

6 General Information

Quick Contacts

Flinders Ports

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Client Services Officer / Marine Traffic – Central

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Client Services Officer / Marine Traffic – Regional

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Signal Station

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Business Development

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HydroSurvey Australia

Phone 1800 060 450
Fax (08) 8447 0606

Tug Agents

Port Adelaide, Port Giles & Ardrossan

Svitzer
4 Victoria Road, Birkenhead
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Phone (08) 8449 8466
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Port Lincoln

Port Adelaide Marine
Phone (08) 8449 2082
Mobile 0400 449 755

Port Pirie

Port Adelaide Marine
Phone (08) 8449 2082
Mobile 0400 449 755

Wallaroo

Port Adelaide Marine
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Mobile 0400 449 755

Thevenard

Port Adelaide Marine
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Stevedores

Capital P&O Logistics

PO Box 1224, Port Pirie
South Australia 5540
Phone (08) 8633 2708
Fax (08) 8363 0803

DP World Adelaide Pty Ltd

PO Box 207, Port Adelaide BC 5015
Phone (08) 8248 9300
Fax (08) 8248 9370

POAGS

Berth 19, Ocean Steamers Road,
Port Adelaide
South Australia 5015
Phone (08) 8440 3900
Fax (08) 8447 3183 or
(08) 8241 0707

Patrick Stevedoring

263A St Vincent Street
Port Adelaide
South Australia 5015
Phone (08) 8447 5100
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A/Hours 0418 819 811

SA Shipwrighting Pty Ltd

16 Whitesands Drive
West Beach
South Australia 5024
Phone (08) 8353 4172
Fax (08) 8353 0506
A/Hours 0419 810 336

Viterra Wharf Services

124-130 South Terrace
Adelaide, South Australia 5000
Phone (08) 8385 8313 Kym Withey;
(08) 8304 5095 Colleen Booth

Port Adelaide

Phone (08) 8447 3695
Fax (08) 8447 3164

Port Giles

Phone (08) 8852 8135
Fax (08) 8852 8088

Port Lincoln

Phone (08) 8683 1189
Fax (08) 8683 1120

Port Pirie

Phone (08) 8632 2805
Fax (08) 8625 3215

Thevenard

Phone (08) 8625 3369
Fax (08) 8625 3215

Wallaroo

Phone (08) 8823 2238
Fax (08) 8823 3125

Customs and Quarantine

Australian Customs Service

220 Commercial Road
Port Adelaide
South Australia 5015
Phone (08) 8447 9211
Fax (08) 8447 9208
National Customs Watch
Freecall 1800 061 800

Australian Quarantine and Inspection Service

Export Park
Sir Donald Bradman Drive
Adelaide Airport
South Australia 5950
Phone (08) 8201 6000
Fax (08) 8201 6111

Maritime Safety

Australian Maritime Safety Authority

Level 2, Customs House
220 Commercial Road
Port Adelaide, South Australia 5950
Phone (08) 8440 3800
Mobile 0419 828 716

SafeWork SA

Level 4, World Park A
(Coffey Building)
33 Richmond Road, Keswick
South Australia, 5035
Phone 1300 365 255
Fax (08) 8204 9200

Tidal Predictions for Standard Ports

Notes

- 1) Tide predictions are not included in this Port User Guide. For tide predictions, please refer to the National Tidal Centre, Bureau of Meteorology website at: www.ntf.flinders.edu.au
- 2) The time zone is -0930 (Central Standard Time).
- 3) 0000 hrs is midnight, 1200 hrs is noon.
- 4) Caution: Daylight saving operates in South Australia from 2am (SA Standard Time) on 2nd October 2011 until 3am (SA Summer Time) on 1st April 2012. Daylight Saving recommences at 2am (SA Standard Time) on 7th October 2012 and continues to 7th April 2013. During these periods times shown should be adjusted to Central Summer Standard Time i.e. add 1 hour to all times shown.

5) Heights are referred to the datum of the largest scale plan of each place.

6) At some locations the Chart Datum on which the tide predictions are based has changed in previous years. See page 6.10 for more information.

7) To find the height of the tide at times between high and low water, see page 6.7.

8) All material is supplied in good faith and is believed to be correct. It is supplied on the condition that no warranty is given in relation thereto, that no responsibility or liability for errors or omissions is, or will be, accepted and that the recipient will hold the **Bureau of Meteorology, National Tidal Centre, Department for Transport, Energy and Infrastructure** or **Flinders Ports** free from all such responsibility and from all loss or damage incurred as a consequence of any error or omission.

9) Any enquiries relating to tide information can be forwarded to Greg Pearce, Flinders Ports Tides Officer, + 61 8 8447 0657 or email pearce.greg@flindersports.com.au

GENERAL INFORMATION

Moon Phases

New Moon



Jan	23
Feb	22
Mar	23
Apr	21
May	21
June	20
July	19
Aug	18
Sep	16
Oct	15
Nov	14
Dec	13

First Quarter



Jan	1
Jan	31
Mar	1
Mar	31
Apr	29
May	29
Jun	27
July	26
Aug	24
Sep	23
Oct	22
Nov	21
Dec	20

Full Moon



Jan	9
Feb	8
Mar	8
Apr	7
May	6
June	4
July	4
Aug	2
Aug	31
Sep	30
Oct	30
Nov	29
Dec	28

Last Quarter



Jan	16
Feb	15
Mar	15
Apr	13
May	13
June	11
July	11
Aug	10
Sep	8
Oct	8
Nov	7
Dec	7

Tidal Predictions for Standard Ports

Tide predictions are computed by accurate methods, but it must be borne in mind that exact agreement of the predicted with actual time and height is unusual.

The variable effects of wind and atmospheric pressure cannot be predicted, especially for a locality like Port Adelaide, where the meteorological conditions can have a large effect on the tide.

Nevertheless, the predictions will be sufficiently accurate for all practical purposes.

The following remarks will be of service in estimating the meteorological effect up on tides:

- *Sea level rises as the barometer falls, about 0.1m for every 7 hectopascals.*
- *Sea level falls as the barometer rises, about 0.1m for every 7 hectopascals.*

The wind also produces a considerable effect upon the tides, especially upon the height, but it is difficult to give any general rule for the effect. An easterly wind is generally associated with a high barometer, and a westerly wind with a low barometer. The effect is that with easterly winds and a high barometer the tides are lower. Westerly winds and a low barometer has the opposite effect.

The shape of the two gulfs and Investigator Strait also contribute to the wind effects. At Port Adelaide, north westerly winds cause the highest tides, raising the sea level up to 1 metre above normal, while south easterly winds depress it as much as 0.5m.

In the northern part of Spencer Gulf the most marked weather effects on the tide occur with the passage of a deep depression across the Southern Ocean. As the barometer starts falling and with the onset of northerly winds the tides are below prediction, but as the wind backs to the north west, an increase in level occurs, with a gradual build-up if the wind remains steady.

A strong gusty north westerly wind, with such a depression, backing to the west south west at about the time of low water, will cause a storm surge of maximum amplitude, and heights may be expected from 1m to 2m above prediction. These high levels will continue until the barometer starts to rise, and the wind backs rapidly to the south east within 12 hours, and with a rapidly rising barometer the tides return to normal (or below) in about that time.

Thevenard - Caution

Easterly winds lower sea level by 0.5m to 1m, and low waters at spring tides often fall below datum in such conditions.

EXTRA TIDES FOR SOUTH AUSTRALIA – 2012

OUTER HARBOR				PORT GILES				WALLAROO			
Month	Day	Time	Ht(m)	Month	Day	Time	Ht(m)	Month	Day	Time	Ht(m)
Feb	18	0123	1.48	Mar	18	0057	1.22	May	17	0038	0.84
		0356	1.51			0401	1.29			0319	0.86
Mar	18	0125	1.32	Apr	16	0222	1.12	Sep	21	1432	0.66
		0454	1.43			0443	1.14			1837	0.77
Apr	16	0231	1.21	Sep	24	1321	1.01				
		0555	1.28			1803	1.28				
Sep	25	1315	1.34	Oct	24	1812	1.12				
		1644	1.44			2233	1.06				
Oct	24	1827	1.29								
		2312	1.18								

GENERAL INFORMATION

EXTRA TIDES FOR SOUTH AUSTRALIA – 2012

THEVENARD

GENERAL INFORMATION	Month	Day	Time	Ht(m)	Month	Day	Time	Ht(m)	Month	Day	Time	Ht(m)
		Jan	3	0524	0.82	Jun	13	1649	1.02	Sep	11	0447
			0803	0.93			2007	1.26			0728	1.07
	Feb	17	1408	1.09		14	0539	1.31	Oct	10	0347	1.15
			1739	0.90			0834	1.17			0712	1.03
	Mar	16	1706	1.09		28	1136	1.14	Nov	5	1104	0.91
		17	0050	1.24			1610	1.23			1201	0.91
	Apr	2	1119	1.19	Jul	1	0222	1.00		6	1046	0.98
			1544	0.95			0546	0.86			1335	0.90
		14	1647	1.13		12	1703	1.11		7	1833	0.97
			1944	1.22			1856	1.14			2139	0.86
		28	2025	1.02					Nov	8	0736	1.01
			2257	1.09	Jul	13	1722	0.93			1051	1.11
		29	0216	1.01			2027	1.13		22	0453	0.89
			0415	1.03		14	0546	1.34			0804	1.04
	May	13	1624	1.23			0837	1.21		23	1750	1.03
			1835	1.27	Aug	11	1743	0.92			2004	0.97
		14	1637	1.05			1940	0.96	Dec	5	1012	0.81
			2007	1.28		12	2140	1.02			1217	0.78
		15	0445	1.13		13	0114	0.88		6	0825	0.82
			0807	0.96			0554	1.19			1028	0.86
	Jun	12	1622	1.19			0749	1.16		7	0852	0.88
			1848	1.26							1039	0.90
									Dec	22	0514	0.85
											0747	0.94

Tidal Definitions

Chart Datum

A permanently established surface from which tide heights or chart soundings are referenced, usually I.S.L.W. and is the zero level of tide heights.

Dodge Tide

The period when there is one small tide only, or the level remains constant for approximately one whole day.

Duration

The difference in time between successive high and low waters.

High Water

The highest level reached by the surface of the sea in one oscillation.

High Water Full and Change

The interval of time between the transit (upper or lower) of the moon and the next high water at a given place. (Also known as Lunidtidal interval).

Highest Astronomical Tide (H.A.T.)

The highest level of tide that can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions. This is not the extreme level that can be reached as storm surges can cause considerably higher levels to occur.

Indian Spring Low Water (I.S.L.W.)

The lowest level, for most practical purposes, which the tide falls. Only in exceptional circumstances will the tide fall lower.

Low Water

The lowest level reached by the sea in one oscillation.

Lowest Astronomical Tide (L.A.T.)

The lowest level of tide that can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions.

Mean Lower Low Water (M.L.L.W.)

The mean of the lower of the two daily low waters over a period of time (preferably 19 years). Applicable in mixed and diurnal waters.

Mean Higher High Water (M.H.H.W.)

The mean of the higher of the two daily high waters over a period of time (preferably 19 years). Applicable in mixed and diurnal waters.

Mean High Water Springs (M.H.W.S.)

The level that is the average of all the twice-daily high tides at spring periods. Corresponding levels exist for neap tides.

Mean Low Water Springs (M.L.W.S.)

The level that is the average of all the twice-daily low tides at spring periods. Corresponding levels exist for neap tides.

Mean Sea Level (M.S.L.)

The average level of the surface of the sea over a long period of time in all stages of oscillation, or the average level which would exist in the absence of tides.

Mean Tide Level

The average of the levels of all high and low waters.

Neap Tide

The tides which happen near the first and last quarter of the moon, when the difference between high and low water is less than at any other part of the month. They are opposed to spring tides.

Flinders Ports Local Datum

An arbitrary Flinders Ports South Australia datum which is nominally set to 30 metres below chart datum.

Range

The difference between the levels of successive high and low waters.

Slack Water

The period of negligible horizontal movement which occurs when the direction of movement is being reversed.

Spring Tide

The tides which happen at, or soon after, the new or full moon, which rises higher than common tides. Spring tides have the greatest range.

Tidal Streams

The periodic horizontal oscillations of the sea.

Tides

The periodic vertical oscillations of the sea.

**CALCULATION FOR FINDING THE HEIGHT OF TIDE AT TIMES
BETWEEN HIGH AND LOW WATER**

Example 1 – Standard Port

Thevenard, 22nd April, 2012 at 0930 hrs CST

	H m	Metres
Time of nearest LW.....	06:33	Height of nearest LW 0.23
Time of nearest HW.....	12:45	Height of nearest HW 2.01
<i>Duration of Rise or Fall</i>	<u>06:12</u>	<i>Range of Tide</i> <u>1.78</u>
Time at which Height is required	09:30	Height of nearest HW or LW 0.23
Time of nearest HW or LW.....	06:33	Correction (See notes below) +0.80
<i>Interval from H or LW</i>	<u>02:57</u>	<i>Height of tide at 0700 hrs (CST)</i> <u>1.03</u>

INSTRUCTIONS

GENERAL INFORMATION

1. Enter the table with the Duration of Rise or Fall which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest High or Low water which most nearly agrees with the actual interval.
2. The correction sought is in the vertical column in the lower half of the table, on the line with the Range of Tide.
3. When the nearest tide is High Water, subtract the correction.
4. When the nearest tide is Low Water, add the correction.

The resulting height must be regarded as approximate only, especially in the case of Secondary Ports.

Tidal Definitions

Tidal Datums

The datum for tidal predictions is the same as the datum for soundings (Chart Datum) since the total depth of water is found by the addition of the charted depth to the height of the tide.

The levels at which datums have been established at Standard Ports vary widely for historical reasons and they do not conform to any uniform tidal level.

Current Australian practice is to establish at or near Lowest Astronomical Tide (LAT).

PORT	CHART	DATUM CHANGE	DATE	APPROX LEVEL
Adelaide Outer Harbor	AUS 137	+0.27	1/1/2001	LAT
Port Lincoln	AUS 134 AUS 776	+0.2	1/1/2004	LAT
Wallaroo	AUS 777	-0.1	1/1/2005	LAT

Horizontal Datums

The horizontal datum for some older Australian nautical charts is still the 1966 Australian Geodetic Datum (AGD66). International convention dictates that new charts use the 1984 World Geodetic System (WGS84), which is the datum used for calculating GPS positions. In Australia the difference between an AGD66 and a WGS84 charted position can be up to 200 metres. To date, most AUS charts covering South Australian waters are using WGS84 datum. During the progressive revision of Hydrographic Service RAN charts, the horizontal datum of Australia's charts will be converted to WGS74.

Tidal Program introduced to Regional Ports

Flinders Ports has installed a 'windows of opportunity' tidal program in Port Pirie, Port Lincoln and Thevenard. Operating successfully in Port Adelaide for some time, the program enables staff to produce a listing of 'windows of opportunity' (maximum allowable drafts and sailing/berthing times) for a range of dates. Coupled with real time tidal information this shows the actual variation to predicted tide levels in all ports providing accurate tide and draft information to shipping agents.

Chart Datum Definitions

Port Adelaide (Outer Harbor)

5.984 metres below bolt (nut) set in wall of Signal Station.

Port Giles

5.207 metres below NMV/E/58 brass rod in concrete foundation block for overhead gantry at start of jetty.

Wallaroo

4.513 metres below an iron rail driven into rock near the western gate to the old Harbor Master's office.

Port Pirie

5.585 metres below bench mark 6531/3327, adjacent to southern entrance gate to Port Pirie office of Flinders Ports.

Port Lincoln

4.610 metres below bolt in concrete at base of flagpole at the Harbor Master's office.

Thevenard

5.630 metres below BM, bolt in concrete near Harbor Master's office.

Whyalla

10.580 metres below BHP BM 24 at northern end of Forge Plant Shed.