 0.50 0608 1.80 1236 0.25 1851 1.72	23 0058 0.51 0658 1.67 1317 0.38 1933 1.69	24 0152 0.55 0753 1.51 1400 0.55 2019 1.64
25 0258 0.59 0901 1.34 1449 0.72 2113 1.56	26 ◐ 0418 0.63 1038 1.21 1553 0.88 2224 1.49	27 0555 0.60 1244 1.20 1730 0.97 2354 1.46	28 0721 0.53 1404 1.27 1910 0.95	29 0114 1.50 0822 0.44 1455 1.35 2015 0.88	30 0211 1.56 0907 0.38 1531 1.42 2100 0.80	31 0255 1.61 0944 0.34 1602 1.47 2137 0.72

▲ Highest tide of the month
▼ Lowest tide of the month

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

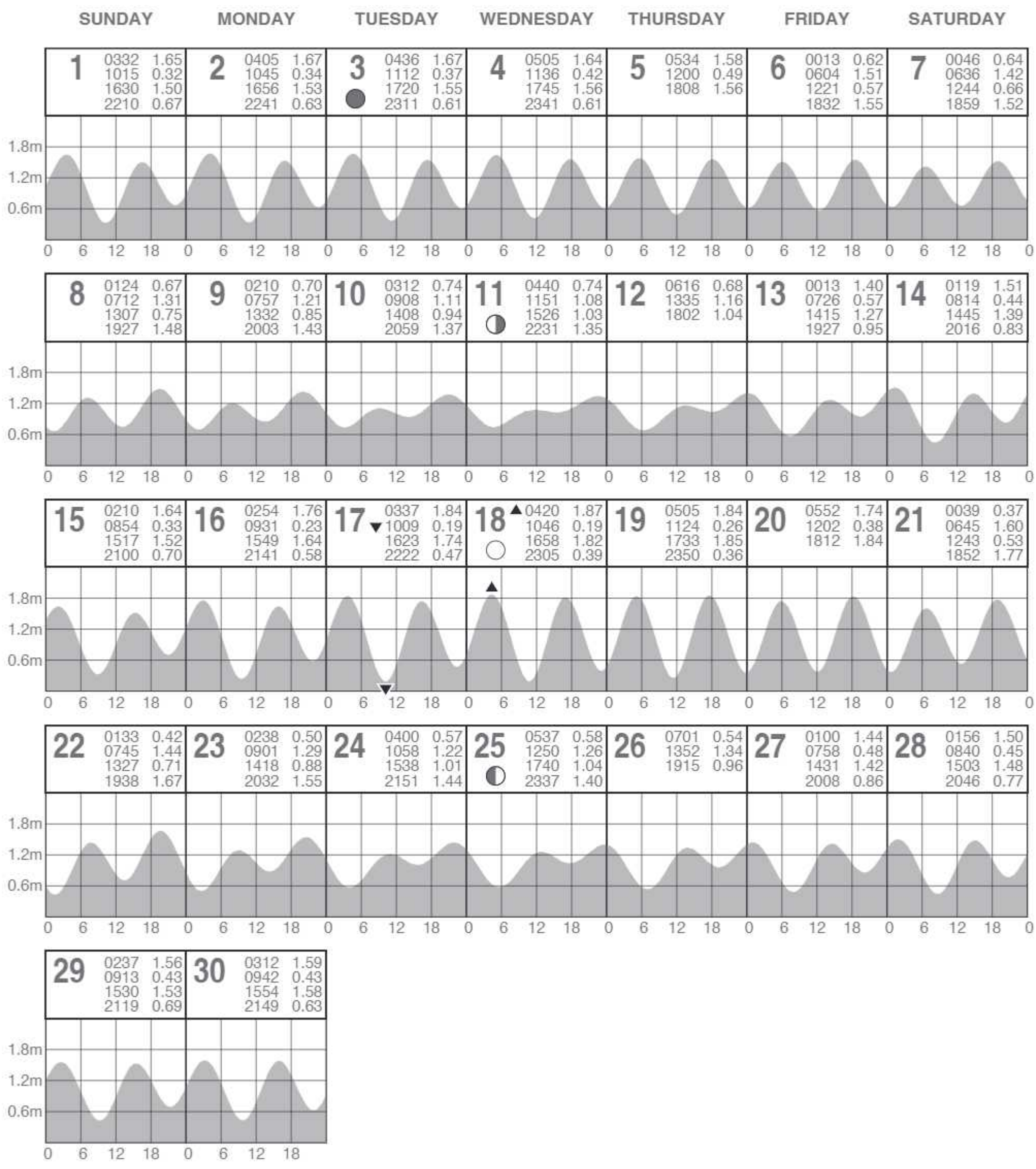
Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

SEPTEMBER 2024 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

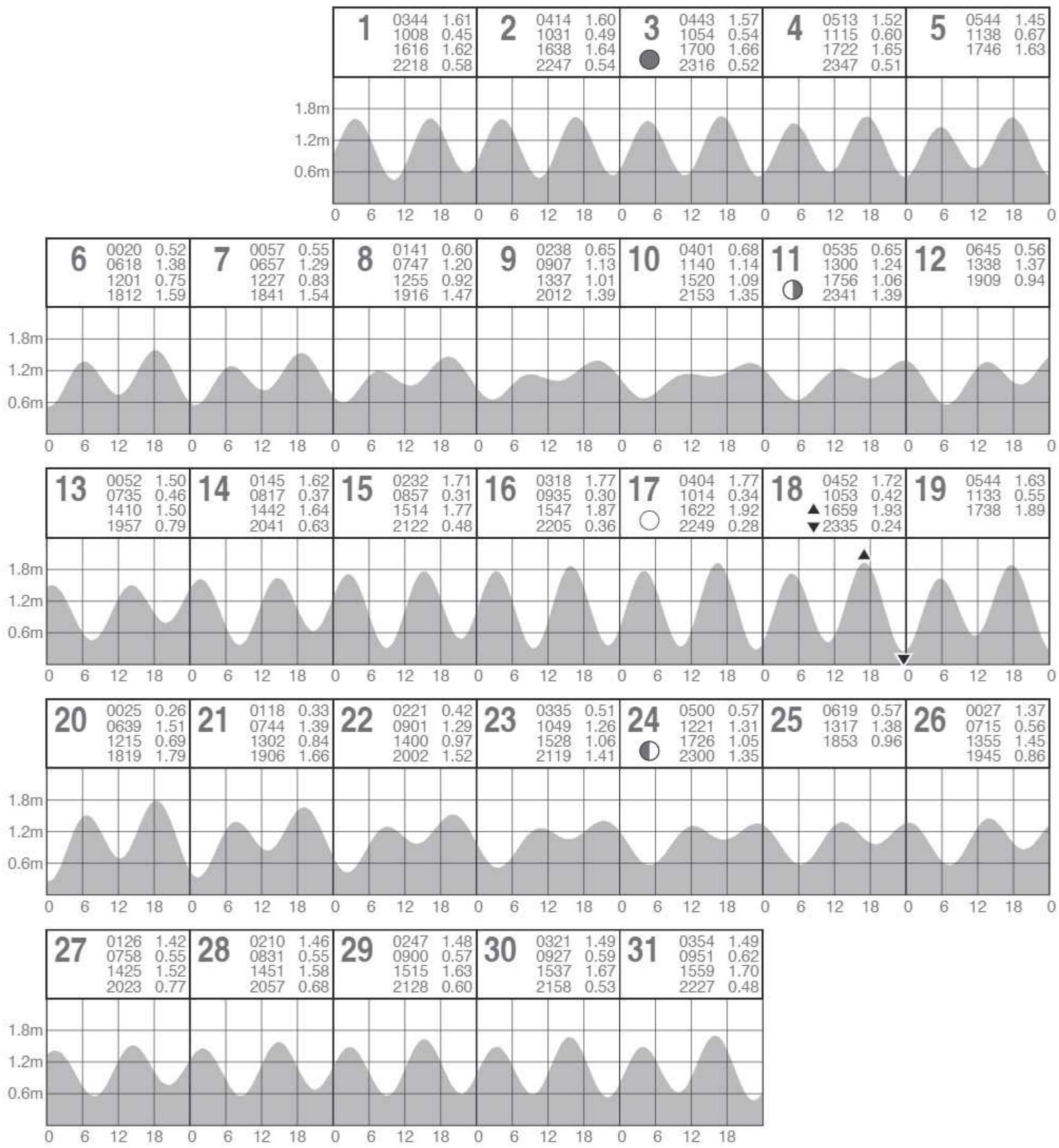
No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

OCTOBER 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 0344 1.61 1008 0.45 1616 1.62 2218 0.58	2 0414 1.60 1031 0.49 1638 1.64 2247 0.54	3 0443 1.57 1054 0.54 1700 1.66 2316 0.52	4 0513 1.52 1115 0.60 1722 1.65 2347 0.51	5 0544 1.45 1138 0.67 1746 1.63
6 0020 0.52 0618 1.38 1201 0.75 1812 1.59	7 0057 0.55 0657 1.29 1227 0.83 1841 1.54	8 0141 0.60 0747 1.20 1255 0.92 1916 1.47	9 0238 0.65 0907 1.13 1337 1.01 2012 1.39	10 0401 0.68 1140 1.14 1520 1.09 2153 1.35	11 0535 0.65 1300 1.24 1756 1.06 2341 1.39	12 0645 0.56 1338 1.37 1909 0.94
13 0052 1.50 0735 0.46 1410 1.50 1957 0.79	14 0145 1.62 0817 0.37 1442 1.64 2041 0.63	15 0232 1.71 0857 0.31 1514 1.77 2122 0.48	16 0318 1.77 0935 0.30 1547 1.87 2205 0.36	17 0404 1.77 1014 0.34 1622 1.92 2249 0.28	18 0452 1.72 1053 0.42 ▲1659 1.93 ▼2335 0.24	19 0544 1.63 1133 0.55 1738 1.89
20 0025 0.26 0639 1.51 1215 0.69 1819 1.79	21 0118 0.33 0744 1.39 1302 0.84 1906 1.66	22 0221 0.42 0901 1.29 1400 0.97 2002 1.52	23 0335 0.51 1049 1.26 1528 1.06 2119 1.41	24 0500 0.57 1221 1.31 1726 1.05 2300 1.35	25 0619 0.57 1317 1.38 1853 0.96	26 0027 1.37 0715 0.56 1355 1.45 1945 0.86
27 0126 1.42 0758 0.55 1425 1.52 2023 0.77	28 0210 1.46 0831 0.55 1451 1.58 2057 0.68	29 0247 1.48 0900 0.57 1515 1.63 2128 0.60	30 0321 1.49 0927 0.59 1537 1.67 2158 0.53	31 0354 1.49 0951 0.62 1559 1.70 2227 0.48		



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

NOVEMBER 2024 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 ● 0426 1.47 1015 0.66 1621 1.71 2257 0.43	2 0459 1.43 1040 0.71 1645 1.71 2329 0.41
3 0533 1.39 1106 0.76 1713 1.68	4 0002 0.42 0612 1.34 1135 0.82 1743 1.64	5 0041 0.45 0657 1.29 1208 0.89 1817 1.58	6 0126 0.50 0752 1.24 1248 0.96 1900 1.51	7 0222 0.55 0906 1.21 1348 1.04 2000 1.44	8 0333 0.59 1045 1.24 1530 1.08 2128 1.39	9 ◑ 0449 0.59 1202 1.33 1727 1.03 2302 1.40
10 0557 0.55 1250 1.46 1841 0.90	11 0019 1.46 0651 0.50 1329 1.59 1934 0.75	12 0120 1.53 0738 0.47 1404 1.72 2022 0.58	13 0215 1.59 0821 0.46 1440 1.83 2107 0.42	14 0305 1.62 0903 0.48 1515 1.91 2153 0.30	15 0357 1.61 0945 0.53 △1553 1.95 2239 0.21	16 ○ 0449 1.58 1029 0.61 1632 1.93 ▼2326 0.18
17 0543 1.53 1113 0.70 1715 1.88	18 0015 0.20 0639 1.46 1159 0.79 1759 1.78	19 0106 0.27 0739 1.39 1248 0.89 1846 1.66	20 0201 0.37 0845 1.33 1346 0.97 1939 1.54	21 0301 0.47 1000 1.31 1459 1.03 2042 1.42	22 0406 0.56 1118 1.33 1629 1.04 2159 1.34	23 ◐ 0512 0.62 1219 1.38 1801 0.99 2326 1.30
24 0612 0.66 1304 1.44 1906 0.90	25 0039 1.30 0700 0.68 1338 1.51 1954 0.80	26 0135 1.32 0739 0.70 1407 1.57 2032 0.70	27 0222 1.34 0814 0.72 1433 1.63 2107 0.60	28 0303 1.36 0845 0.74 1500 1.68 2139 0.51	29 0342 1.37 0915 0.75 1525 1.71 2210 0.43	30 0417 1.37 0945 0.77 1552 1.73 2243 0.38

▲ Highest tide of the month
▼ Lowest tide of the month
△ Highest tide of the year

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

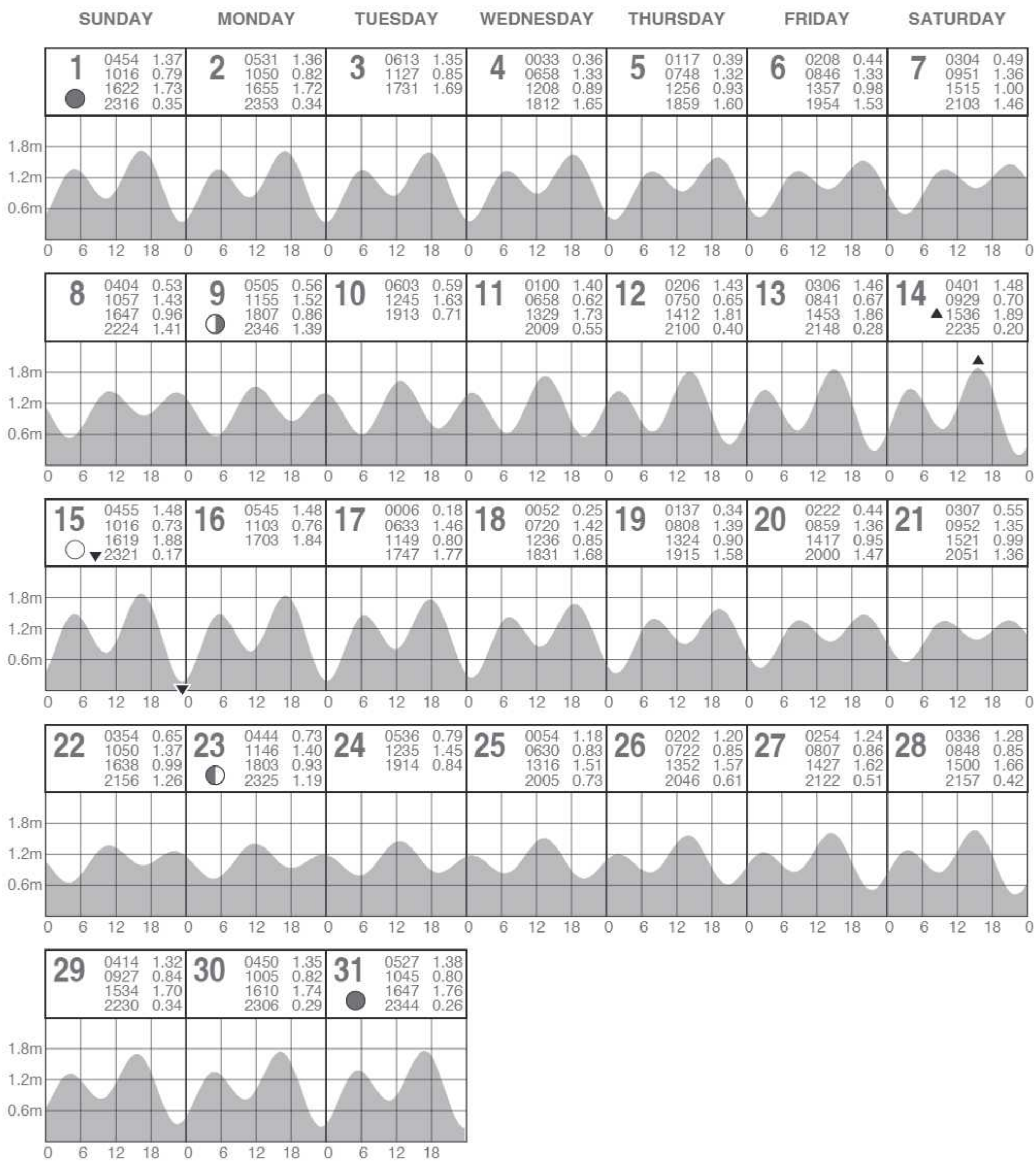
Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

TIDAL PREDICTIONS FOR VANUATU - LUGANVILLE WHARF

DECEMBER 2024 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Tide Prediction Datum is 2.681m below Station Benchmark BM B

Climate and Oceans Support Program in the Pacific

WELCOME TO THE HOME OF PACIFIC TIDES

What is the Pacific Tides App?

A simple way to access reliable tide and moon phase forecasts for Pacific Island countries from your mobile phone.

How do I download the App on my mobile device?

The app is free to download for iPhone or Android devices. Simply, search "Pacific Tides" in the Apple App Store or Google Play Store.

What information is on the Pacific Tides App?

The same tide and moon phase predictions in the annual calendars developed under the Climate and Oceans Support Program for the Pacific (COSPPac) are now available in your pocket on the App.

Do I need internet to access the App?

Initially you will need an internet connection (wifi or cellular data) to download the predictions for any station. Once downloaded, you can seamlessly view forecasts offline.

How many (days/months/years) of data can we find on the App?

The app holds an unlimited amount of data. The Gridview feature allows the user to view all predicted data stored on their device for a given station. Users can download more data using the Downloader.

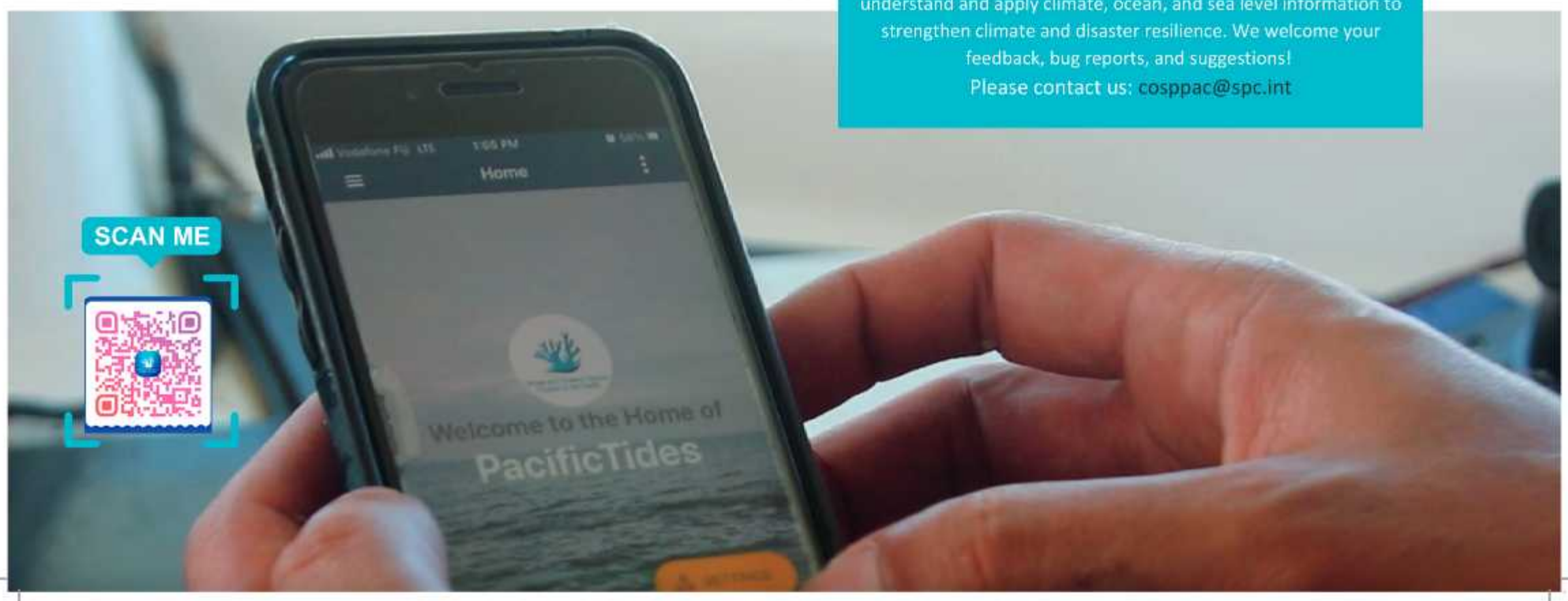
Who can use this App?

The app is designed for coastal communities in the Pacific lincluding fishing groups, tourism providers, the shipping and maritime sector, divers, surfers and other ocean going people in mind.

More Information

The COSPPac project aims to help Pacific Islanders to access, understand and apply climate, ocean, and sea level information to strengthen climate and disaster resilience. We welcome your feedback, bug reports, and suggestions!

Please contact us: cosppac@spc.int



Further Information:

Climate and Oceans Support Program in the Pacific (COSPPac)

Geoscience, Energy and Maritime Division

Pacific Community Private Mail Bag, Suva, Fiji

Email: cosppac@spc.int

Website: www.spc.int

Australian Government
Geoscience Australia

Pacific Community
Communauté du Pacifique

Australian Government
Bureau of Meteorology