

GROUP DISCUSSIONS

Group A

1. Scientific Response Capability

There was general agreement on the need for a scientific response capability to hazardous materials spills. A single response plan to both oil and other hazardous materials was seen as most sensible (as NOAA has done) from organisational, funding and scientific response points of view.

2. Nature of hazards

It was suggested that there is need for future work on toxicity concentrations and effects for appropriate marine organisms. Most toxicity work has been based on brine shrimp assays; coral reef organisms may be several orders of magnitude more sensitive.

Work is also needed to provide more detailed information on the major chemical substances passing through the Great Barrier Reef Region, both entering and leaving Australian ports and in transit through the Region. It was suggested that cargo information might be obtained using the AUSREP radio contact system.

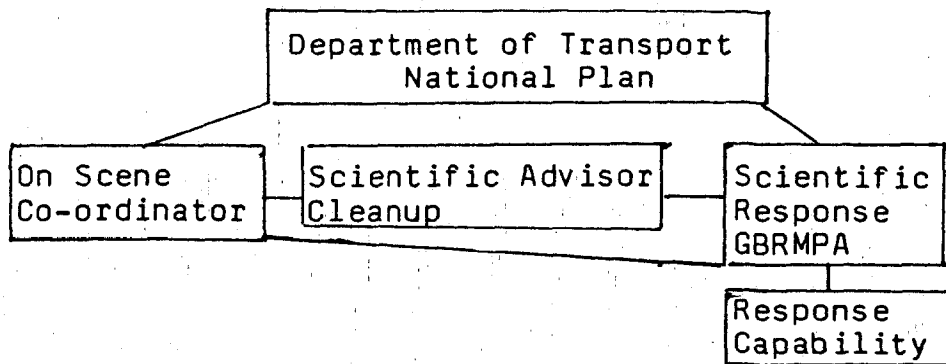
The Queensland and Torres Strait Pilot are about to reevaluate navigation channels in the Great Barrier Reef Region and will in the near future be able to provide an updated list of the areas where the risk of collision is greatest. Reduction of this risk by reducing the possibility of spills at source was also suggested as a worthwhile avenue of endeavour.

3.

Decision to respond

The size, nature and location of the spill are obvious criteria for assisting in determining the subsequent response. Senior expertise is necessary and in established scientific response plans, one person (at least) is usually sent out to establish whether there is a need for further response.

The relationship of the scientific response to the combat response was discussed and the following model proposed.



4. Organisation of response

- (a) There is a need to organise teams of trained people who can be mobilised to carry out pre determined tasks.

It will be necessary to determine:

what tasks
what training
who to involve
institutions/individuals

- capability
- commitment
- competence
- compensation
- contractual arrangements

The need to include an economist in such teams to enable the cost of the spill to be evaluated was stressed.

It was suggested that a working group be set up by GBRMPA to investigate these questions in greater detail.

- (b) There is also a need to address the question of funding the scientific response. Three types of funding require resolution:

- . maintenance of team (GBRMPA)
- . capital establishment (?)
- . episodic crises

(c) Accountability

It is essential that response teams be trained in leaving appropriate paper trails for future decision making on responses and to evaluate responses made.

Group B:

1. Scientific Response Capability

The group agreed to focus on the subject of the Scientific Response Capability. Specifically, what an appropriate response would be and how it should be organised.

It was noted that the National Plan had provision for a scientific component in the response team. The Scientific Support Co-ordinator's (SSC) primary responsibility is to advise and assist in evaluating and dealing with the hazard - that is, how the response group could best deal with the problem. It was agreed that an initial scientific response effort would be needed to feed information into the SSC for input to the combat team but would, at the same time, need to consider longer term efforts to evaluate damage to the resource together with possible research advantages associated with a spill. Such research could result in recommendations to improve the response effort.

The group felt that organisation of any scientific effort could best be co-ordinated by GBRMPA. ~~Some discussion focussed on the role of the media liaison officer.~~ It was agreed that this media contact role would be the responsibility of the On Scene Co-ordinator or his Team which would prepare regular media releases.

There was some concern that confusion would arise between the responsibilities of the State/Federal agencies during a hazardous materials spill as it moved through different geographic areas. It was felt that this problem would probably be resolved at the onset of an event by discussion between the Queensland State Committee and the Federal Authority (DOT).

The Group next dealt with the desirability of a Scientific Response Group. Was such a response really necessary? The group unanimously agreed such a group response was required so that it could provide reliable information as a means to resolve conflicting reports, make reasonable assessments of the damage if any, and improve future responses. Given that it was necessary the group agreed that scientific representation must include oceanographic and chemical, as well as standard biophysical, expertise.

The availability and quality of existing information raised some discussion. Whereas additional information would always be useful it was felt that sufficient data was probably available to permit some form of organised response. It was therefore agreed that

- there should be continued development of oceanic water movement models in the region along the lines of the GBRMPA/JCU/AIMS effort.
- the best currently available data should be obtained and maintained in an accessible database.
- the oceanographic and remaining meteorological data gaps should be identified and resolved.
- basic research should be continued especially in oceanography.
- the DOT, OSSM-8 oil spill model and the Bureau of Meteorology 'Oil Spill' Extract model should be used to respond to any events occurring in the meantime. It was noted that these computer models could be accessed through CSIRONET. Some steps should be taken to familiarise some Townsville people, perhaps at GBRMPA in the first instance.

The discussion returned to Protective Strategies to be used by the Response Team. The feeling was that reefs could be protected by current equipment held by DOT but that this was function of size of the spill and weather and sea conditions at the time. The On-Scene-Co-ordinator (OSC) would require specific advice at the time of the spill as to whether dispersal was warranted. He would need to know where to deploy the equipment.

It was agreed that a generalised map of the Reef Region should be developed which identified "areas at risk" or sensitive areas. It was felt that such information already resided in the records of GBRMPA for areas already zoned or being zoned at a synoptic scale. More detailed information could be provided by an on-scene team with QNPWS and Fisheries representation.

A chemical analysis of the spill substance would probably be required, especially if the information was needed for prosecution. The general feeling was that there was no need to duplicate chemical analysis facilities in the Region if they existed elsewhere but that logistics for movement of samples should be spelt out.

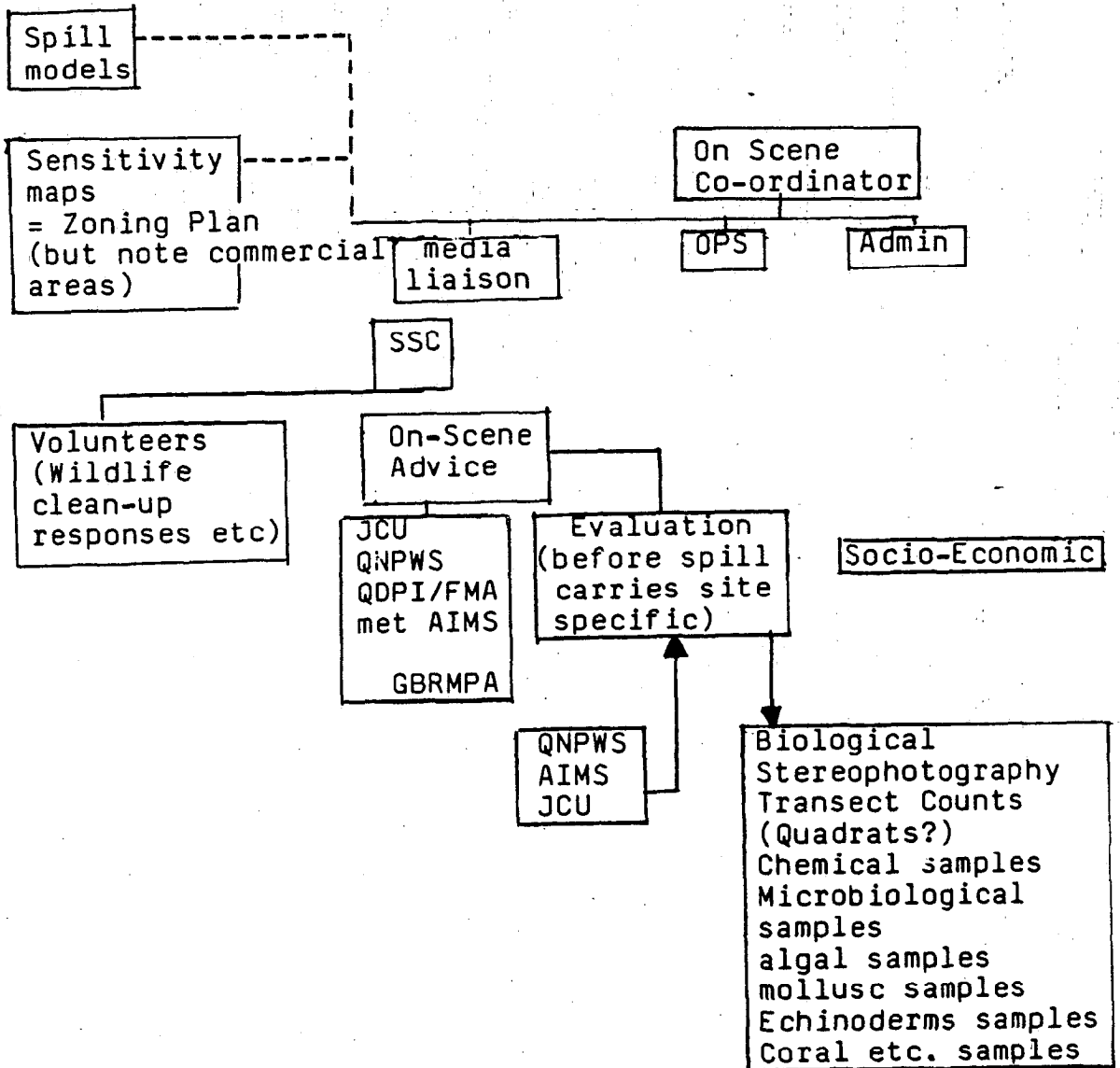
It was agreed that detailed advice on "areas at risk" during a spill could be provided by QNPWS. What they had to measure should be laid out before hand. The techniques and measurements used by the Norwegians should be reviewed, adopted and applied as relevant.

Further discussion focussed on the use and organisation of volunteers and communication of scientific advice to the OSC. It was felt that QNPWS staff would be useful in the immediate on-site advisory role and would provide a strong support role in evaluating the effects of the spill. It was felt that a Fisheries representative should also be on the scientific advice team.

The following diagram sums up some of the major considerations proposed for discussion by the group.

Criteria for Response

- . size of the spill
- . proximity to reef(s)
- . sensitivity ranking
- . weather conditions



Group C:

The Group focussed discussion on the three subobjectives of the workshop.

1. Identification of risk

The group felt that the risk for hazardous chemicals was generally lower than that for oil. Two categories of substances were identified:

- i high volume, low toxicity
- ii small volume, high toxicity

and it was suggested that there is a need to look further at the types of chemicals shipped, the industries involved, and their potential for growth.

The chemical characteristics of the substances carried are obviously important, i.e. whether the substances are "floaters", e.g. oil or "sinkers", e.g. tetraethyl lead..

Different kinds of accidental threat were identified:

- i collision
- ii sinking
- iii grounding

Each may result in the spillage of cargo, but the circumstances of spillage could vary significantly - thus influencing the response requirement. The group observed that there are many unknowns about the fate of chemicals in the Great Barrier Reef system. This will affect costs and benefits and therefore influence the response decision.

Concern was also expressed about the variability of risks in the Great Barrier Reef Region and how this may influence both the response decision and the response capacity. If for example a spill were to occur in the Far Northern Section of the Great Barrier Reef Marine Park, the organisation of the response would be considerably more difficult than if it occurred adjacent to the Townsville Harbour.

2. Decision to respond

It was agreed that a response capacity is necessary - even if only for "PR" value. The nature of response will be influenced by whether the effect is localised or dispersed. If, as suspected, most hazardous chemical spills are limited to localised effects then response will be limited to scientific investigation, damage assessment and monitoring - to do nothing may also be a feasible alternative particularly where access is difficult or where potential damage is considered low. Another active response may be to enhance dispersion - more research is needed, however, before this is practicable. (Also there was some discussion on potential for salvage of spilled material.)

3. Response

In view of the marginal incremental effect involved in extending scientific response capacity to include hazardous chemicals, the group agreed that such an extension is advisable.

REEFPLAN should form the basis of response in terms of use of logistics, structure, communications, etc. The Commonwealth should continue to assume a major role in response. The Great Barrier Reef Marine Park Authority should be a major participant, particularly in the role of SSC.

Recommendations

The group proposed that the following action be undertaken:

- . establishment of a working group which should address the role and responsibilities of a SSC in terms of both oil and hazardous chemicals spills as well as related matters such as the designation of laboratories etc
- . further research into modelling of dispersion
- . more information be sought on hazardous chemicals (shipping patterns and destinations and their potential ecotoxicological effects).
- . support be provided to enable extension of risk analysis work of M. James.