

SAVE OUR FORESHORE INC.

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The Officer in Charge
State Coastal Plan Review
Environmental Protection Agency
REPLY PAID 15155
CITY EAST QLD 4002
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Submission by
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Save Our Foreshore is an association registered under the *Incorporated Association Act*. It is a community organization of some 100 members, created by citizens of the community of Whitsunday having a particular interest in ensuring that public access to the coast and amenity of coastal public lands are preserved and enhanced for the long term benefit of their ecological, scenic and recreational values as enjoyed by the Whitsunday community and visitors to the area.

In accordance with the Minister for Sustainability, Climate Change and Innovation's announcement of a review of the State Coastal Plan and that a key legislative requirement of the review is to provide an opportunity for the public to put forward ideas and views about how to protect and manage coastal areas while providing for development that is ecologically sustainable, we make the following submission of member's contributions to this review.

Introduction:

So, is the state of the coast and the adjacent waterways in better shape today than when the plan was implemented?

Clearly, the facts would support that the state of the coast and Great Barrier Reef (GBR) is not better off today than it was at the beginning of this plan. So the SCMP is not effective in dealing with the pressures and impacts of today's pressures, both man-made and natural. If this plan were to be subject to measured outcomes in accordance with its stated aim, it has failed. So what can be done?

We contend that the Great Barrier Reef coastline and Great Barrier Reef is under such severe pressure and cumulative stresses from what should be locally controllable land-based impacts as well as wider impacts such as global warming and climate change, that anything that is NOT demonstrated to BENEFIT the natural environment of the region should simply NOT be allowed to happen. If the collapse of the coastal eco-systems and Great Barrier Reef is the alternative there really isn't an option.

There must be political will to take the tough decisions and shift from a development and population growth driven at-any-cost mentality to a longer term sustainable state. Nothing happens in isolation, everything has knock-on and cumulative impacts and this is not taken into account in current state development legislation.

This review is now the perfect opportunity to take stock and re-plan with the knowledge and information available today that was neither considered nor available when the plan was first written. We would be negligent if we didn't.

We suggest the following starting point which requires a shift in the Government's and people's attitude to the value of the natural environment:

CALCULATE the CAPITAL VALUE of the natural coast and GBR to Queensland, Australia and the world.

So what is this value? No one knows, but clearly it is time for this capital value to be calculated. Currently, any (relatively) short term development project, for example, an integrated resort development, shale-oil mining or alumina refinery such as proposed in our Whitsunday region, is pitched in terms of its value in jobs and contribution to the economy. The proponent can make whatever economic benefit claim they like, there is no counter argument and the environment is silent. It is not measured against anything, especially not the environment and local and wider impacts and potential losses.

If this instead could be measured in terms of its impacts on the environment and sustainability (which may in some cases be positive) we may come up with a very different scenario.

The environment is given no VALUE at present, it is simply there to be exploited unsustainably and wasted.

Vision Statement: the current statement recognizes the coast as important and then fails really make a difference. Suggest including in the Vision Statement something that sets a target, something along the lines of "will measurably leave the coast in a better condition than at the commencement of this Plan"

In Table 1, major values and pressures are all identified yet if we were to measure outcomes and whether the coast is better off today than in 2001, we believe the plan has failed.

1. Assess the effectiveness of the plan and its policies:

As already noted, with few exceptions, the coast, catchments and waterways are worse off today than when the plan was implemented. So it is not taken seriously, it is ineffective, unenforced/unenforceable and largely treated with contempt by Councils other State departments like DNR and State Development.

There are no outcomes or targets to measure against. Giving capital values to the environment would assist in this. Nothing is more priceless than a healthy population, living a sustainable life with sustainable jobs, housing, infrastructure and so forth. This is not occurring now and as population increases and pressure increases, dealing with these issues is what the SCMP is about.

The SCMP must not be subservient to other State departments

Policies contain nice statements and words like "*have regard to*"; "*is not supported*" "*will*"; "*must*" "*protect*"; "*encouraged*"; "*whenever practical*"; "*..are encouraged to implement*" but nothing about how these will be achieved. So they conveniently remain not enforceable, unmeasured and unmeasurable. The new SCMP must change this to measurable targets and outcomes, with specifics, timelines and factual outcomes. If the State government is to be serious about having an effective coastal management plan, then targets, clear actions and mechanisms for its enactment, funding and enforcement must be included in the new plan.

The SCMP is gutless and vague (possibly deliberately so) and must be revised to be assertive in designating specific areas as "not for development". See Section 3, for example, listing specific sites in the Whitsunday region as not appropriate for development.

2. Consider how the coastal planning system can be simplified

The planning system is complex and without measurable outcomes or results. For the environment, the time has come to move beyond comfortable statements that are meaningless and to instead approach this in a more business-like way, implement an environmental business plan for the State's coastal environment which plans for short, medium and long term actions and results. This approach will make simplification possible with clear direction.

3. Examine ways by which any the overlaps between the coastal and other statutory planning regimes can be resolved:

The State Coastal Management Plan must be the peak planning directive for the long term sustainable development of the State. Increasing pressures demand increasing power for this plan. It must not be subservient to pressures from other departments, especially Development.

This is an opportunity for the State to work in with the Environment, Water and Heritage and the new Regional Councils to build a cohesive management system. The Water Quality Improvement Plan and its implementation is a start. We use the example of our regional Mackay Whitsunday Natural Resources Management Group which has worked out the actions and funding needed to address remedial works to bring water quality in the Mackay Whitsunday Sarina region up to community standards.

As a community group, we can find it difficult to identify which Department or which group we should be asking for information. There isn't even really agreement within local government eg Airlie Creek, critical stormwater catchment runoff, for whose responsibility the creek is. We don't doubt that these inefficiencies are happening on a larger scale.

Recommendation: identify the strengths and specific local knowledge/expertise of one sector to work with another which has other strengths, rather than overlapping and having same expertise duplicated in departments. The SCMP, be given increased powers to identify and then reduce overlaps where two or more departments are really trying to do the same thing and each department is clearly trying to justify its own existence and protect its turf. We see this for example, in the extraordinary number of planning studies being carried out in the Whitsunday region for the same area. There are some three or four overlapping studies being carried out by various sectors of State departments, when really one overall plan would do, and this could be carried out under the new directives for the SCMP along with appropriate funding and resources.

Recommendation: the SCMP has the over-arching power where policies of other departments fail to take into account the impacts of their policies on the SCMP's targets. Again, this will be of value when the environment is given its true capital value, rather than a value based on short term development and jobs.

Overlaps can also be beneficial. So, for example, where one piece of legislation protects a part of the environment eg wetlands and another supports development that will impact on wetlands an overlap that sets out to achieve the SAME thing will be beneficial.

4. Identify the mechanisms to effectively achieve coastal policies in IPA-based planning instruments and natural resource management plans and programs

There is nothing in IPA that we can identify as effective where it relates to preserving the natural environment.

IPA must be subservient to the SCMP.

With the latest climate change information to hand, 7 years after Climate Change was addressed broadly and quite vaguely in 2.2.1 there is no doubt both the SCMP and the IPA must prioritise this as possibly the most important area to deal with, and how it relates to every aspect of this plan and human existence on the coast.

The SCMP needs to now add to its portfolio of systems modeling of how the developing coastline is interacting with and impacting on the environment. The development creep, for example, where under IPA, each development is assessed on its own, rather than how it interacts and impacts on everything else around it and “downstream” or “downwind, must be measured and assessed against the value of the environment and impacts on natural systems and human health.

IPA’s one plan fits all is no longer appropriate for the complexity of the environment, the population pressures and the climate changes that are forecast.

If the SCMP is to be serious about the environment and climate change, we suggest that new urban, rural residential or integrated development must not occur within the following specific key coastal areas as examples in the Whitsunday region and a similar approach be taken for other coastal areas under pressure from development which is being supported by IPA allowing anything to happen anywhere.

- Hideaway Bay
- Dingo Beach
- Nellie Bay
- George Bay
- Jonah Bay & Little Jonah Bay
- Unnamed Bays on the mainland east of George Pt, opposite Olden Island
- Earlando Bay
- Unnamed Bay between Earlando and Double Bay West
- Double Bay East
- Woodwark Bay
- Bluff Pt
- Funnel Bay
- Swamp Bay
- The Beak
- Cane Cocky’s Cove
- Shute Harbour
- Genesta Bay

Reconfiguration of lots within and adjacent to existing urban areas is to retain remnant native vegetation with preference being given to proposals that preserve and provide wildlife corridors or habitat for native wildlife and particularly the Proserpine Rock Wallaby and False Water Mouse/Rat.

2.7.1 Scenic Coastal Landscapes (all of listed above qualify) should be singled out and valued for their long term ability to generate revenue for the State from tourism, along with being forested/carbon sinks.

Growth of urban or tourism (including residential component) settlements must not occur on or within (refer also to SCP 2.8.1 Areas of State Significance (natural resources) and regional policy 2.8.2 (coastal wetlands)

Erosion Prone Areas Foreshores Riparian Areas; Areas of state significance (natural Resources) - Hillsides and Coastal backdrops; Areas of state significance (natural resources) – endangered Regional Ecosystems



Failures of erosion management on Airlie Beach hillside, previously rainforest and Proserpine Rock Wallaby habitat.

Under the SCMP, specific areas such as listed below must be designated as inappropriate for new urban development, including rural residential and higher density development. Why? This could include for example, water supply is limited to rainwater tanks in some of these areas with poor quality groundwater/bores. Coastal wetlands in these areas provide habitat for mosquitoes and biting midges which may result in ongoing nuisance and public health problems if urban development is inappropriately sited in these areas.

Substantial areas of high quality coastal resources occur within this region including:

- Areas of State Significance:
- Conway National Park
- Conway State Forest – **recommended that this be incorporated into Conway National Park under the State’s expanding National Parks programme**
- Mt Dryander
- Endangered Regional Ecosystems
- Coastal wetlands – mangroves
- Fringing reefs and

- Shute Harbour – **recommend that this be incorporated into the State’s expanding National Park programme as a Marine Park**



Shute Harbour, runoff sedimentation Feb 2008, importance of maintaining the mangrove systems and not losing this to development, as proposed.

2.1.6 and 2.1.7: Extractive Industry, Mining and petroleum activities: The SCMP should take into account policies within other agencies like GBRMPA for example, so that extractive industries like Shale Oil mining are not a permitted activity and are dealt with certainty eg on the Whitsunday Coast and Goorganga Wetlands. There is nothing in this policy that gives anyone comfort that the SCMP will protect the environment from this devastating activity. The SCMP should be doing everything within its power to reduce carbon emissions and again, having measurable targets including expanding the scope of the plan to deal significantly with CO₂, to include COS targets and reductions. Not to be weak and vague and actually permit an increase in this sort of industry.

IPA encourages settlement patterns in much of the Queensland coast which are characterized by increasingly high density coastal development with preference for hillsides (for views) or near the water. With increasing demand for coastal lifestyle in what used to be remote bays accessible by 4x4 vehicles, communities are expanding from local’s (historic) beachside holiday shacks for which little in the way of infrastructure was required, to larger homes requiring costly infrastructure services and additional cumulative demands and impacts on the surrounding environment.

IPA and local government's town plans are permitting development on (steep) hillsides with accompanying runoff and sediment plumes into the already stressed GBRMP, as seen below in a photo taken late February 2008 of the extent of plumes in the Whitsunday Islands never seen before. Developers generally behave with impunity and only strong actions against environmental devastation eg Clarke's Cove will send the right message and avoid the costs of litigation and time which could be better spent working on positive actions for the environment.



Sediment plumes moving through the Whitsunday Islands end Feb 2008, continued for several weeks

There is a financial burden on Councils and the State in the case of poor long term coastal planning eg Mackay – Whitsunday in 2008 after a reasonable wet season. Heavy rains, not experienced during the building boom of the past decade of so of less than average rain, placed people and property in danger often through inappropriate developments. The State should bill Councils for disaster relief funding where damage costs are directly related to poor planning decisions the State did not approve. That way Councils have a feedback mechanism that makes them face the true costs of their decisions.

5. Investigate means by which greater certainty can be provided about where coastal dependent development may occur

There must first be policy certainty about where coastal development MAY NOT occur. Otherwise, it is still implied that any development may occur anywhere.

Climate change will be included in any policy and define specifically what may/may not occur.

A policy stating there will be no loss of public foreshore land or restrictions to access the coast to private commercial development

Recommend a policy of acquisition into public hands of coastal lands and wetlands.

To give you a working example of where the SCMP has been subservient to another Department eg State Development, so that the aims of the SCMP may not be achieved, we include the example below of what is acknowledged to be an inappropriate proposal for what could be Queensland's largest marina, residential and commercial development (State Significant) in an environmentally important area of Shute Harbour.



Above, ie Shute Harbour Marina proposal is a clear example of where a coastal dependant land use should not occur. Marinas are a necessary part of our coastal infrastructure, however, this does not mean every safe harbour should be removed from public use and turned into private marina and residential accommodation/commercial premises. While commercial marinas can be considered as coastal dependent development, associated residential housing and foreshore tourism development cannot. Marina "villages" are a form of urban expansion sprawling outside of urban centres in natural hazard environments and they increase the impact coastal infrastructure has on the environment, as well as visual amenity for the community and visitors.

If a coastal dependent land use is unavoidable, it is then desirable that future coastal-dependent land uses be located in areas where facilities and infrastructure already exists in order to minimize establishment costs and impacts on coastal resources, amenity and values, particularly in largely undeveloped areas. An example could be in the Shute Harbour area where this group would support appropriate redevelopment and infill of the existing

commercial site providing it complies with town planning and environmental criteria and receives no special treatment.

Any such use must be subject to an independent report, which is then peer reviewed.

Where a proposal for a future coastal dependent land use wishes to be located away from areas where facilities and infrastructure already exists, the SCMP must be firm in that it may not occur.

If there are compelling reasons that are not of a private commercial nature, a net public most appropriate use study must be carried out where issues are addressed by stakeholders such as need, public access, loss of amenity as well as environmental impacts such as:

- Erosion prone areas
- Climate change
- World Heritage values
- Fish habitats
- Seagrass beds
- Mangroves
- Areas of State Significance
- Cultural Heritage

Port of Airlie residential and small marina development. Is this what the SCMP is going to allow more off? Most of these values were lost and new risks created in the Muddy Bay development pictured below Sept 2007. Will the SCMP continue to allow these losses?



Policies need not exclude future zero-impact eco-tourism opportunities along the coastal strip. For example as in Tasmania, where tourism operators have a permit to operate coastal walks during “the season” and must remove/rehabilitate all evidence of impact and use prior to departing the site at the end of the season. This encourages high responsibility, high yield and high quality sustainable long term tourism services.

6. What do we think are the most significant issues for coastal management and planning in Queensland?

- IPA – an outdated planning policy that is development driven
- IPA – a one size fits all plan
- A SCMP that is subservient to IPA and the State Development agenda
- An under-resourced EPA
- No mechanism to value the natural environment
- State Significant to be reviewed and defined and be limited to strategic State infrastructure, not private commercial development.
- Long-term we need an environment that ensures quality of life for human systems as well as environmental systems along the coast. Our biggest long-term attraction to visitors is the quality of our natural coastline, not how many coastal high rise buildings or marina village units we have for investors. Otherwise we provide no authenticity or “sense of place” that makes our tourist destinations unique and attractive for visitors and communities. Our communities continue to lose their views of natural coastlines in places of state significance for visual amenity.
- Uncontrolled population growth without measuring carrying capacity of the State
- Climate Change
- Inappropriate development
- Water supply
- Air quality
- Weak town planning schemes
- No mechanisms to measure outcomes of the SCMP and regional plans. The aspirations in the SCMP are extensive and laudable but merely remain aspirations if quality outcomes are not assured because there are too many qualifiers and loopholes that degrade the end product.
- Targets, actions to meet those targets, and timelines to achieve those targets need to be established and acted on immediately.
- A monitoring and reporting system on the progress towards meeting the targets is also necessary.
- The SCMP can also take on the until recently taboo subject of population capping
- Mining: As population increases there is a growing need for quarries located close to where construction is occurring. As transportation costs increase with the end of cheap oil there will be more pressure to locate quarries even closer to urban centres. But those rising transportation and energy costs will also mean that the industry will look for new stronger and lighter building materials. This should be encouraged as quarrying of sand on beaches affects sand budgets and supply of sand to northern beaches. It also affects biodiversity along foreshores.

- A shale oil mining operation within the Goorganga Wetlands - 2.8.2 fails to protect this region, listed in the Directory of Nationally Important Wetlands - and a dredged boat channel through the Great Barrier Reef Marine Park to ship out the processed oil. They are paying people in the Whitsunday community to attend meetings where they are describing the project. They have done preliminary exploration work in the region.
- Another project that may happen is the Chalco Aluminium Refinery being built in a new State Industrial Area north of Bowen adjacent the Caley Abbot Point Wetlands Aggregate, also in the Directory and which meets the criteria for RAMSAR status. Both the indigenous and environmental communities have many concerns. The environmental damage will be profound and irreversible and 2.8.2 fails to protect.
- 2.1.8 Dredging: Safe dredge spoil disposal along the coast from marinas is a growing headache for the Whitsunday Council. This problem would increase enormously with the addition of yet another dredged shipping channel in soft near shore coastal mud in Queensland. The SCMP appears powerless to protect the coastal environment in both these situations yet it will significantly impact two major wetlands in Central Queensland that habitat for thousands of migratory birds as well as significant fisheries habitat.
- With an application being supported to dump some 30,000m² of dredge spoil containing acid sulphates which are reported to be "self neutralizing" – no time frame given – on the Goorganga Wetland and Proserpine River floodplain, based on an experimental site in SE Queensland, which is not subject to the same dynamics as this area, clearly the SCMP plan's "one policy fits all" is not going to protect the coast as it should. So until wetlands are identified as having a capital value that exceeds a commercial value and until the SCMP over rides any other development policy, the environment will continue to be the loser in every case.
- A recent ABARE report (2007) states that an industrial corridor is to be built along the coast from Gladstone to Townsville, nearly 1000km along the Great Barrier Reef Marine Park catchment and within the cyclone zone. **Engineering will fail to protect the environment and people and property eg Cyclone Katrina in the USA. Can we afford this sort of devastation on this important coastline and the potential wipeout of the sustainable tourism industry? We don't believe so.**
- This appears likely to be a number of State Industrial Areas hundreds to thousands of hectares in area, built close to the coast near actual or potential Port sites as well as close to coastal towns. The public will have just fifteen working days from the time a development notice within these SIA's is published to submit their comments. This inadequate time frame makes a mockery of public consultation. What role will the SCMP have in protecting significant habitat and establishing protective wildlife coastal corridors impacted by these SIAs?

2.1.9 RECLAIMING LAND FOR DEVELOPMENT

- This usually means filling in wetlands, a policy which should be avoided, given that they are in flood plains and provide a wealth of ecosystems services to protect water quality, recharge groundwater etc. and biodiversity protection, especially for aquatic species and migratory birds protected under the *EPBC Act*.
- Another form of reclamation is placing of dredge spoil from within marinas eg Port of Airlie and proposed in Shute Harbour. This encourages dredging along the coast which has many adverse impacts on near shore marine life. It also destroys connectivity by disrupting the food chain along the coast for migratory species which travel and feed close the shore e.g. Dugongs and Turtles in Muddy Bay, now Port of Airlie Development. At Abel Point Marina in the Whitsundays, dredge spoil was extraordinarily fine and simply seeped under the retaining walls of the reclamation site creating a continuing disposal problem. Obviously much more work need to be done by engineers or they need to be better qualified to handle reclamation for marinas along the coast. The coast has few natural harbours, and ship channels and ports need to be constantly dredged to keep them open. The problem of safe dredge spoil disposal is huge and a long-term threat to coastal wetlands. Dredging should be done only when no other alternative is available and the benefits far outweigh the risks and environmental damage it causes. Issues such as the Precautionary Principle and the principle of Intergenerational Equity must be addressed, as well as cost benefits.
- Australia has little need to reclaim coastal land for most forms of development, and certainly not for residential development. It simply encourages building of expensive development into the sea bed in a high risk.

7. Identify the mechanisms to effectively achieve coastal policies in IPA-based planning instruments and natural resource management plans and programs

- The IPA should be replaced with new relevant, updated planning policies, using the latest information available for climate change
- Mechanisms for achieving coastal policies will have to be able to rapidly adapt to changing circumstances. IPA based instruments cannot do this.
- If the aim of the SCMP is to protect the environment, then the simple test to apply is "Does this benefit the environment?" Keep it simple. Sometimes the simple ones are best, instead of muddying the waters.
- Mechanisms to achieve the aims of coastal policies can include setting targets and timeframes within the SCMP to achieve the prioritized outcomes.

- IPA's one plan/one size fits all fails to deal with the complexities and dynamics of different environments.
- Mechanisms will need appropriate funding or they risk failing.
- Climate change modeling of the coastal zone could be used to show where needed development that had the least environmental impact and the lowest chance of natural hazard damage could be sited.
 - The models should also include upstream impacts on the coast. For example cyclones usually cause heavy rainfall in the upper catchment and downstream flooding of coastal towns.
 - Lack of riparian vegetation on upstream banks can increase the amount of herbicides, pesticides and fertiliser that affects downstream water quality.
 - This information could be used to show the most appropriate locations for needed coastal infrastructure within the State and Regional Town Planning Schemes as well as the Regional Coastal Management Plans.
- The Precautionary and Inter-General Equity Principles should apply to site selection for coastal dependent development because there is so much uncertainty about climate change impacts on the coast.
- Coastal dependent development should be avoided as much as possible in 100 year coastal floodplains and estuaries, especially where rivers and streams have short steep gradients because flooding will be rapid, fast flowing and of high volume.

Councils need to be educated on the values of the environment to their Shires vs losses of the environment. Councils need to be given the capacity to manage environmental issues, too often this is under funded and given no priority. It needs to move up to the top priority.

- The SCMP suggests that Coastal Management Districts could act as coastal wildlife corridors because EPA has a stronger role in assessing certain types of development under IPA in these high natural hazard districts.
- CMDs are not continuously linked along the coast and are usually narrow. Few are more than half a kilometre in width.
- Councils continue to allow human disturbance from adjacent developments e.g. stormwater outlets act as point sources of changes in salinity, nutrients, pesticides, herbicides and weed delivery into the CMDs.
- These sources of adverse impacts would have to be better managed if the CMDs are to play an improved role in coastal biodiversity protection. Biodiversity in CMDs in coastal urban and agricultural zones would have no place to retreat as sea levels rise and would bear the brunt of natural disaster disturbances.
- Could they be made resilient enough to take on an official biodiversity protection function?

- If vegetated riparian buffer zones of adequate width were required and funded along the coastal rivers and streams we would have an avenue for planned retreat and biodiversity protection as sea levels rise. No legislation to require this exists in Queensland, although it is an objective in the SCMP. Without legislation it is unlikely to happen except in a random fashion under voluntary funded uptake programs such as Mackay Whitsunday NRM's Sustainable Landscapes Program for land managers.
- **The Coastal Management Areas could be expanded to account for greater rises in sea levels:**
 - That would better serve coastal biodiversity protection along the coast.
 - It would get people and urban development back at safer distances from the foreshore and delay adverse impacts from climate change.
 - There can be 100m of erosion inland in erosion-prone areas e.g. sandy beaches for every metre rise in sea level.
 - Our planning schemes and NRM Plans are not prepared for this. The NRM groups in Queensland are non-statutory so have no enforcement powers.
 - As community-based groups they do not seek statutory status. IPA has so many loopholes that it seems to lack any planning instrument to address most unsustainable coastal planning developments.
 - EPA's building lines in the current draft Mackay Whitsunday Regional Coastal Plan are already out of date.
 - Good coastal management will require that loopholes will be closed, coastal information to the public and agencies will be kept current and disseminated widely if communities are going to accept that wider setbacks and CMDs will be needed.

Local Area Plans offer some hope as a mechanism but seem to languish when they hit political and bureaucratic headwinds. For example, the one that started off for Shute Harbour last year with community group meetings and input and has not been heard of since.

There has to be a way to place a realistic value on ecosystem services so there is a fair comparison of those values against the values of coastal development. This has to be done over the long-term to truly measure the environmental values.

Where coastal-dependent infrastructure such as ports and marinas must be placed along the coast technology to cope with such events should be incorporated into infrastructure design. But associated commercial infrastructure should be built further back from the coast in safer areas.

We need a systems approach to research, planning and implementation.

We need to fund the protection and conservation of what we value, and we need to put a dollar value on what we value even if we value some things as priceless.

We need to have the resources and power to do the research and enforce the regulations we put in place to achieve the outcomes we want.

We need to put resources towards building community awareness of the need to protect the coast and the capacity (education, skills training and resources) to be able to do that, so that people can self-regulate their choices about how to behave towards the coast.

IPA is alienating communities. It is not possible for individuals and community groups to afford to bring a planning issue before the Planning & Environment Court, let alone run appeals, so people have little or no input into local planning decisions that affect the quality of development within their communities. For similar reasons of costs Councils are also reluctant to take a case to the P&E Court. Whatever happened to the original proposal when IPA was being considered, to have a pre-court mediation team to sort out the main issues in disputes before they even came before the P&E Court?

Clarke's Cove Illegal clearing, exposed by this community group, successfully prosecuted but what will the outcome be? Property owner has to date not complied and continues to landscape with palms etc.



Often the community does not even have the right to bring their issues to the P&E Court. The Fisheries Act was IPA'ised so that community groups lost their prior standing status in the Courts. State agencies are reduced to merely advisory agents in many cases.

The legislation places a tremendous burden on communities because the underlying premise of IPA appears to be that any person can come along with a development proposal. Then both Councils and the community have to spend huge amounts of time, effort and money to show why a development may be inappropriate.

A majority of pro-development Councilors may vote for a development, against the advice of state agencies such as EPA and DNR&W and are not even required to give a Statement of Reasons to the community for their decision. A community that cannot shape its future to its vision is no longer a community. IPA is affecting social and environmental sustainability and therefore long-term economic sustainability.

Communities are facing limits to coastal sprawl with more intense and infill development within their boundaries. This is proving unacceptable to many communities because of the unsustainable nature of the new development not because they suffer from the NIMBY syndrome. Open Space for people and wildlife in urban areas is steadily lost with no attempt to compensate for that loss through improved building and landscape "green infrastructure" designs. This relates back to the need for a systems-based approach to the design of integrated more functional urban areas that deliver quality of life and efficiencies in energy and water use. That approach would do much for coastal sustainability.

URBAN DEVELOPMENT

Loss of Natural Resilience to Climate change Impacts:

Clearing of coastal regional ecosystems which are Not of Concern or Of Concern (VMA status) continues to be allowed for urban development under the Queensland *Vegetation Management Act 1999*. The result is steady loss of coastal ecosystems no matter what their biodiversity status. The commonwealth *Environmental Protection and Biodiversity (EPBC) Act 1994* focuses on the protection of threatened species, certain migratory species including shorebirds and turtles, and ecological communities of national environmental significance. But protection on the ground has been scant and slow. Littoral rainforest coastal ecosystems were nominated under EPBC for Endangered status two years ago because of clearing for development and it may be years before the federal environment minister makes a determination on their status.

Urban coastal development clusters around estuaries and along coastal rivers and wetlands. These are areas of high biodiversity and productivity yet little attention is given in urban planning schemes to protecting and restoring the values and ecosystem services these natural systems provide.

The rapid rate of clearing and lack of protection means we are losing coastal lowland corridor connectivity to the point of no return. There are no incentives to protect regional ecosystems on private lands for land owners save small reductions on rates for Nature Refuges in some local government areas, and competitive access to small amounts of funding for protective and restoration works through the regional Natural Resource Management Groups. There are very strong financial incentives for the Dept. of Natural Resources and Water (public unallocated state coastal lands), Councils and land owners to sell lands containing regional ecosystems for urban residential development once land is zoned Urban in rapidly growing coastal centres.

Research by ecologists at the University of Queensland in southern QLD briginal ecosystems shows that once a regional ecosystem drops below 35% in area in a bioregion, biodiversity goes into irreversible decline. Under the Local Government Act Councils have the power to legislate for local vegetation protection laws, but this has not happened in the Mackay region. The town planning scheme makes provision for open space corridors across the region's landscapes but this has not been implemented and Council continues to sell off its public lands adjacent to significant habitat for wetland species.

In another example, in the full knowledge of Climate Change issues and other risks as well as being public land, the Department revived an EXPIRED LEASE across the Shute Harbour sea bed for a proposed 733 berth, commercial and residential housing. The site is out of scale with the harbour taking up 25% of its area, creating the loss of the Whitsundays last safe accessible mainland anchorage, creating a safety issue along with a proposed unsafe southern entry access for recreational vessels craft and other commercial businesses which the developer lobbied to have removed. Access to the harbour will be extremely crowded should the development proceed, and its high natural visual amenity value as the gateway to the Great Barrier Reef will be lost. Other commercial marina village/commercial developments within areas approved in the regional WHAM Plan (Abel Point and Port of Airlie) are now creating ongoing dredge disposal and sediment pollution problems, as fine muds seep from under the containment wall for onsite disposal and back out into the marinas.

Runoff from Port of Airlie/Jubilee Pocket/Mt Whitsunday Feb 08 with subsequent plumes into the GBRMP World Heritage Area. Note no plumes on the eastern side where mangroves are intact and there has been less development.





Plume in Pioneer Bay from hillside development Airlie Beach runoff Feb 08

Good Quality Agricultural Land is also being lost to urban development. As oil is becoming more expensive as we approach the end of peak oil supplies food prices are rising. World food prices rose forty percent last year, and have been rising steadily in Australia. In future we will need to produce more food locally, close to and in urban areas. That network of protected quality agricultural land for food and fibre production to supply local needs in and near urban areas needs to be planned for now. As most urban areas in Queensland are near or on the coast, a good coastal plan must recognise and provide for future urban food and biodiversity needs. We will depend in the future on the resources of our wetlands, estuaries and marine ecosystems to meet more of our local food needs. In parts of Florida where urban development was allowed close to mangroves and salt marshes in estuaries, fisheries steadily declined over twenty years. Elsewhere in Florida where this was not allowed, fisheries are still healthy and a local food source.

Urban coastal development too close to and within coastal and marine ecosystems such as wetlands and estuaries and seagrass beds that provide important and valuable ecosystem services needs to be addressed. These services include protection from cyclone wind, storm surge and flooding damage, water quality filtering services, pollination from biodiversity (e.g. flying foxes that live in and near mangroves and coastal waterways, and food for protected species such as the dugong).

Development too close to terrestrial ecosystems allows no room for them to retreat as sea level rises. It also introduces weeds, storm waters that are polluted or drastically changes the amount and frequency of freshwater point inflows into estuarine and marine ecosystems. These impacts are not monitored for the most part yet they are having impacts on biodiversity (e.g. loss of Grapsid Crab habitat in stormwater outlet plumes. This species is the main food source of the false water rat listed as vulnerable under the federal EPBC Act 1999 and the QLD Nature Conservation Act 1994). Until we know more about these impacts and how to mitigate them we should adopt the Precautionary Principle in our coastal town planning schemes. The principle of Intergenerational Equity applies here too. We should stop allowing further development close to the foreshores, wetlands, and sensitive and significant

remnant ecosystems and within the inshore areas save for necessary state infrastructure.

Mitigating Damage

Rising costs of damage from natural disasters is primarily due to the fact that more people are choosing to build in high natural hazard areas along the coast. Future urban expansion along the coast should be in centres out of flood plains, and well back from the coast, (at least a mile or two) depending on elevations and natural hazard risk assessment. A policy of Gradual Planned Retreat from the coast is desirable for most future development. The State should not approve state infrastructure projects such as airports along the coast that can be sited elsewhere. The Mackay Port Authority plans to extend its runway eastwards into a 400m erosion prone coastal management district in its latest planning scheme. This area was covered with 7m of storm surge in the 1918 cyclone. The surge extended 4km west to the Bruce Highway. This cyclone has been called a one in five hundred year event (hydrology engineers projecting from the historical record) but dating of broken coral ridges onshore from past large events in the region suggest the return interval is more like a one in two hundred year event. With global warming the return interval is more likely to shorten than lengthen, so town planning schemes should be planning for shorter return intervals of damaging cyclones and storm surges and storm tides

Instead of conceding that the airport is growing too big for the site it would prefer to build into the high natural hazard area of Shellgrit Creek, fill in the wetlands and destroy a nationally significant site for shorebirds in Shellgrit Creek. The Mackay Port Authority would be better served long-term by leaving the current airport to serve smaller planes, and build a larger runway elsewhere inland on higher ground.

Other State Agencies such as Transportation and Queensland Rail, and local government town planning appear to ignore the State Coastal Plan, probably because it has few enforcement powers and uses weak enforcement language. Town planners need to work with state agencies such as Queensland Rail and Main Roads to integrate State projects with town planning schemes. Evidence of this lack of cooperation was seen in the February 15, 2008 flash flooding of Mackay in the Janes Creek and Barnes Creek catchments. Projects such as Main Roads East West Connector and the Railway embankment were blamed by residents for exacerbating the flooding by blocking floodwater flows.

When the State declares a project as being of State Significance it inevitably means the requirements of the State Coastal Plan are thrown out of the window. The commercially owned marina villages in the Whitsundays are one example. They are creating ongoing dredge spoil disposal problems, ongoing sediment pollution and loss of coastal seagrass beds (which means the loss of feeding grounds connectivity along the coast for Dugongs). They result in the building of housing in high natural hazard areas over the seabed in a cyclone prone region. There have been at least forty-two cyclones either near offshore, direct hits or close inland between 1906 through 2003 in the Whitsundays i.e. on average one every 2.3 years. (QLD Bureau of Meteorology cyclone track maps). Marinas with associated commercial

infrastructure and high rise residential housing obstruct views from the foreshore and along the coast in an area of national significance, and restrict foreshore access to the public. Commercial operators now want to bring in super yachts >120 m to marina villages and have produced a report using State government funding to justify the continued expansion of this industry along the coast, when no need for additional expansion has already been identified. In fact there is an oversupply of marinas, with a permitted one yet to be built in Bowen. This type of development represents coastal urban sprawl outside of the urban footprint established in regional planning schemes. Need for this type of coastal infrastructure, which will have major impacts on coastal biodiversity and community amenity, must be firmly established first by professional, independent, scientific, peer-reviewed studies before any expansion is allowed. This should be required under the Coastal Plan.

Another example of poor State planning and lack of integration with a local planning scheme is the East West Connector Road that parallels Malcolmson Street in Mackay. This involved clearing of 90,000 mangrove trees in Barnes Creek for a road levee that will not work as it will deliver more vehicles to a bottleneck at Forgan Street Bridge. It will not be high enough for more than a 1/30 year flood from the Pioneer River, and will allow intensive rainfall (common in the Wet Season) to back up behind the levee in North Mackay, as happened in the Feb 15 2008 flood. Many homes in North Mackay were flooded. Valves in the levee could not be opened for hours to let water out to the flooded Pioneer River as the river was higher than the waters backed up behind the levee in North Mackay. This project has established a precedent for the large-scale clearing of protected mangrove forests (>12 ha) and salt marsh (22% of saltmarsh in the Pioneer River estuary) by the State for a transportation project through wetlands. In Louisiana in the U.S. highways are constructed above the wetlands to have minimal adverse impacts on wetland forests. As sea levels rise Mackay will look more like Louisiana and coastal transportation networks within low-lying areas will need to be elevated and protected from destructive winds.

Town planning schemes should not be approved by the State unless they address the issue of allowing intensive development in river flood plains and storm surge zones, as it will mean even higher future damage costs to Queensland as the effects of climate change intensify. Yet recent changes in torts laws are reducing Councils' liability if they allow development in high natural hazard areas in response to uncertainty about the severity of future climate change impacts, especially at the regional level. As a result there is little legal and legislative disincentive for Councils in coastal Queensland to prevent this practice and every financial incentive to encourage them to continue.

The solution may lie in reducing or eliminating access to State disaster funding for areas where housing should obviously never have been built. Such areas of high natural hazard risks (storm surge, high erosion rates, wind and flooding) need to be clearly mapped by the State for all urban areas and small towns along the coast and that information relayed to Councils. The State needs to work with insurance agencies on this to ensure insurance for near coastal development is available.

Some Councils have mapped high storm surge hazard and flood areas but continue to allow development within them, as happened at Valetta Gardens in Mackay, a new suburb that the 1958 flood maps show as flooded (Geoscience Natural Hazards Risks in Mackay study). Councils are not even required to supply the community with a Statement of Reasons when they approve developments within floodplains and other high risk natural hazard zones.

Also useful would be online mapping of areas of coastal natural hazards that are kept up-to-date. All real estate agents could be required to provide prospective home and property buyers with a current property report listing natural hazard risks and the lack of insurance and disaster aid if buyers choose to buy and build in high natural hazard areas. Such areas should be kept in a natural state and used as coastal wildlife corridors. A process of gradual withdrawal from high natural hazard areas which are already developed should be a priority. The State should only allow protective works on existing private foreshore properties where all affected neighbours and those who would be affected by a protective work get together and work on a strategy that would minimise harm to all.

More resources and funding need to be put into the education of Council town planners. Few have Environmental Science and Geomorphology training. Even fewer Councilors have any knowledge of ecology and biodiversity conservation yet they make the final decisions on development applications, and are invariably backed up in these decisions in appeals in the Planning & Environment Court, because they are seen by the Court as representing community views and desires. There is responsibility on their part to understand the environmental impacts of their decisions.

CANAL ESTATES

Not supported as in light of rising sea levels they are out of date and environmentally harmful. They are really another form of building in a flood plain.

People have a desire to live by water. This need can be met through good urban design away from the coast. It does not have to be met by placing people and infrastructure in harm's way.

Transportation networks servicing canal estates will be increasing inundated as sea levels rise and cyclones and rainfall events and flooding become more intense. This will increase infrastructure damage and repair costs along the coast.

PRIVATE AND COMMERCIAL USE OF WATERFRONT AREAS

This should be limited to necessary essential infrastructure for trade and commerce to reduce future damage costs from the impacts of global warming. Locations should be where the least environmental damage will be done, preferably in developed centres, and where infrastructure will suffer the least damage from natural hazards.

Innovative design may be needed to reduce natural hazard impacts on necessary coastal infrastructure.

The Vision section of the State Coastal Management Plan states:

“Recreational and commercial boating also creates pressure on coastal resources. Registered vessel numbers are increasing and additional facilities are needed to cater for this growth.”

Please be aware that the majority of the growth in registered vessel numbers is at the small craft “tinnie” recreational fisher end of the vessels size continuum. We are seeing plenty of PR items in the newspapers stating we need to cater for “super yachts.” In fact in the Whitsundays and Bowen there is over-capacity for years to come in coastal infrastructure for the larger vessels. The benefits of these super yachts and associated marina villages are being lauded but the costs and adverse impacts are not. No more such additional facilities should be built without professional independent assessment of need and economic viability.

There is a pressing need is to manage the impacts of the growing numbers of weekend recreational fishers and their needs, especially for more boat ramps. Many boat ramp sites are not well built or managed and carelessly discarded fish wastes attract crocodiles. Education and management of increasing numbers of these fishers is a priority. Fishers want a safe fishing experience and management should focus on that

MARITIME INDUSTRY AND PORTS

As ports expand with the mining boom more channels are deepened or dredged. Mining of the Goorganga Wetlands for oil shale could involve dredging yet another a shipping channel in the Whitsundays and environmental damage to the State and commonwealth Marine Parks and problems with coastal dredge spoil disposal. How feasible is it to build pipelines and conveyor belts out from the shoreline or use other technologies to avoid further dredging? After every rainfall multiple sediment plumes stream from the Whitsunday mainland. We have the distressing images. Is there a recognised limit to the amount of dredging the GBR can tolerate? Does anyone know?

If little action is taken to address climate change eventually we may need to build an inland canal along the eastern seaboard of Australia if its environmental impacts could be mitigated. Where for example would be put all the excavated soil? This would protect against the impacts of rising sea levels and higher intensity cyclones and storms. It would mean foreshore mangroves and other vegetation could be left in place to improve the coast's resilience to such events and improve biodiversity protection. More foreshore vegetation would have room to retreat as sea levels rise. Sand transport processes along the coast and seagrass beds would improve. Land lost to the inland canal could be offset with a wildlife corridor of Nature Refuges paid for through fees shipping would pay to use the canal. These fees would be possible from the money shipping saved by using the canal rather than the Great Barrier Reef Lagoon, which as corals acidified, would provide less protection from Pacific storms.

AQUACULTURE – LAND OR SEA BASED

It is too easy for species to escape during floods and other natural disasters within coastal areas, so only native fish species local to the area should be in aquaculture farms. Land-based aquaculture farms attract native birds and are not desirable because of that impact on biodiversity. Aquaculture farmers are then tempted to kill those birds illegally and when they do they are usually not caught because the farms are well out of sight and many miles from oversight authorities. For those reasons as well as the native wetlands that are displaced by aquaculture farms, their size and numbers should be limited in each coastal bioregion. Comprehensive monitoring of their impacts on water quality and surrounding biodiversity are also needed for good coastal management. Sea-based aquaculture is too risky in the GBR Lagoon as it brings higher levels of disease.

RURAL LAND USE

Monitoring of rural land use impacts on coastal areas and remediation of harmful impacts is the most pressing need. Peri-urban areas in particular need special attention as they usually consist of 5 ha lots where landowners often lack the skills and time to manage the land and its biodiversity, and weeds and other introduced species can become a problem. This is where a strong catchment group and other forms of agricultural and biodiversity extension can make a big difference, as people are often willing to learn, and knowledgeable staff who know the area can provide an important coastal management education service.

COMMERCIAL FISHING

Monitoring and enforcement are the main needs.

RECREATION AND TOURISM

Cont..pg 25

Whitsundays start to groan under strain of growing tourism pressure

Islands' squeeze ruining the fun

Melissa Maugeri
TRAVEL DESK

IT'S a mecca for backpackers and celebrities alike, but as the number of watercraft plying the impossibly blue waters of the Whitsundays increases, some fear we could be loving it to death.

Estimates put the number of boats traveling through the region at 1700 each week.

Every year the region attracts more than 600,000 visitors and the Whitsundays has more than 760 commercially registered boats and 14,000 recreational boats.

This week Grant Lewis, skipper of the schooner Providence, decided to head further north.

"It's very crowded, saturation point in some areas," Mr Lewis says.

"The amount of boats com-

ing in is increasing, and they are getting bigger too."

His boat has catered almost exclusively to international tourists, and Mr Lewis says many were disappointed when they pulled up at places such as Whitehaven Beach.

"They think because it's a national park they are going to a remote area and then there are boats and people everywhere," Mr Lewis said.

According to Queensland Parks and Wildlife Service central region director Keith Twyford, high visitor use of some islands in the Whitsundays is having a significant effect on the environment and the quality of visitor experiences.

He says popular areas such as Tongue Point and Whitehaven Beach need better infrastructure.

In a soon-to-be-released strategy for the region, the Queensland Parks and Wildlife Service is flagging a moratorium on issuing new commercial activity permits for Tongue Point at the northern end of the Whitsundays.



TOO popular? ... sunbathers enjoy lazing on the deck of Grant Lewis's yacht Providence.

Picture: Bruce Miller

on issuing new commercial activity permits for Tongue Point at the northern end of the Whitsundays.

Mr Twyford said the narrow walkway there could not cope with the crowds of people trying to walk the track, which has caused erosion and vegetation damage. There is no proposal to limit visitors to Whitehaven, but Mr Twyford says a cap on numbers might be considered in the future.

"It's always a real challenge not to kill the goose that laid the golden egg," he says.

"There is no other place like Whitehaven Beach, but there are plenty of nice places where it is not as crowded."

In a paper delivered at the recent Ecotourism Australia conference in Townsville, Mr Twyford said it was vital for different levels of government to work together to protect the islands, beaches and adjoining

marine areas. One option was to encourage future growth in other parts of the islands.

"There is room for other operators," Mr Twyford says.

"Large areas of the Whitsundays and down to Mackay are rarely visited."

He says that while some areas should remain uncrowded, other islands like Scawfell Island near Mackay were suited for future tourism growth.

He says the Whitsunday and

Mackay Islands Visitor Management Strategy is a key tool to ensure tourism in the region is environmentally sustainable and visitors enjoy the experience.

But Mr Lewis plans to offer a different experience for tourists away from the Whitsundays. His yacht will now ply the waters off Magnetic Island, taking daytrippers for gourmet picnics on deserted beaches.

The local laws and industry regulation are often in place to address adverse impacts but the resources for enforcement usually are not. There are limits to the carrying capacity and resilience of ecosystems and these limits are usually unknown. The lack of adequate green Open Space in booming coal towns like Mackay and tourist towns like Airlie Beach means more human pressure on coastal foreshores and islands.

Monitoring of recreation and tourism impacts on coastal urban areas and tourism access areas will be needed to build better management, design and planning along the coast for these uses. It is the natural unique environment most tourists want to see and managing that is the priority.

TOURISM USE

Monitoring, research and management to provide the best possible tourist experience of a region yet protect the biodiversity values of that region are the priorities. That should come before making the biggest amount of revenue from tourists. They are more than cash cows. Tourism needs should not overshadow the needs of the community as it builds resentment and is not sustainable long-term.

RECREATIONAL ACTIVITIES AND FACILITIES

There is more demand for these facilities as the population booms in Central Queensland from the mining boom. The State is adopting a User Pays approach to building and running these facilities yet they provide an important recreational function for communities and should receive state subsidy as they affect quality of life and have values that are not measured in the current economic system. They can also play an important role in educating people about how to care for the coast yet have not traditionally been used in this way. Many focus on sport now as there are many young families in the community but as the community ages they will have different

functions and local and state authorities could work with community groups to research the best way to utilise and improve usage of these facilities. They can be the heart of a community.

PUBLIC ACCESS

This should be more than a narrow path or alley access to the beach through high rise development. Public access should be tied in with the public's right to visual enjoyment of places of high scenic values along the coast. These rights should also be linked with public responsibility to protect and care for such places.

The public should not have right of access where that right causes high environmental damage. Roads at ground level to Mission Beach have led to the deaths of many Cassowaries, an ancient endangered species, and too much contact between this species and humans. This development is an example of how coastal development should not be done.

Public access to turtle nesting and shorebird nesting sites should also be restricted or banned during these times.

DRIVING ON BEACHES AND DUNES

Forbidden to the general public except during emergencies because of the adverse impacts on foreshore and marine life and danger to other beach users. Needs funding for enforcement.

RECREATIONAL FISHING

See comments on boat ramps. Work with Sunfish on research to ensure education of the public and fishers to minimise any adverse impacts on fisheries.

CONSERVATION OF COAST

This will mean no more clearing of remnant ecosystems for housing and tourism developments and developing a network of linkages across coastal landscapes to protect biodiversity and other ecosystem values. More research and biomonitoring needs to be done for better management. Community capacity to biomonitor the coast and climate change impacts needs to be built up as there will never be enough funding for state and local agencies to do this alone.

AREAS OF CONSERVATION SIGNIFICANCE

There are more than have been mapped along the coast in the existing regional planning schemes. We need to map and protect areas of local conservation significance as well as state significance. The local government act allows Councils to create their own local tree protection areas and areas of other conservation significance but many Councils choose not to do so. Yet it important to map and link important local fragments of conservation significance to protect biodiversity and the "sense of place" that makes a community unique.

DUNE CONSERVATION

Protection of dunes should be mandatory because of the role they play in protecting foreshores from wind and storm surge damage. Clearing and flattening of dunes for foreshore development is an ongoing problem. Heavy fines should accrue, as well as education about their values.

WATER QUALITY

Mainly covered by the new Reef Water Quality Plan and actions taken to implement it for each coastal catchment along the Great Barrier Reef. There is an ongoing need for funding to address improvements in water quality within catchments, as well as a need for legislation to require vegetated riparian buffer zones along coastal waterways.

Commonwealth and State funding for sewage treatment plants along the coast is an ongoing need as well as the need for new innovative technologies to treat sewage within each home so it lessens the need for central treatment plants.

SCENIC COASTAL LANDSCAPES

Simply no legislative protection with enforcement powers. The steady pollution of these landscapes will continue as long as development continues along headlands and foreshores in areas of high scenic beauty value.

COASTAL HAZARDS

Covered earlier. Need for research and mapping to measure levels of risk from coastal natural hazards and require actions to minimise those risks e.g. storm surge, storm tide, high winds and coastal flooding. All affected by rate of sea level rise with climate change so need to keep regional mapping current as the situation changes, and establish long-term monitoring sites.

Also consider what constitutes coastal hazards for wildlife e.g. loss of wetlands for migratory birds, and address those man-made hazards.

CLIMATE CHANGE

One of the main challenges to sustainable coastal development in Queensland will be mitigating the impacts of climate change. Future trends in greenhouse gas emissions are the product of complex interactions between driving forces such as population growth, economic growth and technological change.

Climate change impacts will affect every section of the state coastal Management Plan yet it is treated as only one of the sections of the Plan. Climate Change impacts and mitigation strategies needs to be included in each section.

Regional population growth along the coast is increasing and most people are choosing to live in flood plains close to estuaries or close to beaches, areas of high natural hazards along the coast. This places increasing amounts of urban infrastructure in areas more susceptible to damage from natural events and wind, storm, cyclone, erosion and storm surge and storm tide damage at a time when rising sea levels will make the damage costs even higher in the future.

This also comes at a time when changes in torts law in Queensland makes Councils even less accountable for getting town planning decisions wrong and allowing building in flood plains and close to the foreshores.

The homeowner choosing to live in high natural hazard areas will increasingly have to bear their own costs for trying to mitigate natural hazard damages. While this "buyer beware" policy sounds fair it represents poor planning as it allows more damage costs to occur in a community.

As insurance companies withdraw even more support for covering such damage costs by refusing to insure infrastructure which is poorly sited, homeowners and businesses in high natural hazard areas will have to pass along the costs of their damages to the community in one form or another.

Compassionate fundraising events for victims inevitably take money away from other areas of need where it could have been spent. Communities experiencing rapid erosion from more intensive storm events and sea level rise will lobby local government very hard for assistance, and this also distracts busy officials and scarce resources away from other matters which also need addressing and which can be fixed.

The "buyer beware" approach also ignores the fact that many people coming to coastal Queensland towns and cities are from elsewhere, and often not familiar with local and regional natural hazard impacts, or where to get information on them. They trust local governments to have excluded development within high natural hazard areas.

It can also be difficult for Council planners to have good information on the levels of risk of natural hazard areas. Historical records of past hazard events are usually too short (<100 years) and often incomplete.

Many Councils lack the financial resources to assess the probabilities of return events of natural hazard events.

The main need is for regional assessments of these areas of high natural hazard risks and the impacts of climate change on their probabilities, increase in intensity and expanded effects. This will have to be done at the State and/or federal levels, and kept up to date as needed.

It must then be mandatory for Councils to integrate this information into their town planning schemes, not simply to "have regard to" this information. The policy towards coastal planning should be one of Planned Retreat, with no further government assistance given to coastal areas which become at higher risk of natural hazards as sea levels rise and rainfall and winds increases in intensity and frequency causing more flooding and raising the levels of frequently inundated flood plains.

Consideration should be given to those affected being eligible for some relocation funding from the Greenhouse Gases Emissions Trading Schemes permits fund discussed by Ross Garnaut's Emissions Trading Scheme Discussion Paper (March 2008). By those affected I mean people who were

formerly not in mapped coastal high natural hazard areas, (e.g. EPA's coastal management districts) but have become so over time.

In areas such as sandy beaches, more vulnerable to erosion than rocky cliffs, research has shown that for every metre in sea level rise there could be up to 100 m erosion inland from the shore. Current town planning schemes are not preparing for this other than to raise minimum building heights to match conservative predictions in sea level rise. Given the accelerating rates of glacial icemelt from terrestrial parts of Antarctica and Greenland we need to expect much higher rates of sea level rise in the future. Records from these regions show past episodes of rapid glacial melt leading to rapid rises in world sea levels.

TIDAL INUNDATION FROM STORMS AND SEA LEVEL RISE

This can be expected to increase in frequency and intensity and climate change escalates. Timely and updated mapping of areas of high risk from these natural hazards will be needed for each coastal region. These should also take into account the eventual loss of much of the protection afforded by the coral Reef from ocean wave action as increasing acidification of the Great Barrier Reef Lagoon destroyed the Reef's coral.

Coastal low-lying river towns such as Mackay can also experience severe river and creek flooding coinciding with tidal inundation, as happened during the 1918 cyclone when some 508 mm (20 inches) of rain fell in the prior week. The Pioneer River flood peaked two hours prior to the peak tidal height. This resulted in higher water levels in Mackay than they would have been if inundation had only been from the cyclone, but not as high as they would have been had the flood peak coincided with the peak tide. Tides are also higher Dec-Feb than at other times of the year. Planning for tidal inundation should also factor in river flood impacts in river towns, and information about those combined impacts should be widely distributed to the community e.g. schools, libraries and information packs for newcomers to the town.

Currently Councils are only required to plan for floods, and make a conservative allowance for sea level rise e.g. raising the minimum building height and planning emergency evacuation routes. They are not required to exclude development in storm surge zones. Because of the lack of a long enough historical record of return storm events and the random nature of such events, there is uncertainty about the recurrence intervals of severe storm and cyclone events. Mackay City Council classed the 1918 cyclone as a 1/500 year event using an extrapolation from historical data. Research by a geomorphologist, Dr. Jonathan Nott from JCU's Cairns campus on broken coral ridges along the Great Barrier Reef coastline and offshore islands covering the past 5,000 years, showed that this cyclone was more likely to have a return interval of 200-280 years. This is much closer to the 100 years time frame city planners work with. Given the predicted increase in cyclone intensities as global warming continues, the 1918 cyclone could be expected to reduce its recurrence level perhaps becoming a 1/100 year event.

We need more research and new technologies and modeling to get improved predictions on the recurrence interval of such natural hazard events. We

need to build much further back from the coast than we do now to mitigate such impacts, as man-made barriers are prohibitively expensive for most people and Councils, and eventually fail. Any funding spent on such barriers, including levees should be subject to professional economic and scientific oversight to see if it could be better spent on other mitigation efforts. The prolonged and intensive rainfall of Feb 15, 2008 actually caused water to back up behind the levees. The levee valves could not be opened because the Pioneer River levels were higher than the flood levels behind the levees. Levees did little to help people in low lying areas who were flooded because of the high intensity of the rainfall and the lack of a place where floodwaters could drain.

COASTAL EROSION

In areas such as sandy beaches, more vulnerable to erosion than rocky cliffs, research has shown that for every metre in sea level rise there could be up to 100 m erosion inland from the shore. Current town planning schemes are not preparing for this other than to raise minimum building heights to match conservative predictions in sea level rise. Given the accelerating rates of glacial ice-melt from terrestrial parts of Antarctica and Greenland we need to expect much higher rates of sea level rise in the future. Records from these regions show past episodes of rapid glacial melt leading to rapid rises in world sea levels. There is great uncertainty in

The EPA Coastal Management Districts in the current Coastal Plan have had some success at excluding inappropriate development in areas of high natural hazard, and preventing in-filling of wetlands in those districts. The districts need to be expanded to prevent development close by which would impact vegetation and increase erosion in the CMDs.

Clearing of mangroves and other estuarine ecosystems causes erosion in estuaries. Modifications, clearing and a severe dieback episode of mangroves within the Pioneer River estuary in Mackay have caused a net decline in their areas and increased erosion since 1948 (Jupiter 2007).

All that protects mangroves and salt marshes from being cleared is the Fisheries Act. Even then a permit from the Department of Primary Industries and Fisheries can be given and Offsets allowed for clearing. This happened when the East West Connector Road parallel to Malcolmson Street in Mackay was declared State Significant and the Dept. of Main Roads was allowed to clear >12 ha of mangroves (90,000 trees) and salt marsh that represented 22% of the salt marsh area within the Pioneer Estuary. It was never clear how Mackay City Council's assessment manager for the project used the Offset, but it has been obvious there has been not net gain for the mangroves and salt marshes in the estuary.

Councils are producing coastal management plans to control coastal erosion at the local level and these need more interdisciplinary professional oversight. Regional Natural Resource Management Groups are helping to fund such programs and also may lack the expertise to assess their erosion control values. They invariably consist of revegetation programs using native coastal plants. They often are implemented without taking into account other variables that make the value of the replanting scheme dubious. Such

variables could include planning decisions that have placed housing developments too close to the foreshore. This increases stormwater runoff (more frequent and large volume stormwater flow rates affecting erosion and salinity rates and introducing weed species from the development's gardens). Stormwater pipe infrastructure also changes the near shore coastal hydrology e.g. loss of freshwater lens close to the surface affecting the ability of dependent vegetation such as trees to survive and reduce erosion. Nearby residents may have erosion control structures which block the flow of replenishing beach sands and the revegetated area is eroded out in the next storm.

Regional remnant coastal ecosystems not classified as Endangered under the Vegetation Management Act are being routinely cleared in urban areas for housing developments and high rise tourism accommodation. This affects foreshore erosion rates and the loss of visual amenity and biodiversity along the coast, as well as long-term ecosystem services and tourism values (all coastal towns look alike). No more coastal remnant vegetation should be removed and such development should be kept well back from the foreshores to cope with increased erosion as weather events intensify and sea levels rise. Any proven need for State infrastructure is already covered by the State when needed infrastructure is declared to be "State Significant".

CULTURAL VALUES

Perceptions of landscape values vary with culture. This should be acknowledged when educating the public on what coastal natural values need protection.

INDIGENOUS AREAS AND TRADITIONAL OWNERSHIP

To be resourced adequately so these areas can be recorded, mapped and their values transmitted to the general public via an education program. Indigenous legends tell of extensive past sea level changes and they may be much to learn on how indigenous ancestors coped with those changes.

As sea levels rise there may be a need to rescue some coastal artifacts and establish Maritime Coastal Museums or Centres where indigenous and non-indigenous heritage can be protected and stored. These should be eligible for funding from the new Greenhouse Gases Emissions Trading Scheme Permit sales.

BUILT HERITAGE

To be moved wherever possible out of areas of high natural hazard risks. See comments for Indigenous Areas etc. above.

COASTAL PROTECTION AND MANAGEMENT RESPONSIBILITIES

More needs than can be funded so identifying and addressing priority needs will be important. The coast can best be protected by keeping inappropriate development off the near coast areas, and people can best be protected if they build back from the foreshores and out of the floodplains. All levels of government need to work with community groups to research and develop best practice management plans to monitor and protect the coast. Databases need to be built so collected data can be organised for use in modeling and

management plans. The predicted loss of many of the corals of the Great Barrier Reef to global warming impacts will greatly affect the coast, especially erosion rates of the coast yet many people have not faced this change. The State has the responsibility to address carbon emissions from its large mining industry sector to reduce impacts of global warming on the Reef.

COASTAL PLANNING

Much planning responsibility is being put in the hands of Councils not adequately resourced, educated or equipped to handle it. The shortage of trained planners, especially those with environmental, climate change, ecology, biodiversity, coastal engineering and geomorphology and integrated green space design (i.e. Urban Ecology) is especially apparent. The State needs to work with universities and the commonwealth government to address this need for more interdisciplinary-trained planners. Supplemental funding is probably required so Councils can top up the salaries and additional training of planners.

Councilors also need education in the above and to be aware of their planning responsibilities as they have the power to over-rule the advice of their planners. Councilors should provide a Statement of Reasons to the community and state agencies when they go against the advice of their Planning Departments.

It is a conflict of interest to allow a developer to hire his/her own consultants to undertake environmental and other impact assessments. Consultants need professional certification from their own professional organisations and this certification must also meet State accreditation requirements and be kept up to date with new technologies and information. Councils should then select them with their costs being paid by the developer. Council should consult regularly with the developer so the developer is aware of the amount of these costs and is prepared to meet them before the project continues. The quality of present consultant work is very uneven and we see this as a way of introducing more professional standards and accountability in planning.

We are facing a period of declining and more expensive oil supplies. This will greatly impact transportation fuel and food costs. Along the coast climate change impacts means road, rail, maritime and air transportation networks and hubs close to natural hazard areas will be unavailable in times of disaster, greatly impacting service delivery in times of natural disasters. We will need to give very careful consideration to proposals which plan to build new transportation infrastructure or extend it in areas of present or future high risk natural hazard areas, especially along the coast. Just as we may need an inland canal water transportation system in the future that parallels the coast, we will also need to locate major highways, airports and railways further inland. This would assist in getting towns and cities moved out of coastal natural hazard areas and leave a natural area buffer zone and wildlife corridor along the coast which would assist in protecting coastal biodiversity. We need to be planning and mapping this buffer and corridor zone now.

DEVELOPMENT ASSESSMENT

Too often state agencies have merely an advisory role. This applies in particular to EPA except for within CMDs.

The Integrated Planning Act was intended to be interdisciplinary in its approach taking into account advice from all relevant state agencies. The result has been like the blind person trying to identify an elephant by being given piecemeal parts. It is not integrated to produce a system that can deliver healthy quality of life good town planning outcomes. Open Space development in particular is very ad hoc and not linked across the landscape. Developments are considered one at a time. Their impact on their neighbours and the region around them is not systematically considered except in the coarsest of ways within town planning scheme zoning. This is a problem in coastal planning as we have migratory species using our coastal wetlands and nearshore marine systems. Their needs are often ignored in planning decisions.

We need sustainable urban systems modeling that can integrate the many variables that need to be considered so we can understand the short and long term multi-scale impacts of a development. This applies especially to urban coastal developments where natural hazard impacts are often more severe and complex than on inland towns.

MANAGEMENT OF COASTAL RESERVES

The Department of Natural Resources and Water (DNR&W) is in charge of joint trusteeship arrangements with Councils to place unallocated state coastal land into Coastal Reserves. Councils are required under the Lands Act 1994 to produce a Management Plan. I will relate our experience with one such joint trusteeship Environmental Reserve to show what can go wrong from the community's perspective.

Sandfly Creek Environmental Reserve was declared last year following a Most Appropriate Use study by DNR&W. It is managed in joint trusteeship between DNR&W and Mackay City Council as an Environmental Reserve. It lies close to the mouth of the Pioneer River on the south bank. It has an internationally significant high tide wader roost site for many species of migratory birds on a sand dune within the Sandfly Creek wetlands. These migratory shorebird species are protected under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). Inexplicably, DNR&W, against the advice in its MAU study chose to exclude the sand dune from the Environmental Reserve. It also chose to allow a concrete road 2.46 m (8 ft) wide gazetted road reserve through the reserve and past the high tide wader roost site. The road is part of the Mayor Boyd's pride and joy, the Blue Riverwalk along the foreshore and south bank of the Pioneer River.

The problem is that the waders are sensitive to human disturbance, especially the Lesser Sand Plover that is present in internationally significant numbers according to annual bird surveys done by the Queensland Wader Studies Group. The road allows many people to pass and disturb the site. QWSG requested that the road be removed or that a moat be built to protect the birds from human disturbance, important as the birds need to build up fat reserves to undertake the annual migration to the Arctic Circle annually to breed. In an earlier 2003 Shorebird Survey report to Mackay City Council they had requested that any source of human disturbance be at least 200 m from the high tide wader roost site. This advice was ignored.

It is obvious that Mackay City Council, who employed a Landscape Architect and not an ecologist to design the layout of the Reserve, planned to use the site as Open Space for passive public recreation. This type of Open Spec use is clearly separated out in the Integrated Planning Act from use as an Environmental Reserve where protecting biodiversity is paramount. The SCMP needs to address this issue of confusion over use of Open Space and Environmental Reserves.

Mackay City Council also recently sold a lot of land adjacent to the Reserve for high rise tourism development. This high rise would be within metres of the high tide wader roost site. The lot was sold against advice from EPBC Compliance in Canberra because of the adverse impact of high rise development on the waders. These waders have been gradually displaced from other roost sites along the south Mackay foreshores. The Reserve high tide wader roost site was a final refuge on the south side of the Pioneer River.

The Mackay Council Planning Scheme included a 100 m wetland buffer zone on the east and west side of the development site. But this does not guarantee that no development will occur within the buffer zone, as under the Fisheries Act its width is determined by the presence of protected marine plants. If these plants are absent the width of the buffer could be zero (Conversation with Tim Mulherin, DPI&F Minister and Richard Stewart, DPI&F staff Mackay)

Case Study: The Sandfly Creek Reserve

Information in submissions to Council about the impacts of the proposed design of the Reserve by the community, including local bird watchers, was also ignored. Money from the Council's Natural Environment Levy was used to build the concrete roadway. There is no interest by DNR&W to build the protective moat or remove the concrete road. Letters to DNR&W about the problem and how Council has gone against its Trusteeship responsibilities under the Land Act have been ignored.

The Coastal Plan needs mechanisms for accountability from state and local agencies when mistakes such as the above have been made. The Reserve does not meet its responsibilities to conserve and protect biodiversity of national and international significance. To date Mackay City Council has not produced even a Management Plan for the Reserve although we understand a draft is in progress. The Reserve has been planned since 2001. This is why we need timelines. Mackay Conservation Group's requests to become joint trustees of future coastal environmental reserves with DNR&W have been refused on the grounds of lack of capacity but we think we could do a much better job than the Council on conserving biodiversity in this Reserve.

SCIENCE, INFORMATION AND EDUCATION

Funding for programs and implementation is crucial to the success of the State Coastal Management Plan.

Given the poor incorporation rates of the State Coastal Management Plan into local planning schemes, there is an urgent need for increased funding for proper implementation of the Plan in this aspect. Training of local government personnel on enforcing the State Coastal Management Plan, or enforcing conditions on development approvals imposed to protect the coastal zone is imperative.

Not all regions along the coast have universities with staff who can address local research needs. We lack that local capacity. We need help from the State to make sure that adequate skilled people are available to get priority research projects done that support the SCMP. The universities need assistance with resources to assist the community in getting research and monitoring programs established and run successfully. We need to establish long-term monitoring programs of changes in biodiversity in response to adverse natural and human impacts so we can find out how to make regional ecosystems more resilient to climate change. The same need applies to urban systems. We need to know how to adjust to other impacts such as the end of cheap oil. The regional universities have a large role to play in building local community capacity in coastal management and science and need to be supported.

Ends.