



Tidal Theory

How tides work and how they affect us

Introduction

Understanding how tides work is a very important part of yachting.

Tides around the UK are some of the most powerful in the world and can have a significant impact on entering and leaving ports and on passage plans

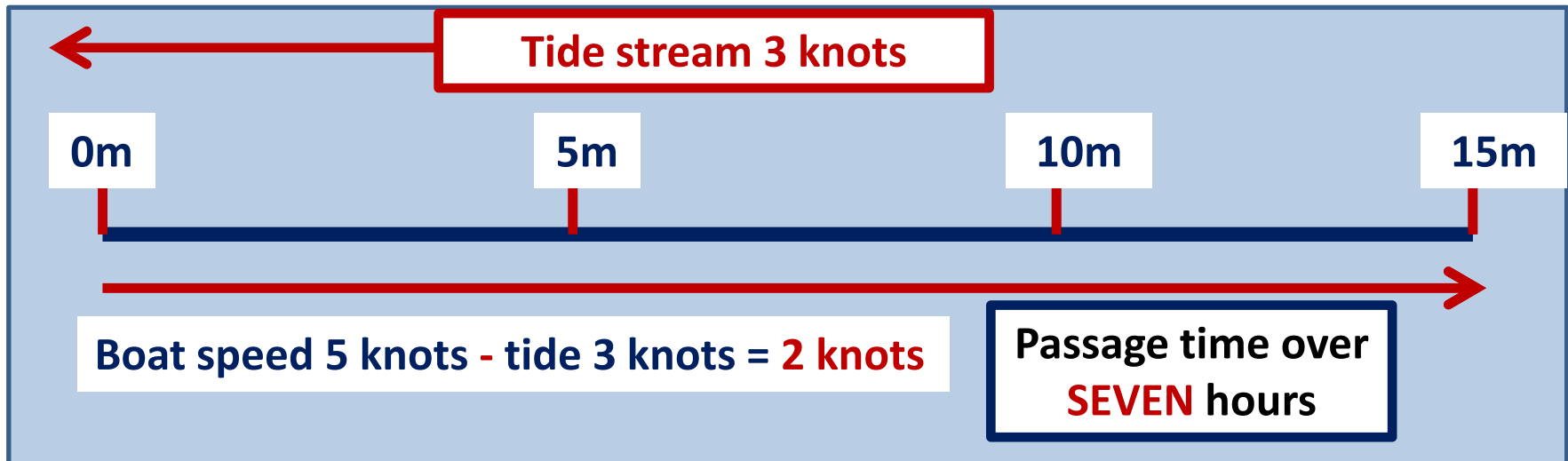
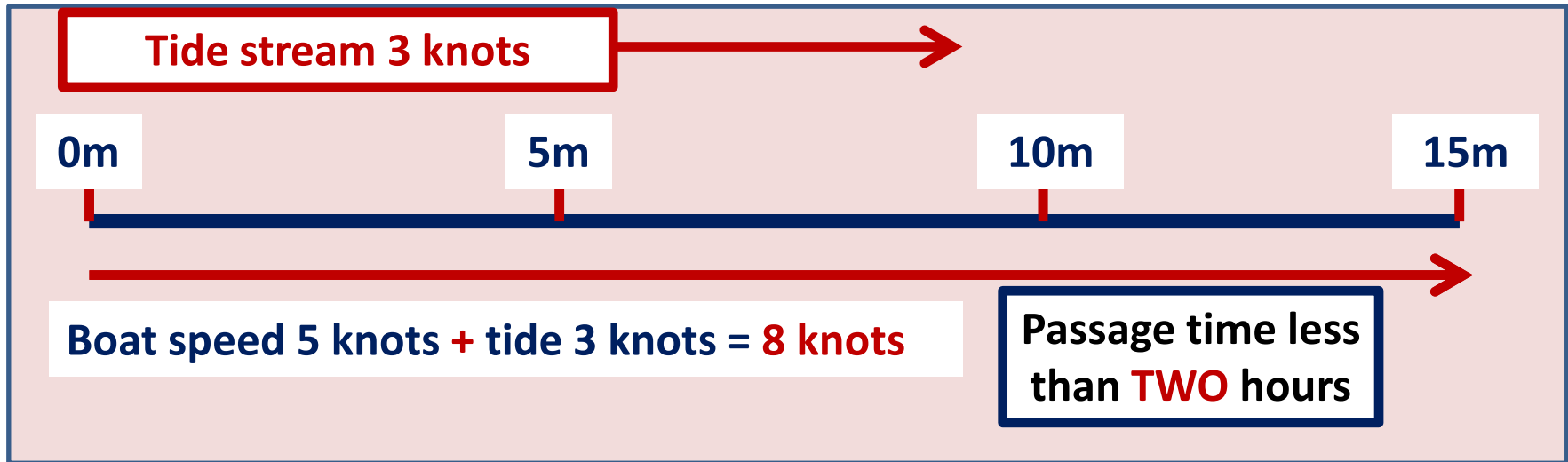


Introduction

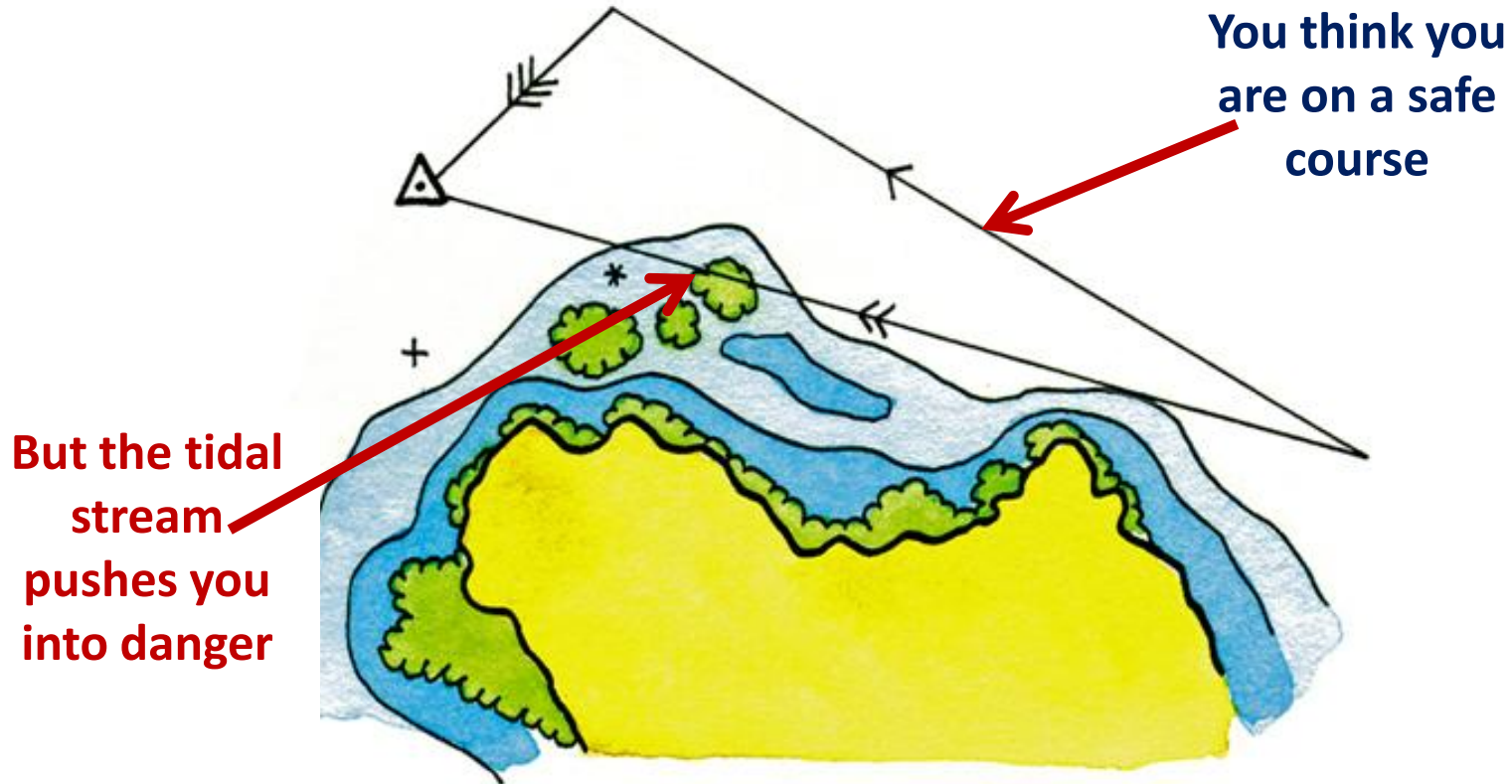


This presentation deals with how tides work and what other factors can influence them.

Why Tides Matter

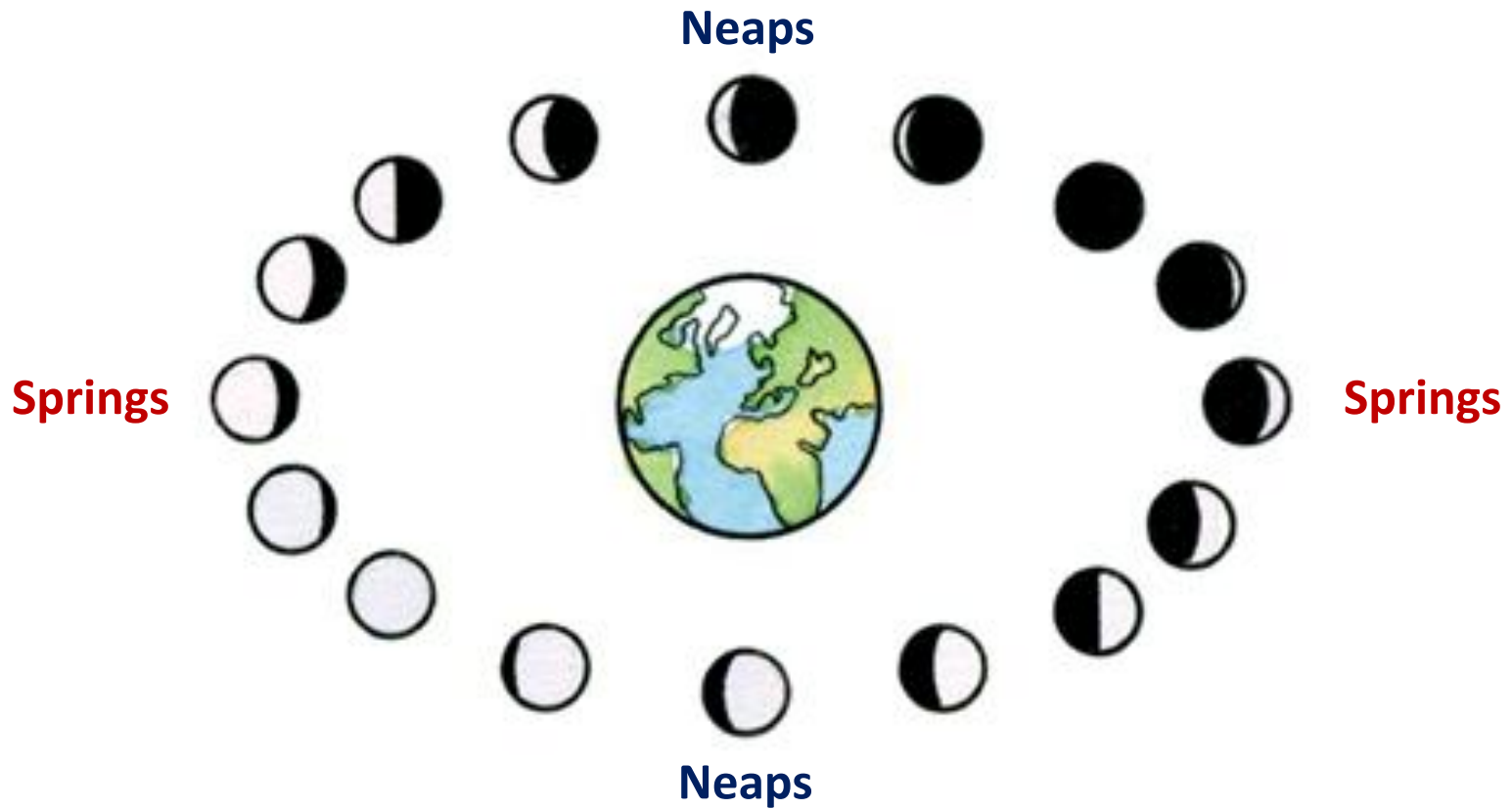


Why Tides Matter



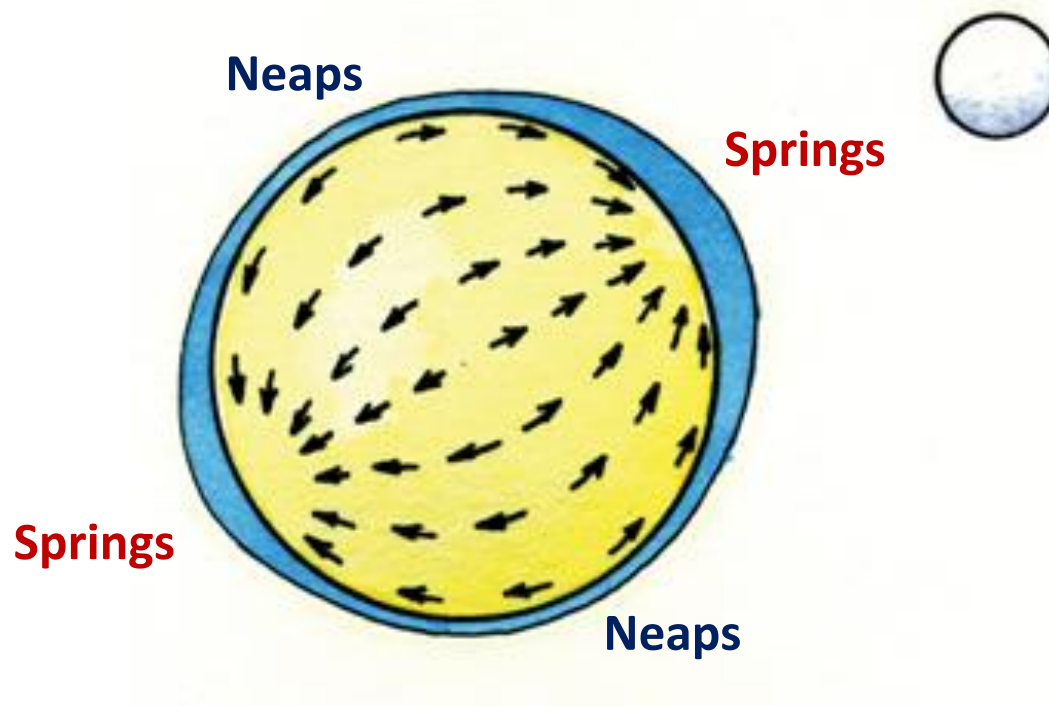
How they work

The gravitational pull from the moon and sun is the main cause of tides



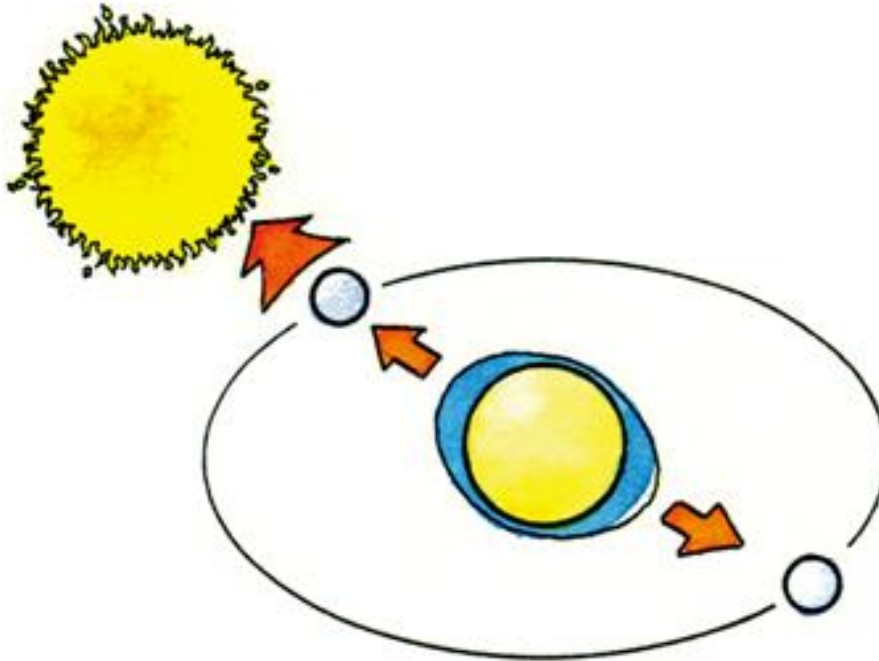
How they work

The moon orbits the Earth over a 28 day cycle
creating Spring and Neap tides



Spring Tides

When the gravitational pull from the moon and sun are in line...

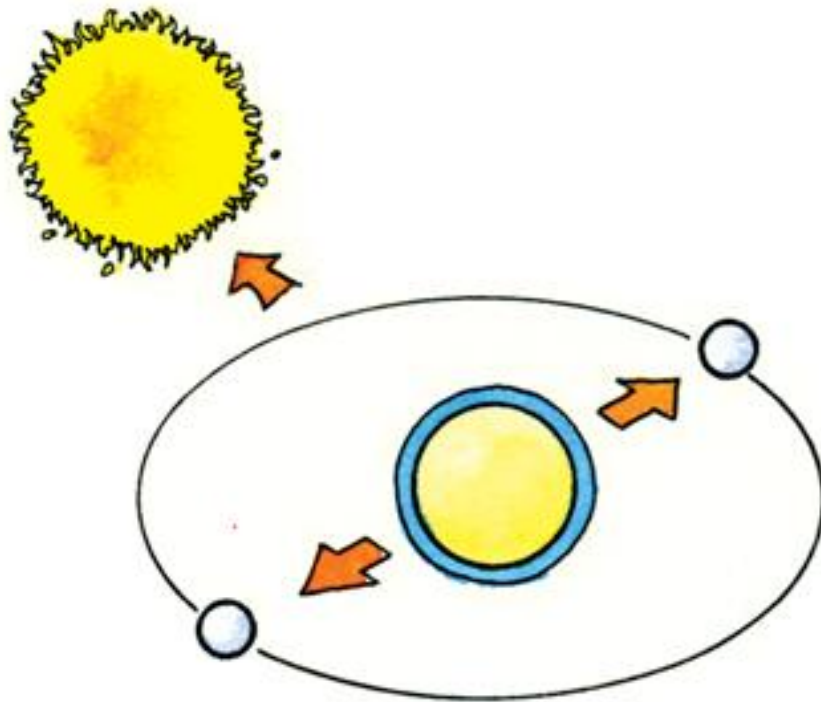


...we experience higher high waters and lower low waters



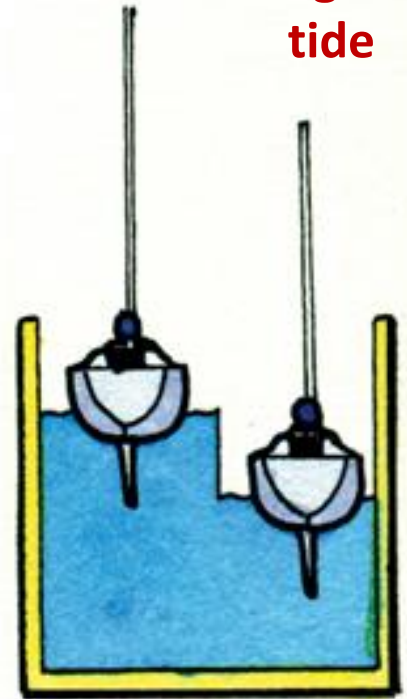
Neap Tides

When the gravitational pull from the moon and the sun are at right angles to each other...



...we experience lower high waters and higher low waters

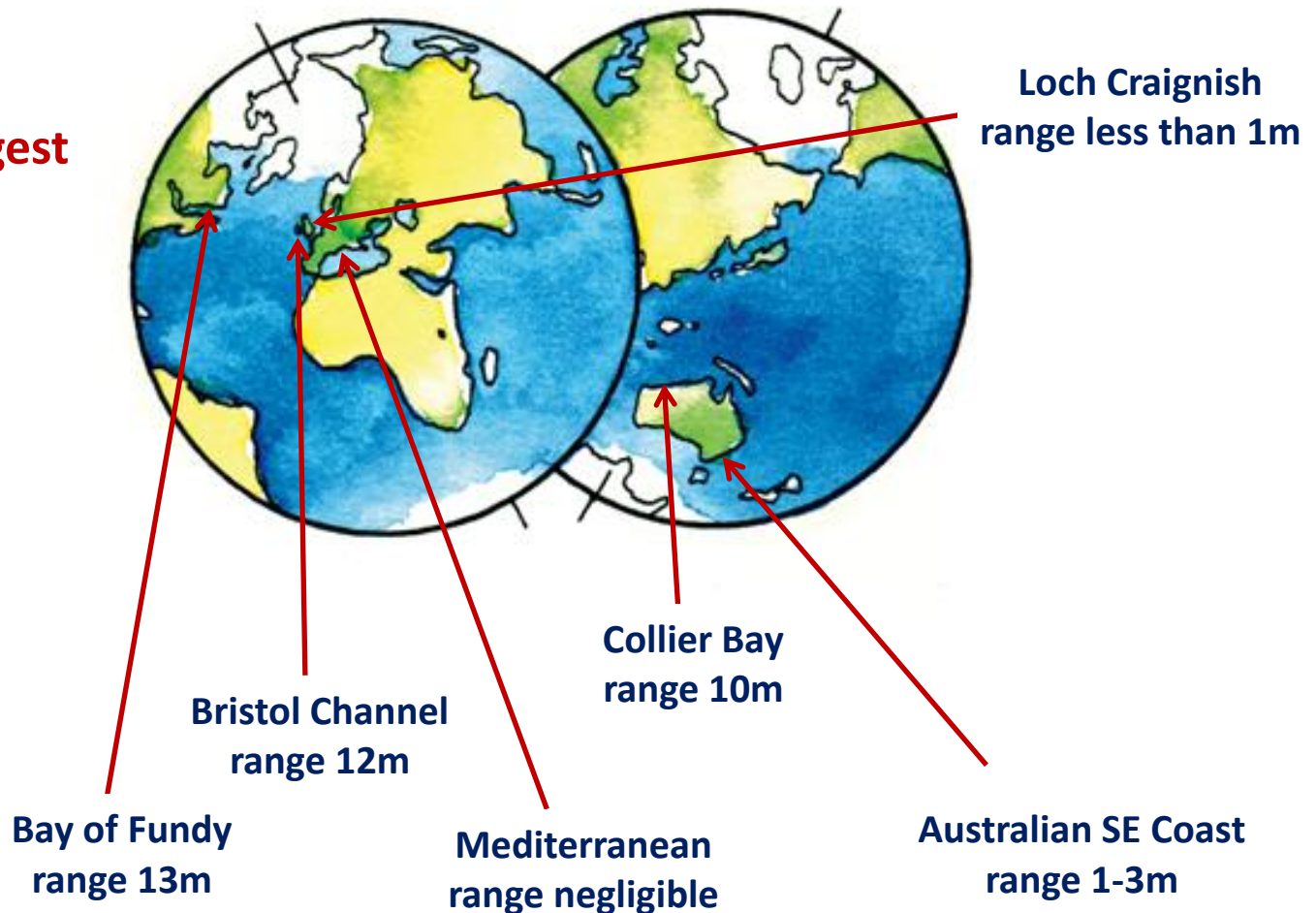
Smaller
range of
tide



World Tide Patterns are Complex

The biggest tidal range in the world is in Canada

The second biggest is in the UK

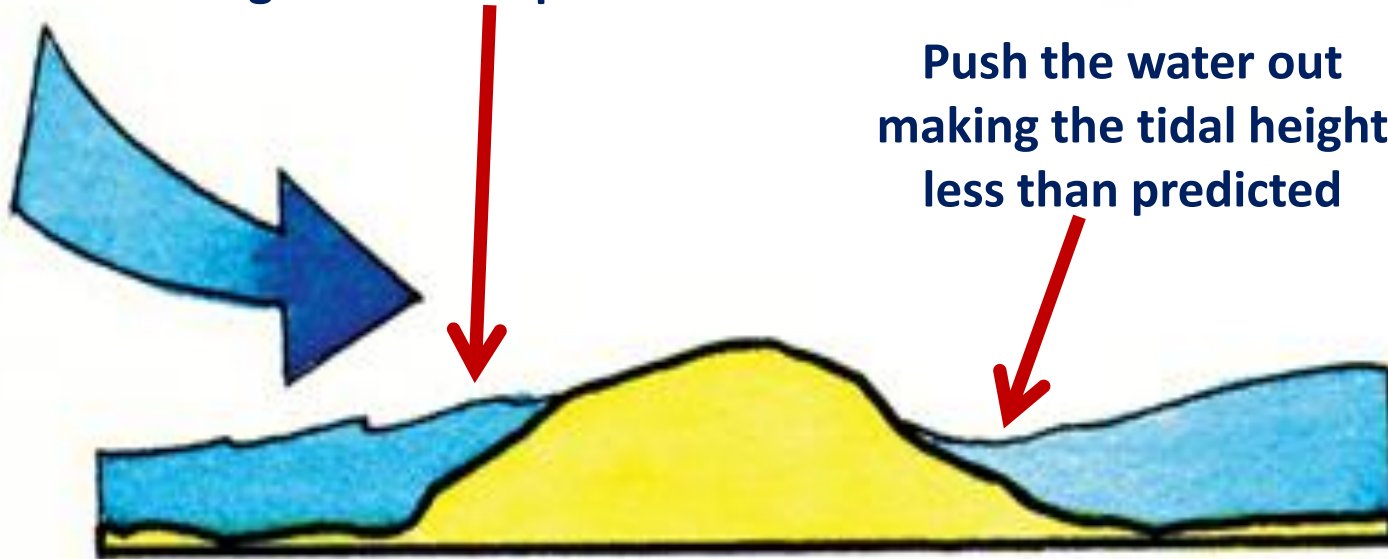


Effects of Weather

Strong winds for prolonged periods can affect the tide

Hold the water back
making the tidal height
greater than predicted

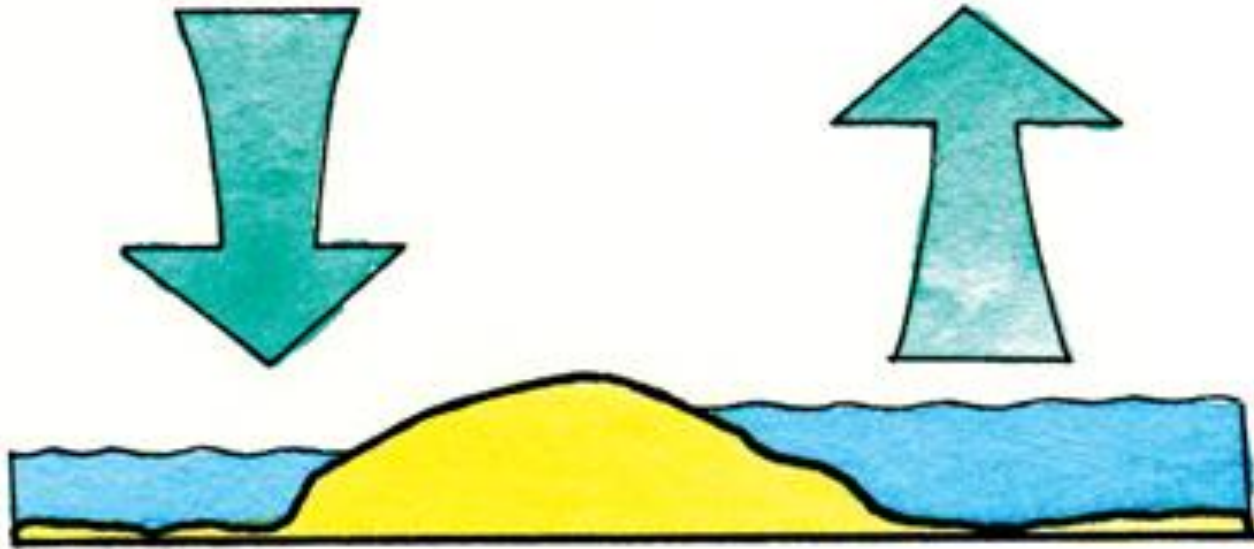
Push the water out
making the tidal height
less than predicted



Effects of Weather

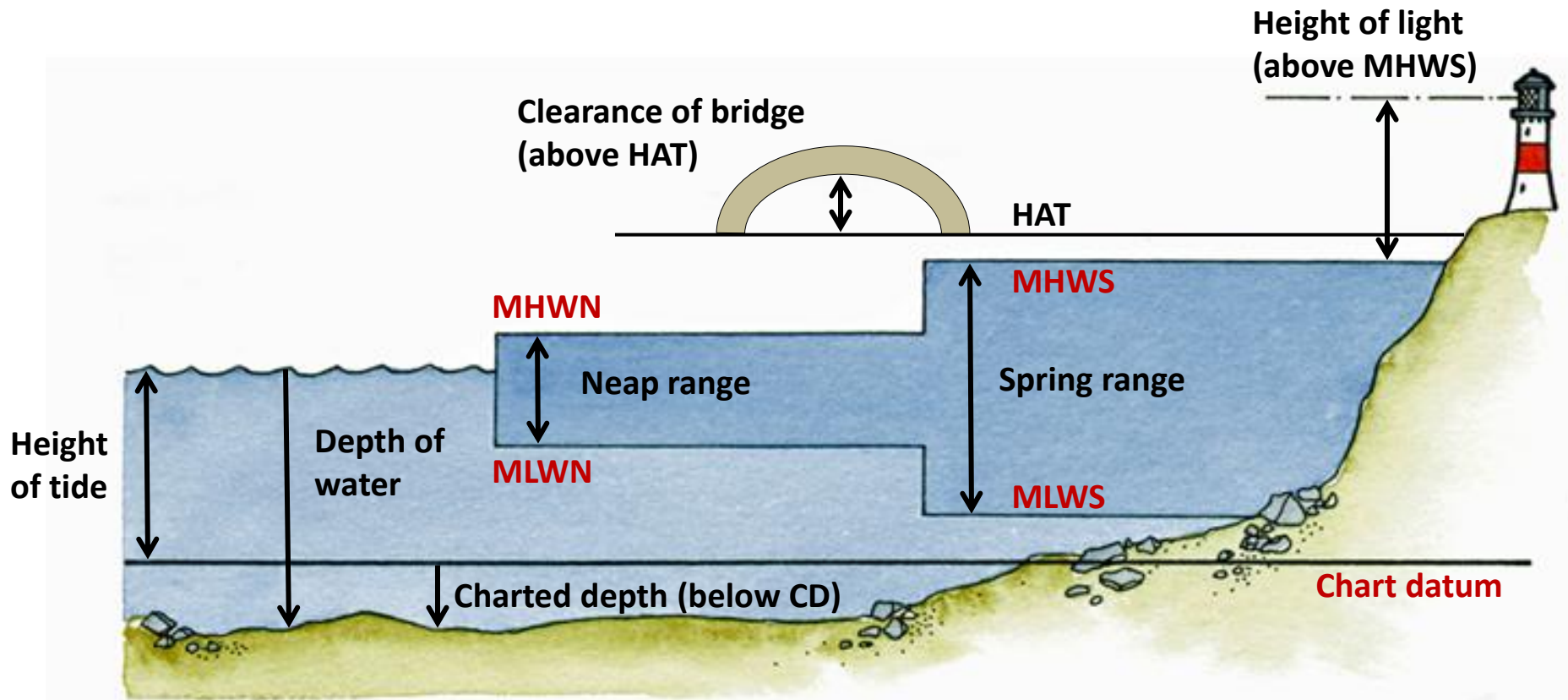
Barometric pressure can affect the tide

Low pressure can make the tidal height greater than predicted



High pressure can make the tidal height less than predicted

Tidal Terms



Summary

Major impact on leaving or entering ports and on passage plans

Caused by gravitational pull of MOON and SUN

Moon orbits earth every 28 days creating SPRING and NEAP tides

SUN in line with MOON = BIGGEST spring tides

Can also be affected by WIND and BAD WEATHER



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Further Reading



We highly recommend Tim Bartlett's
RYA Navigation Handbook (G6)

You can buy a copy of this book by visiting our on-line shop at
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