

MANAGEMENT OF ACID SULPHATE SOILS IN NEW SOUTH WALES – POLICY, ORGANISATION, AND REGULATION

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ABSTRACT: Runoff from acid sulphate soils (ASS) is a key issue affecting water quality in estuarine areas of NSW. This paper briefly outlines the main guiding policies and regulatory tools available for ASS management and examines aspects of their administration, with references to the case law. Major problems in addressing the issue by regulatory means have included the lack of effective planning instruments, uncertainty concerning the roles and obligations of agencies and statutory authorities, uncertainty concerning the appropriateness and effectiveness of the use of regulatory powers relating to ASS management, and financial arrangement in relation to prosecution.

I. INTRODUCTION TO ACID SULPHATE SOILS

Acid sulphate** soils (ASS) are sediments deposited under estuarine

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** NSW Governmental practice is to use the spelling “sulfate”, in accordance with the *Macquarie Dictionary* and the *International Union of Professional Analytical Chemists Nomenclature of Inorganic Chemistry Recommendations* (1990) (ed GJ Leigh). The

conditions (ie. close to sea level), and which contain the sulphidic mineral pyrite. ASS are found underlying many coastal floodplains and in coastal wetlands.

As long as ASS are not disturbed or drained, they are relatively harmless and are termed 'potential ASS'. However, if the sediments are exposed to air, the pyrite is oxidised, and sulphuric acid is generated. As a result, soil acidity (pH) may fall to below 4, iron and aluminium become soluble in toxic quantities, and their precipitates affect water quality. Massive kills of aquatic life can occur due to low pH and aluminium toxicity. Chronic effects on aquatic systems are common and widespread and include: habitat degradation; altered waterplant communities; weed invasion by acid-tolerant plants; secondary water quality changes; the presence of disease; reduced aquatic food resources; reduced migration potential of fish; and reduced recruitment, survival and growth rates across a wide range of aquatic species.¹

ASS areas are generally degraded backswamp wetlands. The frequency and magnitude of water quality problems associated with ASS areas are generally due to the drainage of these wetlands in an attempt to convert them into agricultural land.² For these reasons, the management of ASS areas can often be effected through policies and regulatory tools relevant to wetland management.

Although frequently justified on flood mitigation grounds, an additional and often primary motive was the 'reclamation' of dry land, including by the exclusion of tidal waters. The NSW Government's recorded involvement in flood mitigation and drainage dates from at least the 1890s, and from the early 1900s the Department of Public Works assisted in draining large areas of NSW coastal floodplains under the provisions of the *Water and Drainage Act 1902* (NSW). Following major flooding in 1949 and the early 1950s, a number of large flood mitigation and drainage schemes were commenced, with the 1960s being the most energetic period for the construction of drainage and flood mitigation works generally. The floodplains of the northern rivers of NSW have now been extensively drained with large networks of floodgated drainage channels. Much of this work was supported and/or undertaken by local and State governments.

Australasian Journal of Natural Resources Law and Policy uses the standard Australian English "sulphate".

¹ J Sammut and R Lines-Kelly *An Introduction to Acid Sulfate Soils* (1996) Acid Sulfate Soils Management Advisory Committee (ASSMAC), Dept Environment, Sport and Territories (Cth), Australian Seafood Industry Council. Also: J Sammut, JB Callinan and GC Fraser *An Overview of the Ecological Impacts of Acid Sulfate Soils in Australia* (1996) 2nd National Conference on Acid Sulfate Soils, Coffs Harbour; and Healthy Rivers Commission *Independent Inquiry into the Clarence River System Final Report* (November 1999).

² PH Walker *A Reconnaissance of Soils in the Kempsey District, NSW. CSIRO Soils and Land Use Series No 44* (1963) Melbourne.

Much of the ASS-related problem is therefore caused by historical drainage, and the greatest challenge is to manage existing drains, floodgates and other structures, and to facilitate the remediation of previously drained areas. Regulatory responses to these issues are the focus of this paper.

The guiding policy framework is outlined in Section II. Section III examines the organisational framework relevant to ASS management. Section IV examines the regulatory framework, and Section V the case law developed. Section VI comments on some aspects of the exercise of regulatory functions which may lead to improved management of ASS areas.

II. POLICY FRAMEWORK

The exercise of the functions of statutory authorities with respect to ASS management should be carried out in accordance with the policy framework created by the relevant level of government where possible. Commonwealth and NSW government statutory authorities are guided by the Commonwealth and State policy framework in exercising their functions, which may include operational policy setting, decision-making processes, and decisions to support or fund particular community initiatives. Attempts to achieve consistent approaches have been made through intergovernmental agreements such as the *Intergovernmental Agreement on the Environment* of 1992 (IGAE), the Council of Australian Governments (COAG) *Water Resource Policy 1994*, the COAG *Heads of Agreement on Commonwealth/State Roles and Responsibilities for the Environment 1997*, and national strategies such as the *National Strategy for the Management of Coastal Acid Sulfate Soils 1999*. Whilst the Commonwealth is primarily responsible for matters of foreign policy relating to the environment,³ it is agreed that all levels of government have a responsibility to ensure that matters of national interest are properly taken into account in their activities.⁴

Increasingly, Commonwealth and State levels of government are confining themselves to policy and standards-setting functions, with operational functions devolved 'downwards' to local committees or local government, which in turn is facilitating processes whereby certain of its functions can be carried out by smaller organisations. It is important therefore that these smaller operational units recognise and carry out the various policy aims, goals, objectives and strategies.

A. COMMONWEALTH FRAMEWORK

(i) *International Instruments*

³ *Intergovernmental Agreement on the Environment 1992* cl 2.2.1.

⁴ *Intergovernmental Agreement on the Environment 1992* cl 2.5.6.

The Commonwealth has entered into a number of international agreements relating to wetland areas, aspects of which apply to degraded wetland ASS areas. These agreements have the status of international law, and create obligations for the Commonwealth. Both the *Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment (JAMBA) 1974* and the *Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (CAMBA) 1986* create obligations with respect to the conservation of wetlands.⁵ The broad aims of the *Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971 (Ramsar Convention)* are to halt the worldwide loss of wetlands and to conserve, through wise use and management, those that remain.⁶ The *Directory of Important Wetlands in Australia*,⁷ a Ramsar Convention initiative, presents summary information⁸ on Australia's most significant wetlands, including a number of ASS areas.⁹

(ii) *Commonwealth Policies*

(a) *Wetlands Policy 1997*

The goals of the *Wetlands Policy of the Commonwealth Government of Australia 1997*¹⁰ (the "Wetlands Policy") include to conserve, repair and manage wetlands wisely. The policy aims to meet Australia's commitments as a

⁵ *Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment (JAMBA) 1974* ATS 1981 No 6, UNTS 1241 p 385.

Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (CAMBA) 1986 ATS 1988 No 22, UNTS 1535 p 243.

⁶ *Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971 (Ramsar Convention)* ATS 1975 No 48, UNTS 996 p 245.

⁷ Australian Nature Conservation Agency *Directory of Important Wetlands in Australia* (2nd ed, 1996) ANCA, Canberra.

⁸ Information presented includes direct or indirect human disturbances or threats, including drainage and river regulation.

⁹ NSW wetlands identified as "Important Wetlands" which are also ASS areas include the Clarence River estuary, Everlasting Swamp (Clarence), the Clybucca Creek estuary (Macleay), and Swan Pool and Belmore Swamp (Macleay). Those areas in Australia designated as "Important Wetlands" are often considered to be potential candidates for inclusion in the *Ramsar Convention*.

¹⁰ Environment Australia (Biodiversity Group) *Wetlands Policy of the Commonwealth Government of Australia* (1997) Environment Australia, Canberra.

signatory to relevant international treaties in relation to the management of wetlands; promotes the conservation, ecologically sustainable use and where possible enhancement, of wetland functions; and seeks to establish a range of measures for the protection, rehabilitation and restoration of wetland habitats.

(b) Oceans Policy 1998

Australia's *Oceans Policy 1998*¹¹ (the "*Oceans Policy*") sets in place the framework for integrated and ecosystem-based planning and management for all of Australia's marine jurisdictions. Specific commitments in relation to ASS include: to develop an action plan for the implementation of the *National Strategy for the Management of Acid Sulfate Soils*; and to provide financial support for demonstration projects to illustrate the options available to the community and governments for managing ASS.

(iii) *The Register of the National Estate*

The *Register of the National Estate* is established by the *Australian Heritage Commission Act 1975* (Cth). It highlights the importance of natural areas and helps to make decision-makers, planners and the general public aware of the value of those areas.¹²

(iv) *National Strategy for the Management of Coastal Acid Sulfate Soils*

The main strategy which specifically relates to ASS is the *National Strategy for the Management of Coastal Acid Sulfate Soils*¹³ which aims to minimise disturbance of ASS through planning and development controls; to control disturbance of ASS to mitigate adverse impacts; and to rehabilitate areas of disturbed acid sulphate soils and acid drainage. Specifically, a "balanced

11 Commonwealth Government of Australia *Oceans Policy* (1998) Environment Australia, Canberra.

12 Important ASS areas listed include Tuckean Nature Reserve (Richmond River), Stotts Island Nature Reserve (Tweed River), Everlasting Swamp (Clarence River), and parts of the Cattai Creek area (Manning River). The lower Clarence estuary, from the southern tip of Woodford Island to the entrance, has also been nominated for inclusion due to its ecological values.

13 National Working Party on Acid Sulfate Soils *National Strategy for the Management of Coastal Acid Sulfate Soils* (1999) prepared on behalf of the Standing Committee on Agriculture and Resource Management Council of Australia and New Zealand. Published by NSW Agriculture, Wollongbar Agricultural Institute, Wollongbar NSW. Only currently available electronically at:
<www.dpie.gov.au/armcanz/pubsinfo/ass/ass.html>

regulatory policy of incentives and standards”¹⁴ is to be developed in conjunction with industry and local councils to improve the management of ASS areas. Although the strategy emphasises cooperation, negotiation and incentives, the roles and responsibilities of State government include to “establish regulatory and planning development controls appropriate to the risk of disturbing ASS”,¹⁵ and to “identify a lead agency to coordinate state government services”.¹⁶ The role and responsibilities of local government includes to prepare local Environmental Planning Instruments (EPIs) which incorporate ASS issues, to “provide leadership in addressing ASS impacts at a local level”,¹⁷ and to “work with agencies to develop mechanisms for rapid response to ASS ‘emergencies’”.¹⁸ The National Working Party charged with formulating the strategy “did not consider it appropriate for legal action and penalties to be imposed on land owners and industries whose ASS areas had been disturbed by drainage works undertaken before this problem was understood”,¹⁹ but considered that “punitive action may be appropriate for those future developments which result in acid outflows into waterways.”²⁰

(v) *Other*

The *National Water Quality Management Strategy* aims to achieve sustainable use of the nation’s water resources by protecting and enhancing their quality. The Commonwealth continues to coordinate the revision of the *Australian Water Quality Guidelines for Fresh and Marine Waters*.²¹ These guidelines, currently being updated, are commonly used in setting targets for discharges from ASS affected areas, including as conditions of development

14 “Principal Aims and Objectives in the Management of Acid Sulfate Soils”, Objective 3 s 3.1.5. In: National Working Party on Acid Sulfate Soils *National Strategy for the Management of Coastal Acid Sulfate Soils* (1999). Only available electronically at <www.dpie.gov.au/armcanz/pubsinfo/ass/ass.html> 26 May 2000. Copy on file with author.

15 “Implementation of the National Strategy”. In: National Working Party on Acid Sulfate Soils *National Strategy for the Management of Coastal Acid Sulfate Soils* (1999) ASSMAC, Wollongbar NSW.

16 As above.

17 As above.

18 As above.

19 “Resources to Achieve Desired Outcomes” 5 Regulation. In National Working Party on Acid Sulfate Soils *National Strategy for the Management of Coastal Acid Sulfate Soils* (1999) ASSMAC, Wollongbar NSW.

20 As above.

21 ANZECC *Australian Water Quality Guidelines for Marine and Fresh Waters* (1992) National Water Quality Management Strategy ANZECC, Melbourne.

consent.

Other key Commonwealth documents which may be relevant to ASS areas include: the *National Strategy for Ecologically Sustainable Development*, the *Intergovernmental Agreement on the Environment*, the *Greenhouse 21C Strategy*, the *National Weeds Strategy*, the *National Forest Policy Statement*, the *National Decade of Landcare Plan* and the draft *National Strategy on the Conservation of Australian Species and Ecological Communities Threatened with Extinction*.

B. NSW GOVERNMENT POLICIES

NSW State Government actions must be consistent with the following policies for natural resource management. In some cases specific guidance to statutory authorities in the exercise of their functions is provided by statute.²²

(i) *NSW Coastal Policy 1997*

The *NSW Coastal Policy 1997*²³ (the “*Coastal Policy*”) includes a number of goals, objectives and strategic actions to facilitate the remediation of ASS areas. Key strategic actions of the policy include to address the problems of non-point source pollution, and to prepare management plans to effectively manage the remediation of ASS sites. The *Coastal Policy* applies to urban and non-urban areas of the NSW coasts (excluding from Newcastle to Shellharbour), three nautical miles seaward of the mainland and offshore islands; one kilometre landward of the open coast high water mark; and one kilometre around coastal rivers, lakes, lagoons, estuaries and islands.

(ii) *NSW Rivers and Estuaries Policy 1992*

The *NSW State Rivers and Estuaries Policy 1992*²⁴ (the “*Rivers and Estuaries Policy*”) establishes the framework for the management of the State’s rivers and estuaries and related ecosystems, including wetlands. Its objectives are to manage the rivers and estuaries of NSW in ways which slow, halt or reverse the overall rate of degradation in the systems, to ensure the long-term sustainability of their essential biophysical functions; and to maintain the beneficial use of these resources.

A number of component policies are set up under the policy, including the

²² For example, the *Protection of the Environment Administration Act 1991* (NSW) in the case of the EPA, and the *Water Administration Act 1986* (NSW) in the case of DLWC.

²³ NSW Government *NSW Coastal Policy: A Sustainable Future for the New South Wales Coast* (1997) DUAP, Sydney.

²⁴ NSW Government *NSW Rivers and Estuaries Policy* (1992) NSW Government.

Wetlands Management Policy, the *Weirs Policy*, and the *Estuary Management Policy* (see below).

(a) NSW Wetlands Management Policy 1996

The *NSW Wetlands Management Policy 1996*²⁵ (the “*Wetlands Management Policy*”) aims to identify degraded wetlands; to halt and where possible reverse the loss of wetland vegetation, declining water quality and falling natural productivity; to encourage projects and activities which will restore the quality of the State’s wetlands²⁶ such as rehabilitating wetlands; and to ensure that adequate water is available to restore wetland habitats. A principle of the policy is that degraded wetlands and their habitats and processes will be actively rehabilitated as far as is practicable. The coordinating agency for the implementation of the *Wetlands Management Policy* is the Department of Land and Water Conservation (DLWC).²⁷

(b) NSW Weirs Policy 1997

The goal of the *NSW Weirs Policy 1997*²⁸ (the “*Weirs Policy*”) is to halt and, where possible, reduce and remediate the environmental impact of ‘weirs’, including floodgates and related structures.²⁹ The policy will be achieved through an environmental audit of all weirs, examining the impacts of existing works and developing a strategy which would lead to enhanced environmental outcomes. The audit will assess the appropriateness of the existence and/or operation of each weir against a set of criteria, which includes whether there is any evidence for ASS or scalding in the vicinity of the weir. Management principles include that the construction of new weirs, or the enlargement of existing weirs, shall be discouraged; that weirs no longer providing significant benefits to the owner or user shall be removed; and that where weirs are retained, their owners shall be encouraged to undertake structural changes to

25 NSW Department of Land and Water Conservation *NSW Wetlands Management Policy* (1996) DLWC, Sydney.

26 L Torrible, in *State Wetlands Management Policy Implementation* (1997) Proceedings, Wetlands Conference and Workshop 28-30 April 1997 Myall Shores, Myall Lakes National Park, Centre for Natural Resources, DLWC, notes that for the purposes of the policy, wetlands are defined as lands that are inundated with slow-moving or stationary shallow water on a temporary or a permanent basis.

27 As above.

28 DLWC *NSW Weirs Policy* (1997) NSW Government.

29 The *Weirs Policy* states that a weir is “a structure (including a dam, lock, regulator, barrage or causeway) across a defined watercourse that will pond water, restrict flow or hinder the movement of fish along natural flow paths, in normal flow conditions”. A weir review program is being carried out as part of the NSW Water Reforms.

weirs to reduce their environmental impact and prepare and adhere to operational plans to reduce the operational impact of those weirs. The environment auditing process will initially be triggered by renewals for licences under the *Water Act 1912* or works under the *Drainage Act 1939*.

(c) NSW Estuary Management Policy 1992

The general goal of the *NSW Estuary Management Policy 1992*³⁰ (the “*Estuary Management Policy*”) is to achieve an integrated, balanced, responsible and ecologically sustainable use of the State’s estuaries. Specific objectives of the policy are the protection of estuarine habitats and ecosystems in the long-term, including maintenance in each estuary of the necessary hydraulic regime, and the preparation and implementation of a balanced long-term management plan for the sustainable use of each estuary and its catchment, in which all values and uses are considered, and which defines management strategies, including for the conservation of aquatic and other wildlife habitats, the prevention of further estuary degradation, and repair of damage to the estuarine environment. The policy sets up a process for the preparation for Estuary Management Committees of Estuary Processes Studies, Estuary Management Studies and Estuary Management Plans.

(iii) *NSW State Groundwater Quality Protection Policy 1998*

The *NSW State Groundwater Quality Protection Policy 1998*³¹ (the “*Groundwater Protection Policy*”) is a component policy of the *NSW State Groundwater Policy*. The *Groundwater Protection Policy* is relevant to ASS management due to the impacts of ASS leachate on groundwater. It seeks to encourage the ecologically sustainable management of the State’s groundwater resources so as to slow and halt, or reverse any degradation of groundwater resources, to maintain the full range of beneficial uses of these resources, to ensure sustainability of groundwater dependent ecosystems, and to maximise economic benefit to the region, State and nation. Its objectives will be achieved by applying management principles, including the requirement that where possible and practical, environmentally degraded areas should be rehabilitated and their ecosystem support functions restored.

(iv) *NSW Flood Prone Land Policy 1986*

30 NSW Government *NSW Estuary Management Policy* (1992) NSW Government.

31 DLWC *NSW State Groundwater Quality Protection Policy* (1998) NSW Government.

The *NSW Flood Prone Land Policy 1986*³² provides the framework for the preparation of Floodplain Management Plans by Floodplain Management Committees pursuant to processes set out in the *Floodplain Development Manual*. The plans set priorities for the carrying out of flood mitigation works and the maintenance of existing works, which are partly funded by DLWC.

(v) *NSW Water Reforms*

The Council of Australian Governments (COAG) water reform agenda is a key driver of land and water management in the States. As part of the preliminary assessment process under the NSW Water Reforms, a number of unregulated rivers in NSW have been classified as 'stressed'. One of the criteria for stress is the area of ASS in the catchment. All subcatchments in significant ASS areas on the NSW North Coast have been classified as such. For stressed rivers, river management plans must be developed by local Water Management Committees to define outcomes and detail actions required following river flow and water quality objectives. The issue of drains and floodgate operation will be addressed through the flow planning processes.³³ The Healthy Rivers Commission has also been established to conduct independent public inquiries into the health of NSW's rivers, and will propose river flow and water quality objectives and actions for certain catchments. The Commission's draft report on the Clarence³⁴ identified disturbance of ASS associated with drainage and flood mitigation systems, canal estates, dredging and road causeways as matters for major concern in relation to estuarine water quality and the environment generally, including the impacts on recreational and commercial fishing.

(vi) *Catchment Priorities*

The policy commitment of the NSW Government to the remediation of the ASS areas is also given effect in part by the priorities of Estuary Management Committees and Catchment Management Committees (CMCs). Estuary Processes Studies, Management Studies and/or Estuary Management Plans, have recognised the issue of ASS in a number of areas,³⁵ and CMCs of most of

32 NSW Government *NSW Flood Prone Land Management Policy* (1986) NSW Government.

33 DLWC *Submission to the Healthy Rivers Commission Inquiry into the Clarence Catchment* (1998) DLWC, Grafton NSW.

34 Healthy Rivers Commission of New South Wales (HRC) *Independent Inquiry into the Clarence River System. Progress Report: Specific Challenges for River, Floodplain and Estuary Health* (December 1998), HRC, Sydney.

35 For example, in the upper Tweed estuary - Tweed Shire Council *Upper Tweed Estuary Management Plan* (1996); near Byron Bay - Geomarine *Belongil Creek. Estuary*

the major rivers on the NSW North Coast saw ASS as one of their main issues.³⁶ It should be noted that CMCs have now been replaced by Catchment Management Boards.

III. ORGANISATIONAL CONTEXT

This section examines the main organisations which coordinate the exercise of statutory powers in relation to ASS management. The State agencies are dealt with in alphabetical order.

(i) *Acid Sulfate Soil Management Advisory Committee*

In 1994 the NSW Government established the Acid Sulfate Soils Management Advisory Committee (ASSMAC) to coordinate a whole of government response to ASS issues. ASSMAC includes representatives of State agencies, local government, universities, landholders, industry and the environment movement. It provides advice to government, coordinates the implementation of policy, and is supported by an expert sub-committee to provide technical advice.

ASSMAC's strategic plan includes the following aims: to educate key stakeholders about ASS management; to prevent disturbance of ASS by industry self-regulation; to ensure that disturbed ASS is treated and previously disturbed ASS areas are rehabilitated to prevent acid outflows; and to ensure that development controls are introduced through Local Environmental Plans (LEPs) and Development Control Plans (DCPs). A technical manual provides advice on best practice in planning, ASS assessment, drain management, groundwater management, and industry best practice.³⁷

Processes Study Final Report (October 1997) report prepared for the Belongil Creek Estuarine Management Committee; in the Hastings - Webb, McKeown & Associates Pty Ltd *Hastings River Estuary Processes Study* (1998) report prepared for Hastings Council and DLWC; and in the Manning floodplain - Webb, McKeown & Associated Pty Ltd *Manning River Estuary Processes Study* (1997) for the Greater Taree City Council.

36 For example, Greg Aldersen & Associates Pty Ltd *Draft Brunswick Catchment Report for the Brunswick Catchment Management Committee* (1998); Richmond Catchment Management Committee *Draft Richmond Catchment Management Strategy* (1995); Manning Catchment Management Committee *Manning Valley Draft Strategic Plan* (1996) ERM Mitchell McCotter.

37 Y Stone, CR Ahern and B Blunden *Acid Sulfate Soil Manual* (1998) ASSMAC, Wollongbar NSW.

(ii) *State Agencies*

(a) Department of Land and Water Conservation

The Department of Land and Water Conservation (DLWC) has a major role in relation to ASS management. The DLWC has primary carriage of the *Rivers and Estuaries Policy* and component policies, and is the coordinating agency for the implementation of the *Wetlands Management Policy*, and the environment auditing process under the *Weirs Policy*, and is responsible for guiding the preparation of catchment plans to achieve the implementation of the NSW Government's water resource objectives. The DLWC provides for the availability of financial and technical assistance to local government for the development and implementation of Estuary Management Plans under the *Estuary Management Policy*, and for Floodplain Management Plans under the *Flood Policy*.

The DLWC administers: the *Water Act 1912* and the *Water Administration Act 1986*; the *Rivers and Foreshores Improvement Act 1948*; the *Crown Lands Act 1989*; the *Drainage Act 1939*; the *Soil Conservation Act 1938*; the *Hunter Valley Flood Mitigation Act 1956*; the *Catchment Management Act 1989* and the *Native Vegetation Conservation Act 1997*. Some of the main provisions in each of these Acts relevant to ASS management are discussed below.

The DLWC is also the lead agency of inter-departmental Technical Support Teams, created in 1998 to facilitate the restoration of degraded sites and to prevent problems on land affected by ASS. The DLWC also administers the Rivercare program, objectives of which include to fund community groups to carry out wetland enhancement or protection. Through the State Lands Service, the DLWC is also a major landholder of Crown land.

(b) Department of Urban Affairs and Planning

The Department of Urban Affairs and Planning (DUAP) oversees the administration of the *Coastal Protection Act 1994* and the *Environmental Planning and Assessment Act 1979*, including approval of EPIs, Environmental Impact Statement (EIS) guidelines, consent concurrence for certain development, and the development of Regional Environmental Plans (REPs) and State Environmental Planning Policies (SEPPs). DUAP also took a role in the development of the ASS Manual (see below).

(c) Environment Protection Authority

Under the NSW Water Reforms, the Environment Protection Authority (EPA) is responsible for development of objectives, guidelines, and compliance

and auditing procedures, and the overseeing the prosecution of water pollution offenders.

The EPA administers aspects of the *Protection of the Environment Operations Act 1997*, including the preparation of Protection of the Environment Policies,³⁸ and licensing.³⁹ The EPA is defined as the “appropriate regulatory authority” in relation to scheduled activities.

For non-scheduled activities, “local authorities” including local councils are defined as the appropriate regulatory authority.⁴⁰ For example, agricultural premises causing water pollution are non-scheduled activities under the Act, and are therefore to be regulated by local authorities. (However, local authorities are not defined as appropriate regulatory authorities in relation to premises occupied by, or activities carried on by, the State or a public authority.⁴¹)

The appropriate regulatory authorities are therefore generally local councils.

(d) NSW Agriculture

NSW Agriculture chairs ASSMAC and provides technical, research, policy, and information and extension advice. However, NSW Agriculture administers no instruments capable of directly regulating management of ASS.

(e) NSW Fisheries

The role of NSW Fisheries is fisheries management and the protection of fish habitat. Provisions to achieve these objectives are dealt with in the *Fisheries Management Act 1994*. Specifically, NSW Fisheries has interests in floodgate management and the protection of aquatic vegetation.

(iii) Local Authorities

(a) Local and county councils

The main functions of local and county councils are provided for under the *Local Government Act 1993*, although councils also have functions under other Acts, notably functions under the *Environmental Planning and Assessment Act 1979* such as the development of LEPs and DCPs, and the assessment and

38 *Protection of the Environment Operations Act 1997* (NSW) Chapter 2.

39 *Protection of the Environment Operations Act 1997* (NSW) Chapter 3.

40 *Protection of the Environment Operations Act 1997* (NSW) s 6(2). The EPA may designate a public authority to be the appropriate regulatory authority: see s 32.

41 *Protection of the Environment Operations Act 1997* (NSW) s 6(2)(c).

approval of development applications. Since 1 July 1999, local councils may also issue Penalty Infringement Notices under the *Protection of the Environment Operations Act 1997* in relation to non-scheduled premises.

Local government authorities also have a key operational role in ASS management. Local government commonly have responsibility for the design, construction and maintenance of flood mitigation works, including floodgates, which control the hydrology of ASS areas.

County councils may be formed in respect of the whole or any part of one or more local government areas.⁴² The functions of a county council may comprise any one or more of the functions of a council.⁴³ Functions commonly exercised by county councils include water supply and flood mitigation and drainage. County councils are “determining authorities” under Part V of the *Environmental Planning and Assessment Act 1979*. Local or county councils often control key pieces of infrastructure such as floodgates and drains, and are therefore important organisations with respect to the management of ASS areas. County councils formed on the North Coast of NSW include Richmond River County Council and Clarence River County Council. Councils are statutory corporations.⁴⁴

(b) Section 355 committees

A local council may exercise its functions through a committee of the council.⁴⁵ A council may, by resolution, delegate to any “body” certain functions of the council.⁴⁶ Service functions of councils,⁴⁷ which are delegable, may include the following services and facilities: environment conservation, protection and improvement; drainage works; and flood prevention, protection and mitigation. A decision of a delegate body binds the council.

Section 355 committees are increasingly being formed to manage floodgates. In the past, councils have discouraged the unauthorised operation of floodgates, however, certain councils are now actively pursuing landholder

42 *Local Government Act 1993* (NSW) s 393.

43 *Local Government Act 1993* (NSW) s 394.

44 *Interpretation Act 1987* (NSW) s 50; *Local Government Act 1993* (NSW) Chapter 9, Introduction.

45 *Local Government Act 1993* (NSW) s 355(b).

46 Other than those functions listed in s 377. Functions that may not be delegated by a council include the making of a rate, the purchase or sale of any land or other property, the adoption of a management plan, and any function that is expressly required to be exercised by resolution of the council. Delegable functions generally exclude the regulatory functions (Chapter 7 of the Act), ancillary functions (Chapter 8), revenue functions (Chapter 15) and enforcement functions (Chapter 17).

47 *Local Government Act 1993* (NSW) Chapter 6.

management of controlling structures. For example, Clarence River County Council (CRCC) has negotiated management plans with seven committees. Landowners operate the gates according to a detailed management plan and assist with water quality monitoring.

(c) Drainage unions

Drainage unions are established under the *Drainage Act 1939*. Drainage unions have broad powers to construct and maintain works for mitigating the effects of flood or tides.⁴⁸ There are currently about 50 functional drainage unions in NSW, although the level of activity varies, and many tend to become activated in response to particular issues or events only. Approximately 20 per cent of drains in NSW are owned by drainage unions.⁴⁹

(iv) Other Organisations

(a) Crown trusts

Trusts have been formed to manage ASS areas. Under the *Crown Lands Act 1989*, the Minister may establish a reserve trust and appoint it as trustee of any one or more specified reserves.⁵⁰ A trust board is charged with the care, control and management of a reserve(s). The Yarrahapinni Wetlands Reserve Trust was formed to manage the remediation of ASS-affected land on the lower Macleay floodplain. Most of the relevant land was purchased or acquired, declared Crown land reserved for environmental protection, and is now managed by the Trust, which is preparing a development application which will include the managed opening of floodgates.

(b) Catchment Management Trusts

Catchment Management Trusts are established under Part 3 of the *Catchment Management Act 1989*. A trust may: manage and maintain works; purchase, lease, dispose of, manage or otherwise deal with property; enter into contracts; generate revenue by levying and recovering catchment contributions from any land declared by the Minister to be catchment contribution area;⁵¹ and do anything incidental to the achievement of the purpose for which it was

48 D Farrier, R Lyster and L Pearson *The Environmental Law Handbook* (3rd ed, 1999) Redfern Legal Centre Publishing, Sydney NSW p 441.

49 Internal DLWC document (1999).

50 *Crown Lands Act 1989* (NSW) Part 5 Division 4, s 92.

51 *Catchment Management Act 1989* (NSW) ss 39, 40.

established.⁵² Until recently only two Catchment Management Trusts existed, and only one, the Hunter Catchment Management Trust, occurred outside the Sydney area. The Hunter trust coordinates the Hexham Swamp Rehabilitation Project,⁵³ a large ASS-affected area near Newcastle. However, the Minister for Land and Water Conservation recently announced the formation of 19 new Catchment Management Boards to replace CMCs.

IV. THE EXISTING REGULATORY FRAMEWORK

This section outlines the powers available to regulatory authorities. The actual use made of some of these powers is explored in the following section.

Although the disturbance of ASS for agricultural uses has historically been largely caused by drainage, for legal, political and practical reasons, government will generally be reluctant to utilise regulatory tools to address the impacts of past drainage works which were constructed in a manner consistent with then prevailing community standards.⁵⁴ However, possible triggers for government interest and involvement in the management of existing drains and other structures will generally occur when further work is undertaken in respect of those structures. A work may require development consent; or an approval, licence or permit, may be required when seeking to address the impacts of those earlier works, often pollution.

A. WORKS WHICH REQUIRE DEVELOPMENT CONSENT

(i) *Environmental Planning and Assessment Act 1979*

In so far as regulation of works is concerned, the *National Strategy*, ASSMAC's *Strategic Plan*, and its operational document the *ASS Manual*, emphasise the control of new, or future, works, thereby placing the *Environmental Planning and Assessment Act 1979* at the centre of ASS regulation in NSW.

(a) ASS amendments to Local Environmental Plans

Most local councils on the North Coast of NSW have adopted cl 34(1) of the *Model Provisions 1980* (or a similar clause), and therefore generally require

⁵² *Catchment Management Act 1989* (NSW) s 27.

⁵³ G Evans *Returning the Tide to Hexham Swamp, While Retaining Flood Protection* (1999) Proceedings 39th Annual Conference NSW Floodplain Management Authorities, Tamworth, May 1999.

⁵⁴ The first standards specifically relevant to ASS management are the EPA *Guidelines* 1993.

consent for works on floodplains. However, in some cases drainage works will be exempt from consent requirements due to cl 10 of *SEPP 4 – Development Without Consent*, which applies to development for a purpose that is ancillary or incidental to a purpose for which the land may be used, including development for the purposes of drainage. Development that, but for this clause, could not be carried out except with development consent being obtained, therefore may be carried out without that consent.

To overcome this exemption, and to bring new works in areas of ASS within the development control process, Hastings Municipal Council amended its LEP in 1997. DUAP is currently encouraging councils to amend LEPs with similar provisions to ensure that works in certain mapped areas are subject to assessment and consent requirements. The Model ASS LEP amendments require development consent for works, including some agriculture-related works, that would disturb soils or lower groundwater levels in mapped areas identified as having potential for ASS conditions.⁵⁵ The works and areas to which the ASS LEP amendments apply are defined on ASS Planning Maps. Areas expected to contain ASS are divided into five classes, based on the expected depth to ASS, and the depth to which disturbance of ASS, or lowering of the watertable, would occur. The Minister for Urban Affairs and Planning has issued a s. 117 direction under the *Environmental Planning and Assessment Act 1979*⁵⁶ to require all coastal councils to include ASS provisions consistent with the *Model ASS LEP* when preparing an LEP. Preliminary assessments and/or the preparation of ASS management plans are to be in accordance with the *Acid Sulfate Soils Assessment Guidelines*.⁵⁷ The amendments also ensure that consent is also required for development carried out by councils, county councils and drainage unions.

The amendments will therefore trigger consent requirements for many types of works which do not require consent at present, works such as many agricultural works, drainage undertaken by drainage unions, flood mitigation works undertaken by councils and county councils, and drain re-excavation which disturbs more than one tonne of material.

In the case of the *Tweed LEP 1987*, a facility is included for an exemption for the sugar industry from the need to require development consent for certain works, provided that the works are carried out pursuant to an ASS Plan of Management agreed to by agencies and local government.

Existing use and existing consent rights have been invoked in some cases

55 Y Stone and G Hopkins *Acid Sulfate Soils Planning Guidelines* (1998) ASSMAC, Wollongbar NSW.

56 *Environmental Planning and Assessment Act 1979* (NSW) s 117 Direction Number C1 - Acid Sulfate Soils, 19 October 1998.

57 CR Ahern, Y Stone and B Blunden *Acid Sulfate Soils Assessment Guidelines* (1998) ASSMAC, Wollongbar NSW.

to obviate the need for development consent.⁵⁸

(b) Designated development

The *Environmental Planning and Assessment Regulation 1994* provides that certain development is “designated development”.⁵⁹ This may be triggered not only by the type of development, but by its location on ASS. When the proposed development is to be located in an area of ASS, developments (including agricultural produce industries, aquaculture or mariculture, artificial waterbodies >0.5 ha, and extractive industries) may be designated development. Substantial drainage works may therefore be designated development. Development applications for designated development must be accompanied by an EIS.⁶⁰

Although gazetted before the recognition of ASS issues, *State Environmental Planning Policy No 14 - Coastal Wetlands* is a key instrument for the control of certain development on ASS backswamps (see below). However, in at least one case, that of Yarrahapinni on the Macleay River floodplain where tide exclusion works changed a saline wetland into a partly drained freshwater wetland, the SEPP has also placed development controls over the proposed remediation project. Clause 7A concerns “Restriction on Carrying out of Restoration Works”. Where an applicant is not contesting responsibility for works, this clause allows restoration works to be carried out with the consent of the council and the concurrence of the Director⁶¹ pursuant to a restoration plan prepared in accordance with the guidelines issued by DUAP.⁶²

(c) ASS Manual

The *ASS Manual*,⁶³ released in October 1998, is the key operational document which provides guidelines on aspects of ASS management including assessment, management, laboratory methods, and drainage guidelines, and sets action criteria that, if exceeded, trigger the need for the preparation of a detailed ASS Management Plan. The guidelines are commonly invoked in the context of

58 The application of these rights in the context of ASS management has been discussed by D Jones *Acid Sulfate Soils – The Environmental Timebomb* (1998) unpublished BSc (Env)/LLB thesis, Centre for Natural Resources Law and Policy, Faculty of Law, University of Wollongong, NSW.

59 *Environmental and Assessment Act 1979* (NSW) s 77A.

60 *Environmental Planning and Assessment Act 1979* (NSW) s 78A(8)(a).

61 *SEPP 14 - Coastal Wetlands* cl 7A(1).

62 *SEPP 14 - Coastal Wetlands* cl 7A(2). Also *DUAP Guidelines for Wetland Restoration Plans* (1999).

63 Note 37 above.

conditions for consent, or for some other form of approval. The manual is currently being revised.

(ii) *Native Vegetation Conservation Act 1997*

Development consent is required from DLWC for clearing of: any vegetation on State protected lands,⁶⁴ which may include that within 20m of a river,⁶⁵ or on land identified as being environmentally sensitive or liable to land degradation;⁶⁶ or native vegetation on other land.⁶⁷ Clearing may be ancillary or consequent to works which may disturb ASS.

B. WORKS WHICH DO NOT REQUIRE DEVELOPMENT CONSENT

In many cases works may not require development consent. Common agricultural works, such as drain maintenance, may fall into this category. It is also expected that special provisions exempting certain forms of aquaculture will be advanced in the near future.

Certain works may not require development consent, but will require another form of approval from a public authority.⁶⁸ The following options may be used to address aspects of works which may affect ASS. In most cases, the regulatory tools are not designed to deal specifically with ASS, therefore generally limiting the extent to which ASS impacts may be specifically or explicitly addressed. The Acts are dealt with in alphabetical order.

(i) *Coastal Protection Act 1979*

Under this Act, the Minister for Public Works may advise consent authorities that certain works in the coastal zone require Ministerial concurrence.⁶⁹ The Minister must take into account the adverse effects of the

64 *Native Vegetation Conservation Act 1997* (NSW) s 22.

65 *Native Vegetation Conservation Act 1997* (NSW) s 7(1)(b).

66 *Native Vegetation Conservation Act 1997* (NSW) s 7(1)(c).

67 *Native Vegetation Conservation Act 1997* (NSW) s 14. State protected land could include ASS areas. Note: "native vegetation" is defined in s 6 as a number of broad types of indigenous vegetation, but specifically excludes mangroves, seagrasses and other marine vegetation.

68 In many cases works will require both development consent, and another approval listed in s 91 of the *Environmental Planning and Assessment Act 1979* (NSW), in which cases the proposal will be considered to be integrated development and subject to a coordinated assessment and approval process.

69 *Coastal Protection Act 1979* (NSW) s 38.

works on any foreshore, floodplain or river.⁷⁰ However, these provisions are rarely invoked.

(ii) *Crown Lands Act 1989*.

The *Crown Lands Act 1989* requires that approval be obtained for works, including drains, on public lands, which includes many foreshores, public (including ‘paper’) roads, and the beds of most rivers and estuaries.⁷¹ Section 61 requires a permit for drains constructed through a road reserve. The exercise of functions under this section was an issue in *Fishwatch Inc v Sawtell & Ors* (see below).⁷²

(iii) *Drainage Act 1939*

The *Drainage Act 1939* provides the framework for the establishment, administration and operation of drainage unions (see above). Drainage unions have broad powers to enter land (including outside its district) for the purpose of making inspections or surveys, to construct, maintain and effect extensions and alterations to works,⁷³ and to make drains through adjacent land with the consent of the board of the relevant drainage union.⁷⁴ Drainage unions are required to prepare and exhibit plans of drainage works and lodge these with the local council before commencing any works.⁷⁵ Most provisions of the Act deal with the administration of drainage unions and the construction of new works. However, the Act requires that the boards of drainage unions maintain the works under their charge in a state of efficiency, and renew such works where necessary.⁷⁶

As vehicles for facilitating the remediation of ASS areas, drainage unions may be disadvantaged by the fact that they are established in order to drain land and to mitigate the effect of floods and tides. The *Drainage Act 1939* places no environmental obligations on drainage unions. It is proposed to amend the Act by requiring drainage unions to take environmental factors into account in the

70 *Coastal Protection Act 1979* (NSW) s 44.

71 *Crown Lands Act 1989* (NSW) ss 153–158.

72 *Fishwatch Inc v Sawtell, Sawtell, Gray, Stark, Lismore City Council, Richmond River City Council, the Minister Administering the Crown Lands Act and the Minister for Planning* (Unreported, Land and Environment Court of NSW, No 402412 of 1994, 11 March 1996).

73 *Drainage Act 1939* (NSW) s 33.

74 *Drainage Act 1939* (NSW) s 76.

75 *Drainage Act 1939* (NSW) s 69.

76 *Drainage Act 1939* (NSW) s 32.

exercise of their functions.⁷⁷

(iv) *Fisheries Management Act 1994*

The *Fisheries Management Act 1994* includes potentially useful provisions which may have beneficial consequences for ASS management. First, the potential scope of s 201, under which carrying out of unauthorised dredging or reclamation work in any waters is an offence, may extend to drain clearing.⁷⁸

Secondly, s 205 creates an offence in relation to the harming of mangroves and seagrasses in a “protected area”, which includes public water land or an aquaculture lease⁷⁹ without a permit; while s 179 concerns the protection of leased areas, and encompasses injury to any “fish” cultivated.⁸⁰

Thirdly, s 218 provides that the Minister may require a person who constructs, alters or modifies a “weir”, including a floodgate, to provide fishways. NSW Fisheries proposes to apply the *Aquatic Habitat and Fish Conservation Policy and Guidelines* to encourage landholders to maintain floodgates in an open position during non-flood conditions.⁸¹

Finally, the Act enables the Minister to make Habitat Protection Plans for the protection of any habitat of fish. The Minister and public authorities must have regard to any habitat protection plan relevant to the exercise of their functions once that plan is gazetted. Three plans have so far been prepared, two of which are relevant to the North Coast of NSW. *Habitat Protection Plan No 1* restates the provisions of the Act which deal with habitat and outlines the processes to be followed when consent, notification or consultation is required. *Habitat Protection Plan No 2* is specific to the protection of seagrasses.

(v) *Local Government Act 1993*

Under s 68 of the *Local Government Act 1993*, an approval must be obtained to connect a drain to a public drain. In some cases however, the assets for which local government is responsible are incompletely documented. Therefore, approvals may not be sought.

⁷⁷ DLWC *A Proposal for Updated and Consolidated Water Management Legislation for New South Wales* (1999), White Paper, DLWC, Sydney.

⁷⁸ Drains may be “waters” for the purposes of s 201(1) of the *Fisheries Management Act 1994* (NSW), except if they only contain waters during flood or storm events. Drain cleaning resulting in the removal of sediment could therefore fall within the meaning of “dredging”.

⁷⁹ *Fisheries Management Act 1994* (NSW) s 204.

⁸⁰ *Fisheries Management Act 1994* (NSW) s 179(1)(a).

⁸¹ Internal DLWC document (1999).

(vi) Protection of the Environment Operations Act 1997

The power of the EPA and local councils to issue notices and take legal action is a key component of the regulatory regime in relation to ASS management. Chapter 4 of the Act provides a range of new environment protection notices, including “clean-up notices”,⁸² “prevention notices”,⁸³ and “prohibition notices”.⁸⁴ Local councils are normally the “appropriate regulatory authority”⁸⁵ in respect of pollution from non-scheduled premises, unless the activity is conducted by a public authority.⁸⁶ A public authority may be declared the appropriate regulatory authority in relation to certain matters under s 6(2)(d) or s 6(3).

Clean-up notices allow the appropriate regulatory authority (or the EPA in the case of an emergency⁸⁷ or when issued to a public authority⁸⁸) to direct an occupier of premises and/or a person responsible to take clean-up action when a “pollution incident” has occurred or is occurring.⁸⁹

Prevention notices can be issued when the appropriate regulatory authority reasonably suspects that that an activity has been or is being carried on in an “environmentally unsatisfactory manner”, including if it is not carried on in accordance with ‘good environmental practice’.⁹⁰ Examples of action required may include: carrying on an activity in a particular manner;⁹¹ monitoring, sampling or analysing any pollution;⁹² or preparing a plan of action to minimise pollution.⁹³ Section 219 precludes third-party enforcement action unless the EPA has decided not to take any “relevant action”.

A perceived difficulty in exercising regulatory functions in relation to water pollution in agricultural situations has been the difficulty of clearly

82 *Protection of the Environment Operations Act 1997* (NSW) s 91 or s 92.

83 *Protection of the Environment Operations Act 1997* (NSW) s 96.

84 *Protection of the Environment Operations Act 1997* (NSW) s 101. Prohibition notices are intended to be issued by the Minister in extraordinary circumstances only.

85 *Protection of the Environment Operations Act 1997* (NSW) s 6.

86 *Protection of the Environment Operations Act 1997* (NSW) s 6(2)(c).

87 *Protection of the Environment Operations Act 1997* (NSW) s 91(2).

88 *Protection of the Environment Operations Act 1997* (NSW) s 92.

89 *Protection of the Environment Operations Act 1997* (NSW) s 91(1).

90 *Protection of the Environment Operations Act 1997* (NSW) s 95(d). ‘Good environmental practice’ will include accordance with the ASSMAC Guidelines.

91 *Protection of the Environment Operations Act 1997* (NSW) s 96(3)(e).

92 *Protection of the Environment Operations Act 1997* (NSW) s 96(3)(g).

93 *Protection of the Environment Operations Act 1997* (NSW) s 96(3)(i).

attributing the pollution to a particular person.⁹⁴

(vii) *Rivers and Foreshores Improvement Act 1948*

For new works, Part 3A of the *Rivers and Foreshores Improvement Act 1948* (*RFI Act*) has the potential for influencing drainage design and impacts through the Integrated Development Assessment process. Section 22B of the *RFI Act* requires a permit to excavate “protected land”, which includes (a) land that is the bank, shore or bed of protected waters; or (b) land that is not more than 40 metres from the top of the bank or shore of protected waters.⁹⁵ The jurisdiction of the Act appears to extend to artificial channels which flow intermittently. However, the Act may indirectly also have effect beyond the 40 metre zone, as any drainage works carried out in lands other than protected land may not be connected, and will therefore not be effective, unless a permit under Part 3A is granted. Thus this Act may effectively extend to wherever drainage works are carried out.

Part 3A is potentially useful in that it includes provisions such as stop work orders,⁹⁶ injunctions,⁹⁷ impounding orders,⁹⁸ directions for remedial work,⁹⁹ the power to obtain information,¹⁰⁰ provides for appeals to the Land and Environment Court¹⁰¹ using prescribed defences defined by case law,¹⁰² and is a “planning or environmental law” within the meaning of s 20(3) of the *Land and Environment Court Act*. Also of interest is s 22L(4), which, in certain

94 It should be noted that the *Protection of the Environment Operations Act 1997* (NSW) adopts relevant wording similar to the Acts it repealed. See eg. s 120 *Protection of the Environment Operations Act 1997* (NSW) and s 16 *Clean Waters Act 1970* (NSW). As a result, much of the case law developed under those previous Acts will carry over.

95 In the *Rivers and Foreshores Improvement Act 1948* (NSW), “Protected waters” and “river” are defined in s 22A and s 2 respectively. “Protected waters” means a river or lake into or from which a river flows, coastal lake or lagoon (including any permanent or temporary channel between a coastal lake or lagoon and the sea. “River” includes: “any stream of water, whether perennial or intermittent, flowing in a natural channel ... or in an artificial channel which has changed the course of the stream of water and any affluent, confluent, branch, or other stream into or from which the river flows and, in the case of a river running to the sea or into any coastal bay or inlet or into a coastal lake, includes the estuary of such river and any arm or branch of same and any part of the river influenced by tidal waters”.

96 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22D.

97 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22E.

98 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22F.

99 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22G.

100 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22I.

101 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22L.

102 *Rivers and Foreshores Improvement Act 1948* (NSW) s 22B(3).

proceedings, requires the Court to take into account, and have due regard for, government policy relating to the management, protection and enhancement of the State's rivers and foreshores. Administration of the *RFI Act* often takes ASS issues into account as conditions of consent rather than as reasons for refusal.

(viii) *Roads Act 1993*

Section 138 of the *Roads Act 1993* provides that a person must not erect a structure or carry out a work in, on or over a public road¹⁰³, or dig up or disturb the surface of a public road.¹⁰⁴ "Public roads" include 'paper' roads, or road easements, which provide for access to every portion in NSW. Action has been taken under these provisions in several instances in relation to works crossing public roads in ASS areas.

(ix) *Soil Conservation Act 1938*

Section 15A of the *Soil Conservation Act 1938* concerns the issuing of notices if the Commissioner of the Soils Conservation Service (s. 4) is of the opinion that:

- “(a) any act or thing done or proposed to be done on or in relation to any land, or
- (b) the failure to do any act or thing on or in relation to any land, has caused or is likely to cause ... land degradation on that land or on other land and that the ... degradation or its effects can be mitigated or avoided, the Commissioner may ... require that owner, occupier, holder or grantee, ... to:
- (c) abstain from doing, or
- (d) do or permit to be done, such acts and things as may be specified in the notice.”

The powers of the Commissioner are wide, and include both on-site and (due to the legal meaning of "land" to include water) off-site effects. These provisions have not been exercised in relation to degradation due to ASS.

(x) *Water Act 1912*

Section 10 of the *Water Act 1912* requires a licence to construct any works used for purposes including drainage or the prevention of flooding in non-estuarine areas. However, drainage works in ASS areas and their operation and

103 *Roads Act 1993* (NSW) s 138(1)(a).

104 *Roads Act 1993* (NSW) s 138(1)(b).

maintenance are generally outside the operation of the provisions of this Act because the discharge from works in ASS areas generally flow into saline waters.¹⁰⁵

Part 8 of the Act controls works on river banks and designated floodplains, and requires approval for earthworks, embankments or levees. Licences are also required for the extraction of groundwater,¹⁰⁶ and licence conditions may relate to the protection of the environment generally.¹⁰⁷

Section 101 of the Act, however, creates an obligation on owners of drains to maintain them and to keep them clear of weeds and other debris. Orders can be served to that effect, although this is rare.

The *Water Act 1912* was designed for the development phase of rural production, and does not provide a suitable framework for environmental management.¹⁰⁸ A proposed Water Management Act¹⁰⁹ will consolidate and streamline water management legislation administered by DLWC, including the *Water Act 1912*, the *Water Administration Act 1986* and the *Rivers and Foreshores Improvement Act 1948*.

(xi) *Water Administration Act 1986*

The *Water Act 1912* is administered by the Water Administration Ministerial Corporation. The Corporation is established by the *Water Administration Act 1986*, and resides in the DLWC. In exercising its functions, the Corporation must have regard to cumulative impacts and ecologically sustainable development. The Corporation may also exercise functions under the *Drainage Act 1939*, the *Hunter Valley Flood Mitigation Act 1956*, and the *Rivers and Foreshores Improvement Act 1948*.

105 The *Water Act 1912* (NSW) section 10(1) provides that:
 “Any occupier of land whereon any work to which this Part extends ... is constructed or used, or is proposed to be constructed or used, for the purpose of
 (a) water conservation, irrigation, water supply or drainage; or
 (b) the prevention of inundation of land and overflow of water thereon ... ,
 may apply to the Ministerial Corporation in the form prescribed for a licence to construct and use the said work ...” .
 A “work to which this Part extends” is defined in s 5(1) as “a work: which is connected with, or which affects the quality or use of water in, a river or lake”. Section 5(1) provides that “river”: “does not include those waters of a tidal river that at any time are not capable of being used for irrigation or for watering stock”. However, the jurisdiction of the *Water Act* may be extended by regulation: s 27.

106 *Water Act 1912* (NSW) s 115.

107 *Water Act 1912* (NSW) s 116AA.

108 Note 77 above.

109 As above.

V. REGULATION OF WORKS ON ACID SULPHATE SOIL – CASE STUDIES

A moderately large body of case law has accumulated in relation to ASS management. The cases below are selected in order to illustrate various difficulties which authorities have encountered in exercising their regulatory functions relevant to ASS management.

A. EARLY CASES

Early cases largely concerned the adequacy of assessment in the context of mining, subdivision, and proposals for resort development, and commonly accepted proponents' assessment and proposed management of ASS. This litigation has included *Citizens Against Sand Mining (Inc) v Australmin Holdings Pty Ltd & Anor*,¹¹⁰ *Hancock Byatt & Associates Pty Ltd v Wyong Shire Council*,¹¹¹ *Byron Businesses for the Future Inc v Byron Council and Holiday Villages (Byron Bay) Pty Ltd* (“Club Med case”),¹¹² and *Cameron v Nambucca Shire Council & Anor*.¹¹³

B. DEVELOPMENT CONTROL

ASS issues have been successfully prosecuted where consent had not been obtained but was required. The first successful action in which ASS management was seen to be a crucial issue was *Hastings Council v Macmillan* (1993),¹¹⁴ where the defendant landholder had excavated a large dam into ASS in a rural zone near Port Macquarie and used the material as fill. The LEP had incorporated the relevant *Model Provisions 1980*. Hence the work required development consent as the operation involved the filling of material on the floodplain. The council took the matter especially seriously as the material excavated was ASS, and sought and obtained an order from the Court for an injunction to stop work, and later for restoration.

110 *Citizens Against Sand Mining (Inc) v Australmin Holdings Pty Ltd and Ballina Shire Council* (Unreported, Land and Environment Court of NSW, No 10328 of 1989, 3 November 1989).

111 *Hancock Byatt & Associates Pty Ltd v Wyong Shire Council* (Unreported, Land and Environment Court of NSW, No 10429 of 1992, 15 April 1993).

112 *Byron Businesses for the Future Inc v Byron Council and Holiday Villages (Byron Bay) Pty Ltd* (1994) 84 LGERA 434.

113 *Torquil Cameron v Nambucca Shire Council and Resource Design and Management Pty Ltd* (1997) 95 LGERA 268.

114 *Hastings Council v Macmillan* (Unreported, Land and Environment Court of NSW, No 40191 of 1993, 9 February 1994).

Similarly, in *Ballina Shire Council v Leeson and Wall* (1996),¹¹⁵ the respondents failed to obtain development consent for drainage works on flood prone land as required pursuant to the *Model Provisions 1980*.

A more complex exploration of the exercise of development control functions under a range of instruments arose in *Fishwatch Inc v Sawtell & Ors*.¹¹⁶ The case concerned drainage works undertaken at Tuckean Swamp on the Richmond River floodplain in mid-1993. The works involved the enlargement of existing drains and the construction of new drains on private land. These drains flowed into a public drain. Certain of the drains also crossed road reserves, and therefore required a permit under the *Crown Lands Act 1989*. The parties agreed on draft orders. Stein J acknowledged that although not all the matters had been litigated, the fact that the parties had agreed to the minutes was sufficient to establish those matters, that: the plaintiff had an arguable case that the works required development consent under Pt IV of the *Environmental Planning and Assessment Act 1979*; that the works required the approval of Lismore City Council pursuant to s 68 of the *Local Government Act 1993*; and also that the Minister administering the *Crown Lands Act 1989* had acknowledged that an approval for the drains crossing the road reserves is a Part V activity requiring compliance with s 111 and/or s 112 of the *Environmental Planning and Assessment Act 1979*. None of the required approvals had been sought or obtained. The parties agreed that the landholders be restrained from permitting polluted water from entering the public Main Drain, unless the landholders prepared a Strategic Plan, such that waters discharged have a pH of >5.

As noted above, the importance of development control on floodplains led Hastings Municipal Council to amend the *Hastings LEP 1987* in 1997 by Amendment No 65 to require development consent for certain works in ASS areas. The amended LEP was tested in *Hastings Council v Maria River Tea-tree Plantation Co*,¹¹⁷ where the defendant had failed to obtain development consent for certain works, including the widening of several kilometres of drains adjacent to the Maria River near Port Macquarie, as was required under the amended LEP. The Court levied a restoration order, fine and costs to a total of \$30,000.

However, similar works may still be carried out without consent and

115 *Ballina Shire Council v Leeson and Wall* (Unreported, Land and Environment Court of NSW, No 40193 of 1996, 24 March 1997).

116 *Fishwatch Inc v Sawtell, Sawtell, Gray, Stark, Lismore City Council, Richmond River City Council, the Minister administering the Crown Lands Act, and the Minister for Planning* (Unreported, Land and Environment Court of NSW, No 40241 of 1994, 11 March 1996).

117 *Hastings Council v Maria River Tea-tree Plantation Co* (Unreported, Land and Environment Court of NSW, No 50018 of 1998, 23 March 1998).

assessment requirements in other shires. This points to the usefulness of the development control approach in controlling the extension and intensification of drainage, whether development consent is pursuant to an LEP or some other instrument such as *SEPP 14*.

For the purposes of refining policy and practice relating to the regulation of works affecting ASS, it may be more illuminating to focus on those instance where action taken by the relevant authority(s) failed to deliver the desired environmental outcomes, and to examine the reasons why. Two of the main reasons appear to be a reliance on instruments of insufficiently encompassing scope, and difficulties in relation to evidentiary issues.

C. SCOPE OF INSTRUMENTS AND EVIDENTIARY ISSUES

Where development consent is not required, an approval of some kind may be required by another instrument, such as the *Fisheries Management Act 1994*, the *Rivers and Foreshores Improvement Act 1948*, or the *Water Act 1912*. The narrow scope of these instruments is suggested by their selective use.

(i) *EPA and Maria River Tea-tree Plantation Co*

Aspects of *Hastings Council v Maria River Tea-tree Plantation Co* concerning the *Environmental Planning and Assessment Act 1979* have been referred to above. However the events also illustrate the importance of evidentiary issues in relation to a prosecution under the *Clean Waters Act 1970*. In respect of the works carried out, the EPA decided not to prosecute, as the company took immediate action to ameliorate the disturbed ASS, including blocking the drain. In those circumstances it was considered that sufficient evidence did not exist to demonstrate pollution of waters and support a prosecution under that Act.

(ii) *Hastings Municipal Council v Quildan Pty Ltd*¹¹⁸

In 1991, Quildan Pty Ltd dug and deepened drains and cleared vegetation on a *SEPP 14* wetland, which was underlain by ASS. The works caused significant export of acid water from the land into the Hastings River adjacent to commercial oyster leases. In 1997, Hastings Council commenced proceedings against Quildan in the Land and Environment Court, alleging that the development had been carried out without consent.¹¹⁹ The EPA joined the

¹¹⁸ *Hastings Municipal Council v Quildan Pty Ltd* (Unreported, Land and Environment Court of NSW, No 40129 of 1997, 25 September 1998).

¹¹⁹ By consent, the points of claim in the proceedings were later amended to omit reference to the alleged breach of the planning legislation.

proceedings, alleging that the works were causing the pollution of waters.

On 25 September 1998, orders requiring Quildan to undertake specified remedial works were made by the Court, with the consent of all parties.¹²⁰ As the matter was settled by consent and no adjudication was reached in respect of an offence under the *Clean Waters Act 1970* for pollution of waters, no legal precedent exists under that Act (or the *Protection of the Environment Operations Act 1997* to date). Potential breaches of the *Fisheries Management Act 1994*, the *Rivers and Foreshores Improvement Act 1948*, and the *Crown Lands Act 1989* were not pursued.

(iv) *Everlasting Swamp*

In August 1998, drain 'cleaning' activities undertaken by the owner of land at Everlasting Swamp on the Clarence River floodplain resulted in excavated ASS material being placed on the edges of the drain. It was considered that acid water retained in the drain posed a serious risk to the receiving waters. In September 1998 the EPA received an ASS Management Plan which was considered inadequate, and following attempts at negotiations, the EPA issued on the owner two notices in November 1998 under s 27A of the *Clean Waters Act 1970*. The first required: specific action to be taken to prevent the pollution of waters from the disturbed ASS; an improved ASS Management Plan; and actions to be taken to neutralise the drain water and the ASS drain spoil. A second notice issued by the EPA required an audit by a consultant of the remediation works. The consultant reported that the drain spoil had been successfully managed, despite the apparent magnitude of the works, and the section 27A notice was revoked by the EPA.

Being considered a good example of a large coastal wetland, Everlasting Swamp is listed in the *Directory of Important Wetlands in Australia*.¹²¹ The swamp is also listed in the *Register of the National Estate* under the *Australian Heritage Commission Act 1975*, and numerous studies have documented the ecological significance of the swamp. These listings highlight the relevance of a range of Commonwealth and State Government policies to the swamp, and the need to ensure that the management of the swamp achieves wetland conservation objectives. While the pollution legislation (the *Clean Waters Act*) was able to address the effects of the material removed from the drains, the legislation does not effectively address the question of the desirability of existing drainage of sensitive areas such as this.

The Everlasting Swamp events highlight the need for consistent adoption of ASS LEPs by local councils. They also illustrate the difficulties faced in lieu

120 Remediation has been delayed due to heavy rain and the Court orders have twice been amended to take account of this.

121 Note 7 above p 70.

of *SEPP 14* protection, as the relevant land was originally included in, but was later deleted from, *SEPP 14 Coastal Wetland No 231*.

(v) *Micalo Island*

The developer of land on Micalo Island in the Clarence River enlarged existing drains, constructed new drains, and installed floodgates. The EPA encouraged council (as the appropriate regulatory authority) to issue a Notice under the *Protection of the Environment Operations Act 1997*. However, it was considered that there was insufficient evidence to bring a prosecution under that Act given that spoil had been removed from beside the drains before soil or water samples could be collected. Maclean Shire Council requested a consultant's report, which concluded that no impacts due to the works were apparent. Council has subsequently issued a Notice under the same Act instructing the developer to engage a consultant to prepare an Acid Sulphate Soil Management Plan by the end of September 1999 and that works to be completed by end of October 1999. At time of writing (Feb 2000) Council has received an ASS Management Plan.

The developer also upgraded roads and installed electricity and water services. As the applicant claimed the development was for agricultural purposes, Council conceded that the development was for such purposes and did not require consent under existing planning instruments.¹²² This issue therefore also highlights the need for adoption of the model ASS LEP by local governments to ensure that development consent is required for works, including some agricultural works, that would disturb soils or groundwater levels in localities identified as having ASS.

Certain actions have also been taken by NSW Fisheries under the *Fisheries Management Act 1994*, including the seizure of floodgates that were restricting tidal movement and restricting fish passage. Certain other powers were available to DLWC under the *Rivers and Foreshores Improvement Act 1948* and the *Roads Act 1993*. Council also placed appropriate notations on s 149 certificates highlighting the site constraints relating to effluent disposal, ASS and flooding.

D. DIFFICULTY OF ENFORCING ORDERS

Attempts to secure appropriate management of ASS areas in certain cases have also seen a lack of correlation between legal and environmental successes. This is often related to financial matters, and the case law related to ASS management has so far illustrated this in two ways.

¹²² Maclean Council has now adopted a model ASS LEP.

(i) *Kempsey Shire Council v Berne*¹²³

In 1989, the landholder Berne, excavated 1.6 km of drain through part of *SEPP 14 Coastal Wetland No 484* on the Maria River, a tributary of the Hastings River. Proceedings were commenced in 1996 under the Class 4 jurisdiction of the Land and Environment Court. In 1997 the Court found that the drainage works required development consent, but that no development consent had been granted. The Court ordered, by consent of the parties, that a Plan of Management be prepared, and that certain other works be carried out.

A major issue arising from these proceedings is the ability of a Respondent to carry out orders. The Plan of Management received by council was considered to be deficient in a number of respects. The orders also required that the Respondent intensively monitor water quality and manage a remediation structure accordingly. Doubts were expressed as to the ability of the Respondent to carry these orders out, a concern which may also apply in other cases.¹²⁴

Berne points to the deficiencies of orders made in the absence of financial arrangements to give effect to those orders. State and local government have spent more on these proceedings and the associated actions, so far to minimal environmental effect, than it would have cost to hire plant and return the excavated material to the drain, or to a strategic section of it, pursuant to an agreement or an appropriate court order. If relevant authorities could agree on a suitable scheme in cases such as *Berne*, cost-effective and environmentally-effective outcomes could be achieved whilst preserving precedent and deterrence, yet minimising adverse political outcomes for State and local authorities and the Government generally.

¹²³ *Kempsey Shire Council v Berne* (Unreported, Land and Environment Court of NSW, No 40195 of 1996, 13 June 1997).

¹²⁴ In *Fishwatch Inc v Sawtell & Ors* (1996) landholders were required to prepare a Strategic Plan such that waters discharged from the offending drain have pH<5 with monitoring to be carried out by the primary respondent.

(iii) *EPA v Iron Gates Pty Ltd*¹²⁵

This case concerned a successful prosecution for water pollution that has some relevance not only for the prosecution of pollution from drainage works, but also for the capacity of even successful prosecution to deliver positive environmental outcomes. On 12 June 1998, the EPA charged that Iron Gates had committed an offence against the *Environmental Offences & Penalties Act 1989* in that it polluted waters via a drain contrary to s 16(1) of the *Clean Waters Act 1970*. The drain effectively drained the water table, and the water flowing out of the drain into the river was “discoloured brown”, carrying “scum”,¹²⁶ and had unacceptable pH values, within the terms of Regulation 2(2) (ie <6.5). The Court accepted that the evidence indicated that although the impact on the river would be somewhat localised, there was evidence of dead oysters at the outlet. The EPA issued a notice under Reg 21 of the *Clean Waters Regulations* on Iron Gates requiring all drains “conveying polluted stormwater and groundwater to Evans River to be blocked”. These works were not complied with by the deadline. Sheahan J accepted that the subject site was known to be environmentally sensitive, and, although “satisfied that no major environmental harm occurred in this matter”, regarded the “circumstances as being well above the ‘least serious’ category of offence”, convicted Iron Gates and ordered the company to pay a fine of \$50,000 within 28 days and ordered the drains blocked.

However, during the proceedings, the Court had heard evidence that an administrator of Iron Gates had been appointed on 23 April 1998, and that preliminary investigations into the affairs of the company led the administrator to the belief that it was “hopelessly insolvent”, with “no funds in [the] administration of Iron Gates nor are there funds likely to be forthcoming in the near future”. As of January 2000, the drains had not been effectively blocked.

VII. CONCLUSIONS AND RECOMMENDATIONS

Despite a firm policy commitment by government to address the ASS issue and a range of regulatory instruments with which to effect these intentions, the use of regulatory powers for the purposes of controlling the disturbance of ASS has so far delivered mixed results in NSW.

¹²⁵ *Environment Protection Authority v Iron Gates Pty Ltd* (Unreported, Land and Environment Court of NSW, No 50083 of 1997, per Sheahan J, 12 June 1998). For earlier material in this long running matter, see also :

Environment Protection Authority v Iron Gates Pty Ltd (Unreported, Land and Environment Court of NSW, No 40189 of 1996, per Pearlman J, 26 September 1997).

¹²⁶ *Environment Protection Authority v Iron Gates Pty Ltd* (Unreported, Land and Environment Court of NSW, No 50083 of 1997, per Sheahan J, 26 September 1997).

So far, most of the regulatory emphasis has been directed towards ensuring that ASS are addressed at the development control stage through Pt IV of the *Environmental Planning and Assessment Act 1979*. However, most of the major drainage works are of historical origin, and the main challenge in relation to the management of ASS now is the management of existing structures, including drain maintenance. The use of Part IV successfully brings most works affecting ASS within the development application-consent process, but includes works which many farmers would see as routine farm management.

It is argued that the consent process is poorly tailored for these agricultural purposes, due to the costs and delays associated, therefore risking significant levels of non-compliance. Furthermore, the boundary between new works on existing structures requiring development consent and those not requiring consent, such as legitimate drain maintenance versus drain deepening and widening, is not always easy to determine.

One response has been to ensure that certain works do not require development consent. The *Tweed LEP 1999* for example, provides that works for the purposes of agriculture do not require development consent, provided that certain criteria are satisfied, including that the works are carried out in accordance with a drainage management plan prepared in accordance with the *Sugar Industry Best Practice Guidelines* and endorsed by the NSW Sugar Milling Cooperative. The Guidelines must be approved by the Director-General of DUAP in consultation with ASSMAC and NSW Agriculture and have been adopted by Council.¹²⁷ The *Maclean LEP 1999* provides an exception for cane land, with similar criteria.¹²⁸ However, such works may require an approval of some kind under some other Act.

In relation to the use of other statutory instruments for controlling works affecting ASS areas, one of the main difficulties identified which may lead to unsatisfactory environmental outcomes appears to be a lack of suitable regulatory tools of sufficient scope or specificity with which to influence aspects of ASS management. Regulatory tools in relation to works on ASS not requiring development consent are frequently fragmentary and issue based, and are often applied on an opportunistic basis. The resultant difficulties encountered and complexity of the matters involved may be compounded by the fact that regulatory responsibilities are spread across a number of government agencies. This tends to produce an uncoordinated and inconsistent approach to the exercise of statutory powers, which therefore diminishes the deterrent effect of those regulations.

The roles and obligations of agencies therefore need to be clearly established so that maximum use can be made of the instruments available. An

127 *Tweed LEP 1999* cl 2.

128 *Maclean LEP 1999* cl 4.

example of such delineation exists in the case of agency roles and responsibilities with regard to the NSW Water Reforms. The DLWC is responsible for planning, assessment and licensing, and the EPA is responsible for the setting water quality objectives, guidelines, and compliance and auditing procedures, and the overseeing the prosecution of water pollution, while NSW Agriculture is responsible for extension and planning at the property and industry level.

In relation to the management of statutory authority responses in ASS areas, expertise from the range of relevant organisations may be brought to bear in the form of a technical/legal inter-departmental reference group, so that information relating to alleged breaches can be fully evaluated for its potential to affect the likely outcomes of agency actions. A clear compliance and prosecutions policy should include action criteria such as thresholds. As key operational authorities, councils and other relevant statutory authorities should be included under any such protocols. Following notifications, clear guidelines for referral of information between authorities should be followed, although information flows will vary from catchment to catchment and region to region due to different organisational arrangements. A register of public notifications should be established and be publicly accessible. A process for monitoring the exercise of, and review of, regulatory roles should also be established.

Another major impediment to the successful exercise of statutory powers appears to be the costs associated with prosecutions, and a lack of resources available to the prosecuting authority, both financial and technical, especially for smaller organisations such as local authorities, which under the *Protection of the Environment Operations Act 1997*, now have the primary and major roles in relation to non-scheduled premises. The financial exposure of local government due to prosecution of environmental offences is likely to become a greater impediment to the exercise of those powers. As a result, greater use is likely to be made of more cost-effective tools such as notices under the *Protection of the Environment Operations Act 1997*, and similar provisions under other Acts. A further option to contain costs may be to differentially utilise regulatory tools, including licensing, other authorisations and notice powers in different locations or classes of land according to risk of environmental harm in a similar way to the class-based amendment of existing coastal LEPs.

Even where a matter is successfully prosecuted, difficulties have been encountered in enforcing orders due to lack of respondent's resources. A strategic and more cautious use of financial security as conditions of consent or approval, including by ss 80A(6) and 93(2) of the *Environmental Planning and Assessment Act 1979*, may negate difficulties encountered in remediating sites such as the Iron Gates land.

The operational, including regulatory, functions of government are increasingly being devolved 'downwards' to local government. However, policies at both Commonwealth and State levels intended to give direction in

relation to the management of ASS areas are often poorly understood and/or expressed at the local level(s), especially by local committees. Documents which give operational guidance to local land managers should reflect government policy preferences with respect to floodplain management, such as specific provisions for the management of environmentally significant areas, including Important Wetlands. For example, council conditions of consent and operational protocols in respect of delegated functions commonly require Plans of Management to be prepared in accordance with guidelines, often including the *ASSMAC Guidelines*.

Alternatively, improved ASS management may be effected through management agreements between government and/or community groups and those who hold or have interests in land. Statutory bases for such agreements may include s 88E of the *Conveyancing Act 1919* which allows public authorities to enter into voluntary agreements relating to land use with landholders and to attach covenants to particular pieces of land which can be enforced against subsequent landholders. The *Native Vegetation Conservation Act 1997* refers to the making of property agreements between a landholder and DLWC concerning the management of native vegetation on the property, and the *National Parks and Wildlife Act 1974* provides for conservation agreements between the Minister and the owner(s) of the land for purposes including the preservation or protection of fauna or native plants or the conservation of threatened species, populations or ecological communities, or their habitats. However, so far these and other statutory avenues for effecting improved management have been little explored by government authorities.

The proposed Water Management Act is expected to address certain compliance and planning aspects of the existing system.¹²⁹ The Act will place greater emphasis on water management planning, which will be the basis of water resource management for rivers and groundwater systems in NSW. The plans must be consistent with government policy, environmental agreements, and compulsory State or regional standards. The new compliance system will adopt the best compliance aspects of the *Rivers and Foreshores Improvement Act 1948*, including stop work orders, notices and orders to prevent harm and for rehabilitation works, and provision for third party action.

129 Note 77 above.

