

Activity 1: Location, location

Background: Positions on the earth's surface can be accurately located using two sets of coordinates given as a latitude and longitude. Originally obtained using measurements of angles between the sun, moon and stars, in conjunction with accurate clocks, positions on the earth's surface were added to navigational charts in order to provide the details of land features such as ports, and hazards that might be found in the water such as reefs. Today global positioning satellites are used with a Geographic Positioning System (GPS) on board to enable accurate positioning of the boat to be easily obtained.

For marine research where land features are not obvious accurate positioning is extremely important. In Marine Habitat Mapping knowing the actual location of research vessels is needed in order to be able to place the data that is being collected accurately onto a map. Maps produced in this way provide information about the location of different habitats, features of the parks, and allow scientists and managers to monitor changes over time by being able to return to exactly the same position in the future.

In this exercise you will use mapping skills to find each of Victoria's Marine National Parks, and then navigate to a number of points of interest discovered within Point Addis Marine National Park through the Marine Mapping project.

Objective: To practice using coordinates to find objects on maps and charts.

Part A: Finding Victoria's Marine National Parks

Materials:

- A printed map of Victoria showing a grid in intervals of degrees with further divisions of 10 minute intervals (Remember 1 degree = 60 minutes) to allow for more accurate positioning. (Image: A4 Layout)
- Table giving coordinates of Victoria's Marine National Parks

Method:

1. Use the coordinates provided in the table below to locate each of Victoria's thirteen Marine National Parks.
2. Note that the coordinates are provided with **Longitude** (the lines that run North – South) first then **Latitude** (lines that run east west) second.
3. Put a name next to each of the parks marked on the map.

Table 1. Victoria's Marine National Parks

Park Name	Coordinates
Bunurong Marine National Park	38 ⁰ 41'S 145 ⁰ 39'E
Cape Howe Marine National Park	37 ⁰ 32'S 149 ⁰ 57'E
Churchill Marine National Park	38 ⁰ 29'S 145 ⁰ 19'E
Corner Inlet Marine National Park	38 ⁰ 49'S 146 ⁰ 24'E
Discovery Bay Marine National Park	38 ⁰ 21'S 141 ⁰ 21'E
French Island Marine National Park	38 ⁰ 17'S 145 ⁰ 22'E
Ninety Mile Beach Marine National Park	38 ⁰ 26'S 147 ⁰ 10'E
Point Addis Marine National Park	38 ⁰ 26'S 144 ⁰ 14'E
Point Hicks Marine National Park	37 ⁰ 50'S 149 ⁰ 15'E
Port Phillip Heads Marine National Park	38 ⁰ 17'S 144 ⁰ 40'E
Twelve Apostles Marine National Park	38 ⁰ 42'S 143 ⁰ 05'E
Wilson's Promontory Marine National Park	39 ⁰ 08'S 146 ⁰ 21'E
Yaringa Marine National Park	38 ⁰ 14'S 145 ⁰ 15'E

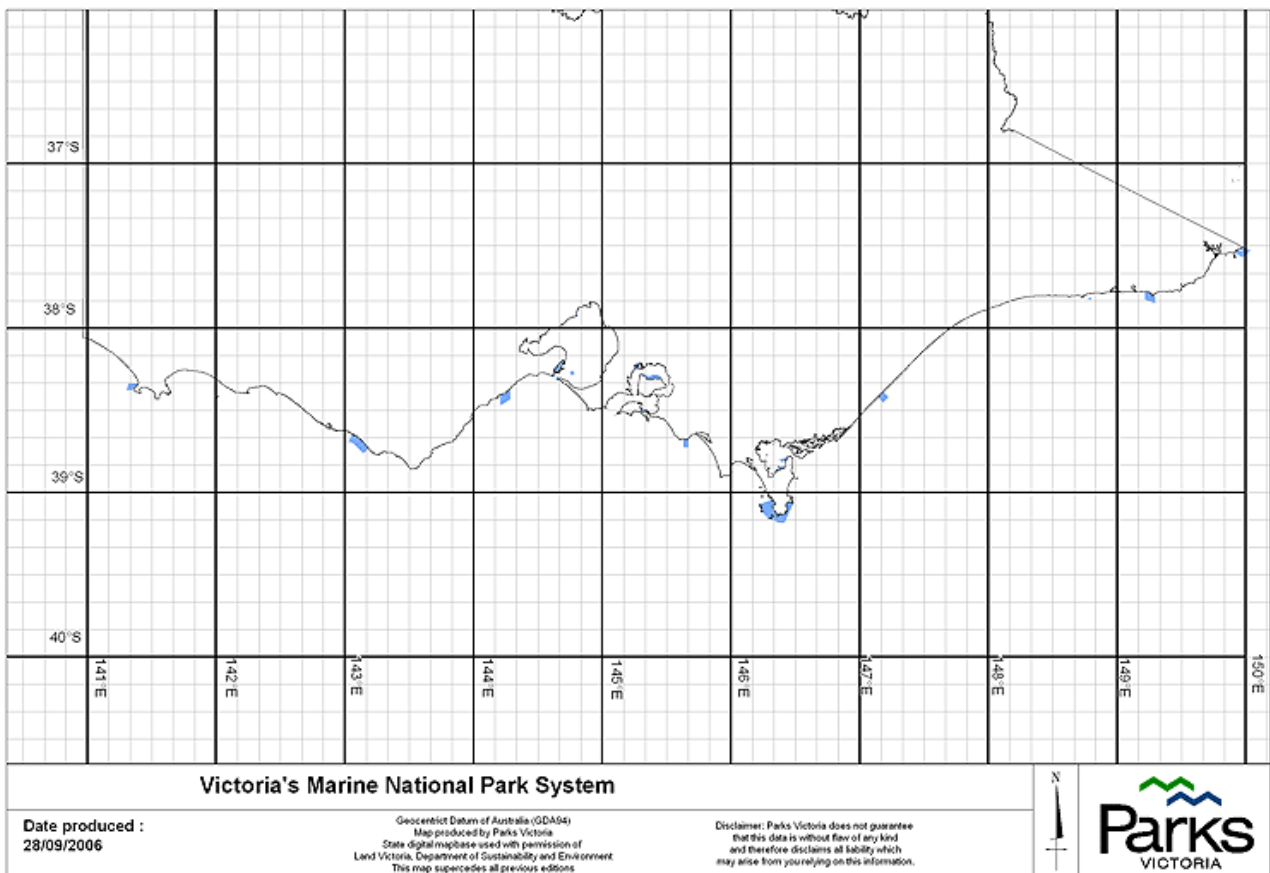
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Discussion:

1. Why would accurate location of objects at seabed more difficult than on land?
2. Mathew Flinders constructed the first map of Australia using navigational tools and a clock. Have a look at the [map](#) that Flinders drew of Australia and make comparisons with what we know Australia to look like today. What differences can you find between this and a modern map?
3. Marine National Parks are spread along Victoria's coast to protect the different animals and plants found in different *bio-regions* of the state. What physical changes would you expect to observe if you travelled along the coast in
 - temperature of the water?
 - exposure to waves?
 - depth?

Visit www.parkweb.vic.gov.au/education/marinekit for more information about Victoria's Marine National Park system.



For more information call the Parks Victoria Information Centre on 13 1963
or visit our website - www.parkweb.vic.gov.au

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Part B: Navigating to Points of Interest in Point Addis Marine National Park

Aim: To use coordinates to navigate to a series of points of interest within Point Addis Marine National Park.

Materials:

- An interactive map of Point Addis Marine National Park Map of Victoria showing grid in intervals of minutes with further divisions of 10 second intervals (Remember: 1 minute = 60 seconds) to allow for even more accurate positioning.
- Table giving coordinates to Point of Interest within Point Addis Marine National Park

Method:

1. Use the coordinates provided in the table below to find a number of points of interest within Point Addis Marine National Park
2. Note that the coordinates are provided with Eastings (the lines that run North – South) first then Northings (lines that run east west) second.
3. Read the description of the points of interest found at these locations
4. Record the letter found at each point. When completed these will spell a word that represents one of Victoria's most amazing marine animals.

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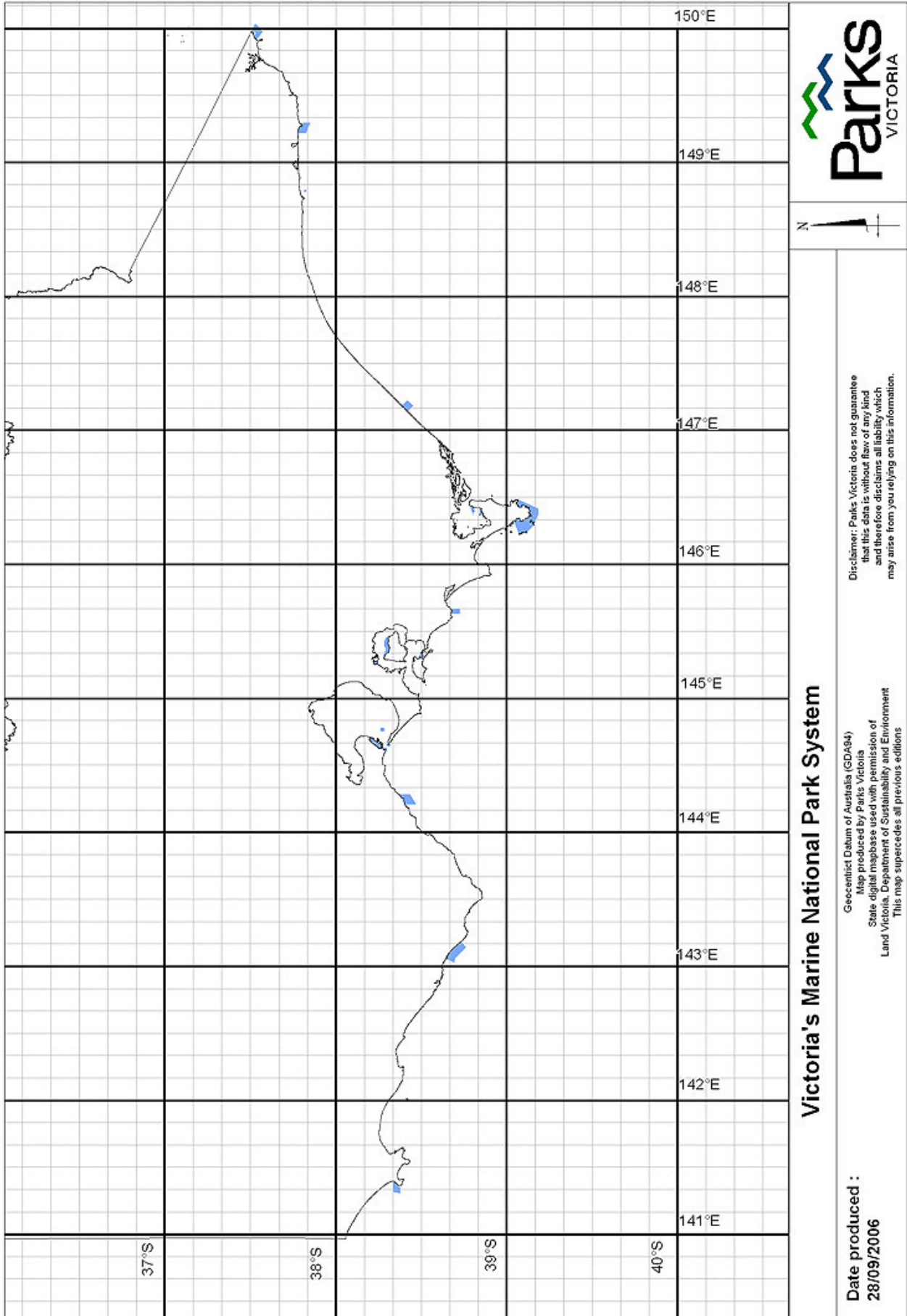
Table 2: Points of Interest with the Point Addis Marine National Park

Point of Interest	Coordinates	Description of Point of Interest
1. Holocene river bed	38°25'15" 144°12'42"	The Anglesea River once flowed through this area during periods of time when sea level was much lower than today.
2. Ingoldsby reef	38°24'24" 144°13'36"	The Ingoldsby Reef is often visible in the middle of the Point Addis Marine National Park and is a good location for diving and snorkelling under calm conditions.
3. Addis rock platform	38°23'38" 144°15'25"	Where the reefs area exposed to the rise and fall of the tide large platforms covered in plants like Neptune's Necklace provide an important habitat for many species of molluscs and crustaceans.
4. Rhodolith beds	38°25'45" 144°14'14"	Previously unknown in this area large beds of the unusual marine red algae rhodoliths are found in section of the Marine National Park. These slow growing pink plants roll around on the sea floor and grow very slowly.
5. Sponge City 1	38°26'36" 144°14'15"	Large sponges attach themselves to hard reefs and filter food from the water flowing around them. Many sponges are brightly coloured.
6. Sponge City 2	38°25'15" 144°16'38"	In protected areas of reef many different species of sponges compete for space and water flow creating a complex sea floor habitat.
7. Sandy plains	38°27'23" 144°13'38"	In offshore areas vast drifts of sand move slowly along the sea floor as large ripples. Because of the constant movement only animals that can live in the sand or above it are found.
8. Kelp forest	38°24'30" 144°15'30"	A variety of species of brown algae form a forest canopy over the reefs creating shelter for smaller plants and animals including fish
9. Deep sands	38°25'40" 144°16'45"	In deeper sections sands are less disturbed and support unusual communities of sponges and other filter feeding animals

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