Coastal Fieldwork

TWEED/GOLD COAST COASTAL FIELDWORK TOUR

OUTCOMES

A TOUR OF FOUR LOCATIONS TO COLLECT QUANTITATIVE AND QUALITATIVE DATA AND INFORMATION.

TO ASSIST WITH THE TASKS ON THIS TOUR YOU SHOULD:

› Take copies of the TSB Stimulus booklet to use the Topographic Map and to compare your findings with the stimulus material in the booklet.
› Encourage students to take photographs at each location to compare with those in the booklet.
› Organise students into pairs or small working groups.
STOP 1: Letitia Spit/TSB Jetty

**Inquiry Question:** Is sand being pumped on the day of your visit?

i. Measure the wind and wave directions at this location using appropriate equipment.

ii. Predict the direction of longshore drift based on your answer to Question i.

iii. Determine the direction of longshore drift on this section of coast. Decide if the result matches your prediction and explain why or why not.

iv. Measure the width of the beach at the site of the jetty.

v. Construct a field sketch looking from the beach towards the end of the jetty.

vi. Identify the source of the sand that would be collected by the TSB system and show on your sketch. Label other coastal and TSB features.

vii. Sketch a section of the jetty with sand movement pipes. Use arrows to show the direction sand would be moving on different parts of your sketch.

viii. Observe evidence of Aboriginal land ownership travelling to and on Letitia Spit.

**THINK:** Identify one challenge to the management of this location and propose a management solution. Justify your choice.

STOP 2: Point danger

**Inquiry Question:** What coastal processes can be observed operating on this section of coastline today?

i. Create a ‘birds eye view’ sketch map of the coastline north and south of Point Danger.

ii. Identify and label known coastal features (using correct place names).

iii. Determine north direction and add orientation to your map.

iv. Identify observable coastal processes such as different types of waves, wave refraction, deposition, erosion. Label these on your sketch map.

v. Is a dredge operating in the Tweed River or off the coast today?

vi. Identify groups of people using the coastal environment. Beside each write why they would value this section of coast.

**THINK:** Identify one challenge to the management of this location and propose a management solution. Justify your choice.
STOP 3: Kirra Beach

**Inquiry Question:** What evidence suggests that Kirra Beach is undergoing erosion or accretion (deposition) on this day?

i. Determine the direction this beach faces.
ii. Measure the wind and wave directions at this location using appropriate equipment.
iii. Identify the types of waves arriving on Kirra Beach (constructive or destructive).
iv. Predict the direction of longshore drift based on your answer to Question ii.
v. Determine the direction of longshore drift on this section of coast. Decide if the result matches your prediction and explain why or why not.
vi. Measure the width of the beach at your stop.
vii. Photograph beach-management strategies used at this location.

**THINK:** Identify one challenge to the management of this location and propose a management solution. Justify your choice.

STOP 4: Kirra Groyne

**Inquiry Question:** Is the beach at Kirra Groyne wider than at Stop 3?

i. Measure the width of the beach at your stop. Compare to your answer to Question vi. at stop 3. Explain any differences.
ii. Identify groups of people using Kirra Beach and dunes. Beside each, write why they would value this section of coast.
iii. Explain where the sand on Kirra Beach originated.

**THINK:** Identify one challenge to the management of this location and propose a management solution. Justify your choice.
Inquiry Question 1: How are the coastal locations you visited during your fieldwork similar or different to those in the stimulus booklet? Record the main points discussed on a Venn diagram.

Inquiry Question 2: What was the most serious coastal management challenge you identified today? Rank the management challenges you identified at each site from most to least important for maintaining the environmental values of the Tweed/Gold Coast coastal environment.

Inquiry Question 3: How would you include community consultation in a strategy to address the challenge you identified as most important?

NOTE: These fieldwork activities can be adapted to a different coastal environment and compared to the material for the Tweed/Gold Coast in the stimulus booklet.

NOTE: Queensland teachers are advised to visit ONE fieldwork location where students can identify the processes occurring at the site, identify a challenge and focus on strategies to manage that challenge.