



Tweed River Entrance Sand Bypassing Project (TRESBP)

www.tweedsandbypass.nsw.gov.au

Worksheet 2: maps and map work

Worksheet 2, of 4

Required for this worksheet:

- TRESBP website www.tweedsandbypass.nsw.gov.au and internet access
 - extension activity question 2 has a 'Note to Teachers' and particular requirements.
- Could be useful:
- atlas or online mapping tool e.g. atlas.nsw.gov.au or maps.google.com.au



Topographic map

Consult the topographic map (page 2) for these questions.

1. Identify two inlets off the Tweed River.
2. In this low-elevation, coastal strip find and name one or more elevated locations by using survey landmarks or contour lines.
3. Use the key to find a lighthouse, and give its name and location.
4. Identify and name two key interstate/intrastate transport sites or routes.
5. Estimate the distance as-the-crow-flies from Point Danger to Coolangatta Beach, and estimate the distance drifting sand might travel in the ocean between those two points.
6. Use the topographic map and/or an online map or satellite image to write a paragraph contrasting human activity evident north and south of the Tweed River entrance.

Seabed maps

Seabed maps, showing all the beach (exposed and non-exposed sand), allow study of erosion and recovery.

See www.tweedsandbypass.nsw.gov.au/topics_of_interest/snapper_rocks_before_and_after_the_autumn_2009_storms

1. Describe the key and the scale used for the map.
2. Outline the main contrasts between the July 2008 map and the July/August 2009 map (after severe storms). Look particularly for any changes at these locations: Point Danger, Frogs Beach, Snapper Rocks, Marley's Beach and Rainbow Bay.
3. In the July/August 2009 map, find the unusual feature off Snapper rocks, a very popular surfing location. Describe this unusual feature and its location.

EXTENSION ACTIVITIES

1. Tweed Heads and Coolangatta are sometimes known as 'twin cities'.
 - a. What does the expression twin city or town mean? Why might it be used?
 - b. Can you find the names of any other twin cities?
 - c. Could there be advantages or disadvantages for residents, workers, school students, business people, holiday makers or others in this or other twin city/town locations?
 - d. Might there be implications or considerations for TRESBP operating in this cross-border area?



The New South Wales–Queensland border monument in Boundary Street, Tweed Heads/ Coolangatta.

NOTE TO TEACHERS

This extension activity requires:

- a computer for each student or each pair, internet access and some online mapping experience
- a Google account per student (see www.google.com/accounts), which requires provision of personal information (email address)
- knowledge of sand bypassing issues from the TRESBP Fact Sheets and Coastal Management Case Study sheets.

The outcome is a Google map that can be shared online or exported to Google Earth for viewing in 3D.

2. If you are able to use an existing Google account or start an account, produce a map that highlights issues raised and solutions to problems on the Gold Coast. (See 'Hint' on creating maps below.)

Develop your map of the Tweed River entrance and southern Gold Coast and include:

- a layer showing natural features of interest, with a description of each feature in its placemark box
- a layer showing human issues or problems in this area, with a description of each in its placemark box
- a layer showing previous and current 'solutions' to problems on the Gold Coast (coastal protection and management measures such as groynes, revetments, sand placement, dredging, sand bypassing), and give a description of each in its placemark box.

Your map should include a title and outline and it should not be made public—you will need to select 'unlisted' while you are editing the title. When your map is completed you could try, subject to approval, using the email option to send the map to your teacher.

Hint: Learn about online map-building tools through, for example, typing these in your search engine: Google Maps for educators, Creating custom maps or Creating Google Maps.

TWEED HEADS



SOUTH PACIFIC OCEAN



SCALE 1:25 000
 0 km 0.5 2 km
 CONTOUR INTERVAL 10 METRES

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| <ul style="list-style-type: none"> Built up area Route marker: National Highway, National Route, State Route Major road: paved (with Merroad marker), unpaved Secondary road: paved, unpaved Minor road: paved, unpaved Vehicular track: Stock grid, Floodway Four-wheel drive track: Gate Walking track Road tunnel, Culvert, Bridge Railway, heavy, Station, Tunnel Railway, light: Road underpass Landmark feature: Stockyards, Mine Water tank or reservoir, Ground tank or dam Survey landmark (with height) Spot height Contours, Depression contours Cliff, with relative height, Rocky pinnacle Quarry or gravel pit, Levee or dyke Closed forest: 80-100% crown cover, Open forest: 50-80% crown cover Woodland: 20-50% crown cover, Pine forest Orchard, plantation or vineyard, Mangrove Power transmission line (33kV and above) Cableway Pipeline, water, Pipeline, other | <ul style="list-style-type: none"> Perennial lake, Intermittent lake, Land subject to inundation Wet swamp, Dry swamp Intertidal flat, Sand Perennial stream, with waterfall Large dam or weir Ferry route Lighthouse or beacon, Breakwater Jetty or wharf Slipway, Anchorage, Wreck Rock shelf, Reef Rocky shoreline, Rock, bare or awash Building, small, Building, large, Homestead Hospital, Telephone exchange, Place of worship Ambulance station, Police station, Emergency headquarters Fire station, School, Post office Electricity substation, small, Electricity substation, large |
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|---|--|
| <ul style="list-style-type: none"> Local government State forest State recreation area National park, nature reserve or regional park | <ul style="list-style-type: none"> State County Parish Cadastral |
|---|--|

Map: from Tweed Heads 9641-4S 3rd edn.

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