ORDINARY HIGH WATER MARK

Association of Nova Scotia Land Surveyors

Spring Workshop

Inn on Prince, Truro

2 June 2022

Raymond Pottier, NSLS

Outline of Presentation

- Definitions of OHWM
- Freshwater Shorelines
- Tidal Shorelines
- Determining the OHWM
- Displaying the OHWM
- Discussion of Best Practices

Definitions

Regulations made under the subsection 12(1) of the Land Surveyors Act

70 (1) In this Section, “ordinary high water mark” means

(a) for non-tidal waters, the limit or edge of the bed of a body of water where the land has been covered by water so long as to wrest it from vegetation or as to mark a distinct character upon the vegetation where it extends into the water or upon the soil itself; and

(b) for tidal waters, the mark on the seashore reached by the average of the mean high tides of the sea between the spring and neap tides in each quarter of a lunar revolution during the year excluding only extraordinary catastrophes or overflows.

(2) Unless there are existing rights to the contrary, the ordinary high water mark must be used as the feature defining water boundaries.

Definitions continued...

Regulations made under the Beaches Act

2(f) "mean high water mark" means the line on the seashore reached by the average of the mean high tides of the sea between the spring and neap tides in each quarter of a lunar revolution during the year excluding only extraordinary catastrophes or overflows, or

(ii) the line on the shore of a lake or river usually reached by the water after the great flow of the spring

has abated and the lake or river is in its ordinary state, and

(iii) for the purposes of determining the boundaries of a parcel of land at a place in respect to which there is no record of tides extending at least over one year, the visible high water mark, that is, the point fixed by signs on the ground such as the state of vegetation and accumulation of debris;

Different Types of Shorelines

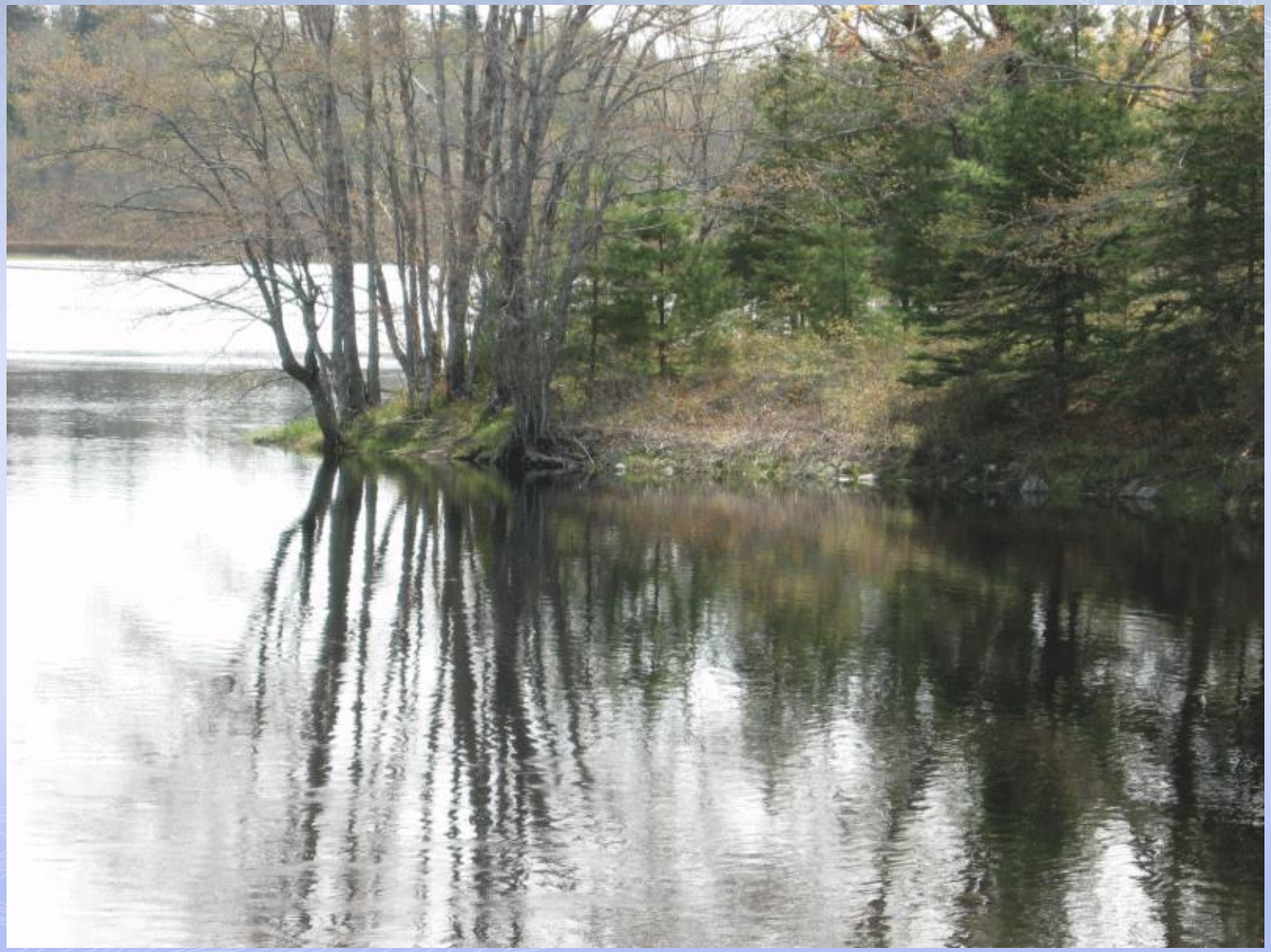
- Ocean, Lakes, Rivers, Streams and other Watercourses
- Each of the above bodies of water can have different shoreline types such as:
  - Steep Rock Shore
  - Sandy Beach
  - Cobbles
  - Salt Marsh
  - Cliffs
  - Eroding Clay
  - And others
- Some examples follow

Freshwater Shorelines

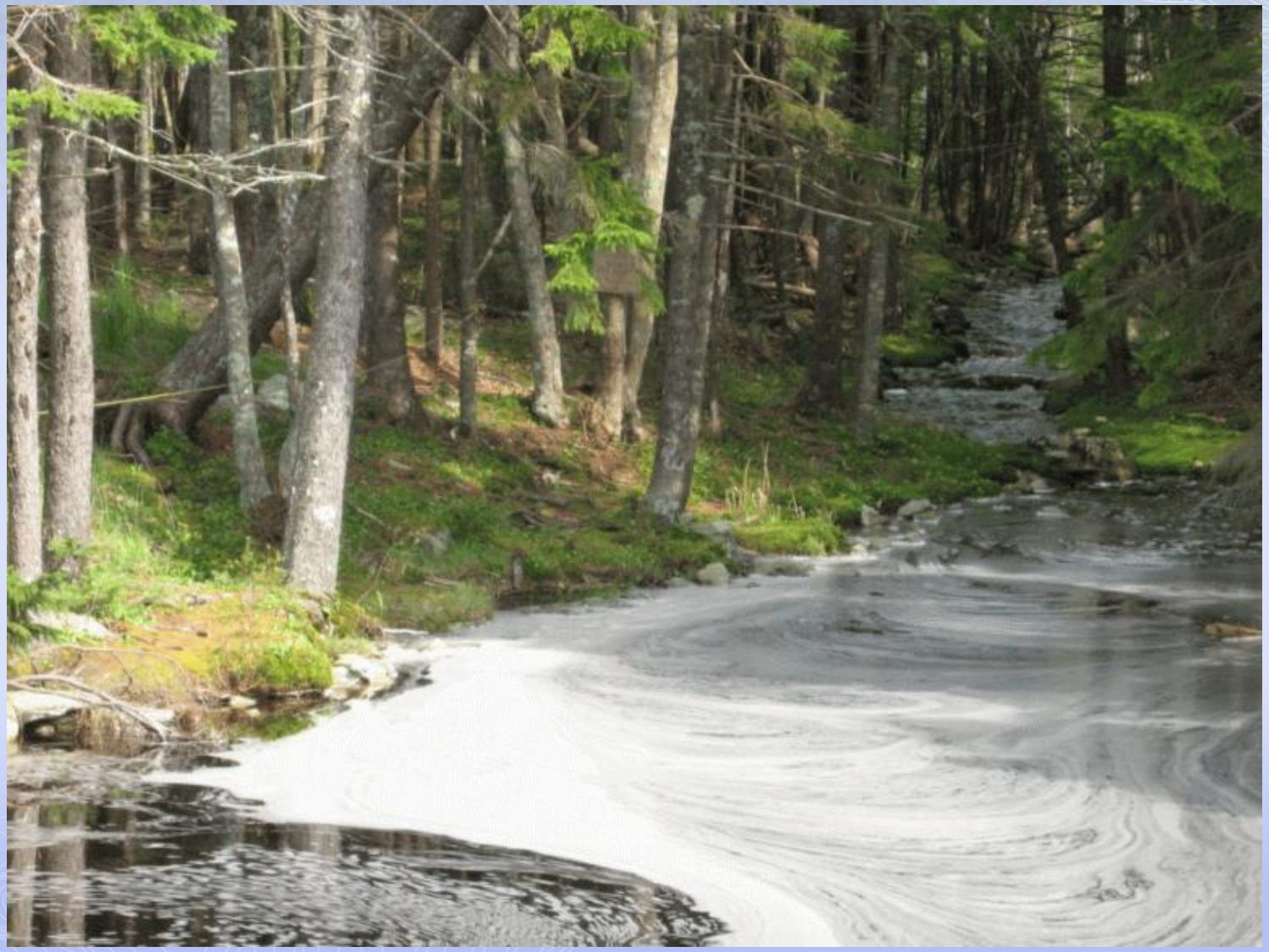
Freshwater Lakeshore

Freshwater Lakeshore

Freshwater Lakeshore



River Shoreline



Tidal Shorelines

Tusket River - Rocky Shore (Tidal)

Sandy Beach and Cobbles - Cape Sable Island

Sandy Beach and Sand Dunes, Shelburne Harbour

Salt Marsh - Tusket

Salt Marsh

Mud Flats - Tusket River (Tidal)

Mud Flats – Wolfville Harbour

Outcropping Bedrock – Cape St. Marys

Steve Acker Plan

Sand, Cobbles, Cliff - Mavillette

Basalt Shoreline – Whale Cove

TUS2021-0027_OHWM_Whale Cove.pdf

Determining the Ordinary High Water Mark

Location of Shoreline Segments

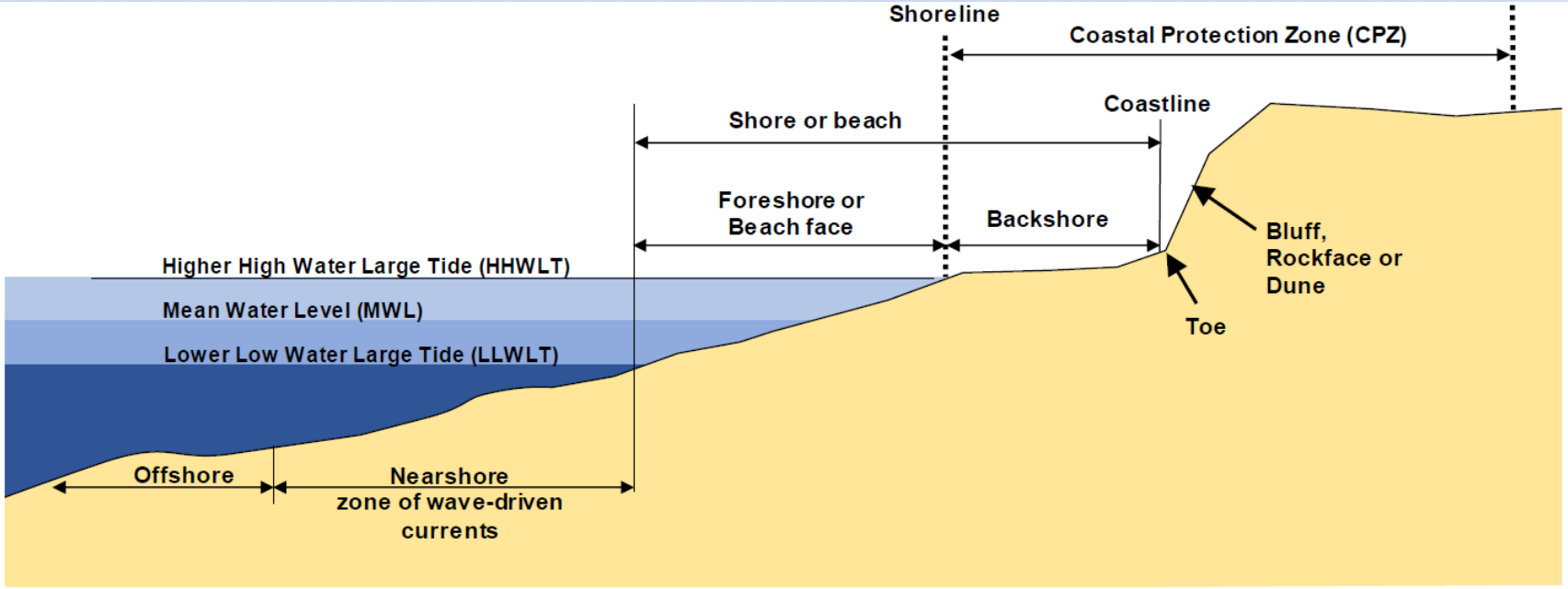
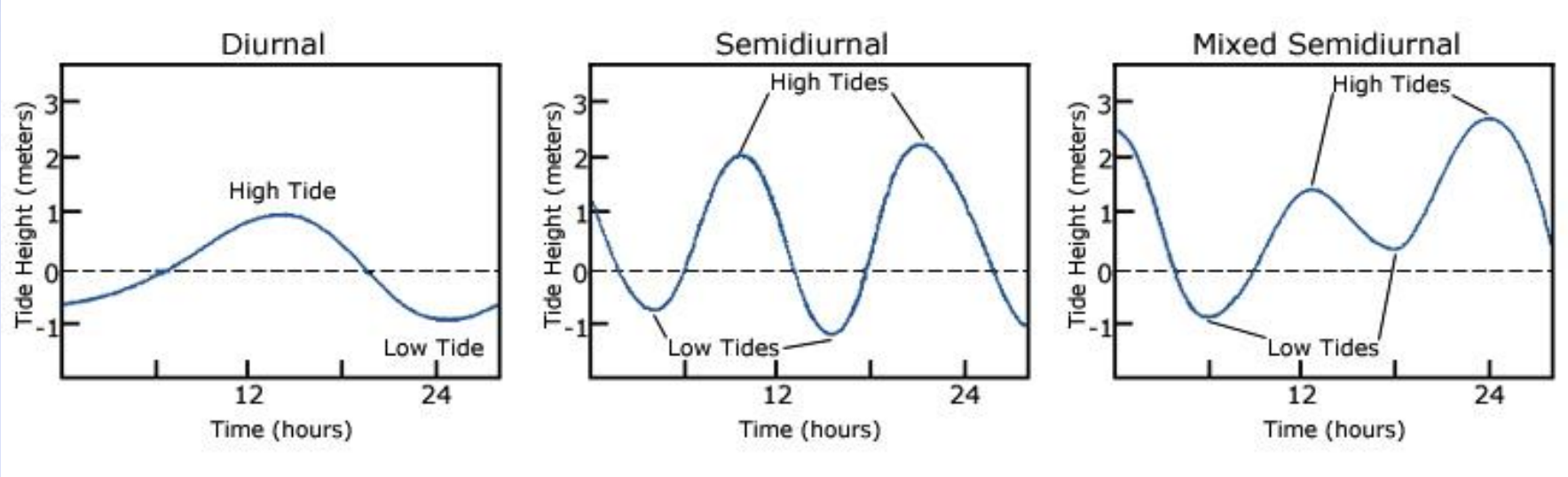
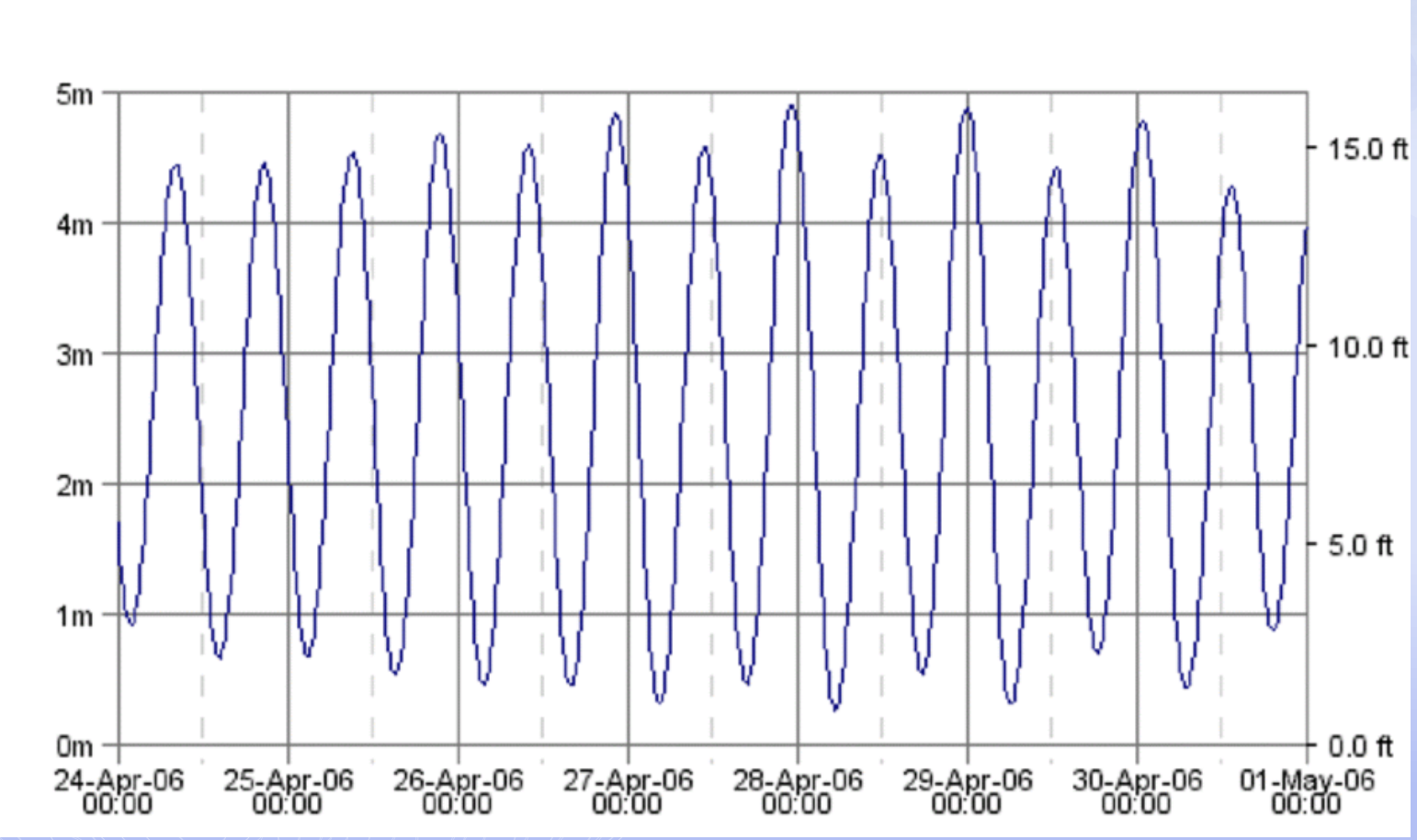


Figure 2.1: Definition of Shoreline Profile Terms – Adapted from Mangor et al 2017

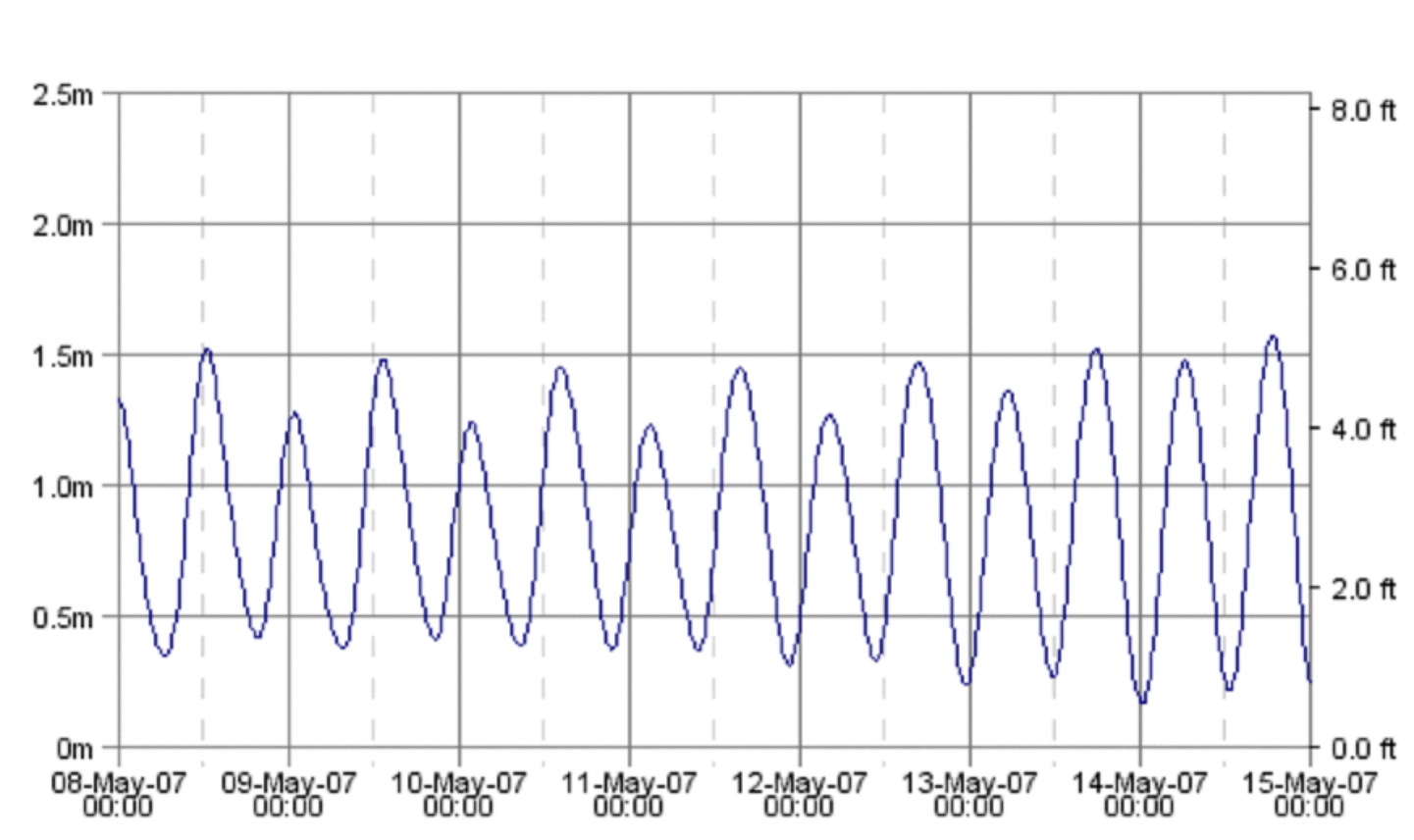
Tidal Regimes



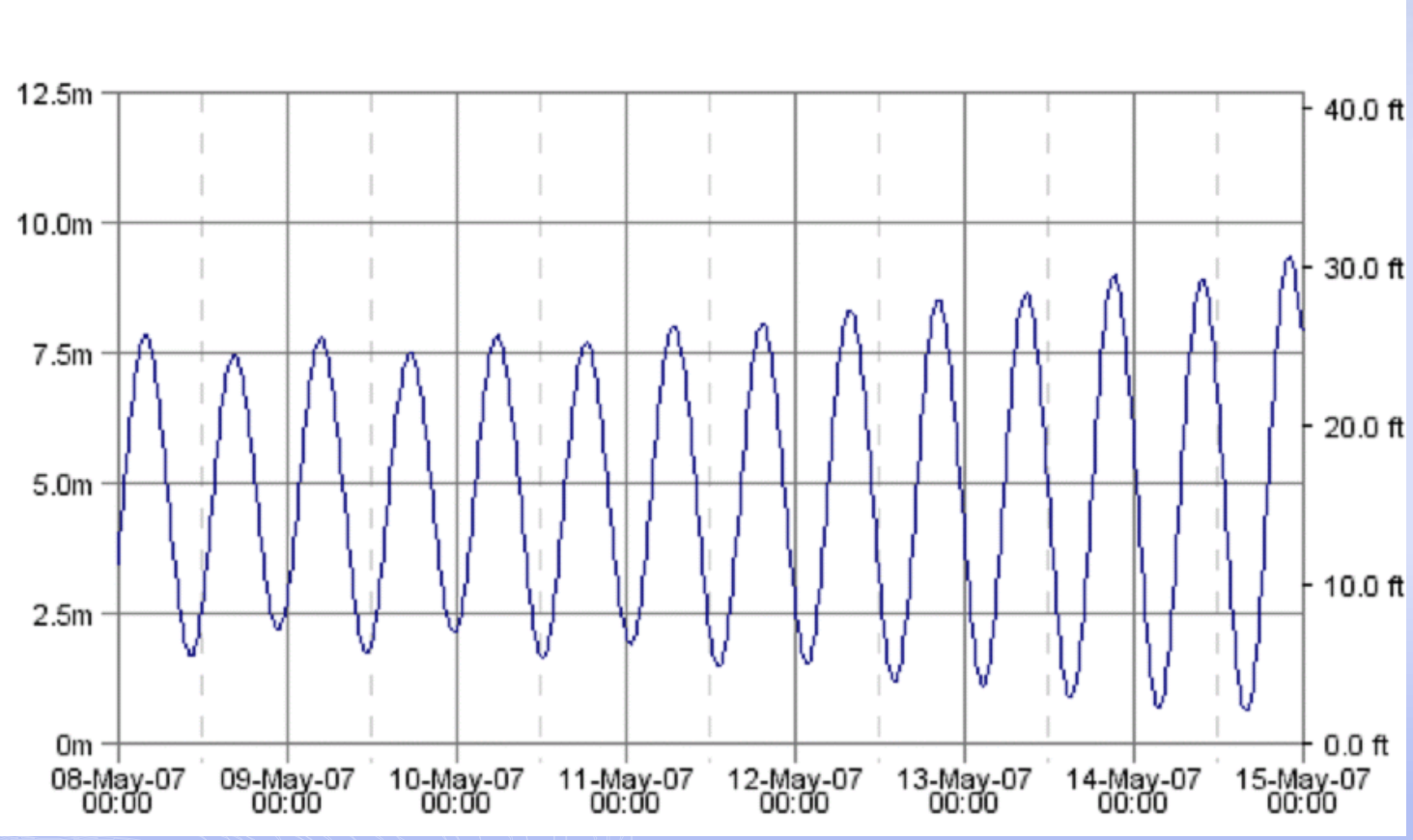
Tidal Predictions - Abbotts Harbour Yarmouth County



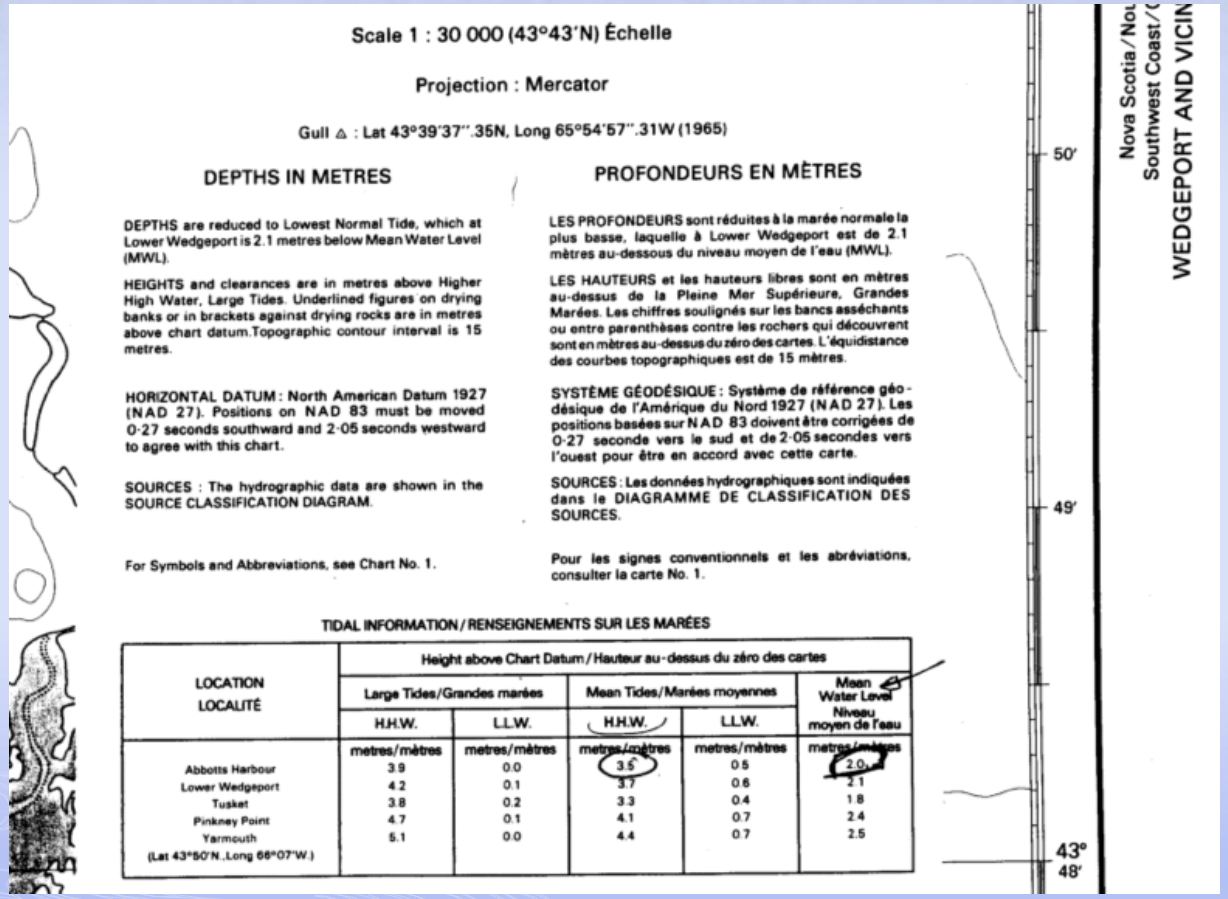
Tidal Predictions – Arichat
Richmond County



Tidal Predictions - Parkers Cove
Annapolis County



Portion of CHS Marine Chart



Scale 1 : 30 000 (43°43′N) Échelle

Projection : Mercator

Gull △ : Lat 43°39′37″.35N, Long 65°54′57″.31W (1965)

DEPTHS IN METRES

DEPTHS are reduced to Lowest Normal Tide, which at Lower Wedgeport is 2.1 metres below Mean Water Level (MWL).

HEIGHTS and clearances are in metres above Higher High Water, Large Tides. Underlined figures on drying banks or in brackets against drying rocks are in metres above chart datum.Topographic contour interval is 15 metres.

HORIZONTAL DATUM : North American Datum 1927 (NAD 27). Positions on NAD 83 must be moved 0·27 seconds southward and 2·05 seconds westward to agree with this chart.

SOURCES : The hydrographic data are shown in the SOURCE CLASSIFICATION DIAGRAM.

For Symbols and Abbreviations, see Chart No. 1.

PROFONDEURS EN MÈTRES

LES PROFONDEURS sont réduites à la marée normale la plus basse, laquelle à Lower Wedgeport est de 2.1 mètres au-dessous du niveau moyen de l'eau (MWL).

LES HAUTEURS et les hauteurs libres sont en mètres au-dessus de la Pleine Mer Supérieure, Grandes Marées. Les chiffres soulignés sur les bancs asséchants ou entre parenthèses contre les rochers qui découvrent sont en mètres au-dessus du zéro des cartes. L'équidistance des courbes topographiques est de 15 mètres.

SYSTÈME GÉODÉSIQUE : Système de référence géodésique de l'Amérique du Nord 1927 (NAD 27). Les positions basées sur NAD 83 doivent être corrigées de 0·27 seconde vers le sud et de 2·05 secondes vers l'ouest pour être en accord avec cette carte.

SOURCES : Les données hydrographiques sont indiquées dans le DIAGRAMME DE CLASSIFICATION DES SOURCES.

Pour les signes conventionnels et les abréviations, consulter la carte No. 1.

TIDAL INFORMATION / RENSEIGNEMENTS SUR LES MARÉES

LOCATION / LOCALITÉ	Height above Chart Datum / Hauteur au-dessus du zéro des cartes				
	Large Tides/Grandes marées		Mean Tides/Marées moyennes		Mean Water Level / Niveau moyen de l'eau
	H.H.W.	L.L.W.	H.H.W.	L.L.W.	
	metres/mètres	metres/mètres	metres/mètres	metres/mètres	metres/mètres
Abbotts Harbour	3.9	0.0	3.5	0.5	2.0
Lower Wedgeport	4.2	0.1	3.7	0.6	2.1
Tusket	3.8	0.2	3.3	0.4	1.8
Pinkney Point	4.7	0.1	4.1	0.7	2.4
Yarmouth (Lat 43°50′N.,Long 66°07′W.)	5.1	0.0	4.4	0.7	2.5

50′

49′

43°
48′

Nova Scotia / Nou
Southwest Coast / C

WEDGEPORT AND VICIN

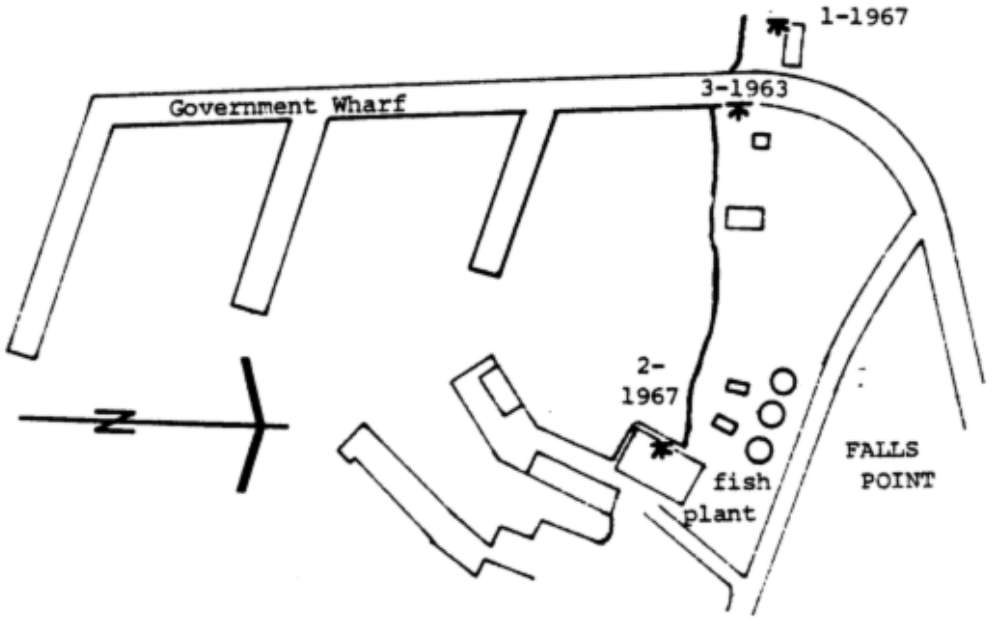
CHS Station Description

B.M. NO. ....2-1967.....

Chart datum. 3.74 ..... m below.
G.S.C. elevation ..1.943 m.....
IGLD (1955) elev. .....

A Canadian Hydrographic Service bronze tablet stamped "B.M. 2-1967" and set in a concrete wall .9 m off ground level on the northwest side of a fish processing plant owned by Wilbert Sears. This building is on the eastern side of the government wharf and is 23 m from the north west corner of the building.

SKETCH



Yarmouth (00365)

Locating Tide Data
Fisheries and Oceans Canada

Tides, Currents, and Water Levels

Displaying the OHWM

A few accepted methods of locating the OHWM:

- Radial Bearing and Distances from control points
- Offset Distances from a line
- Real Time Diffential GPS Coordinate File **
- Real Time Kinematic GPS Coordinate File

Location of Shoreline Segments

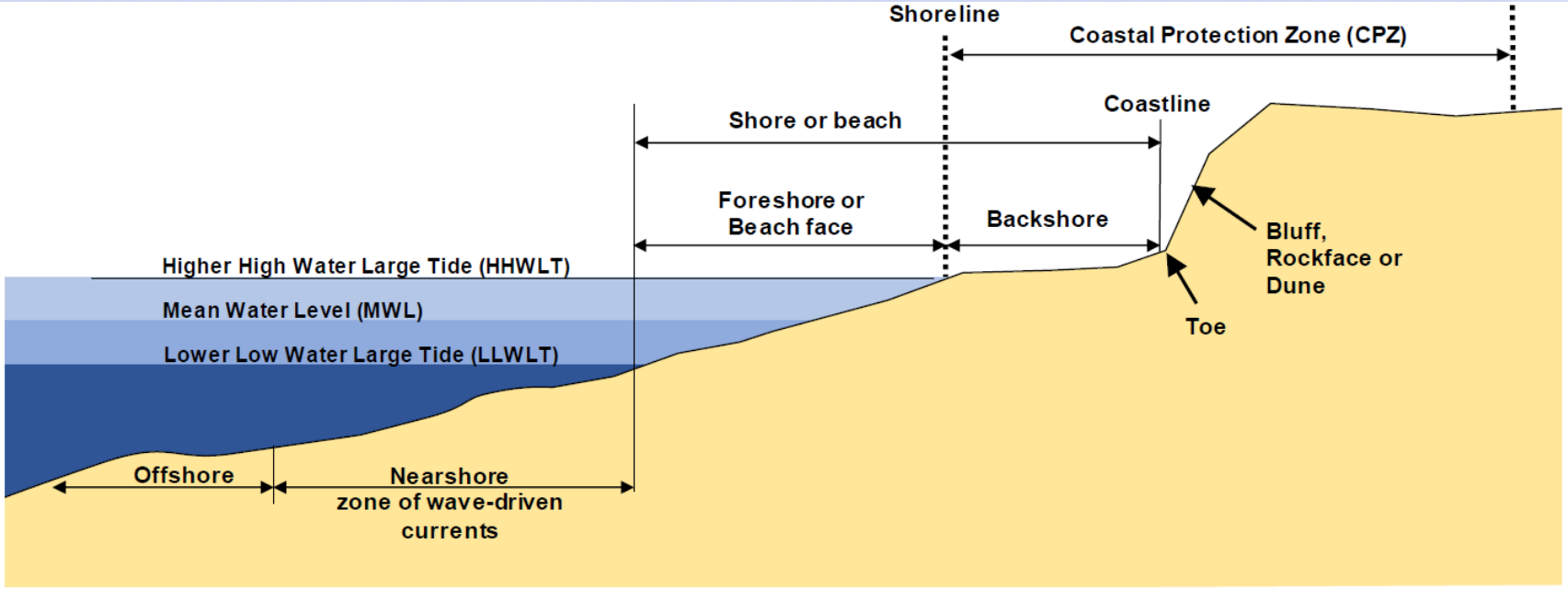


Figure 2.1: Definition of Shoreline Profile Terms – Adapted from Mangor et al 2017

Plans Showing OHWM Location

Lyndon Crowe Wallace Bridge

Jim Macintosh Wolfes Island

Steve Acker Wedgeport

Steve Acker Tusket River

Ray Pottier East Jordan

QUESTIONS

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