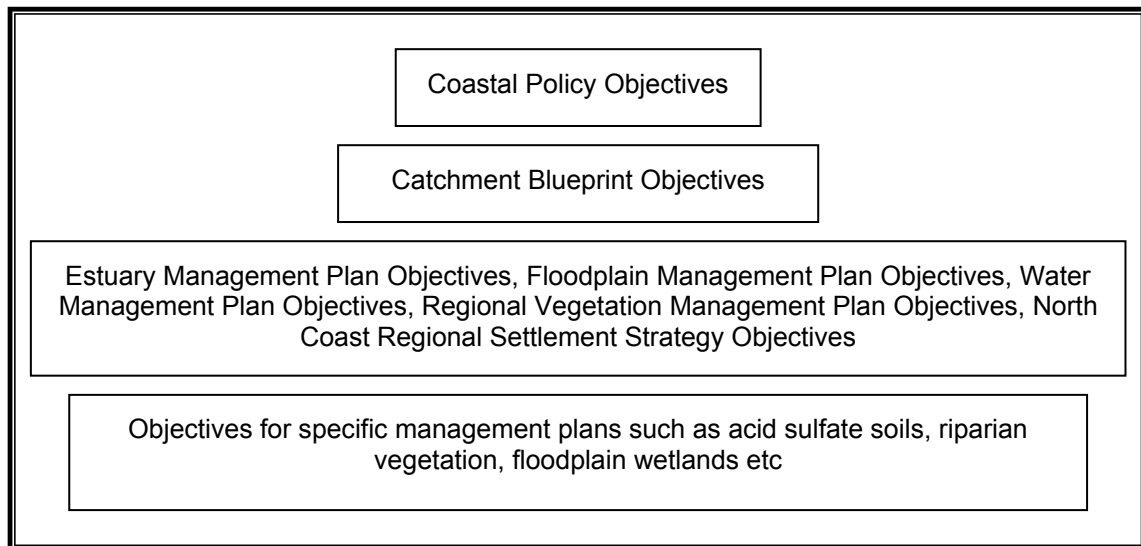


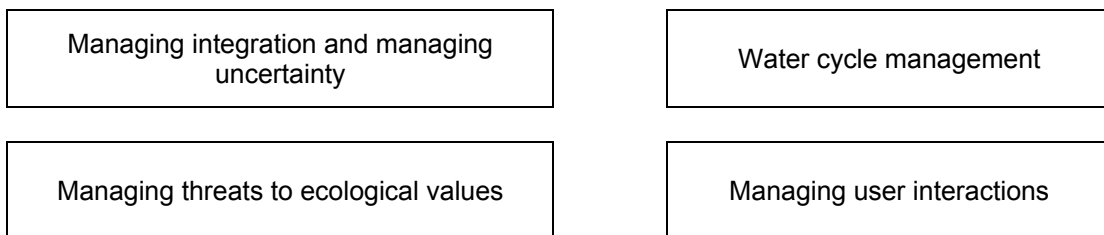
4.0 VALUES AND OBJECTIVES

The concepts of ecological, cultural and community values are incorporated into the estuary management process by defining clear objectives, targets and indicators for estuary health.

For the Clarence estuary, these objectives have been developed within a nested system that takes into account the objectives of other strategic initiatives for a sustainably managed coastal zone in NSW.



Objectives for the Clarence Estuary have been identified in relation to four broad issue clusters or themes:



4.1 OBJECTIVES - MANAGING INTEGRATION AND UNCERTAINTY

The following objectives define the key outcomes promoted by the Estuary Management Plan in relation to integration, focus and clarity:

- To facilitate effective participation in the management process by all relevant stakeholders.
- To facilitate communication between all levels of government about objectives and priorities.
- To provide a decision making framework that is based on sustainability priorities at a systemic scale.

- To ensure agreement, before the action plan is finalised, on objectives, responsibility and mechanisms to make responsible parties accountable.
- To facilitate carefully targeted, issues focused research that enhances adaptive management of the estuary and floodplain by providing stakeholders with a better understanding of key aspects of the natural system and its interaction with community aspirations for use of the estuary and floodplain.
- To ensure that local landholders and residents have clear information about the management process – how decisions are made and by whom, what actions have been implemented and environmental outcomes.
- To maximise opportunities for funding of strategies that address issues that have medium to long term time frames for change, and requires a combination of planning, works and maintenance components.
- To promote rapid regional implementation of state policy initiatives and conversely to promote clear and direct advice to state policy makers about regional successes and outstanding issues.
- To facilitate consistent data collection and storage so that information about the estuary is readily accessible to decision makers, implementers, auditors and the broader community.
- To foster opportunities for appropriately sharing risks, costs and benefits of management decisions.

4.2 OBJECTIVES - WATER CYCLE MANAGEMENT

The following objectives define the key outcomes promoted by the Estuary Management Plan in relation to all aspects of water, eg creek management:

- Integrated management of water supply, stormwater and wastewater for both urban and rural residential development, across all local government areas.
- Water quality in the estuary is suitable for the protection of aquatic ecosystems (ie water quality meets the ANZECC guidelines for protection of aquatic ecosystems, as amended by the Healthy Rivers Commission 1999).
- Water quality in the estuary is suitable for secondary contact recreation (boating), primary contact recreation (swimming) at selected locations, and for the supply of seafood that is safe to be consumed by humans after cooking.
- Tidal flows are maintained and restored in estuarine tributaries, where restoring tidal ventilation provides for better ecological outcomes than the current situation.
- Threats of contamination of groundwater are minimised.
- Minimise the risks of flooding to infrastructure and property, consistent with protecting important ecological values.
- Protect and restore floodplain habitats, especially wetlands.

4.3 OBJECTIVES - MANAGING THREATS TO ECOLOGICAL VALUES

The following objectives define the key outcomes promoted by the Estuary Management Plan in relation to ecological values:

- To minimise blockages to fish passage, focusing on locations where removing blockages to fish passage also has other benefits, such as enhanced flushing or restoration of estuarine inundation to wetland areas.
- To restore riparian vegetation, with a priority for the tributaries in the lower estuary.
- To protect and restore high conservation value wetlands such as Lake Wooloweyah, Everlasting Swamp and Tucabia Swamp.
- To reduce acid and low dissolved oxygen discharges from tributary creeks.
- To locate new development in areas where there is a minimum loss of remnant habitat. Note for instance, that very little natural floodplain habitat remains.
- To protect and enhance the health and distribution of seagrass beds, acknowledging significant natural variance in distribution, but major apparent losses from the Clarence estuary over the last 50 years.
- To protect rare habitat types such as saltmarsh and sandbars exposed during high spring tides, particularly in relation to habitat for migratory waders.
- To identify areas for sediment dredging that are consistent with then protection of ecological values in the estuary.

4.4 OBJECTIVES - MANAGING USER INTERACTIONS

The following objectives define the key outcomes promoted by the Estuary Management Plan in relation to community aspirations for estuary and floodplain use:

- To manage interactions between estuary users and ecological values
- To manage fishery resources sustainably, taking into account interactions and cumulative impacts of the commercial, recreational and indigenous sectors.
- To promote and facilitate marine (estuary) based industries which are managed to protect estuary values and provide local employment.
- To manage the sedimentary resources in the estuary in a manner that is consistent with natural sediment sources and sediment transport processes in the estuary.
- To protect Aboriginal sites and provide for access by Aboriginal people wherever possible.
- To plan and regulate recreational use of the waterway to minimise impacts on estuary health.
- To provide for safe commercial (including fishing) and recreational navigation in the estuary.

- To locate and manage new urban development to minimise risks to sensitive aspects of estuary health.
- To provide recreational access and facilities that meet diverse user needs.

5.0 STRATEGIC AND OPERATIONAL DECISION MAKING

5.1 CRITERIA FOR SETTING PRIORITIES

An important estuary and natural resource management issue for the community is the transparency of the decision making process and the ways in which the views of stakeholders are taken into consideration. This section notes a range of criteria that are relevant to decisions about priority actions for achieving a sustainably healthy Clarence estuary. The factors that have been considered when identifying high priority actions are noted below.

- The action addresses an issue of significant community concern (ie it relates to community values that are threatened).
- The action relates to a high risk and high value subcatchment, identified through the resource assessment. These subcatchments were considered to require urgent actions to reduce risks to vulnerable natural, social or cultural values.
- The action addresses a priority objective (or a highly ranked outcome) agreed to by stakeholders.
- The action is identified by a focus group (in this case the Estuary Management Committee) as a high priority.
- There is a high risk attached to a do nothing approach to the issue.
- A high return is expected from investment in this action ie, the action can support further positive cumulative outcomes. For ecological issues, related criteria include:
 - save reaches containing valuable/threatened species;
 - protect areas in the best general condition before those in poor condition;
 - improve degraded reaches, starting from the least damaged; and
 - leave lost causes until last.
- Funds are available for this action (within local resources or through targeted grant schemes).
- Other management resources (eg staff time and skills) are available within local institutions to implement this action.
- The action can achieve recognisable outcomes in a specified time frame (this may be important from the political perspective).
- The action is a step in a broader strategy, and is essential before other actions can be implemented.

These factors are discussed in **Sections 5.1.1 to 5.1.6**. **Sections 6.0 and 7.1** introduce the actions that are considered to be a high priority for the Clarence estuary, on the basis of the analysis in **Sections 5.1.1 to 5.1.6**.

5.1.1 Outstanding issues for the Clarence estuary and floodplain

Nine key issues for the sustainable management of the Clarence estuary were noted in **Section 2.3**. These issues focus on the impacts of inherited and current ASS management, loss/degradation of floodplain habitats (wetland and riparian), demands on fishery resources,

the interaction of sedimentary processes with port and marine industries, and planning for sustainable urban growth. The need for a well integrated and accountable management approach for local natural resources and land use planning is also highlighted.

5.1.2 Ranking Objectives

The objectives noted in **Section 4** have been compared with the sustainability implementation principles identified by the HRC (see **Section 2.2**), with the values noted by the community in workshops about the future of the estuary (see **Section 2**), and with the overall aim of estuary management identified by the Clarence Estuary Management Committee. On this basis, the most important objectives for the future health of the Clarence estuary and its associated floodplain are noted below.

Key objectives for sustainability
<p>Values</p> <p>Water quality in the estuary is suitable for the protection of aquatic ecosystems, for secondary contact recreation, for primary contact recreation at selected locations, and for the supply of seafood that can be safely consumed by humans after cooking.</p> <p>To protect and restore high conservation value riparian vegetation, wetlands and aquatic habitats.</p> <p>To manage fishery and agricultural resources, and other commercial activities, sustainably.</p> <p>To provide recreational access and facilities that meet diverse user needs (also minimising impacts on estuary health).</p> <p>To protect Aboriginal sites and provide for access for Aboriginal people wherever possible.</p>
<p>Managing a natural system</p> <p>To provide a decision making framework that is based on sustainability at the systemic scale.</p> <p>To facilitate carefully targeted, issues focused research that enhances adaptive management of the estuary and floodplain by providing stakeholders with a better understanding of key aspects of the natural system and its interactions with community aspirations for use of the estuary and floodplain.</p> <p>To manage the sedimentary resources of the estuary in a manner that is consistent with natural sediment sources and sediment transport processes in the estuary.</p> <p>To locate new development in areas where there is a minimal loss of high value remnant habitat.</p> <p>Integrated management of water supply, stormwater and wastewater for both urban and rural residential development across all local government areas.</p>
<p>Responsibility and accountability</p> <p>To facilitate consistent data collection and storage so that information about the estuary is readily accessible to decision makers, implementers, auditors and the broader community.</p> <p>To facilitate effective participation in the management process by all relevant stakeholders.</p> <p>To ensure agreement before the action plan is finalised, on objectives, responsibility and mechanisms to make responsible parties accountable.</p>

Key objectives for sustainability (cont)
To promote rapid regional implementation of state policy initiatives and conversely to promote clear and direct advice to state policy makers about regional successes and outstanding issues.
To maximise opportunities for funding of strategies that address issues that have medium to long time frames for change, and require a combination of planning, works and maintenance components.

5.1.3 Resource Evaluation - Sustainability Assessment as a Tool to Identify Priority Areas for Action

The Clarence Estuary Management Study (Umwelt 2002) includes a subcatchment based assessment of values and risks that affect the priority of different parts of the study area for management attention. The assessment considered a range of indicators of estuary and floodplain values, usage, risks and threats and potential to improve condition.

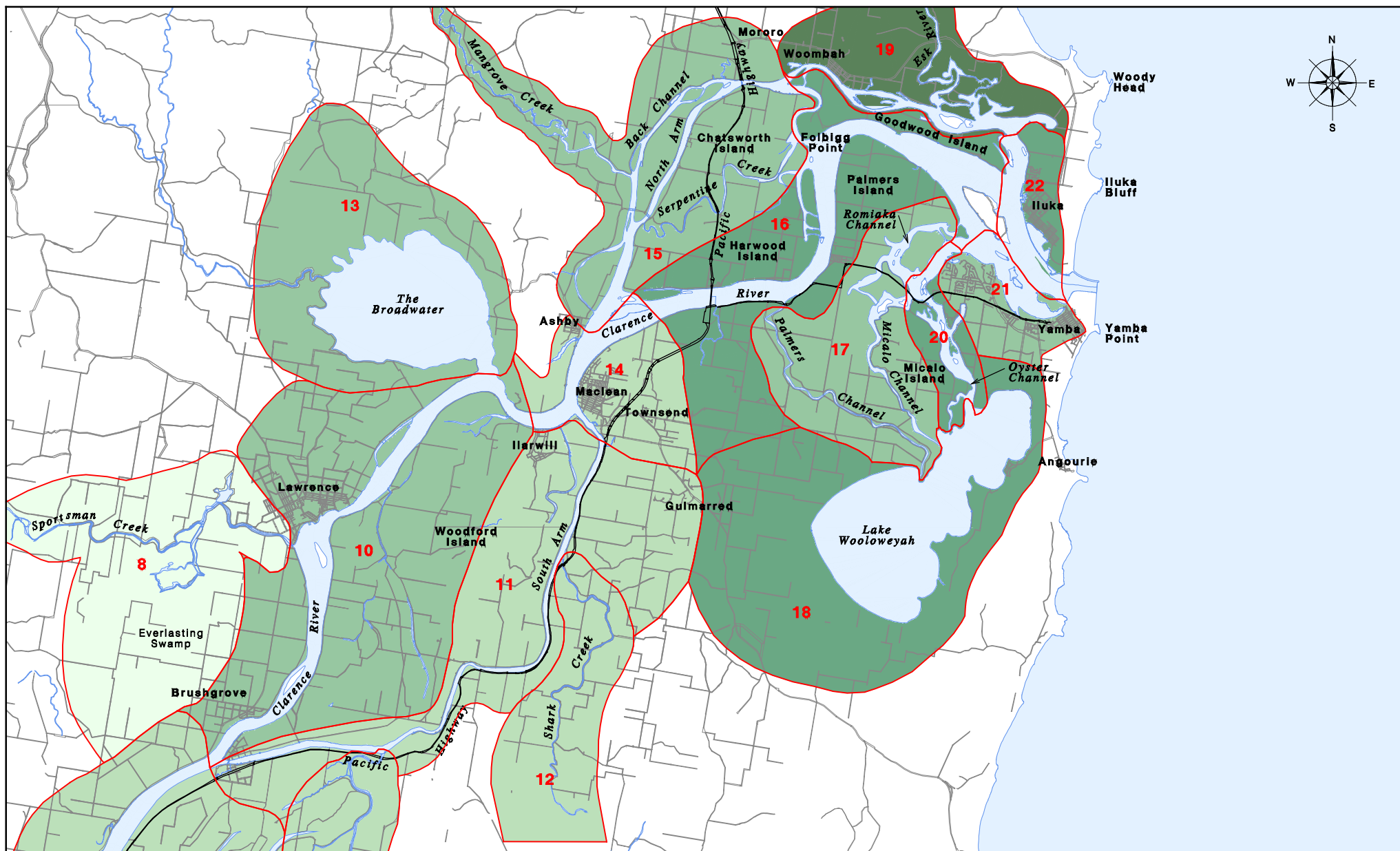
The principal results of the analysis are shown in **Figures 5.1, 5.2 and 5.3**, and a matrix of risks and values is presented in **Table 5.1**. The reach numbers in **Table 5.1** refer to the areas marked in **Figures 5.1 to 5.3**.

Table 5.1 - Risk and value matrix

Value/risk	High value	Moderate value	Low value
High risk	High value/High risk Reach 16 (Harwood, Goodwood and Palmers Islands) Urgent intervention – regulation, education, changed management focus, structures and other physical activities such as replanting etc	High priority intervention, incentives and education, with regulatory enforcement if necessary.	Low value/High risk Reach 5 (Grafton) Less urgent action to reduce risk, with action focused on ensuring risks do not spread to adjoining reaches.
Moderate risk	Reaches 10, 18, 21, 22 (Brushgrove and Ilarwill, Yamba, Iluka, and Lake Wooloweyah). Planning to protect values, plus targeted remedial intervention, incentives for change.	Reaches 9, 11, 12, 14, 15, 17, 20 (Coldstream/Tucabia, South Arm, Shark Creek, Maclean, Chatsworth Island/Mangrove Creek, Micalo and Palmers Channel, Shallow Channel). Proactive planning, with selective remedial action as necessary.	Reaches 2, 4, 6, 7, 8 (Upstream of Grafton, Ulmarra, Swan Creek and Sportsmans Creek) Lower priority, targeted remedial action.
Low risk	High value/Low risk Reach 19 (Esk River) Proactive planning to protect values for the future	Reach 13 (Broadwater) proactive planning and education measures plus monitoring.	Low value/low risk Reaches 1, 3 (upper estuary) Low management priority – monitor condition

The value and threat matrix underpins the suggested management orientation for different parts of the estuary and also contributes to the suggested priority of actions to address specific management issues.

The analysis which is summarised in this matrix shows the nine categories of reaches in relation to values and threats. The high value reaches are concentrated in the lower estuary.



Legend

- Very high number of values
- High number of values
- Moderate number of values
- Low number of values
- Very Low number of values

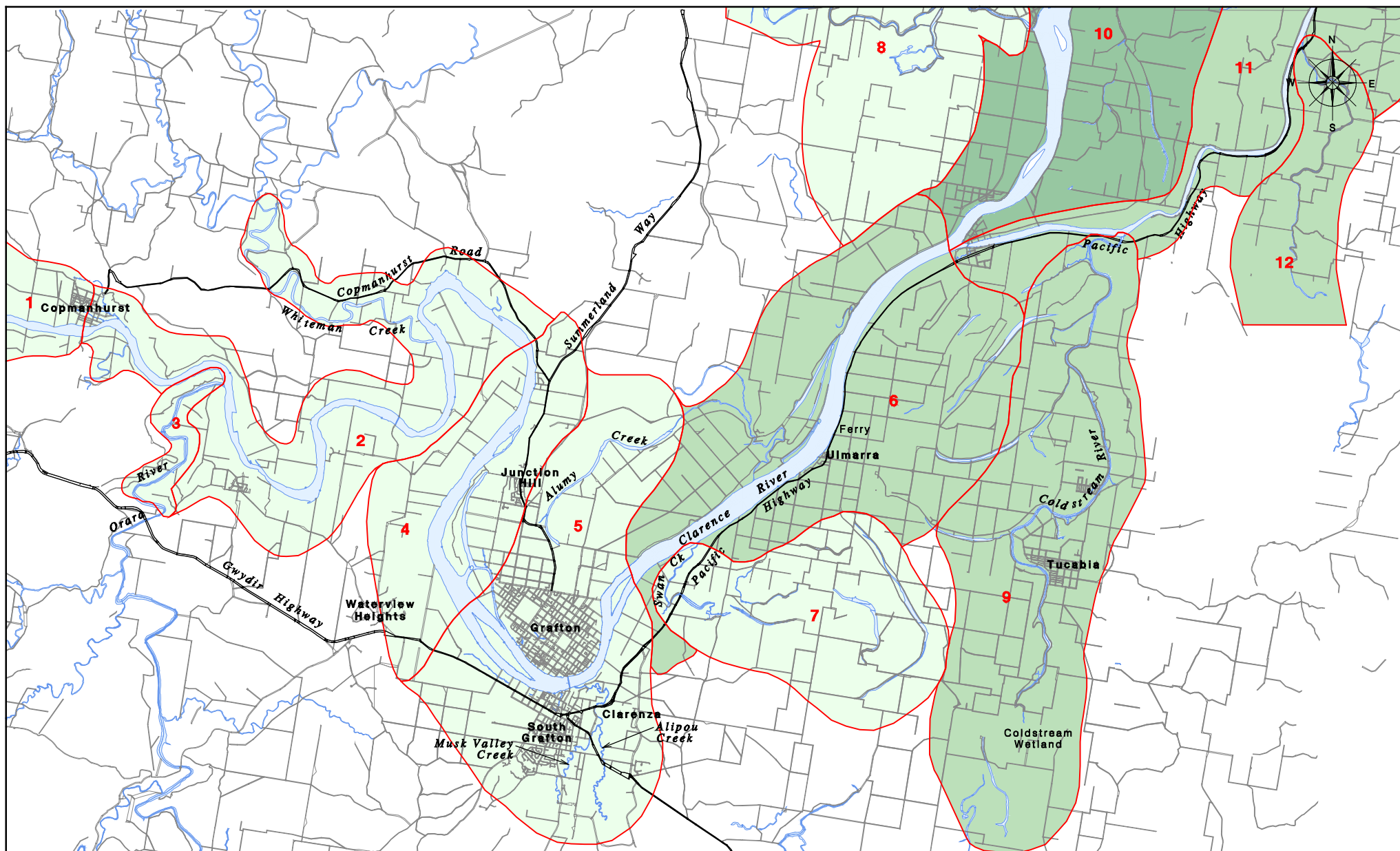
Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.1a
Distribution of Values for
Sustainable Management

A4 Scale 1:170 000

Ref No.:R04_V1/1485_151.dgn



Legend

Very high number of values	Low number of values
High number of values	Very Low number of values
Moderate number of values	

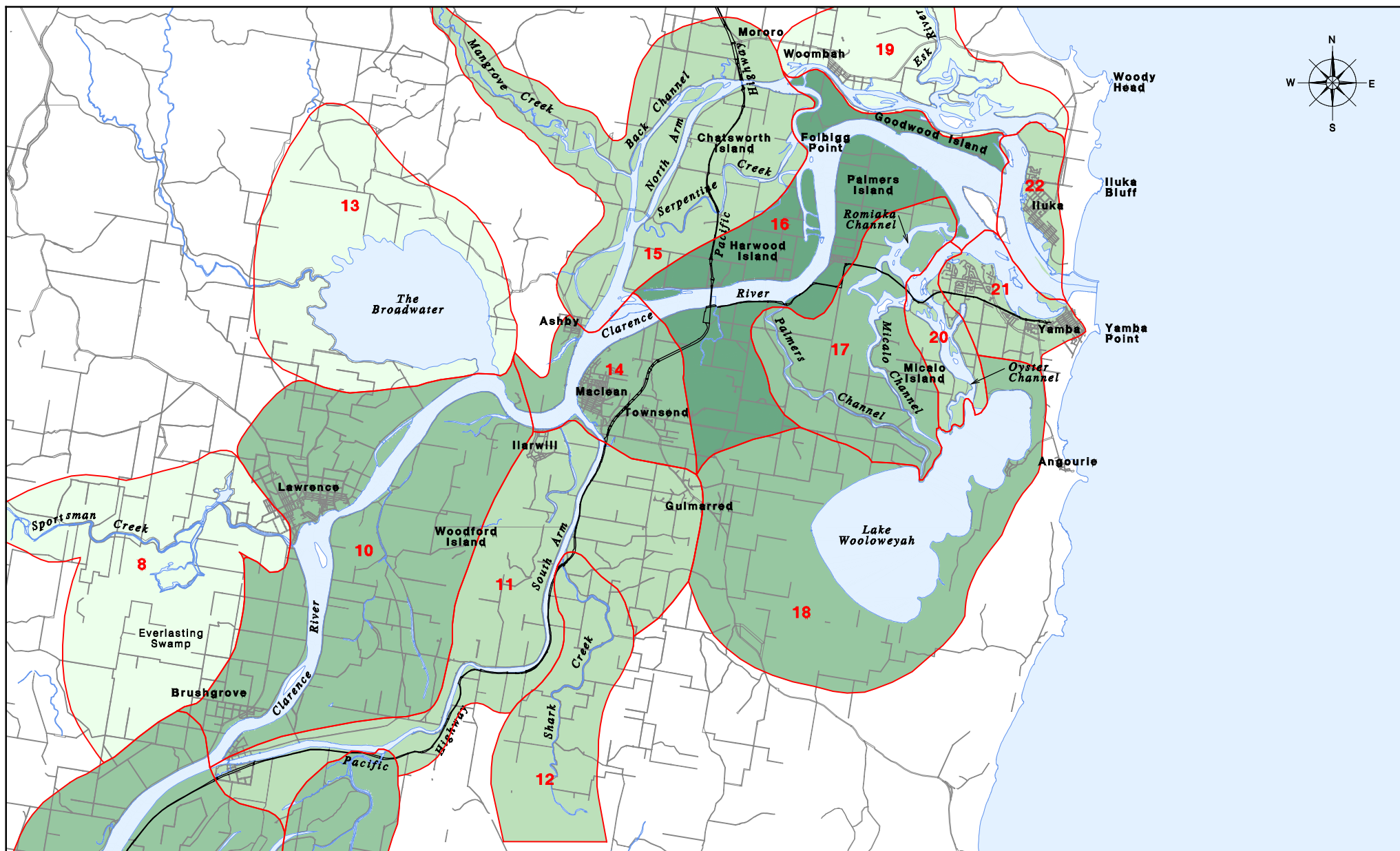
Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.1b
Distribution of Values for
Sustainable Management

A4 Scale 1:170 000

Ref No.:R04_V1/1485_152.dgn



Legend

Very high number of threats	Low number of threats
High number of threats	Very Low number of threats
Moderate number of threats	

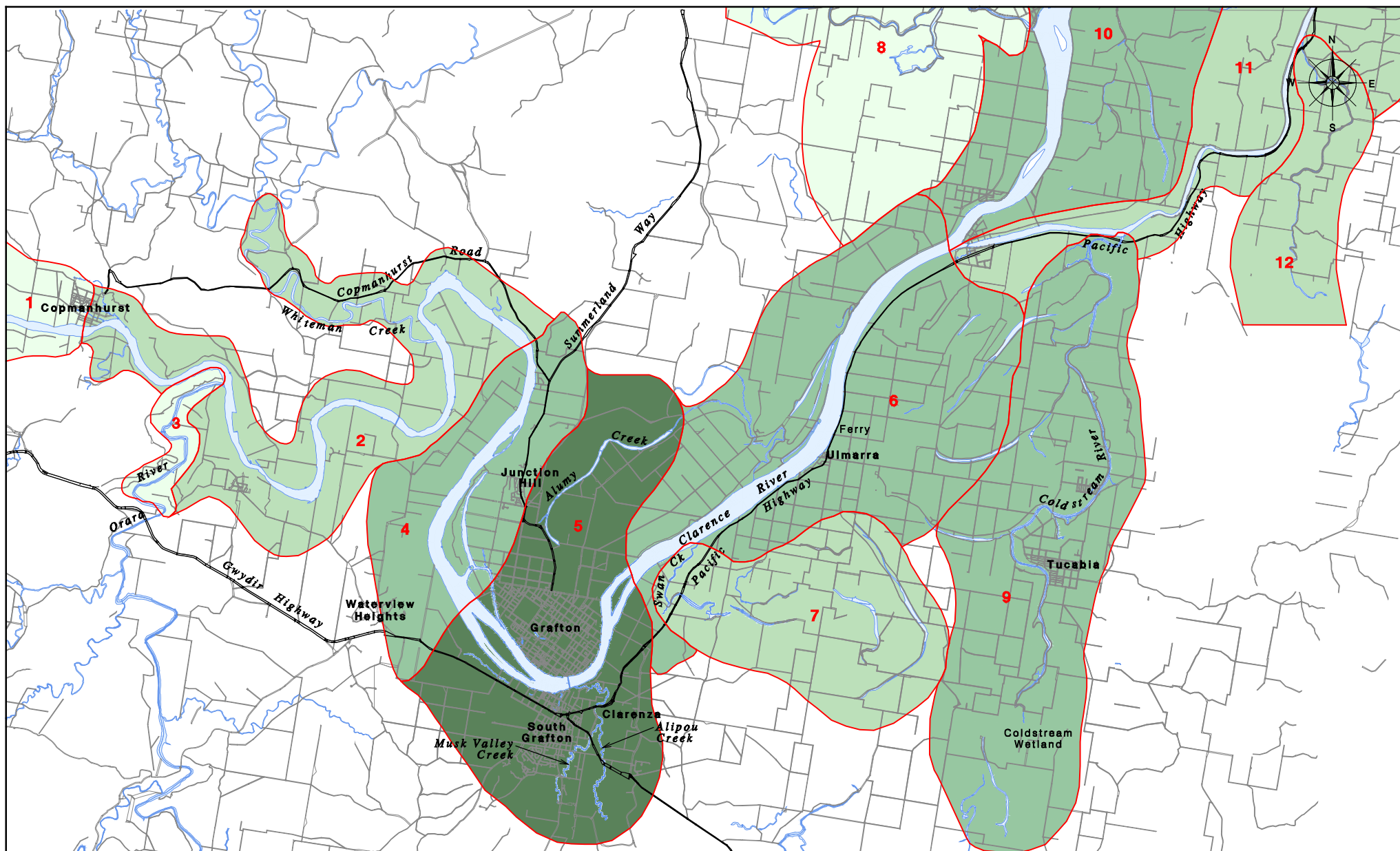
Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.2a
Distribution of Threats to
Sustainable Management

A4 Scale 1:170 000

Ref No.:R04_V1/1485_153.dgn



Legend

Very high number of threats	Low number of threats
High number of threats	Very Low number of threats
Moderate number of threats	

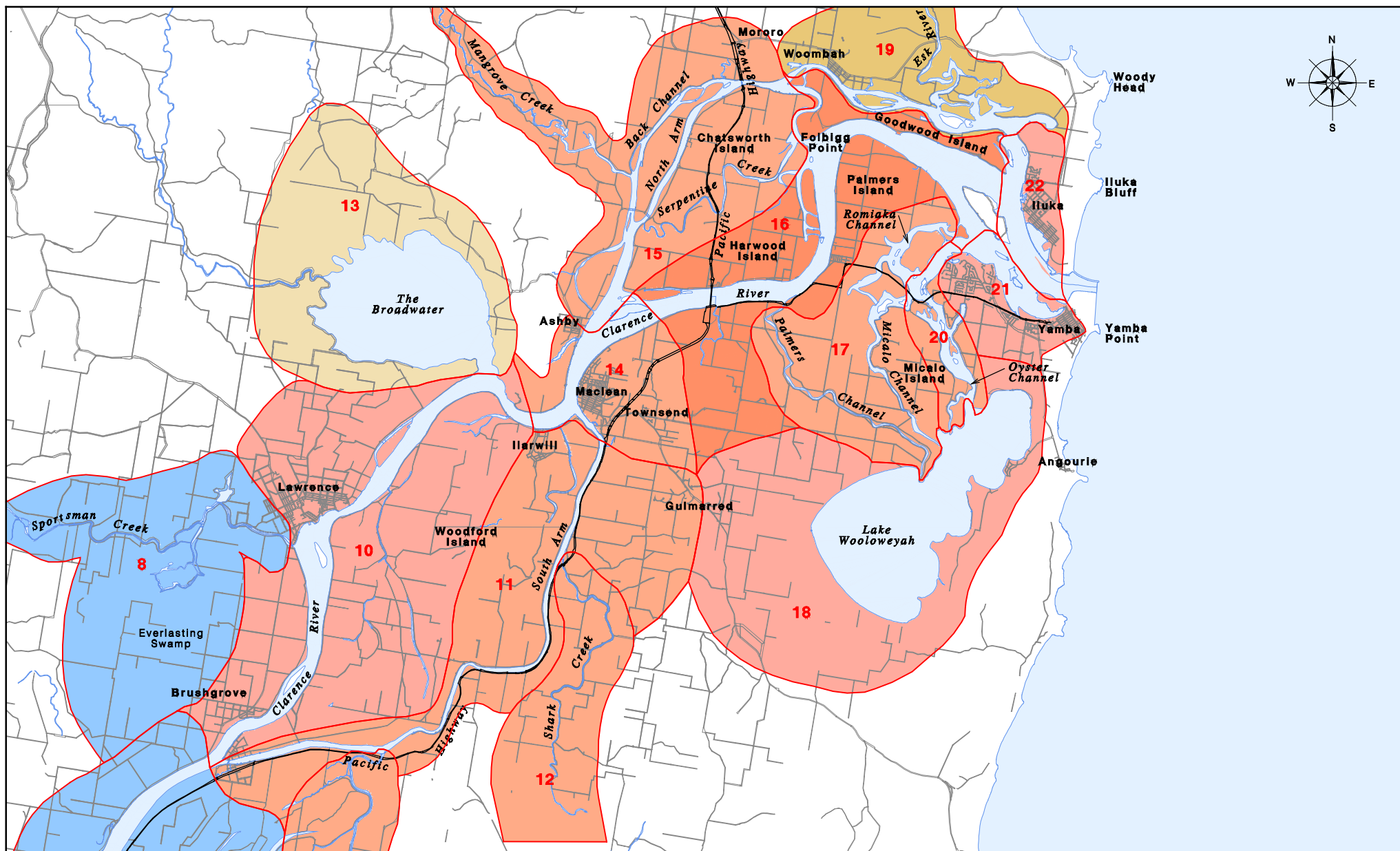
Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.2b
Distribution of Threats to
Sustainable Management

A4 Scale 1:170 000

Ref No.:R04_V1/1485_154.dgn



Legend

High Value / High Threat	High Value / Low Threat
High Value / Moderate Threat	Moderate Value / Low Threat
Moderate Value / Moderate Threat	Low Value / Moderate Threat

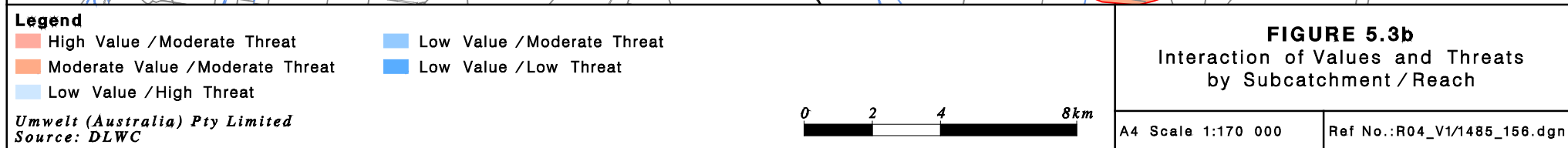
Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.3a
Interaction of Values and Threats
by Subcatchment / Reach

A4 Scale 1:170 000

Ref No.:R04_V1/1485_155.dgn



A4 Scale 1:170 000

Ref No.:R04_V1/1485_156.dgn

The analysis identified the lower estuary islands as the locality with highest values, facing greatest risks.

At the other end of the scale, most reaches in the upper estuary are assessed as relatively low value and low threat in this analysis. The Grafton reach has much higher threats to estuary health because of the impacts of existing and future urban growth on this slow flushing reach of the estuary.

The results of the resource assessment and analysis have placed most reaches in categories that have either moderate risks or moderate values. The matrix is shaded to show suggested management orientations for all categories.

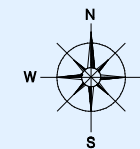
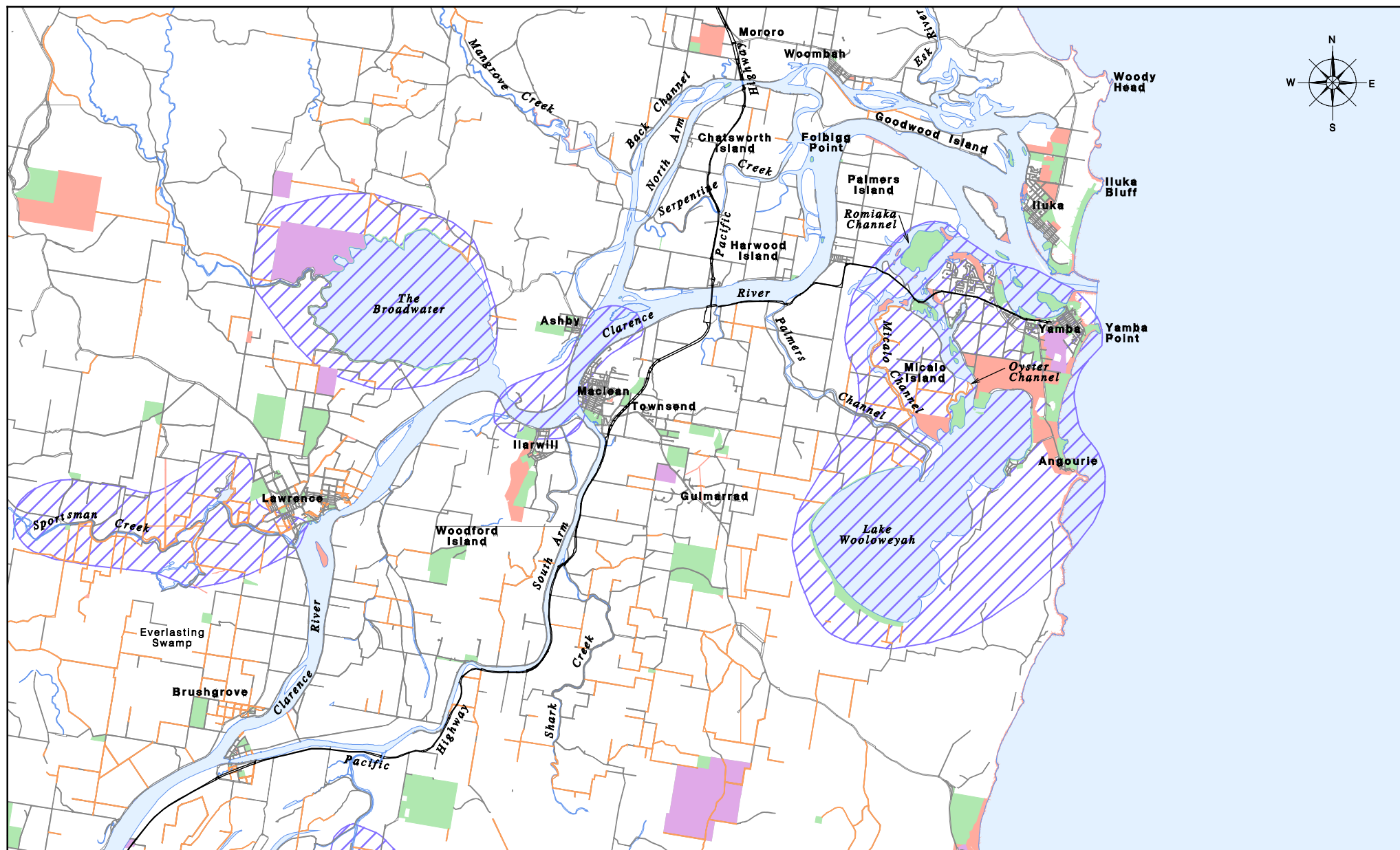
The general concepts of management orientation are indicated on the matrix, and include:

- Reaches with high values and high threats (upper left of matrix). Urgent or high priority intervention across multiple issues, including regulatory activity, education, incentives for changed management practices, and stringent planning controls to prevent further degradation of values. Actions of these types are described in **Tables 7.2, 7.3 and 7.4**.
- High value with low risk (lower left and centre of matrix). The principal management response is strategic planning to ensure that high values are maintained. An example would be land and waterway zoning for environmental protection.
- Low value with high risk (upper right of matrix). The focus of management in these areas is gradual risk reduction. These actions would, in general, have a lower priority than related actions in higher value reaches, unless failure to take action would result in deterioration of adjoining higher value reaches. In the Clarence, the Grafton reach is in the low value / high risk category. The analysis suggests that, overall, remedial actions in the Grafton reach should have a lower priority than reaches in the lower estuary. However, some actions to address water quality impacts, particularly during low flow periods, are considered to have a higher priority because these impacts extend to other reaches.
- Low value with low risk (lower right of matrix). In these areas, the management focus should be on monitoring, with remedial and planning actions a lower priority than for other reaches.

5.1.4 Crown Lands and Waterways Assessment – Constraints and Opportunities

The entire bed of the Clarence estuary is Crown Waters. A review of the distribution of Crown Land in the coastal floodplain shows that it is very fragmented. Despite the high level of fragmentation and the narrow, elongated form of reserves, enclosure permits and roads, the Crown Lands on the Clarence coastal floodplain do present significant opportunities for restoring ecological values (habitat connectivity, riparian zones) and consequently for protecting and enhancing water quality and aquatic habitats. Locations which are identified as having high potential to contribute to the sustainable health of the estuary and floodplain are shown on **Figure 5.4** and include:

- Reserves and leased Crown Lands around the shoreline of The Broadwater;
- Reserves and other Crown Lands around the shoreline of Lake Wooloweyah;
- Crown Lands along the bank of Micalo Channel;



Legend

- Reserve
- Lease
- Other Crown Land
- Enclosure
- Roads
- ▨ Location of Crown Land with strong potential for habitat enhancement

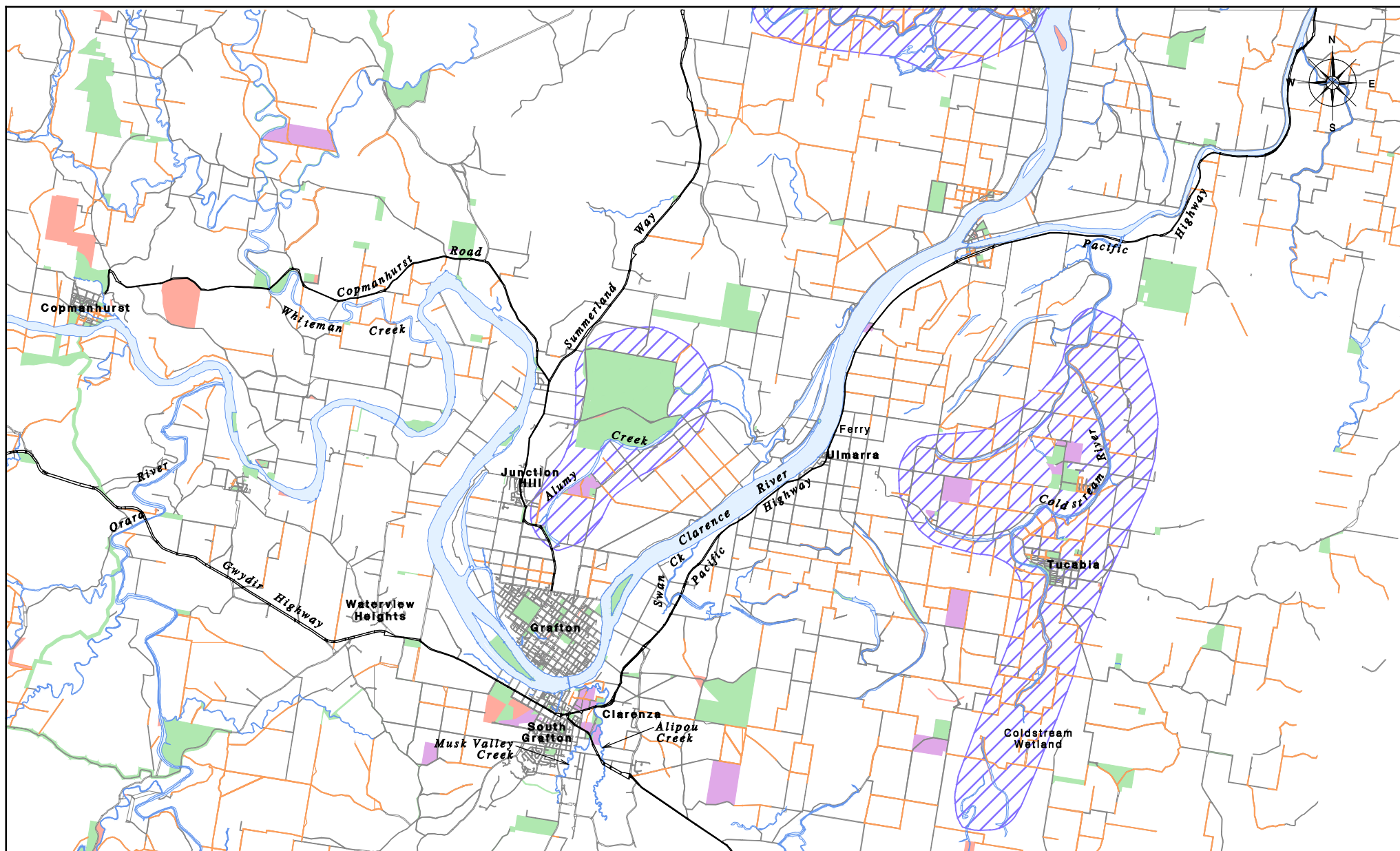
Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.4a
Distribution of Crown Land

A4 Scale 1:170 000

Ref No.:R04_V1/1485_149.dgn



Legend

■ Reserve	— Enclosure	□ Location of Crown Land with strong potential for habitat enhancement
■ Lease	— Roads	
■ Other Crown Land		

Umwelt (Australia) Pty Limited
Source: DLWC

0 2 4 8km

FIGURE 5.4b
Distribution of Crown Land

A4 Scale 1:170 000

Ref No.:R04_V1/1485_150.dgn

- The Yamba foreshore reserves, which also have major recreational values;
- Alamy Creek;
- Enclosure permit areas along Sportsmans Creek (also an ASS Hotspot);
- Crown Roads and enclosure permits on the lower estuary islands and in the Ashby/Maclean/Illarwill area. These Crown Lands form a boundary between cane farms and the estuary, suggesting significant opportunities for co-operative management;
- Parts of the Coldstream/Tucabia catchment.

5.1.5 Priorities identified by the Estuary Management Committee

The Estuary Management Study presented numerous possible options for estuary management action. The Clarence Estuary Management Committee has discussed options for the future management of the estuary and most members have provided advice as to the most important actions from the perspective of their constituency. The actions identified by the committee are noted below, together with a reference to the outstanding issue that they address (from **Section 2.3**).

- Conduct a comprehensive assessment of floodplain and estuarine vegetation and habitats (3).
- Prepare detailed management plans for selected Crown Lands, focusing on opportunities for vegetation and habitat management/restoration (3).
- Confirm the impacts of commercial trawling on Lake Wooloweyah and take action as necessary to reduce impacts (3) (5).
- Prepare and implement Hotspots Plans for Stage 1 acid sulfate soil Hotspots (1) (2).
- Develop and implement a formal partnership agreement for the management of the floodplain and estuary interaction (1) (2) (3) (5) (9).
- Investigate and clarify the sedimentary process drivers in the estuary, leading to a sand and gravel management strategy for the whole estuary (4) (7).
- Update approvals and licences for maintenance of the main shipping channel in the lower estuary in consultation with the local Aboriginal community, relevant agencies, Maclean Council and port users, and dredge the shipping channel if studies and consultation demonstrate that this is consistent with a sustainable sediment budget, is economically justified and can address social and cultural issues. Funding options and opportunities should also be addressed (4) (8).
- Continue to implement and build on the Clarence Floodplain Project (1) (2) (3) (5) (9).
- Prepare sustainability assessments for selected subcatchments (see Healthy Rivers Commission priorities) and prior to any rezoning of land to more intensive use. (8) (9).
- Prepare species recovery plans for relevant threatened species in the estuary and on the coastal floodplain (2) (4).
- Redesign the causeway at Micalo Channel to enhance fish passage (5).

- Prepare a climate change risk assessment for the estuary and floodplain (2) (4) (8) (9).
- Establish a water cycle management forum to integrate water supply and wastewater management across local government area boundaries (8) (9).
- Establish an Estuary Plan Implementation Committee (9).
- Formalise cross representation and information sharing between natural resource management committees (9).
- Establish a formal agreement between local Councils and key industry/community groups to facilitate the implementation of the estuary plan (9).
- Ensure that estuary issues are appropriately addressed in the Catchment Blueprint before it is finalised (9).

5.1.6 Funding and resources for the implementation of the Estuary Management Plan

One of the main threats to effective management of natural resources is the lack of a structured funding program that can support a systematic program of actions, and recognises the risks and benefits for various stakeholders. A survey of local Councils, agencies and industries in the Clarence (see Section 4 of the Estuary Management Study) indicated that approximately \$15 million is currently invested annually in activities that relate to the overall health of the Clarence estuary and floodplain. Analysis of the responses of these organisations and community feedback indicates a range of funding related impediments to effective estuary management, including:

- Fragmentation of responsibility across multiple organisations, some of which are poorly resourced in terms of both finances and skills.
- An ineffective auditing system to ascertain the effectiveness of investment (or whether it has actually occurred as proposed).
- Little evidence of environmental improvements that could be attributed to management initiatives (other than enhanced community awareness). This is at least in part because of the difficulty of measuring environmental outcomes due to different causes and operating at different time frames.
- Relatively small investment in environmental planning and management compared to the value of assets (natural and structural) and regional production.
- A perception that there are high institutional costs associated with obtaining grant funds (e.g. a multi day application process involving relatively senior staff, to obtain relatively small grants), although this is not always the case.
- No clear strategy to use investment to drive changes in land management practice that would lead to improved environmental performance – i.e. a limited range of natural resource investment concepts and options, not targeted to the issues for this particular estuary and floodplain.

Sections 5.1.6.1 and 6.2 discuss opportunities and mechanisms to overcome these impediments to effective investment in the management of the estuary.

5.1.6.1 Potential fund sources and management

The principal sources of funds that can be invested in estuary management programs include:

- Routine budgets of State agencies, particularly in terms of staff available for technical extension advice or to assist with the administration of committees and boards.
- Local Council and County Council budgets derived from local rates. In some Council areas elsewhere in coastal NSW, the rate revenue is boosted by special environmental levees that provide additional targeted funds for special programs. Such levees clearly must have community support and are only possible when the community agrees with Council about the seriousness of the issue, the management approach and the funding responsibility (ie shared by a local community rather than state funds).
- Local Council budgets can also be augmented by a range of state and federal grant schemes, such as the following. The funding ratio, \$ Government:\$ Council is noted in each case.

- DLWC programs

Coastal Management (1:1)

Estuary Management (1:1 up to 3:1)

Floodplain Management (1:1 and up to 4:1)

Minor Ports & Entrance Works Assets Management (1:0)

Country Towns Water Supply & Sewage (Negotiable funding up to 3:1)

Waterways (Variable)

Strategic Planning – Catchment Management Boards.

The DLWC Environmental Services Scheme, which is currently in the early stages of trial implementation, is also intended to assist landholders to change land management practices by valuing the natural assets of their properties. Under this scheme DLWC would provide investment incentives (to individual landholders and groups operating within a catchment based plan) for activities such as regeneration of forests, wetlands and riverbank vegetation. Acid Sulfate Hotspot and other high risk areas are highlighted as potential locations for the scheme.

- National Heritage Trust (Variable - up to 1:0). National Heritage Trust (2) will focus funding into three main programs, Rivercare, Landcare and Coastcare. The Coastcare program will provide funds for actions to enhance the sustainable management of estuaries. It is anticipated that these funds will be available for projects identified within a regional scope management plan such as the Catchment Blueprints.
- EPA Stormwater Trust (up to 1:0).
- EPA Environmental Trust Funds.
- NSW Waterways Asset Development & Management Program.
- Catchment Management Board Program.
- The Commonwealth Coastal Acid Sulfate Soils Program (CASSP) and NSW Acid Sulfate Soil Program (ASSPRO).
- Contributions from industry organisation and individual industries. For instance, the fishing industry has assisted with the investment necessary to modify floodgate design

and operation in the Clarence, to improve fish habitat. The cane industry has introduced a range of requirements on its producers to improve environmental management and reduce potential offsite impacts. These investments are significant contributions to estuary and coastal floodplain health.

- Contributions (capital and in kind) from individual landholders. This could include preparation of property plans, participating in management groups, fencing, tree planting, active floodgate management etc. These contributions are most effective when actions are implemented by groups of farmers (eg on a subcatchment basis) and within a structured plan or partnership.
- Community group and individual contributions such as through Landcare and Coastcare. This can include information distribution, on the ground works and monitoring.
- Investment in enterprises that depend on and support estuarine health, such as some tourism activities and well managed aquaculture.

Whilst multiple possible sources of investment in estuary management are potentially available, effective use of this investment depends on a structured program, which makes organisations clearly accountable for outcomes (see the comments of the HRC, 1999, 2000, 2002). In the Clarence, the concept that is being developed to provide this investment and management framework is the formal Floodplain Partnership Agreement. The CRCC has already sponsored several small-scale partnership arrangements with small groups of landholders (eg at Camp Creek) to achieve improved management. The concept that is now being developed by DLWC through a taskforce sponsored by the Upper North Coast Catchment Management Board (UNCCMB) is more wide ranging in its scope and application. Partnership Agreements of systemic scope have now operated in some inland (irrigation) catchments for several years, linking best practice land and water management, regional and local planning, statutory licensing provision and funding assistance through contractual obligations. The agreements are regularly audited and reviewed.

DLWC has advised that many of the high priority actions noted in the Clarence Estuary Management Study would be incorporated into the Floodplain Partnership Agreement or could potentially be part of the agreement (see **Section 6.2**).

6.0 CHANGE AND CONTINUITY – MANAGEMENT STRUCTURES AND PROCESSES

As noted in **Sections 1** and **3.1**, much progress towards sustainable management has been achieved in the Clarence Valley, and the groundwork has been laid for significant further progress. This section considers the management structures that are needed to support further progress, noting that the state framework for natural resource management and links between land use planning and natural resource management, is currently evolving rapidly. This Estuary Management Plan recommends a management structure that can deliver sustainable outcomes in estuary management, and is demonstrably integrated with other natural resource management strategies.

6.1 THE STATE AND REGIONAL FRAMEWORK

The NSW Government has recently announced that its new planning framework for NSW, as outlined in the PlanFIRST White Paper will be implemented, and that the north coast is one of the first regions for which a Regional Strategy will be prepared. It is intended that Regional Strategies will incorporate a range of natural resource management strategies and actions, adopted from other plans, such as the Catchment Blueprint, Regional Vegetation Plans, Water Management Plans and Estuary Management Plans.

It is also intended that the Catchment Blueprint will provide the overarching framework for natural resource management in each catchment based region, through the preparation and implementation of Catchment Blueprints. As with the Regional Strategy, it is intended that other natural resource plans for specific natural resource sectors or issues will be consistent with, and provide additional detail for, Catchment Blueprints. In this context, the analysis in the Estuary Management Study and the actions in the Clarence Estuary Management Plan, provide detail on priority localities and issues for intervention, within the broader strategic framework provided by the Catchment Blueprint. Other plans that will contribute this type of detail are the Floodplain Risk Management Plans, Water Management Plans, Regional Vegetation Management Plans and Acid Sulfate Management Plans (Hotspots).

6.2 THE PARTNERSHIP AGREEMENT, ROLES AND RESPONSIBILITIES FOR LANDHOLDERS AND LOCAL AUTHORITIES

For the Clarence floodplain and estuary, the Floodplain Partnership Agreement that is described in **Section 5.1.6.1** is the principal tool for supporting implementation. The form of this agreement has not yet been finalised. Some important concepts and their implications are noted below:

- In the inland regions, Partnership Agreements have been built around a community body that has legal standing and can enter into contractual obligations. Although the Partnership Agreement for the Clarence floodplain is being developed and brokered by the UNCCMB, it is unlikely that the Catchment Board will be the statutory body to enter into contractual agreements with landholders and government agencies.
- The CRCC is an existing organisation that can enter into contracts and provides services to all land user sectors in the Clarence Valley. It has an existing management structure that includes experience in the preparation of management plans, grant fund management, annual reports and state of the environment reports. The CRCC has already shown leadership in the Clarence Valley in developing partnership agreements with small groups of landholders. It would appear that the CRCC is well placed to assume the central role in sustainable floodplain management through a more wide

ranging Partnership Agreement. It has been suggested (see the Estuary Management Study for detail) that over time, the CRCC could evolve into a “Clarence River Natural Resource Management Council”, to accommodate a wider role.

- Although such a transformation of the CRCC is feasible and has merit in terms of sustained investment and improved accountability, there are a number of important issues that would need to be addressed. These include the membership of the CRCC (currently entirely elected local government representatives), its charter and constitution. Existing local government stakeholders will need to have confidence that their rights and responsibilities will be protected in a broader constitution.

A potential general model for natural resource management in the Clarence is presented in **Figure 6.1**. This model will be refined during the development of the Floodplain Partnership Agreement.

The implementation of the Estuary Management Plan to provide sustained environmental benefits across the whole of the estuary and its floodplain also presents a significant challenge for local Councils. Councils have a central role in natural resource management because they create, administer and enforce planning instruments for land use and land management. The concept of local plans presented by PlanningNSW in PlanFIRST further enhances this role. Estuary and Flood Risk Committees are committees of local government and make recommendations to individual local authorities.

In a catchment area where several Councils share responsibility for natural resource management, an integrated management response requires that Councils be prepared to consider relative priorities and consistent approaches across a larger area than that for which they are directly responsible. The actions noted in **Section 7** of this Plan include several measures to assist local Councils to share systemic management. Institutional management arrangements in the lower Clarence Valley can be expected to evolve over the next few years, and a different model may emerge from the strategies that are suggested here to achieve integrated implementation. These integrated implementation actions include:

- A regional scale water cycle management forum, sponsored through North Coast Water, to consider integrated water supply (including demand reduction), wastewater and stormwater management;
- Consistent approaches to planning for the protection and enhancement of remnant floodplain, aquatic and riparian habitats, particularly in relation to local plan (currently LEP and DCP provisions) requirements. The implementation of PlanFIRST may assist Councils in this regard;
- Requirements for the preparation of sustainability assessments to accompany potential rezoning applications, and in some cases, development applications (e.g. the sustainability assessment could be part of an EIS);
- Shared funding and administration of the Estuary Management Implementation Committee. The EMC is currently a committee of Maclean Council, but includes representatives of other Councils.

High priority estuary management actions that are being considered for implementation through the Floodplain Partnership Agreement that is currently being developed by a working group of the UNCCMB are noted in **Table 6.1**.

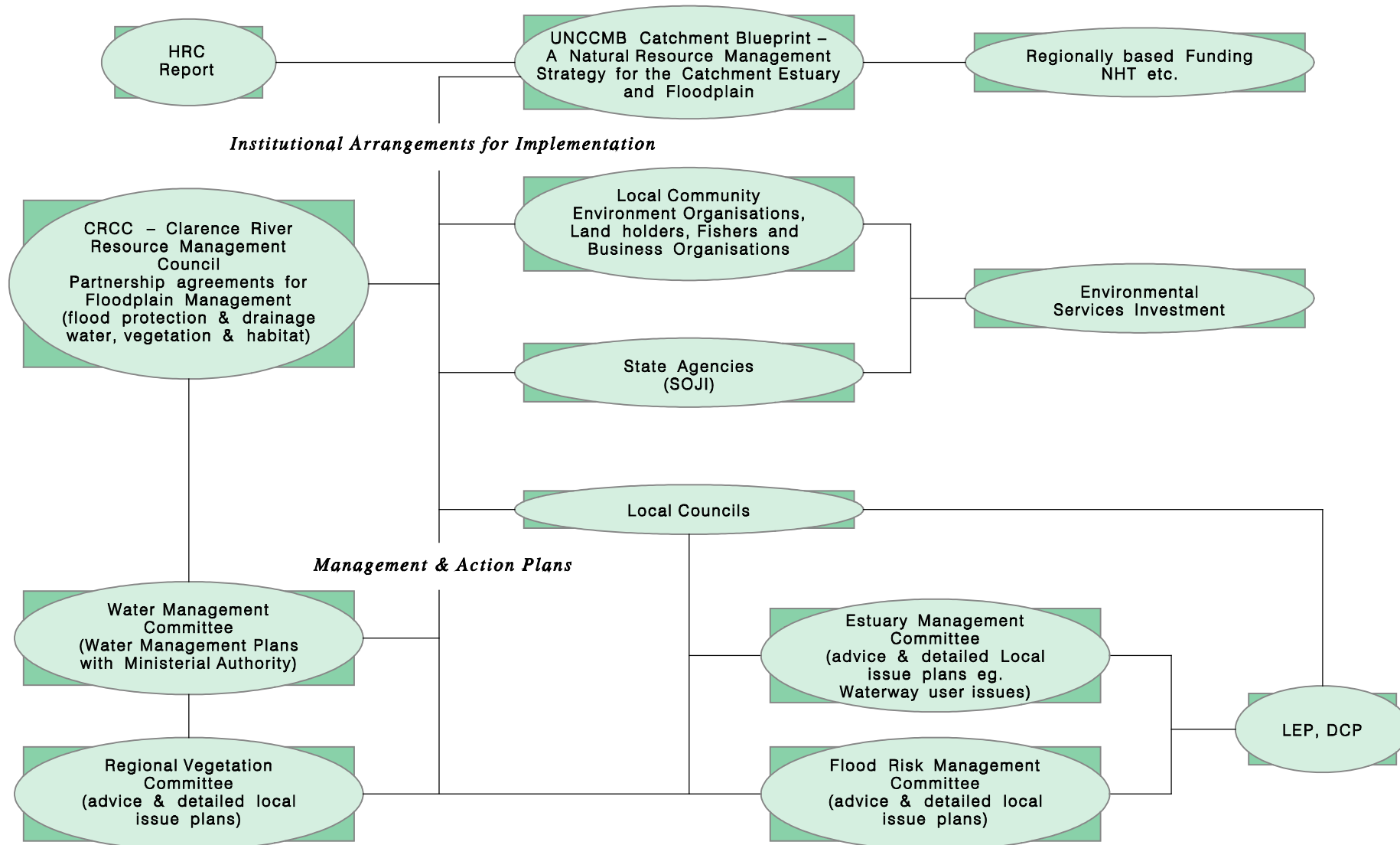


FIGURE 6.1
General Model for Natural Resource
Management in the Clarence
Floodplain and Estuary

Table 6.1 - Possible high priority actions to be implemented through the Floodplain Partnership Agreement

Action	Responsible organisation	Role of Partnership Agreement
Expedite the development of a formal partnership agreement between landholders, relevant state and local authorities and waterway users to provide integrated and effective management of the coastal floodplain.	UNCCMB and CRCC	Partnership Agreement is being developed by the Taskforce
Formal agreement signed by heads of all major regional groups in relation to estuary management actions. This statement should be attached to the formal floodplain partnership agreement.	Local Councils	Part of Partnership Agreement - Taskforce to drive
Continue to implement the Clarence Floodplain project, particularly in relation to partnership development, and adding habitat management to water quality considerations.	CRCC	Part of Partnership Agreement - Taskforce to broker
Complete and implement water management plans for high risk ASS subcatchments (Hotspots Program), with Sportsman's Creek, everlasting Swamp and lower estuary islands as the highest priorities. Similarly, prepare and implement land and water management plans for other high risk subcatchment that are not included in the Hotspots program (Stage 1 or 2).	DLWC	Part of Partnership Agreement
Clarify sedimentary process drivers in the estuary – further modelling of the effects of structural controls on estuary hydrodynamics, sediment transport and erosion distribution, potential impacts of sea level rise, high and low risk areas for dredging.	DLWC	Partnership Taskforce has watching brief
Prepare a sand and gravel resources management strategy for the whole estuary.	DLWC	Part of partnership agreement - Taskforce to broker
Update approvals and licences for dredging the main shipping channel in the lower Clarence, including further consultation with the Aboriginal community, Maclean Council, relevant agencies and port users.	NSW Waterways	Taskforce has a watching brief
If economically justified and after further consultation with the local Aboriginal community about managing the cultural values of the rock reef, dredge main shipping channels as necessary to minimise risks to commercial vessels using the Port of Yamba, in accordance with environmental protection measures identified in the EIS.	NSW Waterways	Taskforce has a watching brief
Confirm commercial trawling impacts on seagrass in Lake Wooloweyah and implement management strategies as necessary.	NSW Fisheries	Partnership Taskforce has a watching brief
Prepare and implement detailed Crown Lands assessments and Plans of Management for significant parcels of land on the estuary banks, with particular attention to potential habitat restoration benefits.	DLWC	Part of the Partnership agreement - Taskforce to broker
Prepare an Aboriginal cultural heritage study and plan for NPWS lands (in the first instance) and subsequently for the whole of the Clarence floodplain.	NPWS	This action is part of a broader study and plan for the whole UNCCMB area
Throughout the lower Clarence Valley, new land zonings towards more intensive use should only occur after a sustainability assessment has been prepared and evaluated (in consultation with PlanningNSW if required under the new SEPP). HRC (2002) provides guidance on the nature of these assessments.	All local Councils	Applies to whole UNCCMB area

A number of other high priority actions should also be considered by the Taskforce as matters to be included within the Partnership Agreement. These include:

- Complete the current wetland restoration at Lake Wooloweyah (ASSPRO) and consider implications for management in other parts of the Clarence Floodplain.
- A range of auditing, monitoring and reporting activities to support information sharing by all stakeholders and to provide management system transparency and accountability.
- Undertake a comprehensive assessment of estuarine and floodplain vegetation, wetlands and non vegetated habitats such as sandbars that are exposed during spring high tides, to clarify the highest conservation value localities, potential corridors etc – use Stream Health assessment methodology (see Catchment Blueprint).
- Develop a consistent vegetation regulatory regime across all LGAs to protect rare coastal floodplain habitat types (modelled on Maclean LEP Special Emphasis Areas).
- Upgrades of some sewerage treatment plants in areas of rapid growth (eg Yamba) which have the potential to affect floodplain wetland habitats.
- Implementation of stormwater management plans (eg Grafton) that have the potential to impacts (both beneficially and detrimentally) on floodplain habitats.

DLWC note that the Estuary Management Implementation Committee (see **Section 6.3**) could be responsible for managing the implementation of some actions (both from within the Partnership Agreement and outside it) once the Partnership agreement is in place.

6.3 THE ROLE OF THE ESTUARY MANAGEMENT COMMITTEE

As the focus of estuary management in the Clarence moves from planning to implementation, it is proposed that the Estuary Management Committee will be restructured and its role reviewed. Important features of the proposed nature and role for the committee include:

- The committee would continue to be a committee of local government, with administration costs shared across all local authorities in the lower Clarence Valley.
- The role of the Committee will be formalised by a Statement of Joint Intent signed by Mayors and/or chief executives of each local government authority, relevant state agency representatives and representatives of peak local user and environment organisations. This agreement will be attached to the Floodplain Partnership Agreement, and will define the relationship of the various committees in implementation and review.
- Committee membership should be carefully targeted to complement the UNCCMB, Water Management Committee and Flood Risk Management Committee, but would include a mix of local (elected representatives and Council officers) and state government representatives and community representatives.
- Clear cross representation arrangements would be made with other natural resource management committees, to facilitate information transfer and co-ordination between plans at different levels of scope and detail.

- The committee would supervise (as a steering committee) a number of projects that are outside the scope of the Floodplain Partnership Agreement, such as estuary recreation management and maintenance dredging. It would also contribute advice about, and potentially be responsible for, the management of some actions that are part of the Floodplain Partnership Agreement. Land use planning actions (studies and statutory plans) that should be co-ordinated across multiple local Councils are an example of this role.
- The Committee would have a greater focus on review and reporting than has been the case to date, and would manage projects targeting community information about the estuary. The Committee would co-ordinate estuary information to be reported at a regional level through the Catchment Board.
- The Committee would provide a forum for presentations about new research, management initiatives etc relevant to the estuary and floodplain.

6.4 THE ROLE OF THE COMMUNITY

The broader community (rural and urban landholders, land users and managers) has several important roles in the implementation phase of estuary management. These can be broadly summarised as:

- Direct management contributions by farmers and industry organisations. These contributions will be defined by the Floodplain Partnership Agreement.
- Contributions through Council rates to funding for some management actions (e.g. to sewerage and stormwater management).
- On the ground management contributions through membership of Landcare or Coastcare (or other relevant community organisations). These contributions could include designated observations/monitoring activities that contribute to information about the health of estuary and floodplain environments.
- Feedback on the achievements of the management process, particularly through a regular performance review process co-ordinated by the Estuary Management Committee.
- Feedback and review of management objectives and desired outcomes, to reflect potentially changing community aspirations for the estuary and coastal floodplain.
- Ongoing participation in related strategic planning programs, such as review of Catchment Blueprints, preparation of specific management plans and preparation of the Regional Strategy (PlanFIRST).

6.5 COUNCIL ENDORSEMENT OF THE ESTUARY MANAGEMENT PLAN

Maclean, Grafton and Copmanhurst Councils have endorsed the Estuary Management Plan. Copies of correspondence from each Council are included in **Appendix 1**.