Submission to Hunter River Estuary Management Study and Management Plan

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Historical Context

The opportunity to make a submission at the early stage of the Hunter Estuary Management Study project that aims to establish a shared vision on the long-term sustainability of the estuary and to participate in the preliminary workshop is appreciated. Unfortunately the Newcastle Port Environs Concept Plan (KBR 2003) was particularly remiss in making what amounted to an ambit claim for industrial development land but pre-empted meaningful community input by making fait accompli decisions concerning the Austeel Project.

There is serious concern that the Management Study plan has come far too late in the sorry history of development in the Estuary to effectively achieve its stated aims. To have any real weight, any such plan must take the historical context into consideration, critically review the historical documentary evidence of the already parlous state of ecological decline in the estuary and reverse recent decisions which continue to accelerate this decline.

In 1973, the Coffey Report stated, in the context of development planning and pollution preventative measures:

> ***The time is now ripe to take a new look at the whole exercise so that future actions will conform to a plan which takes into account the pertinent social, economic and environmental aspects and ensures the best use of the land in the public interest***. (Coffey 1973, p. 72)

The recommendation was ignored. In 1983, the status of planning in the estuary was again raised. The Moss (1983) report stated that the concept of **a single ecological unit linking both Kooragang island and Hexham Swamp was considered as the ideal way to maximise the conservation value of the Hunter Estuary.**

Once again the recommendation was ignored. The degradation process that had been going on as a result of ad hoc and destructive development since first settlement more that 200 years ago has continued unabated under a succession of governments of both political persuasions. In the meantime there has been numerous expert reports documenting various aspects of the history of decline in the ecological characteristics of the Hunter Estuary, as a whole or its components, and recommending changes in practices designed to stop further decline, eg:

- Geering and Winning (1993);
- Geering (1995);
- Healthy Rivers Commission (2001);
- Healthy Rivers Commission (2002)
- Healthy Rivers Commission (2003);
- Kingsford and Ferster Levy (1997);
- Kingsford *et al.* (1998);
- Maddock (2003a);
- Maddock 2003b);
- Maddock and Stuart (2003);
- Manly Hydraulics (2002);
- Moss (1983);
- NSW NPWS (1998);
- NSW NPWS (2002);
- Patterson Britton and Partners (2000);
- Smith (1991);
- Straw (1999);
- Svoboda (1996);
- Watkins (1993);
- Williams et al (2000).

Maddock (2004a) gave a chronological summary of critical events and political decisions since the 1970s which have shaped the development and health of the Hunter Estuary which reveals the current climate of inappropriate development strategies.

Matters of Principle

NSW and Federal and Local Government Policies

Federal, State and Local Government Polices have adopted Ecologically Sustainable Development as the fundamental underlying principle for environmental and development assessment actions. In the context of this principle, the Federal Government has become a party to a number of international conventions and treaties which bring obligations to protect of wetlands and their waterbird species, with flow-on acceptance of these obligations by State and Local Government. Specific wetland management policies have been adopted by both the Federal and State Governments putting the principle into action, and both Newcastle and Port Stephens Councils have been a party to a sister wetlands protection agreement with Kushiro in Japan.

Maddock (2003b) provided analyses of requirements and obligations under these undertakings. The analyses show that the recent development proposals have seriously violated requirements, obligations and undertakings and have fallen well short of fulfilling the fundamental requirements for ecologically sustainable development. The industrial complex concepts for the Hunter Estuary violate the most important principles expressed by:

- the Ramsar Convention for Protection of Wetlands of International Importance;
- the Japan and China (JAMBA and CAMBA) International Treaties on Protection of Migratory Birds and their Environment;
- the 1994 Affiliation Agreement on protection, cooperative research and education for sister wetlands between the Port Stephens Council, Newcastle City Council, Kooragang Wetland Rehabilitation Project, the Wetlands Centre and the Kushiro Region, Japan;
- the Department of Land and Water Conservation (1996) NSW Wetlands Management Policy;
- the Federal Government Environment Protection and Biodiversity Conservation Act 1999;
- the NSW National Parks and Wildlife Service (1998) Kooragang Nature Reserve and Hexham Swamp Nature Reserve Plan of Management;
- The Healthy Rivers Commission (2001, 2002, 2003) reports of the Independent Inquiry into the Hunter River system;
- inclusion of the estuary in the Shorebird Site Network of the East Asian Australasian Flyway (Wetlands International and partners);
- key findings of a number of important and highly reputable expert reports on Kooragang's migratory waders and their habitat. (Maddock 2003b).

Although the Newcastle Port Environs Concept Proposal (KBR 2003) acknowledged the presence of some of these as constraints, it did not spell out what those constraints were. Government rhetoric associated with announcements of development proposals has failed to inform the community. The majority of community members are largely ignorant of the treaties and conventions and their requirements. Although some media items submitted by conservation groups to air their grievances have been given space, there has been virtually no serious attempt by the media to investigate and publish the conservation side of the argument.

Precautionary Principle

Both Federal and State environmental legislation require the operation of the Precautionary Principle. It is also an obligation under the Ramsar Convention, which states:

> **Activities need to be governed by the precautionary principle. "*If the impact of specific actions is not clearly understood, actions should be prohibited even if there is insufficient evidence to prove direct link between the activities and resulting wetland .*"** (Davis 1994, Appendix 10, p 168)

The weight of evidence provided by expert studies of the recent and past developments in the Estuary is that they have not been ecologically sustainable. The net result has been a continuing decline in the ecological characteristics, resulting in loss of biodiversity and declining populations of wildlife species and vegetation communities. The current proposals provide cumulative negative impacts on an already fragile system.

Ecological Systems

In order to achieve the fundamental aim of maintaining ecologically sustainable development, evaluation and acceptance of development proposals must be based on a sound understanding of ecological principles and the operations of ecological systems. Ecology is not a simple matter of linearly connected cause and effect reactions. The whole basis of ecology is the operation of highly complex networks of interactive and interdependent chemical, physical and biological processes which do not recognise arbitrary and artificial boundaries invented for the convenience of humans. Inputs to a local sub-system may originate well beyond the boundaries set down for location of a development and outputs necessary for the health of distant systems originate within the Hunter.

For example, one set of the inputs to the Hunter Estuary complex system is carried to the Hunter by migratory waders which breed in the arctic circle and depend on input from that system. The arctic system in turn depends on input brought back by the migrants returning from the Hunter. The health of the Hunter Estuary system also depends on input brought in from the oceans by tides and from the upper catchment of the estuary by freshwater flow and periodic flooding.

Closer to home, the total estuarine system depends on complex interdependent interactions between the river and tributary channels and a mosaic of mudflats, beaches, sand spits, salt marsh, mangrove forests, freshwater wetlands and intermittently wet and dry grassland in the surrounding catchment. Their impacts are considerably more complex than the simple sum of the properties of their parts.

This concept was well recognised by the reports by the Healthy Rivers Commission. The Healthy Rivers Commission (2001) Draft Report (Appendix A2.2, p. 65) stressed that sustainability requires that an ecosystem possess:

- ***ecological integrity (inherent functional stability);***
- ***resilience (a capacity to absorb disturbance without significant change in system behaviour).***

It further stressed that human impacts lead to simplification of ecosystems, reducing their capacity to adapt, with consequent loss of flora, fauna and the benefits and services that they provide to the wider environment and human activity. Management and performance monitoring must be based on ***"an understanding of the functions of key ecosystems, not just protection of ecosystem components"*** and that ***"further impacts on ecological features and functions must fall within the capacity of the ecosystems to tolerate such changes".***

The Healthy Rivers Commission (2003) Final Report further stated:

- ***attempts to resolve local problems or manage a specific element of the system will generally fail to improve the health of the river as a whole;***
- ***river management must focus on the needs of the whole system;***
- ***the properties of a natural system are different from the sum of the properties of the constituent parts***. (Principle 2, p 6)

The Report also stressed the importance of considering cumulative impacts, which ***"are seldom assessed or acknowledged to the detriment of the river"*** and that ***"the longer term protection of river health requires that planning consider not only land capability but also the capacity of the river to withstand the impacts of inappropriate development or poorly managed land"*** and the need for recognition of the ***"very real limits to which both land and rivers can be pushed"*** (Principle 2, pp 7-8).

The Healthy Rivers Commission (2001, 2002 and 2003) reports painted a very dismal picture of the failure of past Governments to come to grips with the fundamental requirements for achieving ecologically sustainable development and made strong recommendations on how the deficiencies can be addressed. So far there has been no acknowledgment of the importance of these reports nor any level of acceptance of the recommendations.

EIS processes are set up to approach environmental problems inherent in development proposals by separate site-specific studies that assess ecological components in a "tick-a-box presence or absence of species" approach, rather than assessing whole system issues. It is interesting to note that the Department of Infrastructure, Planning and Natural Resources (DIPNR) recently acknowledged that developers were avoiding addressing cumulative environmental effects on coastal protection by taking advantage of a

loophole in SEPP71. They were breaking up the assessment process into smaller units and took action to close the loophole which enabled:

> ***splitting projects up and by stealth getting big scale developments under the guise of multiple small scale applications.*** (DIPNR 2004)

The policy was amended to close the loophole. However, the Government has been actually pursuing a similar process by dividing the EIS processes for the steel industries and associated infrastructure proposals into similar "small scale applications", the EISs for which have failed to address the total ecosystem and cumulative effects. For example, the EIS for the South Arm dredging and its associated infrastructure (GHD 2003), although it made a number of proposals for disposing of the dredge spoil, disavowed any responsibility for assessing the environmental impacts of the proposals. These were passed off to separate assessment under the proposals for the different industrial development components.

The failure of past authorities can perhaps be partly explained by ignorance. There is no such excuse now as the weight of the Healthy River Commission Reports is added to the wealth of the other expert studies. The current focus to date has always been, and unfortunately still is on management of ***"ecological components"*** without assessing the total ecosystem or cumulative effects, nor acknowledging the presence of ***"real limits".***

The Hunter Estuary Management Study and Management Plan, must not fail in the same way, or the estuary will continue to decline to the point of total system collapse.

Economically Sustainable Development Inter-generation Equity and Social Values

For too long, Economically Sustainable Development has been a catch cry which tends to mean the earning of short-term dollars and is regarded as the only criterion in judging sustainability and achieving social values, despite lip service rhetoric promising balance between environmental conservation and development. However, the process of continuing degradation of the environment inevitably results in degradation of quality of life for the community, which in turn leads to social problems, a situation which is becoming steadily more evident in the Hunter.

Economic Sustainablity cannot be achieved without having ecological sustainability as a necessary condition at the same time. Another fundamental principle embodied in government policies on development is providing for inter-generational equity, where the environment is conserved for future generations. A continuation of more than 200 years of destruction of ecological characteristics of the Hunter Estuary, equivalent to the squandering of ecological capital for short term gain, will destroy the heritage of what is left for future generations.

In the world of financial economics, conserving capital and ensuring that interest on investment provides growth are fundamental principles. Corporations are prosecuted and heavily penalised when they deliberately go into a state of insolvency trading. The same principle should be employed in the case of insolvency trading in ecological capital.

An enterprise that exploits the environment can only be sustainable when the ecological capital is strictly conserved and that the system has the capacity to generate replacement of what is used or degraded. In the case of the Hunter Estuary, the ecological capital is continually being eroded. The system is losing the capacity to regenerate, as evidenced by such examples as the decline in the populations of migratory wader species (see Kingsford and Ferster Levy 1997, Maddock 2003a, Maddock and Stuart 2003, Williams *et al.* 2000) for evidence of population decline.

A careful examination of recent actions and proposals for the Hunter Estuary, along with the existing historical earlier projects, produces the conclusion that the ultimate cumulative outcome will almost completely alienate remaining environmentally sensitive and internationally important wetlands to create one gigantic canal estate of concrete and steel on the shores of a sterile drain (see KBR 2003, Figure S.1):

- the present port and its infrastructure;
- Honeysuckle's concreted foreshore and wall of tall buildings;
- the container terminal replacing the defunct BHP Steelworks;
- the Steel River industrial site;
- the dredged South Arm, with its million tonnes of rock and associated port works;
- buildings of concrete and steel in the Kooragang industrial zone;

- industries on the proposed port-related industrial land proposed next to the Stockton Bridge, obtained by removing it from the Ramsar site;
- the infrastructure corridor across Ash Island, proposed for the use of SEPP74 land connecting the South Arm Port and the Tomago industrial site;
- industrial development on the Tomago Buffer Land;
- the proposed infrastructure corridor across Hexham Swamp;
- rail infrastructure at Sandgate.

Dredging and shoreline modification in the South Arm, filling of the Tomago land and the route of the infrastructure corridors above flood level, paving and buildings will create major changes to the natural hydrological processes throughout the system, especially in areas adjacent to the developments. Wetlands will be destroyed or their ecological characteristics significantly modified. Risk of further decline or extinction of threatened waterbird species and migratory waders will be inevitably increased. The capacity of an already heavily stressed system to adapt will be pushed further towards its "real limits" to a state of total collapse.

For example, the land identified as SEPP74 on Ash island and the Tomago Buffer Land provides critical habitat for threatened species, and forms an interdependent and interactive unit within the total estuary system. In a letter to the Premier, Maddock (2004b, p. 3) stated that the land forms a significant proportion of what is left of the Hunter Estuary's very high conservation value land, critical for the survival of 46 wildlife species, protected under the provisions of one or more of the State Environmental Planning and Assessment Act, State and Federal Threatened Species legislation, Migratory Species Provisions of the EPBC Act, Bonn Convention and JAMBA and CAMBA treaties:

- 17 migratory bird species protected under the Federal EPBC ACT (1999);
- 6 migratory wader species listed as populations of International Importance and one of National Importance;
- the Australasian Bittern, listed as Globally Critically Endangered by Wetland International and Vulnerable under NSW TSC Act (1995);
- the Black-necked Stork, listed as Globally Endangered by IUCN and Endangered by NSW TSC Act (1995);
- 8 waterbird species listed as Vulnerable under the NSWTSC Act (1995);
- the Painted Snipe, a wader species listed as Vulnerable on the Threatened Species List of the EPBC Act (1999);
- 3 migratory wader species with declining world populations;
- 13 migratory wader species with declining populations in the Hunter Estuary since the 1970s;
- 22 bird species, which can be classified as Near Threatened, placed under significant threat of being pushed to Threatened status or to extinction in the Estuary;
- one protected migratory wader (Sharp-tailed Sandpiper), not currently classified as Threatened or Near Threatened, of which almost the entire Hunter population is dependent for its survival in the estuary on the habitat threatened under SEPP 74 and therefore could be driven to extinction in the region;
- the Green and Golden Bell Frog, listed as endangered under the NSWTSC Act and Vulnerable under the EPBC (1999) Act;
- the Grey-headed Flying Fox, listed as vulnerable under the EPBC Act (1999);
- 6 bats listed as Vulnerable under the NSWTSC Act (1995).

Figures 2 and 3 (Maddock and Stuart 2003 b,c) in Maddock and Stuart (2003), which mark locations used by the above species, clearly show that developments on Ash Island and the Tomago Buffer Land covered by SEPP 74 will inevitably destroy or seriously degrade key habitat for these species.

Since Maddock and Stuart (2003) was written, there have been further records on Ash island that confirm the importance of the habitat used by threatened and rare species of wader being placed at unacceptable risk by proposed developments within the designated SEPP74 land. A pair of Painted Snipe, listed as vulnerable under the NSWTSC Act (1995), rare in the Hunter and only recently placed on the EPBC (1999) list of threatened species, has been regularly observed in and near a wetland near the NW end of Ash Island (HBOC records). Since 1950, the species has been in substantial decline Australia wide, possibly as great as 90%. It is rare and unpredictable throughout its range (Oring *et al.* 2003, p. 11).

Also during 2004, other rare species for the Hunter have been observed at Ash Island wetlands (HBOC records):

- Broad-billed Sandpiper;
- Buff-breasted Sandpiper;
- Long-toed Stint

The folly of ecologically unsustainable habitat destruction such has been such a prominent characteristic of the management of the Hunter Estuary is eloquently expounded in Suzuki (2003):

- it is the ecosystem that is the fundamental "capital" on which all life depends (p.95);
- we offer money to the dispossessed as if cash can compensate for things that are unique and irreplaceable (p.95);
- we rip up the Earth's productivity in order to keep on growing, even though this conflicts with the most fundamental rule in economics – you don't spend all your capital if you want to avoid bankruptcy (p 101);
- fiscal responsibility dictates that we live on our interest and not touch capital (p 128).

The BirdLife International (2004) analysis of the state of the world's birds stated that:

- ***biodiversity - the variability among living things and ecological systems – is the world's natural wealth. Our lives depend on it, both in obvious ways and in ways that we are only just beginning to understand.*** (p. 4);
- ***to be sustainable in the long term, humanity's consumption of renewable natural resources must stay within limits of the Earth's biological capacity.*** (p. 5)

Climate Change and future Development

The current proposals for development in the Estuary have ignored the potential impact of climate change. There is now strong support in the scientific community that global warming and sea level rise are a reality, with resulting changes to coastal and estuarine conditions and negative impacts on many wildlife species. CSIRO scientists (cited in Wilton 2003a, Wilton 2003b), for example, predict that Australia's coast will suffer from more frequent wild storms, endure more floods, greater depth of flooding and wider areas of inundation over the next 50 years. More consideration should be given to planning for building developments and infrastructure that will exist for the next 50 years

These issues will need to be addressed in planning for the Hunter Estuary. KBR (2003), in the Port Environs Concept Proposal implied that the Hunter Estuary has deep-water port potential:

> ***The Port has a growth and development capacity not matched by other ports in New South Wales and which is unique on the East Coast of Australia, due to Newcastle's potential for deep water access.*** (p. 7)

This concept outlined in KBR (2003) was challenged in the Maddock (2003c) submission to the Concept Proposal. KBR (2003) acknowledged that constraints exist and that land filling has had a detrimental effect on the health of the ecosystem, its biodiversity and productivity, but did not really address the problems and did not even consider global warming issues.

GHD (2003) in the EIS on the dredging of the South Arm and associated port works adopted the deep water concept as a statement of fact and proceeded to define dredging and port construction works. Its approach was dismissive of ecological problems and ignored global warming concerns.

The promotion of Newcastle as a natural deep water port is significantly misleading. It is far from a natural deep water body in the same context as Botany Bay and Sydney Harbour. It was originally a shallow delta of numerous islands separated by shallow channels and has been converted to its present form by a long history of engineering works and continuous dredging, which have largely destroyed the ecological characteristics of the estuary system (see Kingsford and Ferster Levy 1997). In the process, there have also been adverse impacts on the ecology of Stockton Beach (Umwelt 2002). The combination of present deficiencies, impacts of proposed future developments, combined with the problems predicted as a result of global warming raise serious concerns:

- The port cannot currently cope with the large number of ships using the port, frequently resulting in long queues of vessels waiting out the sea. There has already been one wreck in recent history (the Sygna). Even the proposed additional berths will not change the fact that queuing will continue. The

predicted more frequent and violent storm episodes in the future make this queue much more vulnerable.

- The bar is not infrequently closed to shipping under storm conditions, which are certain to be worse in the future.
- The channel is narrow and confined between rock walls, which in addition to being a cause of ecological decline in the estuary, make shipping movements vulnerable to human error and technological failure.
- To accommodate the Cape and Panamax type vessels promoted under the future development proposals, the channel has to be dredged beyond the current port limits to the Tourle St Bridge. This requires deepening from an average depth of 1.5 m to as deep as 16 m and the excavation of a swing bay – hardly the characteristic of a natural deep water port.
- One million tonnes of rock have to be used for batter for the channel walls (GHD 2003, p. 6.28). In addition to increasing vulnerability to human error and technological failure, this will add to the long history of adverse ecological decline by altering hydrological conditions during the more frequent flooding predicted under global warming, including changing tidal regimes resulting from sea level rise, destruction of mudflat and mangrove habitat.
- Using about 6.4 million cubic metres of spoil to raise 1.5 square kilometres of Tomago land, apparently under consideration despite the departure of Austeel (Kirkwood 2005), will place a very large plug in flood-prone land adjacent to the North Arm channel and the Kooragang Nature Reserve. The land will be more vulnerable than at present under the predicted more frequent and bigger flood events.
- Similarly, using fill to raise the level of an infrastructure corridor across Ash Island, an even more vulnerable flood plain area than Tomago, will significantly change hydrology and have negative impacts on the adjacent Ramsar reserve.

The recent tsunami disaster raises a timely warning. Destruction of coastal ecosystems such as foreshore mangroves and replacing them with resorts and other industries leaves human communities exposed to natural forces and vulnerable to disasters. Destruction of remaining natural systems in the Hunter Estuary exposes the system to collapse and renders it highly vulnerable to events predicted to occur as a result of climate change.

Achieving a Balance

Government rhetoric has made much of attempts to achieve a "balance" between environment and development in the Estuary, as indicated in various correspondence from Ministers and NSW Government Agencies to people and organisations who have challenged policies and actions on substantive, research-based grounds. These letters have simply repeated the same old message, but none of them attempted to address the substantive issues raised eg.:

- ***The NSW Department of Environment and Conservation (DEC) has for some time been involved in a whole-of Government process that aims to deliver sustainable balance between environment al conservation and employment generating initiatives around the port of Newcastle*** (Debus 2004).
- ***The Department of Infrastructure, Planning and Natural Resources is actively involved in strategic planning exercises to ensure the valuable assets in the Newcastle Port environs are protected and a sustainable balance between development and conservation is achieved*** (Gellatly 2004a).
- ***NSW Government agencies are concerned about future economic growth and environmental protection and enhancement of the Hunter Region. As a consequence, considerable work has been undertaken in recent years by various government agencies to achieve a sustainable balance between environmental conservation and employment generating activities for the Lower Hunter Region.*** (Gellatly 2004b)
- ***The concept proposal is an important first stage in developing a balance between industry and the environment***…..(Gellatly 2003).
- ***The Concept Proposal covers both the Hunter River Estuary and Hexham Swamp, and aims to achieve a balance between further development, and environmental conservation and protection of cultural heritage*** (O'Gorman 2003).

The Port Environs Concept Proposal (KBR 2003) stated that the port environs are:

> ***regionally, nationally and, in some instances, internationally significant in terms of their conservation value and port and airport related development potential. In order to ensure***

> ***that these valuable assets are protected and that a sustainable balance is achieved between development and conservation this Concept proposal begins a process of consultation and planning to secure the long term future of the area.*** (p.x)

Unfortunately, although acknowledging decline in conservation value due to past development, the proposal document failed to recognise that the balance during the past history has been very much in favour of development. The Concept Plan's proposals to carve up what is left of the Estuary still put the balance very much in favour of development and failed to take due consideration of ecologically sustainable development.

Balance cannot be achieved by trading off pieces of environmentally sensitive land when there is no proper consideration of damage already sustained by the total ecosystem. Its capacity for ecological functioning is severely impaired by total system damage and it has suffered so much over the last 200 years that it is approaching or has already reached its "real limits". Similar consideration is needed in the case of providing environmental corridors. KBR (2003) regarded providing corridors within industrial land as a feasible proposition if appropriately designed, but such design is only feasible if it can be sustained by the total ecosystem.

The Estuary Study and Plan has an opportunity to support the concept of the Green Corridor between the coast and the Watagans being pursued by a consortium of community groups. The estuary component should be incorporated in the Plan and steps taken to ensure that it is properly designed, effectively functional and its ecological integrity protected.

Compensation and Mitigation

As part of the strategy for supposedly achieving "balance", it has become fashionable to trade off destruction or degradation of ecologically sensitive wetlands by offering rehabilitation of wetland habitat elsewhere or construction of artificial wetlands. Any such projects within the Estuary must form part of an integrated management strategy under the Estuary Management Study. Analyses of evidence from world-wide sources (Maddock 2003a, 2003b) showed that such compensation and mitigation projects are faulty. They are generally unsuccessful, with a very high percentage of failure to replace loss of wetland function and to allow sufficient time for success to be evaluated. The degradation or destruction they are supposed to compensate for is commenced before the compensatory projects can be properly evaluated to ensure that appropriate no net loss of ecological function has occurred, a process that may take as long as 10-20 years.

Compensatory projects in the estuary were proposed in 2001 when a Referral was submitted under the EPBC Act (1999) (Environment Australia 2001). The Referral stated:

> ***The NSW government is currently investigating options for future industrial development in the Hunter Region. To mitigate for potential impacts, the NPWS has established the Lower Hunter Estuary Rehabilitation Program (LHERP). This Program aims to advance a number of projects, some of which have been in the planning for several years.***

The projects submitted under the Referral may have been in the planning for several years, but the aim of the planning was to provide rehabilitation for past historical damage, not for trading off against the new suite of proposals. For example, Geering and Winning (1993) identified a number of sites as opportunities for restoration of lost habitat or creation of new sites in the Estuary.

In 1999, The Premier's Department blocked a project organised under the umbrella of the Kooragang Wetland Rehabilitation project to restore tidal flow to the Tomago wetlands to regenerate salt marsh habitat that had been lost as a result of installation of floodgates in the 1970s (Maddock 2004a). In the light of more recent happenings, the decision appears to have been taken because of impending development proposals for the Tomago land, which had been kept secret up to that time.

This decision was taken despite support expressed in expert studies of the ecology of the Estuary. Geering (1993, pp. 32-33) stressed the importance of creation of suitable high tide roosts if the Hunter Estuary is to continue as an important site for migratory shore birds. Hope was expressed that the proposed KWRP tidal restoration project would result in a formerly important high tide roost in the Tomago – Fullerton Cove area would once again become a suitable night roost site. A declaration was made in the tidal project EIS (Patterson Britton 1998), that the realisation of objectives in the Kooragang Nature Reserve Plan of Management and in international treaties could not be fulfilled if the project did not proceed (p.24). Department of Fisheries regarded it as the most important project for fish habitat in NSW. It is understood that, since the withdrawal of Austeel, the project is being reinstituted and that some tidal flow has been restored.

It is important that the project now proceed as originally planned, but it should not be touted as a compensation project for new desecration projects, but as a project to attempt to restore ecological function lost in the past.

Because of the past loss and degradation of migratory wader and fish nursery habitat in the Estuary, there are virtually no locations where projects to provide new habitat could be placed. The remaining habitat is under such severe pressure from the proposed developments and the likelihood of projects successfully replacing lost ecological functions is so remote that no meaningful compensation program could be guaranteed. In any case, application of the Precautionary Principle would demand that the proposed development not be commenced until the compensatory project was properly trialed and evaluated for success, a process which would require many years.

The Study Area

The Parsons Brinckerhoff (2004) Fact Sheet defined the study area as the Hunter River and its tributaries to their tidal limits. It did not indicate whether the study is confined only to the channels of the river and tributaries, nor does it indicate whether the flood plain wetlands on the floodplains bordering the tidal channels form part of the focus. In the light of the above comments on the concept of the interactive characteristics of a total ecological system, a study which does not address the interactive nature of these associated wetlands cannot hope to establish a "shared vision of the long term sustainability of the estuary's ecosystem".

The permanent and ephemeral wetlands on the flood plains close to the channels of the river and tributaries play an important interactive role and are affected by the river system. Periodic floods inundate the floodplain wetlands. When the flooding meets incoming tide, the nature of the inundation changes as the salty tidal and freshwater mix and overflow the banks. Hydrology drives the operation of the systems.

Important species of waterbirds using the flood plain wetlands regularly move to and from each other and between them and the wetlands of the tidal channels. For example, migratory waders such as the Bar-tailed and Black-tailed Godwit move on a regular daily basis between roosts on Ash Island wetlands and estuary sites at Stockton Sand Spit and the Kooragang Dykes, and foraging areas in Fullerton Cove, depending on the relationship between the tides, time of day and weather conditions. There are continuous movements of species between the Hunter Estuary Ramsar Sites and the adjacent catchment wetlands.

There has been long-term decline in the ecological characteristics of the various flood plain wetlands of the tidal reaches, such as Seaham Swamp, Irrawang Swamp, Richardsons Swamp, Hexham Swamp, the Shortland Wetlands, the Tomago Buffer Land, Ash and Kooragang Islands wetlands over the last 30 years and more. The whole tidal channel and floodplain wetlands must be treated as a single ecological unit in the spirit of the advice given in Moss (1983). Cumulative effects across the whole system must form an integral part of the study. The relationships between the Ramsar sites and the catchment surrounds of the sites require special attention in the context of Australia's obligations under the Ramsar Convention (see Maddock 2003a, 2003b).

The Estuary Management Study and plan needs to develop strategies to ensure the conservation of these flood plain wetlands and maintain their capacity to interact with the wetlands within the estuary channels themselves.

The Hunter Estuary Ramsar Site

Management of the Hunter Estuary Ramsar site does not only depend on management actions within the boundary of the site but also its surrounding catchment and must be controlled by the requirements of the Federal EPBC Regulations of 2000. Under the wise Use Principle (Davis 1994, Appendix 9), planning, assessment and evaluation cover projects upstream, the wetland itself and other projects which affect the wetland. The Estuary Management Plan must ensure that any actions within the catchment of the Ramsar site do not have significant negative impacts on the Ramsar site itself.

The choice of lands allocated to port-related industrial purposes and designated as industrial potential has serious implications to the viability of the Ramsar site and Australia's obligations under the Ramsar Convention (Maddock 2003b, Maddock 2003c). Because the wetlands of Ash Island belong to the same integrated ecosystem as the remainder of the Estuary, they should have been included in the original listing of the Kooragang Nature Reserve as a Ramsar site in 1984. No appropriate ecological consideration was given in making the politically expedient decision to separate Ash Island and the industrial site on Kooragang

Island. The decision has led to the whole of the Ramsar site system being put at risk of collapse as the Government continues to pressure for the establishment of industries not compatible with Ramsar Wise Use Principles within the sensitive environmental land.

The Estuary Plan must prevent the proposed excision of land near Stockton Bridge from the Ramsar site for industrial potential land (KBR 2003, Figure S1). The Figure in this document gives an aerial view of the relationship between the proposed land and other key sites within the Ramsar reserve. The Ramsar Convention requires that removal of land from a Ramsar site can only be undertaken if the project is in the Urgent National Interest (Davis 1994). The land has been clearly demonstrated as having significant importance to migratory waders and in no way can it be said that excision of the land is in the urgent national interest (Maddock 2003c)

The Ramsar Convention has a provision that the Ramsar Bureau be notified when a listed site is under significant threat. The wetland is placed on the Montreux Record if the ecological character of the listed wetland:

> ***has changed, is changing or is likely to change as a result of technical development, pollution or human interference*** (Davis 1994, Article 3.20)

Listing on the Record results in a monitoring process being instituted by the Bureau. Although the current culture among Contracting Parties to the Convention is to tend to restrict such listing to developing countries, the message in the Ramsar hand book is clear. The ecological character of the Hunter Estuary has changed for the worst since listing in 1984 and therefore the Estuary should be listed on the Montreux Record. The Ramsar Conference of Contracting Parties in Brisbane in 1996 passed a unanimousa recommendation that Australia consider ***"prudent and feasible alternatives to proposed major developments within a number of Australian Ramsar sites"*** and invited Australian authorities to consider ***"inclusion of sites in the Montreux Record, where this would assist substantially in monitoring or restoring the ecological character of Ramsar sites under serious threat".*** (Ramsar Convention 1996 Recommendation 6.17.4),

The Government's current development policies will clearly ensure that the changes for the worst will still continue. As the Estuary Management Study and Plan covers the tidal reaches of the Estuary, it therefore includes the Ramsar site. Ramsar issues and management strategies, governed by the obligations under the Convention and the EPBC Act and its Ramsar Management Regulations will have to be an integral part of the Estuary Study and Plan. Because the site is already in ecological decline, a request should be made to the Federal Minister for the Environment to take steps to have the Ramsar listed on the Montreux Record. If the study is prevented from having amendments made to State Government decisions which will worsen the rate of negative change, it will be even more imperative that such action be taken.

Actions Needed under the Management Plan

The Hunter Estuary Management Plan must ensure that:

- all current proposals that do not satisfy the requirements of Ecologically Sustainable Development are rescinded;
- Ecologically Sustainable Development, the Precautionary Principle and Inter-generation Equity are installed as the fundamental guiding principles for the plan
- a structure is established that restricts development within the estuary to those which satisfy the Ramsar Convention's requirements for Wise Use, and fulfil Australia's obligations under the Ramsar Convention, Bonn Convention, CAMBA and Jamba Treaties.

To successfully achieve the aim of the plan to become one that "***will provide management actions to achieve a healthy, productive and attractive Hunter River Estuary"*** and to ***"establish a shared vision on the long term sustainability of the Estuary's ecosystem***", the following actions should be instituted:

- Implications of obligations under the Bonn Convention, Ramsar Convention, CAMBA and JAMBA Treaties as guiding principles in management of the estuary and development projects in a way that circumvents the putting forward of development proposals inappropriate for the sensitive estuary ecosystem to withstand should be spelled out.
- Limitation of wetland mitigation and compensation projects should be made explicit to curb attempts to use inappropriate types of projects, established in inappropriate locations, with little or no chance of providing replacement of ecological function, as trade off for proposing developments which degrade or destroy sensitive "green field" sites.

- Pressure must be put on the Government to immediately withdraw the call for new expressions of interest in establishing industry in the SEPP 74 land, to abandon any plans for filling Tomago Buffer Land and construction of an industrial corridor across Ash Island and for immediate cancellation of SEPP 74.
- The Government must be pressured to restore the original zoning of Environmental Protection in the Draft Newcastle LEP 2003 to Ash Island and to change the zoning of the Tomago Buffer Land to Environmental Protection.
- The KWRP project for restoration of tidal flushing and salt marsh on the Tomago Buffer Land and adjacent KNR land must be restored to full status.
- Immediately initiate a process to have Ash Island and Tomago Buffer Land added to the Hunter Estuary Ramsar site;
- Press for the withdrawal of the portion of land just north of Stockton Bridge, currently part of the Kooragang Nature Reserve section of the Ramsar Site, from consideration as port related industrial land as shown in the Newcastle Port Environs Concept Proposal.
- Establish a formal permanent mechanism for the Hunter Estuary Ramsar site to fulfil the requirements of the EPBC Regulations 2000. This requires public consultation on decisions and actions that may have a significant impact on a Ramsar wetland and the involvement in management of the site by people who have a particular interest in, and may be affected by the management of the wetland.
- Press for redirection of efforts for economic development in the estuary towards attracting only ecologically sustainable enterprises which satisfy Ramsar Convention Wise Use obligations, compatible with maintaining ecological integrity in the estuary's total ecosystem.
- Redirect other efforts in the Hunter as a whole towards attracting only those industries that do not desecrate any more green-field sites but can make use of available heavily degraded brown-field sites.
- Demonstrate a genuine commitment to Ecologically Sustainable Development by supporting implementation of the Green Corridor Proposal for Stockton Bight to the Watagans put forward by the Green Corridor Coalition of 40 community groups. Include the Tomago Buffer Land, Ash Island, Kooragang Nature Reserve, the Shortland wetlands and Hexham Swamp in the corridor. Soundly base the implementation on an understanding of the key ecosystems and provide strong protection against inappropriate development.
- Initiate necessary procedures to have the Hunter Estuary Ramsar site listed on the Montreux Record on the grounds that the ecological character has changed for the worst, is still in the process of continuing change and is likely to further change as a result of development, pollution and human interference.
- Recognise the important ecological role of interactions between the flood plain wetlands in the Lower Williams and Hunter River and develop management strategies to conserve the wetlands and maintain this interaction within the total ecosystem.

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