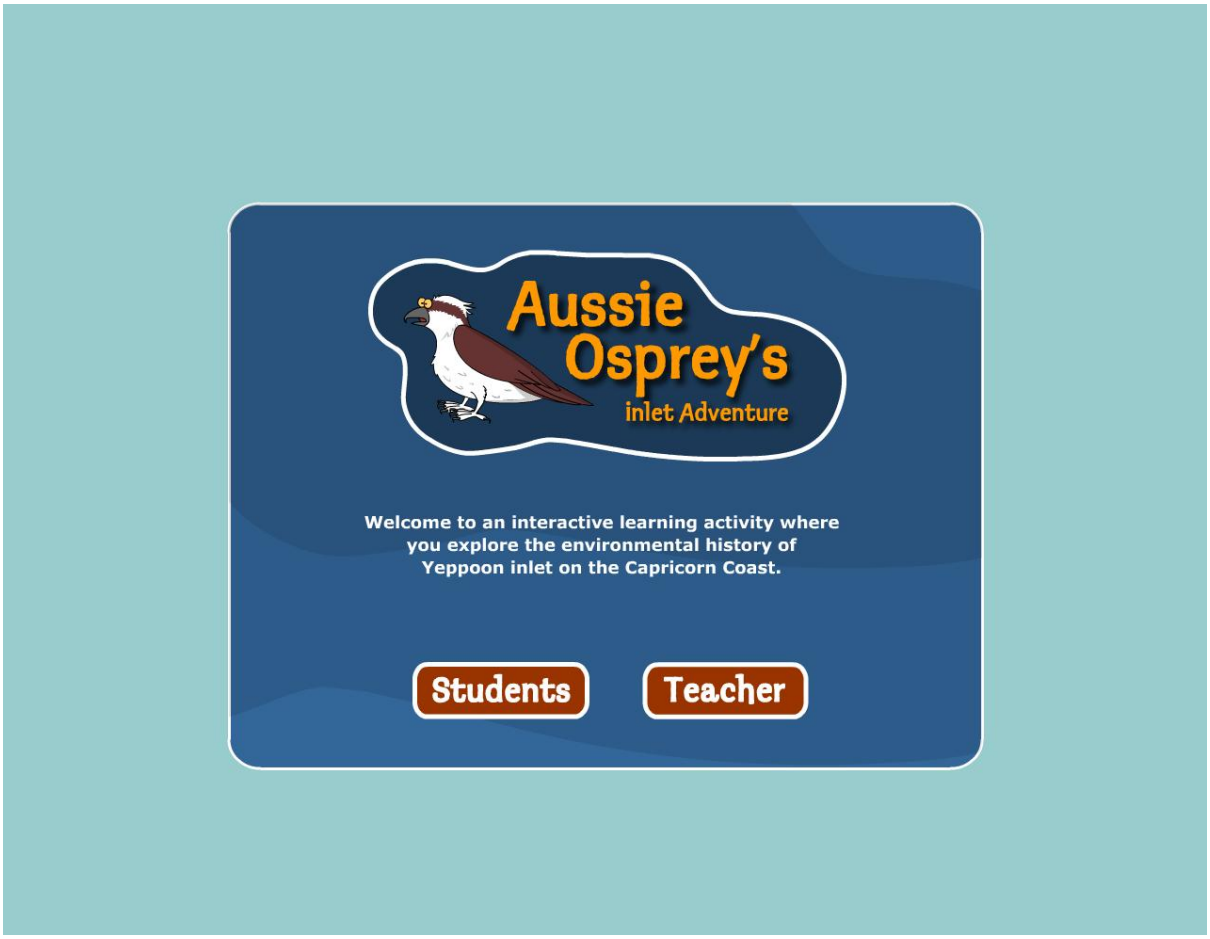
Aussie Osprey's
inlet Adventure
Welcome to an interactive learning activity where you explore the environmental history of Yeppoon inlet on the Capricorn Coast.
Students
Teacher

Teacher Notes

Contents

1. Introduction

This learning activity has been designed for independent use or as a supplement to extended Studies of Society and Environment units. It is an interactive environmental history of Yeppoon Inlet, a sub-tropical mangrove system impinged upon by human activity and encroaching urban sprawl.

The activities are organised using a mix of text, graphics, cartoon character narrative, and historical and recent photographic images to allow students to reflect upon the implications of environmental change over time. It encourages students to think about the local environments that surround them, and to understand them as places shaped by human-nature interactions. It also encourages students to think about the emotional ties people have to locality and the role place plays in their everyday lives. In short, it attempts to bring the study of society and environment together in a single learning activity.

The learning activity gives students the opportunity to explore Yeppoon Inlet's bio-physical environment through an interactive panoramic tour and to analyse historical photographs to improve their understanding of how flora, fauna and people interact and co-exist in this particular ecosystem. They are introduced to some past and present drivers of environmental change and are asked to make assessments of the impact of possible future events. Students will be led to consider why changes took place and to make judgements about what changes might occur in the future.

Towards the end of their virtual journey students are asked to make recommendations for the future management of Yeppoon Inlet. The questions are designed to assist learners to develop a reflective attitude about the roles humans play in prompting or preventing change, and to develop an understanding that change is an ongoing, natural process that can increase or decrease the value of a resource.

The activities and questions are designed to encourage students to become participating citizens with a greater sense of empowerment and social responsibility towards the environment and its natural, social and aesthetic values.

2. Educational philosophies, theories and pedagogies underpinning the learning activity.

This learning activity has been designed to include a variety of well known traditional educational philosophies, theories and pedagogical approaches such as:

- Story telling
- Characters that students can relate to
- Questions of increasing depth and variety as in Bloom's Taxonomy

The activity also combines these long-standing educational approaches with more recent research on learning styles, intelligence types, personality types and thinking strategies.

The design format has ensured it caters to visual, aural and kinaesthetic learners through the use of attractive design features, visual images, optional speech features and numerous ways for students to interact with the learning tools.

The questions and assessment tasks are designed to elicit responses which draw from logical, factual and emotional viewpoints. This allows learners of all personality types to interpret information in the ways they learn most effectively.

The activities encourage:

- independent higher order thinking through the use of carefully constructed questions
- emotional engagement through the use of personable story-telling characters
- memory retention through the use of emotionally engaging activities
- a sense of ownership and personal involvement through the use of futures oriented learner centred scenarios, questions and activities.

3. Key components of the learning activity

The development of this interactive learning activity has been a collaboration between the CQU/Coastal CRC's Historical Coastlines research project and a practicing teacher to provide emotionally engaging, interesting and enjoyable learning and assessment tasks in Studies of Society and Environment in Queensland Schools.

The activity opens into an interactive, virtual panorama tool that allows students to explore the Yeppoon Inlet as it is at present.

It then leads learners to a sequence of tasks based on six themes illustrated by historical and contemporary images depicting scenes of human activity in the Yeppoon Inlet. Attached to each scene are four learning activities that involve students in higher order thinking about the environment and the forces acting upon it.

The learning activity supports many areas of the current Queensland SOSE Syllabus and may be linked with other Key Learning Areas (KLAs).

Many of the activities require a typed response. These answers can be submitted directly to an answer sheet which can then be printed for later marking by teachers. This guarantees evidence of student learning and provides potential assessment items for use in report writing.

The answer sheet will notify the user of any incomplete activities and provide an opportunity to complete activities before printing.

A blank answer sheet and a completed answer sheet are provided for teacher planning and assessment reference.

NOTE: Not all activities have a single correct answer. Teacher judgement and discretion will be required to assess some responses, as the learning activities encourage individual thinking and a personalised response.

NOTE: Once a user has exited the program there will be no record of their submitted answers stored on the program or on the user's computer. Answers must be completed and printed prior to exiting the program.

4. Layout of the learning activity

Students commence their learning experience with an introduction spoken by the main character, Aussie Osprey, providing a brief overview of the history of Yeppoon Inlet, its significance to local Aborigines, the arrival of white settlers, and the development of a near-by town.

Students are then presented with interlocking interactive panoramas of Yeppoon Inlet. They should navigate around this panoramic environment to familiarise themselves with the locality. They should then proceed through the sequence of six scenes each with four learning activities relating to the theme of the scene.

The sequence of the learning activities follows the theory of Bloom's Taxonomy as questions move from basic factual recall to higher order thinking strategies.

Learners are guided chronologically through the activities by native animal cartoon characters or they can navigate themselves through the activities by using the visual menu bar located on the left hand side of each screen. The learning activities and assessment tasks are accessed through the thematic photographic scenes.

Each activity involves a short academic task. Some of these require reflection only, but most require a written response.

The student answers are recorded during each learning session and responses can be printed at any time during a session. During each session the computer will retain a memory of which activities have been completed and which have not. These files are lost once the program is closed. It is recommended that students print their answer sheet at the end of each session.

Sound can be turned on or off by selecting the microphone icon at the left hand side of the screen.

5. Links to SOSE Core Learning Outcomes

The learning activity can be used as a stand-alone task to cover core learning in the current SOSE syllabus. It could also be incorporated into a series of learning activities designed to extend knowledge in any of these areas. The learning activity also has potential to be linked with other curriculum KLAs as well.

The main focus has been to provide a structured learning tool for assisting with the development of learning activities within the Key Learning Area of Studies of Society and Environment.

The activities on this CD will allow students to deepen their understandings of the key values advocated by the Years 1-10 Syllabus for Studies of Society and Environment which are:

- Democratic process
- Social justice
- Ecological and economic sustainability;
- Peace (p.1)

by thinking about how these areas have impacted upon the changes taking place within Yeppoon Inlet.

The learning activities will also take students through the processes advocated by the Years 1-10 Syllabus for Studies of Society and Environment of:

- Investigating
- Creating
- Participating
- Communicating;
- Reflecting (p.3)

These activities will also help children to develop the desired attributes of lifelong learners listed in the Years 1-10 Syllabus for Studies of Society and Environment such as being:

- A knowledgeable person with a deep understanding
- A complex thinker
- A creative person
- An active investigator
- An effective communicator
- A participant in an interdependent world;
- A reflective and self-directed learner (p.4)

The activities have been designed around the presumptions of learners and learning described in the Years 1-10 Syllabus for Studies of Society and Environment. They have been carefully developed to lead to reflective enquiry based on principles of procedure and equity in accordance with a learner-centred approach. (pp. 7-9)

This learning activity links with the key SOSE learning outcomes and contributes to student understanding in all strands of the key learning area:

- Time, continuity and change
- Place and space
- Culture and identity
- Systems, resources and power

In particular the following learning outcomes can be demonstrated or supported and many of them can also be assessed using the printable answer sheet.

The learning activities will be useful for students working in levels 2, 3 and 4. It is therefore suitable for use with students of a diverse ability and pre-knowledge range. The higher order thinking questions provide ample opportunity for students to express level 3 and 4 skills while the preliminary material studies provide chances for students to exhibit understandings in level 2. While this CD

could be used with students outside this range it will be of less educational value. It should also be noted that while level 3 and 4 students could complete these activities independently, level 2 students will need to work through activities in collaboration with a more capable person.

Core Learning Outcomes		
LEVEL 2	**LEVEL 3**	**LEVEL 4**
Time, Continuity and Change		
TCC 2.3 Students cooperatively evaluate how people have contributed to change in the local environment.	TCC 3.2 Students create sequences and timelines about specific Australian changes and continuities.	TCC 4.1 Students use primary sources to investigate situations before and after a change in Australian or global settings.
TCC 2.4 Students describe cause and effect relationships about events in familiar settings.	TCC 3.3 Students use knowledge of people's contributions to Australia's past to cooperatively develop visions of preferred futures.	TCC 4.4 Students critique information sources to show the positive and negative effects of a change or continuity on different groups.
TCC 2.5 Students identify similarities and differences between the experiences of family generations.	TCC 3.4 Students organise information about the causes and effects of specific historical events.	TCC 4.5 Students review and interpret heritages from diverse perspectives to create a preferred future scenario.
Place and Space		
PS 2.2 Students predict possible consequences for an ecological system when an element is affected.	PS 3.1 Students compare how diverse groups have used and managed natural resources in different environments.	PS 4.2 Students predict the impact of changes on environments by comparing evidence.
PS 2.3 Students cooperatively plan and care for a familiar place by identifying needs of that place.	PS 3.5 Students describe the values underlying personal and other people's actions regarding familiar places.	
PS 2.5 Students express a preferred future vision for a familiar place based on observed evidence of changes and continuities.		
Culture and Identity		
CI 2.5 Students identify how symbols, rituals and places reflect identities of different	CI 3.1 Students identify the contributions of diverse	CI 4.Students describe changes resulting from cross-cultural contact on Australian

groups including Aboriginal groups.	groups, including migrants and indigenous peoples, to the development of their community.	indigenous cultures.
	CI 3.4 Students communicate an awareness of change within Aboriginal and cultures.	
Systems, Resources and Power		
SRP 2.5 Students devise possible solutions to problems people nay have in accessing resources.	SRP 3.1 Students make inferences about interactions between people and natural cycles, including the water cycle.	SRP 4.1 Students outline how Australian industries link to global economic and ecological systems.

6. Assessment Tasks

The learning experiences include a variety of assessment tasks designed to provide evidence of student learning and achievement of outcomes based descriptors.

The assessment tasks are designed to begin with simple skills such as factual recall and visual observations and gradually progress towards challenging problem solving and higher order thinking skills. This is aligned with thinking development strategies such as Bloom's taxonomy.

As with the learning activities, the assessment tasks are also designed to be inclusive of the diverse learning and thinking styles and personality types of each individual student.

As students work sequentially through the interactive learning activities in this CD they will be enhancing their understanding of the values, skills and processes of the SOSE syllabus while adding to their range of attributes of lifelong learners and developing their ability to function within a learner-centred approach to education which is based on reflective enquiry and principles of procedure and equity.

The learning activities are presented in modes that will encourage and support students to internalise key values, use processes and broaden their understanding of the concepts described in the SOSE Syllabus. The assessment tasks are designed to elicit evidence of these values and processes.

Assessment data can then be collected by simply recording responses as students work through the CD and then printing the response sheet at the end of each session. The results of this printed work can be shared and discussed for assessment and reporting purposes.

The answer sheet will notify the user of any incomplete activities and provide the opportunity to go back and complete the activities before printing or exiting the learning program.

7. Blank Learner Response Sheet

Fish

Activity 1 – No answer required.

Activity 2 – What do you think it would have been like working on the jetty?

Activity 3 – Do you think man-made objects are permanent? How have the two photos changed?

Activity 4 – Could a large boat like this still be used to transport goods to this part of the Yeppoon Inlet?

Crocodile

Activity 1 – What effect do you think building this bridge had on the transportation of goods to the area?

Activity 2 – Do you think the clothes the ladies are wearing are suitable for this sub-tropical climate? Why or why not?

Activity 3 - What differences can you see between the old and new bridge?

Activity 4 – Which of the three is the best bridge design for the environment? Why?

Brahminy Kite

Activity 1 – What are the similarities and differences between the two photos?

Activity 2 – Make a list of the possible human uses for the inlet.

Activity 3 – What are the differences in jetty styles and why are they different?

Activity 4 – Why aren’t there any people swimming in the creek in the 2006 photo?

Crab

Activity 1 – Did the people in this photo use electricity? How do you know?

Activity 2 – What are some of the advantages and disadvantages of tidal swimming pools like this one?

Activity 3 – Describe five differences between the two photos.

Activity 4 – Could you dive here today? Why or why not?

Flying Fox

Activity 1 – No answer required.

Activity 2 – Should we take the bridge down to free up the silt build up? Why or why not?

Activity 3 – What animals might you see at low tide? Are any of your animals represented in this mangrove ecosystem food chain?

Activity 4 – Does the creek look polluted from this photo? Can you always see pollution?

Snake

Activity 1 – no answer required on blank sheet.

Activity 2 – Can you see where the flying foxes live? Why do they live in the Creek? Is it good to have flying foxes living close to people? Why?

Activity 3 – Is the hospital in the right location? If the hospital was moved, what could be done with this land instead?

Activity 4 – If you were the Mayor of Yeppoon would you have allowed these roads, buildings and bridges to be built around the inlet? As Mayor, how would you manage the inlet environment into the future?

8. Correctly Completed Learner Response Sheet

Be advised that the responses given here are not an exhaustive list, although they attempt to be as comprehensive as possible. Your students might come up with other responses and a wide variety of responses should be encouraged. Also, you should encourage your students to explain their answers as fully as possible. Through their responses you should cultivate a healthy respect for community, environment and history amongst the students. Finally, the responses here can be used as feedback, a learning activity in itself, to the student's work.

Fish

Activity 1

No answer is required.

Activity 2 – What do you think it would have been like working on the jetty?

It would sometimes be hot since sea breezes might not always find their way so far up the creek. There would be sandflies and mosquitos to contend with. It would be physically demanding work with lots of heavy lifting. There might be pressure on the workers to load and unload the boat before the tide turned. However, it may also be an interesting work environment, being surrounded by a saltwater creek and mangroves. You might notice different wildlife as you worked.

Activity 3 – Do you think man-made objects are permanent? How have the two photos changed?

No, they are not always permanent. In this case, the large jetty complex present in 1900 has now dwindled away to just three decaying stumps standing in the mud. So sometimes nature 'reclaims her territory' back. You might be able to think of other examples in your own local environment where 'reverse' changes like this have occurred.

Activity 4 – Could a large boat like this still be used to transport goods to this part of the Yeppoon Inlet?

No, because they would not be able to pass under the Ross Creek bridge. Also, the fact that there are more mangroves and silt/sand in the creek means large boats would have difficulty travelling right up the creek. The mouth of the inlet particularly appears to have more sand in it.

Crocodile

Activity 1 – What effect do you think building this bridge had on the transportation of goods to the area?

The bridge opened up access to the south side of the creek and allowed cars and trucks to take goods across the creek rather than using boats. The bridge reduced the need to use boats to carry goods because goods can be carried more economically and quickly by road transport, and people no longer had to wait for the full tide. A greater number of goods can be transported into the area. Moreover, the bridge prevents large cargo carrying vessels from travelling right up the creek.

Activity 2 – Do you think the clothes the ladies are wearing are suitable for this sub-tropical climate? Why or why not?

Yes, they appear to be so. The broad brim hats, long sleeves and long dresses offer protection for pale skin against the sun. They also offer some protection against sandflies. It is not clear from this black and white photo, but these clothes were probably made from cotton, which makes one feel cooler. Nylon, polyester and other synthetic fabrics would not have been common in the 1930s. Finally, white fabric would also have a cooling affect on the body as white tends to reflect the heat away.

Activity 3 - What differences can you see between the old and new bridge?

The old bridge is longer, has more spans and is more narrow. The new bridge is shorter because the embankment on either side has been extended. The new bridge is also wider, has fewer spans and the side railings are higher.

Activity 4 – Which of the three is the best bridge design for the environment? Why?

(a), because it allows greater tidal flow in and out. Embankments and pylons act to catch silt and sand. This bridge design is the least likely of the three to cause as much silting up of the creek. A healthy waterway requires the free flow of water to wash away pollutants and sediments, and to keep oxygen levels high.

Brahminy Kite

Activity 1 – What are the similarities and differences between the two photos?

The similarities include the jetties are still there and are of the same style but there seem to be fewer of them in the 2006 photo, and the bridge is still there but is a different style from the bridge in the older 1930 photo.

The differences include: there are sheds on some of the jetties in the 2006 photo; the car in each photo is very different; there are more people in the 1930 photo; there are no power lines in the 1930 photo; there is a railing beside the road in the 2006 photo; there are no people swimming in the 2006 photo; and there are some bigger boats evident on the other side of the creek in the 2006 photo.

Activity 2 – Make a list of the possible human uses for the inlet.

The uses include: swimming; fishing; to moor boats in; relaxing; and to meet boats that have returned from the islands.

Activity 3 – What are the differences in jetty styles and why are they different?

In the 2006 photo, the jetties have lock up sheds on them. These sheds allow the owners to store equipment safely and they also prevent just anybody from walking on to their boat from the jetty by acting as a barrier. The jetties in the 2006 photo also have power connected and this allows the boat owners to carry out work and to have light in the evenings. In short, the present day jetties are more developed.

Activity 4 – Why aren't there any people swimming in the creek in the 2006 photo?

Some of the possible reasons might include: there is a sign warning the public of crocodiles (this sign is not evident in the photo); the 2006 photo might have been taken on a very cold day; it is less attractive to swim there because it is low tide; it is more dangerous to swim in the creek nowadays because of increased boating traffic; people can find more attractive places to swim compared to the 1930s when access to the coast's various beaches was limited; and fears of sun cancer might mean more people are swimming less frequently.

Crab

Activity 1 – Did the people in this photo use electricity? How do you know?

Yes, because you can see power lines in the photo. There is also an electric light attached to the pole. You can see this by zooming in. Electricity was connected to Yeppoon in 1932.

Activity 2 – What are some of the advantages and disadvantages of tidal swimming pools like this one?

The advantages would include: they are cheap to maintain and they are free to use.

The disadvantages would include: they could be dangerous owing to currents, passing sea craft, sharks and marine stingers. They could also be dangerous if a person, not being able to properly gauge the depth of water, dived in and hit their head on the bottom.

Activity 3 – Describe five differences between the two photos.

In the 2006 photo, the pool infrastructure such as umbrellas, diving board, slide and so on is missing, the mouth of the creek appears to be more silted up, there are no people recreating there, the electric wires are missing and there is more development on the hill in the distance.

Activity 4 – Could you dive here today? Why or why not?

Maybe at high tide you could dive off the rocks at this location (the diving board no longer exists). But it is unlikely that anybody would want to dive out in the mouth of the creek nowadays because the mouth appears to be more shallow owing to a build up of sand. Therefore, diving might be a risk to one's health.

Flying Fox

Activity 1 – The answer is already provided to this activity.

Activity 2 – Should we take the bridge down to free up the silt build up? Why or why not?

You could argue yes because free flowing water is good for the environment. You might argue no, because then access to the other side is removed. You might also argue no because not that much silt builds up anyway and what does build up can be removed by a dredge on occasions. And last, but not least, you could argue no because extra silt means more mangroves, and more mangroves are good for the ecosystem.

Activity 3 – What animals might you see at low tide? Are any of your animals represented in this mangrove ecosystem food chain?

You might see mudskippers, prawns, molluscs, crabs, little fish, sea gulls, wader birds and birds of prey. Many of these animals are represented in this food chain where secondary consumers feed on primary consumers such as wader birds, like egrets, feeding on small fish. A healthy ecosystem depends on a balanced food chain, where there is sufficient food for each animal all the time.

Activity 4 – Does the creek look polluted from this photo? Can you always see pollution?

No it doesn't look polluted. But at the same time you cannot always see pollution, so you must not assume that an environment is not polluted. Pollution comes in many forms such as noise, smells and invisible (to the naked eye) toxins in the air, soil and water. Pollution that might specifically exist in Yeppoon inlet could be diesel and chemicals from boats, rusting hulks, small oil slicks, and people's rubbish that they have carelessly thrown in. Floating dead fish is a clear indicator of a badly polluted estuarine ecosystem, such as Yeppoon inlet. If you notice any pollution or effects of pollution in a creek such as this, you should notify the local council immediately so that it can be cleaned up, and the source of the pollution found.

Snake

Activity 1 – The answer is already provided in this map activity.

Activity 2 – Can you see where the flying foxes live? Why do they live in the Creek? Is it good to have flying foxes living close to people? Why?

The flying foxes are roosting in the mangrove trees and are evident by the gray/black colour you can see in the trees. They are also evident by the fact that some of the mangrove trees they are roosting in have lost their leaves.

Flying foxes have decided to camp in Fig Tree Creek because it is a protected and quiet environment. They are left alone there. The area is also spacious, and there are lots of trees that they can roost in. Also, this area is in fairly close proximity to food sources, which they fly off to during the night and return before the sun comes up.

Some people will argue it is not good to have flying foxes living so close to people because these mammals are noisy, smelly, they leave lots of droppings, they eat 'our' fruit (only because humans have cleared Eucalypt forests, blossoms of which flying foxes prefer to eat), and they could (but it is extremely rare) infect people with a virus if people interfere with them.

Other people will argue it is OK to have flying foxes living close to people because they provide a spectacular show low in the sky on dusk as they take off and fly away. These people are usually more conservation minded and feel that some of the fears of flying foxes are exaggerated.

You could also think about the question this way. Rather than asking is it good to have flying foxes living close to people, ask whether it is good to have people living close to flying foxes. In Yeppoon inlet, flying foxes have been living there before white settlers arrived. So we should equally respect their home if we expect them to respect ours. Learning to co-exist with flying foxes (and all wildlife), rather than continually moving them on, is a principle people need to aim for if we don't want wildlife becoming endangered or extinct.

Activity 3 – Is the hospital in the right location? If the hospital was moved, what could be done with this land instead?

When the population of Yeppoon was much smaller than it is today this hospital site was a good one. There is something nice about recuperating right beside the sea. Now the site is the wrong place for the hospital because it has no land to expand upon and provide more services. Its present location will also cause traffic bottle-necks when the population increases further.

If the hospital is to be relocated (and it will be), then this land could be turned into park-land. The public need 'green' areas, including shade from time on the beach, and free access areas, and this is an ideal location for that. A park would also provide a good buffer for the creek ecosystem from urbanisation beyond.

Activity 4 – If you were the Mayor of Yeppoon would you have allowed these roads, buildings and bridges to be built around the inlet? As Mayor, how would you manage the inlet environment into the future?

It is difficult not to allow these things to be built because of pressure from different segments of the community, even majority opinion of the community. You cannot stop ALL development even if you wanted to. The key to being a successful Mayor is to achieve ecological sustainable development – which is development that does not destroy the natural environment too much, so that each future generation can continue to enjoy it. In the case of Yeppoon inlet, it is very important to preserve the ecology of the creeks and mangroves in a healthy and dynamic state.

So if I was the Mayor I would try to prevent any more mangroves from being destroyed, try to prevent pollution from entering the creek, and would try to prevent silt from entering the creek form land clearing upstream. It is also important to conserve the cultural heritage and 'character' of the inlet, for example, some of the old jetties, and not to turn the creek into a rich man's marina. I would not allow any more buildings to be built close to the inlet because they clutter up the visual landscape. I would ensure that the flying foxes are continually protected, thus recognising the crucial role that they play in the ecology – that of pollinating native trees. I would move the hospital and Council chambers to another site, and turn the land where they once existed into a park. Finally, I would redesign and re-colour the Tourist Information Centre so that it harmonises with the natural environment, rather than standing out like a sore thumb.