Zoning Plans

The aim of this activity is to transfer what you have learned from the reef environment and examples of marine zoning plans to assist you in developing a zoning plan for a local ecosystem. You will present your plans in a stakeholder discussion group and need to justify your decisions based on science and negotiation.

Time

Four hours (two hours field, two hours classroom)

Tools

- Your observations / research on the reef or a local ecosystem, including: human uses, animal and plant populations, seasonal changes
- Coloured pencils
- Current management / zoning plan of the reef or area you are studying
- Butcher paper
- Coloured markers
- GPS
- Map of local ecosystem (or materials to sketch one)
- Existing management plans for that area

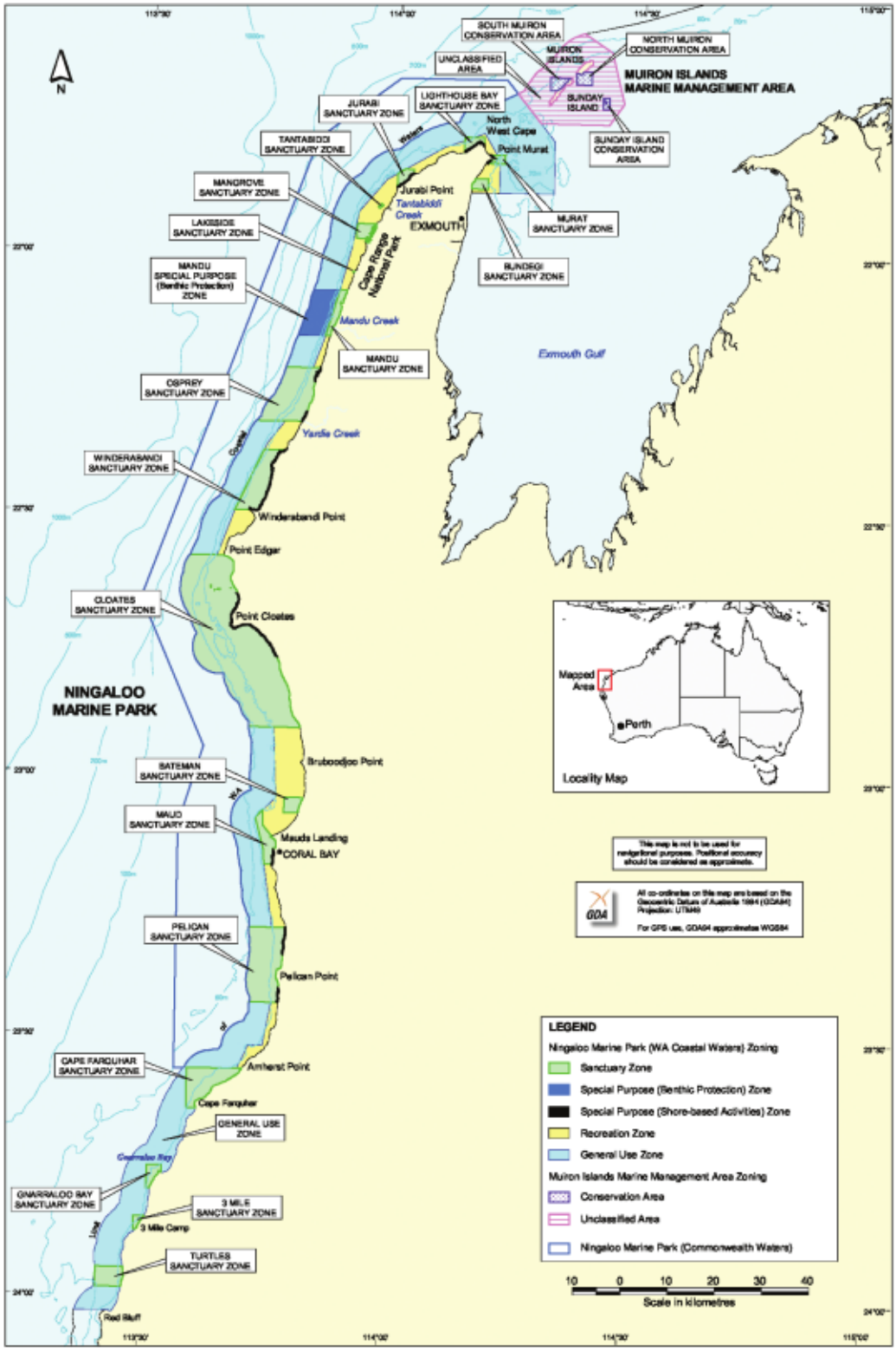
Background

Environmental zoning plans are developed through negotiation to satisfy user needs and lifestyle choices while protecting important landscapes, habitats and species. They are created from a mixture of scientific investigation and political negotiation, governed by economic rationale as well as cultural and social expectations.

The Great Barrier Reef (GBR) Marine Park is a multiple-use area covering 344,000km^2 of one of the natural wonders of the world. Zoning plans define where activities such as tourism and recreation, research, commercial activities and fishing can occur or be modified to both protect the environment and support vital social and economic needs and benefits. Zoning in the GBR was developed following extensive research and community consultation, and revised in 2004 with a dramatic increase in green, or 'no-take', zones from 5% to 33% of the park. The plan was developed using complex computer models to determine representative areas of connected habitat to conserve and to assign multi-use areas.

Classroom activity

1. Use an online search engine to find a Marine Protected Area with an existing zoning plan. The Great Barrier Reef and Ningaloo Reef provide two Australian examples.
2. List the zones that are represented in this area.
3. For each, list the activities which are allowed.
4. Share the various zones you have found with the rest of your group and select the ones you will use in a zoning plan for your local area.



Zoning map Ningaloo Reef, WA, Australia.

Source: Western Australia Dept of Environment and Conservation

Field activity

1. As a group, select a suitable accessible area of river, lake, forest or bushland, reef, beach or any other habitat to create a zoning plan for. You could even make it an urban environment, such as a local park or school grounds.
2. Visit the area, taking note of different zones or habitats within it (e.g. river, estuary, forest, clearing). You may want to use a GPS to mark important areas if you have access to GIS software.
3. Make a copy or draw a map of the area and mark on it different habitat types and landmarks.
4. Mark on any known important historical or cultural features or areas set aside for special activities.
5. Include any known significant or vulnerable species or habitats.

Classroom activity

1. As a group, discuss the importance of this area to local wildlife, as well as people, and come up with a short list of conservation goals, be it preservation, improvement, expansion or development of existing areas. You may consider how this system interacts with others nearby and the possibility of wildlife corridors that link different areas.
2. List the existing or potential users of the area. Designate someone to write each one on a separate small piece of paper. Once the list is completed, place all users into a hat or box.
3. Individuals should randomly select a user from the pile. Pretend you are that user and consider:
   a. how you and people you represent would like to use the area
   b. your needs and expectations
   c. plans for the future
   d. power within the community
4. Devise two main outcomes you would like from a zoning plan. Write the user group you belong to and your desired outcomes in large clear writing on a piece of paper.
5. On a blank map, mark at least one area of significance to you (as that particular user) and designate a suitable zone for that area.
6. Write two instructions for that particular zone (e.g. limited crabbing in the Conservation Park (Yellow) Zone by restricting the number traps to four per person).
7. Create a rough plan of other zones with which you will negotiate with the rest of the group. Include multi-use, no-take, scientific and preservation zones (or ones you have decided on from the previous activity).
8. In groups made of the different users, negotiate a new zoning plan for the area.
   a. take turns presenting your two main outcomes you want to see
   b. now mark down your significant zone on a group map (each user should use a different colour for this part). It is ok if some overlap (these may become multi-use) but if they are conflicting activities you may have to negotiate
   c. write the name of each user group on the map and display your final zoning plan on the wall to compare with others
9. Make a sign to protect wildlife in your area.

Teacher Hint
Students can work together in user groups.

Sign to protect dugongs in Moreton Bay, QLD, Australia.

Questions

1. State the main things you considered when choosing your outcomes.
2. List any considerations other users had that you did not.
3. What are some challenges you faced in the negotiation?
4. Did you come to an agreed zoning plan? Identify why or why not (e.g. two users had opposite needs, one person dominated discussions, etc.)?
5. What infrastructure (buildings, pathways, signs, etc.) would you put in place to aid in promoting correct use of zones?
6. List five benefits of the zoning plan and for whom they occur.
7. Which groups (fishers, tourist operators, reef visitors, etc.) does your final plan disadvantage and why?
8. What challenges exist for natural resource managers in establishing and maintaining the zoning plan for your region?
9. Who do World Heritage Areas belong to and who is responsible for managing them?

Research projects

1. Formulate an argument for or against the following statement: An area where no one is allowed to visit is worth less than a place you are allowed to go. (Think about values other than just money.)
2. Create a timeline and document the process that took place in establishing an existing zoning plan of your choice.
3. Devise a strategy that allows tuna fishers in the Coral Triangle to sustainably supply fish to a growing world population.

References

Reid et al. (2009) Coral Reefs and Climate Change: The guide for education and awareness, CoralWatch, The University of Queensland, Brisbane. (See State of the Reefs page 122 and Collaborative Effort page 214)

Coral Triangle Initiative; www.cti-secretariat.net

Great Barrier Reef Marine Park Authority (GBRMPA); www.gbrmpa.gov.au

WA Department of Environment and Conseration; www.dec.wa.gov.au/marine/marine-conservation/approved-management-plans.html