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Environmental policy implementation: sea dumping off sub-Antarctic Heard Island, Australia

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In pursuit of its Antarctic interests, Australia has nominated a single agency, the Australian Antarctic Division to exercise legislative and managerial responsibility for Antarctic operations. This agency has a dual role in undertaking station development and resupply activities on the one hand and the responsibility of environmental watchdog over these same official activities on the other. There is potential conflict between these roles and in practice this can result in the subversion of the latter function and thus the promotion of environmental degradation with both short and long-term impacts on the terrestrial and marine Antarctic and sub-Antarctic environment. The situation described below typifies the problems encountered in implementing environmental protection policy by agencies charged with conflicting responsibilities.

Recourse is had to policy implementation theory in the context of analyses of pertinent Antarctic and sub-Antarctic environmental legislation, of policy interpretation and management within the Australian Antarctic Division, and of onsite decision-making. Observations of recent sea dumping activities off sub-Antarctic Heard Island are used to illustrate the problem of the Division's role ambiguity. Conclusions and recommendations point toward serious inadequacies in the implementation of environmental policy and to the possibility of improving the environmental record by strengthening the environmental responsibilities of other agencies.

Policy Implementation Theory

The presumption in classical administrative theory is that once policy is made, its implementation is comparatively straight forward. However the proliferation of literature examining and theorizing the implementation process in

recent years suggests the inadequacy of this view. Most recent literature thus eschews the mechanistic formulation-implementation model arguing instead "in favour of relatively unstructured interpretations said to more accurately reflect the subtle and iterative complexities of ... implementation" (MacIntyre, 1985:207).

As MacIntyre (1985) persuasively argues, there is a presumption in favour of the faithful implementation of policy (arising from the perceived legitimacy of legal rationality and reinforced by formal sanctions) but that there is often the will and the opportunity by actors at various points in the policy process to subvert or deflect implementation. The present authors hold to the view that Australia's Antarctic environment policy should be implemented, and we suggest why this is not always the case and what can be done about it.

Though there are a number of departments with Antarctic and sub-Antarctic jurisdictions, and several pieces of legislation contributing to Australia's Antarctic and sub-Antarctic environment policy, there is comparatively little interagency conflict or statutory ambiguity unlike the complex situation in the United States. In fact, we suggest below that consideration be given to deliberately fostering some interagency conflict as a possible means of undercutting those factors that currently tend to subvert Australia's Antarctic environment policy.

Australia's Antarctic policy sub-system is remarkably simple. Though there are groups outside the formal policy sector with an interest in Antarctic policy they are comparatively small and few in number, and focused upon the formulation stage of the policy process, there being very little capacity to monitor the implementation stage (Lewis, 1982:152-159, also notes the limitations upon monitoring of, and mobilisation around Antarctic policy issues). With few

exceptions the Antarctic policy sub-system consists of formal actors within the policy process.

Our analysis highlights the significance of intra-agency goal ambiguity for the triumph of instrumental (or bureaucratic) rationality over legal rationality (Rein and Rabinovitz, 1978) when physical remoteness from the seat of policy implementation makes surveillance and enforcement difficult. Under these circumstances the relevant variable is less one of statutory ambiguity than of actors 'at the coalface' possessing the will and the opportunity to knowingly ignore or contravene what may well be quite unambiguous goals (though not necessarily goals formulated by the administering agency and not necessarily goals for which the agency as signalled - to its employees - unambiguous commitment).

Van Meter and Van Horn call this 'intra-agency coalface sabotage' 'dispositional conflict', and argue that it occurs "because subordinates (implementors) reject the goals of their superiors. Goals and objectives may be rejected for numerous reasons: they offend implementors' personal values or extra-organizational loyalties; they violate implementors' sense of self-interest; or they alter features of the organization and its procedures that implementors desire to maintain" (Van Meter and Van Horn, 1975:482). Our analysis suggests that it is likely to be one of the most significant and enduring factors contributing to implementation failure.

The Legislative and Administrative framework of Australia's Antarctic and sub-Antarctic Environmental Policy

As Australia is a Party under the Antarctic Treaty, and thus takes its primary obligations and duties from the Treaty, the key formal player in Australia's Antarctic policy is the Department of Foreign Affairs (DFA). With thirteen other federal departments, the DFA is a member, and perhaps the dominant member (Rowland, 1984:356) of the Interdepartmental Antarctic Committee (IDAC) that would seem to have an important role in the coordination of broad-brush policy. But it is difficult to

assess the DFA's role within this committee and its will and capacity to control the direction of Australia's Antarctic policy in a more general sense. Davis asks (1984:347) "[h]ow influential is the Department of Foreign Affairs in shaping Australian Antarctic policy and does it exercise any right of veto over certain policy options?", and subsequently admits to not having the answers to these questions. Beyond observing that it plays "a central role in Antarctic policy-making", he fails to find "any evidence that the Department of Foreign Affairs consciously exercises a veto over certain policy options" (1984:348-349).

The problem arises because the execution of Australia's Antarctic operations is entrusted to the Australian Antarctic Division which is not an arm of Foreign Affairs, but an adjunct of the Department of Arts, Sport, Environment, Tourism and Territories (DASETT), often referred to as the 'super department', or, less reverently, 'the department of everything left over'.

As the Division is physically located not in Canberra but in a distant provincial capital, Hobart, and as the Division controls the practical organisation of Antarctic operations, DFA oversight is somewhat difficult (as is that of DASETT itself). This is similarly the case with all other arms of government with legislative responsibility for and policy interests in Antarctica. Davis (1984:352-353) lists twelve agencies with a direct and specific Antarctic interest, excluding those whose general interest should entitle them to membership of the IDAC.

Until 1985 the Division came within the rubric of the Department of Science and Technology. The change from Science to DASETT has placed the Division under the ministerial control of a tough, successful and vigorously pro-environmentalist minister, but there is a perception (not universally held within the Division itself) that its removal from Science and Technology constitutes a priority downgrading on the part of the government, and a muddying of the stated primary purpose (scientific investigation) of Australian involvement in Antarctica.

General policy and administration of the Australian Antarctic Territory (AAT) is established via the *Australian Antarctic Territory Act* 1954 while the External Territory Heard Island and McDonald Islands is administered under the *Heard Island and McDonald Islands Act* 1953. Australia's obligation to meet the provisions of the Antarctic Treaty derive from the *Antarctic Treaty Act* 1960. This act does not specify treaty obligations for environmental protection, such responsibility being entrusted to the Antarctic Division under the *Antarctic Treaty (Environment Protection) Act* 1980 (see Keage, 1986; and Kriwoken and Keage 1989, for specific assessments of protected area planning and management). Guidelines to prevent introduction of non-indigenous organisms and to minimise environmental change are established under this act.

Three other pieces of legislation have important implications for Australian Antarctic and sub-Antarctic environmental management. The *Environment Protection (Impact of Proposals) Act* 1974 "requires the preparation of an Environmental Impact Statement (EIS) in certain circumstances" and "applies to the Antarctic" (ASAC, 1988:55), while the *Heard Island and McDonald Islands Environment Protection and Management Ordinance* 1987 mandates the proper management of the territory, including the declaration of Zones of Special Status. The *Australian Heritage Commission Act* 1975 established the Australian Heritage Commission which is charged to preserve and protect those natural areas and cultural sites deemed worthy of being considered part of the national Estate. This is a somewhat controversial piece of legislation wherein listing on the National Estate places a special obligation on the Australian Government to ensure that the special values of the listed item are maintained and that human activities are consistent with its listing on the register. Heard Island and McDonald Islands were listed on the register of the National Estate in November 1983, both natural and cultural values being cited as justification for the listing. In addition, as the *Report on Australia's Antarctic Science Program* (ASAC, 1988) notes, there are several

other acts of general applicability (concerned with wildlife protection and other environmental matters) that extend to the AAT (ASAC, 1988:55; see also Triggs, 1984:52-54, for an enumeration of some of these incidentally-applicable pieces of legislation). The cumulative effect of this network of legislation applying to the land areas of Australia's Antarctic territories is towards the minimisation of human disturbance of the terrestrial environment.

Turning to management of the offshore zone one finds a more confused administrative picture. DASETT's Antarctic Division has responsibility for administering the important *Antarctic Marine Living Resources Conservation Act* 1981, though cooperation with the Minister of Primary Industries and Energy is here specified. In general, responsibility for marine resources is shared between DASETT and the Department of Primary Industries and Energy, the latter charged with regulation of commercial fisheries and other activities with respect to the sea floor and submerged lands.

A third arm of government with a statutory interest in Australia's southern oceans is Environment (within DASETT), which is charged with regulation of the dumping of wastes and other matter into the sea. Of particular importance for this paper is the *Environment Protection (Sea Dumping) Act* 1981 which forbids the dumping of land generated wastes in the territorial sea. This act also defines how and what matter may be dumped in Australian waters beyond the territorial limit. The Act states:

"Where, otherwise than in accordance with a permit, any wastes or other matter - (a) are, or is, dumped into Australian waters from any vessel or aircraft; or (b) are, or is, dumped into any part of the sea from any Australian vessel, Australian aircraft or Australian platform, the owner and the person in charge of the vessel, aircraft or platform and the owner of the wastes or other matter are guilty of an offence against this section (Australia, 1981:1812).

In general then, the key agency concerned with the implementation and enforcement of Australia's Antarctic

policy is the Antarctic Division within DASETT, and this responsibility extends to External Territory Heard Island and McDonald Islands. Other departments and sub-departments have significant formal involvement in environmental protection, but actual operations are the Division's exclusive preserve, and the Director of the Division is responsible for all *inter alia* consultation with all government departments and agencies involved in management of Australia's Antarctic and sub-Antarctic operations.

Policy Interpretation and Management

The ambiguous charter of the Antarctic Division is clearly evident at the operational level where policy is interpreted and management undertaken. With a 1987/88 budget of \$49.248 million and responsibility for over 6.8 million square kilometres, the main concern of the Division is the maintenance of permanent stations, temporary bases, and a 10 year \$76.704 million station rebuilding program.

The means of environmental policy implementation are the concern of the Environmental Committee, consisting of Division officers and representatives of the Department of Housing and Construction and DASETT (Australia 1987). The Committee is purely an advisory body to the board of management of the Division, advising on environmental aspects of Australian National Antarctic Research Expeditions (ANARE) activities and general Antarctic matters. It is *inter alia* responsible for advice on the environmental impact of ANARE operations and activities and on the ways in which Antarctic activities impact upon the environment (ASAC, 1986:58).

Though the Environment Committee consists of 13 people, only 3 invited members have expertise in biological or environmental studies, the remaining 10 being *ex officio*. It meets only once a year and during that time considers a wide range of environmental matters. It has no function in expedition planning or in the initiation of policy, its advice being confined to interpretation and advice upon practical matters. There is

no full-time environment officer responsible for coordinating committee activities - in fact, at the time of writing the Division does not contain one officer who is trained as an environmental planner.

Given these institutional and personnel deficiencies it is perhaps not surprising to find that, in many ways, environmental planning within the Division maintains no inventory of materials which have been disposed at sea either deliberately or inadvertently. There is no inventory of oil spills during ship to shore refuelling, from ships at sea, or from fuel farms - a recurrent problem concerns ice-broken fuel lines and the absence of any automatic means to stop the flow when this occurs. (Keage and Quilty, [1988] have advanced management prescriptions for dealing with such problems, but to date these have not been into effect).

It is thus difficult to avoid the assessment that the Division at present has neither the expertise nor the inclination for environmental planning activities, and there is thus a strong presumption that operational and development concerns will triumph over environmental planning priorities.

Onsite Decision-Making

The station leader, field leader, and voyage leader are responsible for all onsite decisions at the station or base and are to ensure that environmental policy directives from the Division are implemented. During resupply or pickup the voyage leader, in cooperation with the captain of the ship, coordinates the shipping schedule. The station leader is an appointed inspector under the Antarctic Treaty (Environment Protection) Act 1980 to ensure that the act's requirements are met. Australia has hitherto looked to its station leaders for the drawing up of station management plans, though few such leaders have had past experience or expertise in environmental management (on the need for greater professionalism in environment management plan formulation see Keage, Hay and Russell [in press]). Reporting to the Environment Committee are environ-

ment officers at each station. The environment officer must:

- (1) provide a source of advice on the environmental implications of activities to both the station leader and to station personnel generally;
- (2) provide early warning of developing environmental problems and alert the station leader to these as well as preparing appropriate documentation for the Antarctic Division, and;
- (3) perform on the ground investigations, or coordinate such investigations, of environmentally significant situations that may arise (Australia, 1987:6).

Environment officers are appointed by the primitive 'any volunteers?' device. They take on these tasks in addition to their primary duties. They do not necessarily have qualifications or experience in biological or environmental sciences (ASAC 1986:58) and often have no previous Antarctic experience.

On the specific policy issue that is the subject of this paper Murray-Smith (1988:237) has written recently: "No garbage, says Bleasel [Jim Bleasel was, until recently, the entrepreneurial, high profile head of the Division] is now left in Antarctica. It is either incinerated in a closed system or brought back to Australia". One of the very clear environmental responsibilities of the station leader and, indirectly, the environmental officer, is to return garbage to Australia. At the formal level there is no goal ambiguity on this point; the Division's position is absolutely clear - all garbage generated is to be returned, and in the long-term, the detritus of previous expeditions is also to be removed to Australia.

Observations at Heard Island Base

The exploration and exploitation of Heard Island (Figure 1) is closely tied to sealing, pelts being taken from 1857 to the 1930s (Keage 1981:12-14). Formal discovery of the islands, situated in the southern Indian Ocean at 53°05'S.,

73°30'E, is attributed to a British whaler, Kemp, in 1833. The H.M.S. *Challenger* expedition landed at Heard Island in 1874 and made scientific investigations. Further scientific recordings were made in 1929 via the separate visits of the French and the British, Australian and New Zealand Expedition. From 1947 to 1954 an ANARE station was established at Atlas Cove and undertook a scientific and mapping program. Between 1969 and 1983 the United States of America, France, and Australia all occupied Heard Island in various seasons (Keage, 1981:15-20), while ANARE operated scientific bases on Heard from 1985 to 1988.

The Heard and McDonald Islands are globally significant because they are the only sub-Antarctic island group without human-introduced plants and animals. Strict environmental protection is required to maintain these ecosystems in an undisturbed state. It is imperative that human visitors recognize the global importance of the islands and the need to minimise environmental impacts. It is extremely important to prevent the importation of organisms, including plant propagules, and potential sources of disease to animals and plants (Keage, 1981).

At the end of the 1987-88 season the ANARE base was dismantled for return to Australia. Equipment and personal belongings were packed and returned to the charter vessel. A clean up program had operated throughout the summer season to assist in reducing the vast quantities of accumulated garbage, the residue of activities by various countries over several years. The removal of existing 200 litre drums and drums filled with wire, wood, glass, metal, and plastic was intended. Yet, one of the authors witnessed loads of wire, metal, corrugated iron, and various other garbage along with several 200 litre drums filled with this waste taken out to Corinthian Bay to be dumped. The reason given for this action was that to undertake the tedious task of 'RTA' (Return to Australia) would seriously interfere with the ship's capacity to meet its scheduled arrival date in Hobart.

The littoral zone around Heard Island is foraged by sea birds and seals which breed on land, as well as by migratory non-breeding populations. The characteristics of the inshore areas are poorly known, hence the likely environmental impacts caused by the dumping of wastes cannot be adequately assessed. However, we know that garbage, metal, oil, lubricants, and plastics dumped in the inshore are a major threat to breeding and migratory animals. Strong longshore currents, according to seasonal variation, can restrict the movement of water and therefore tend to concentrate rather than disperse rubbish. The protection of terrestrial biota thus requires tight regulation of activities undertaken in territorial waters, yet sea dumping occurred within this sensitive three nautical mile territorial sea.

Whilst the precise biological significance of this dumping is uncertain, the fact that it occurred emphatically highlights the structural impediment to implementation of environmental policy in Australia's Antarctic and sub-Antarctic zone of operation. The role of protagonist of operations, with its pressure to cut corners in the interests of (say) efficiency, ease and maintenance of schedules, and the role of implementor and enforcer of environmental 'thou shalt nots', inevitably conflict, and, in the absence of any watchdog over the watchdog, it is to be expected that such conflicts will often be resolved in favour of operation interests rather than the interest of the executor of environmental policy interests.

Given that sea dumping activities did take place, the Antarctic Division must be held responsible, in total or in part, for the following irregularities.

- (1) The Environment Protection and Management Ordinance requires the Minister to take all necessary steps to ensure the proper management of the Heard Island and McDonald Islands External Territory. Considering Heard Island has international significance as an intact sub-Antarctic ecosystem, by establishing the operational circumstances that encourage sea dumping and permitting such activities to occur with impunity, the Antarctic Division, acting on behalf of the Minister, cannot be held to have ensured proper environmental management.
- (2) Dumping of land generated wastes at Heard Island is in direct contravention of the Environment Protection (Sea Dumping) Act which forbids the dumping of land generated wastes in the territorial sea. The act is administered by the Department of which the Division is a branch.
- (3) The above dumping activities were not made known in advance to the Heritage Commission which has listed Heard and McDonald islands on its Register of the National Estate under the Australian Heritage Commission Act 1975. Sea dumping activities jeopardize the listing which places a special obligation on the Australian Government to ensure that the special values of the territory are maintained and that human activities are consistent with its listing on the register. The commission and the division are both under the same super ministry, DASETT.
- (4) The sea dumping was witnessed by three senior employees of the Division, including a member of the policy branch with responsibility to inspect protected areas. When the shipping schedule prompted the decision to dump the drums these personnel expressed no concern for the environmental responsibilities of the Division.
- (5) The dumping was not officially reported to the Division at the completion of the voyage. This raises serious implications for the effectiveness of present arrangements for implementation of the above acts. Environment officers appointed to inform the Environment Committee and the Division of environmental irregularities were at the sea dumping but failed to intervene.

We have earlier noted the impossibility of full public monitoring of Antarctic Division activities in Antarctica, and this greatly impedes the construction of the case we have sought to mount here. The Heard Island sea dumping incident is advanced for its *indicative* qualities. Given the internal contradictions between the functions of the Division, there are strong *a priori* reasons for suspecting the presence of 'dispositional conflict' that will militate against the diligent execution of Australia's environmental policy responsibilities. One of the authors did experience the transgression of policy reported here at first hand, so this, at least, can be reported. But it is reasonable to assume, on the basis of this observation, that such incidents; whilst perhaps not routine, may be at least not uncommon.

Conclusions

Our analysis suggests that Antarctic environmental protection is likely to suffer when single agencies are charged with the dual task of carrying out station and project operations and of implementing environmental policy and monitoring the effectiveness of, and adherence to, that policy. Tensions between these roles will conduce to 'dispositional conflict' and result in the circumvention of environmental protection policy, even in the case of Antarctic areas acknowledged as having international significance and extreme sensitivity to human impact.

Heard and the McDonald Islands are the only sub-Antarctic island group without human-introduced plants and animals and this in itself entitles them to special consideration, whilst they also provide a valuable opportunity to study an unmodified sub-Antarctic ecosystem. Environmental protection legislation for Heard Island and the McDonald Islands takes into account the special need to protect the environment, and to preserve and maintain the indigenous fauna and flora within a natural environment. However, it has been shown that the carefully wrought intent of environmental policy may be subverted in operational decision-making onsite, where the Antarctic Division is simultaneously the operator and responsible for environ-

mental policy implementation. Under such conditions, operational concerns will frequently triumph at the expense of environmental priorities. As onsite decisions may transgress established policy and management directives from the Australian Antarctic Division, the role of the Division in environmental protection needs serious consideration.

If multi-functional Antarctic agencies cannot, or will not, enforce environmental legislation then other agencies with specific environmental protection mandates could be empowered, despite the inter-agency tension that will inevitably be engendered thereby. In Australia's case this would mean removing administrative responsibility for environmental legislation from the Antarctic Division, and transferring those responsibilities to a department with an unambiguous mandate for environmental planning and protection. The Australian National Parks and Wildlife Service or the (sub) Department of Environment could possibly fill this role.

The difficulty with such a scheme is that any agency that broke the Division's monopoly over onsite Antarctic activity would probably still be logistically dependent upon the Division, and thus there would be the danger of bitter and debilitating inter-agency tension on the one hand, and the co-option of the logistically-dependent agency, (in which case little would materially change) on the other. Nevertheless, the problem is sufficiently serious for this possible response to warrant further investigation.

A second option might be an independent body responsible for environmental planning and management in all aspects of its Antarctic operations. The Canadian Arctic Resources Committee, an independent analyst with a wide ranging agenda, may be an appropriate model because it incorporates a broad definition of planning and management (Kriwoken, [in press]). The appointment of an independent Australian Antarctic Resources Committee (AARC) could have responsibility for environmental planning and management in all aspects of Australia Antarctic Territory operations. An AARC 'Working Committee' could provide prescriptive advice on long-term

issues, replacing the Division's inadequate Environment Committee.

Finally, in the likely event of the non-adoption of these more radical prescriptions, a means must be found to refocus the Division's informal agenda processes upon its environmental responsibilities.

For this the Environment Committee would need to meet more regularly and to be given real powers; station leadership would need to be recruited and trained with a more clear eye to their environmental responsibilities; and the role of environment officer should be upgraded and professionalised. Only thus can Australia hope to prepare itself to adequately meet its treaty obligations.

Summary

The Australian Antarctic Division, a branch of the Department of Arts, Sport, Environment, Tourism and Territories, is the key actor in the decision chain from legislation through to policy interpretation and on-site decision-making.

This paper questions the effectiveness of this decision chain where implementation of environmental policy is concerned. As the Australian Antarctic Division is both developer and environmental watchdog, an operational conflict-of-interest occurs, wherein environmental policy may be sacrificed to other on-site imperatives.

A case study based on personal observations at Heard Island is used to detail the problems associated with policy implementation, and to illustrate how operational, rather than environmental concerns take priority.

We suggest that consideration be given to vesting responsibility for Australia's environment policy in an agency other than the Australian Antarctic Division, and that this agency have a significant on-site presence. If such initiatives are deemed not feasible, the Division's Environment Committee should have its powers and status in planning, logistics and operations greatly strengthened, to enhance the profile of and move the focus to environmental priorities within the Australian Antarctic Division.

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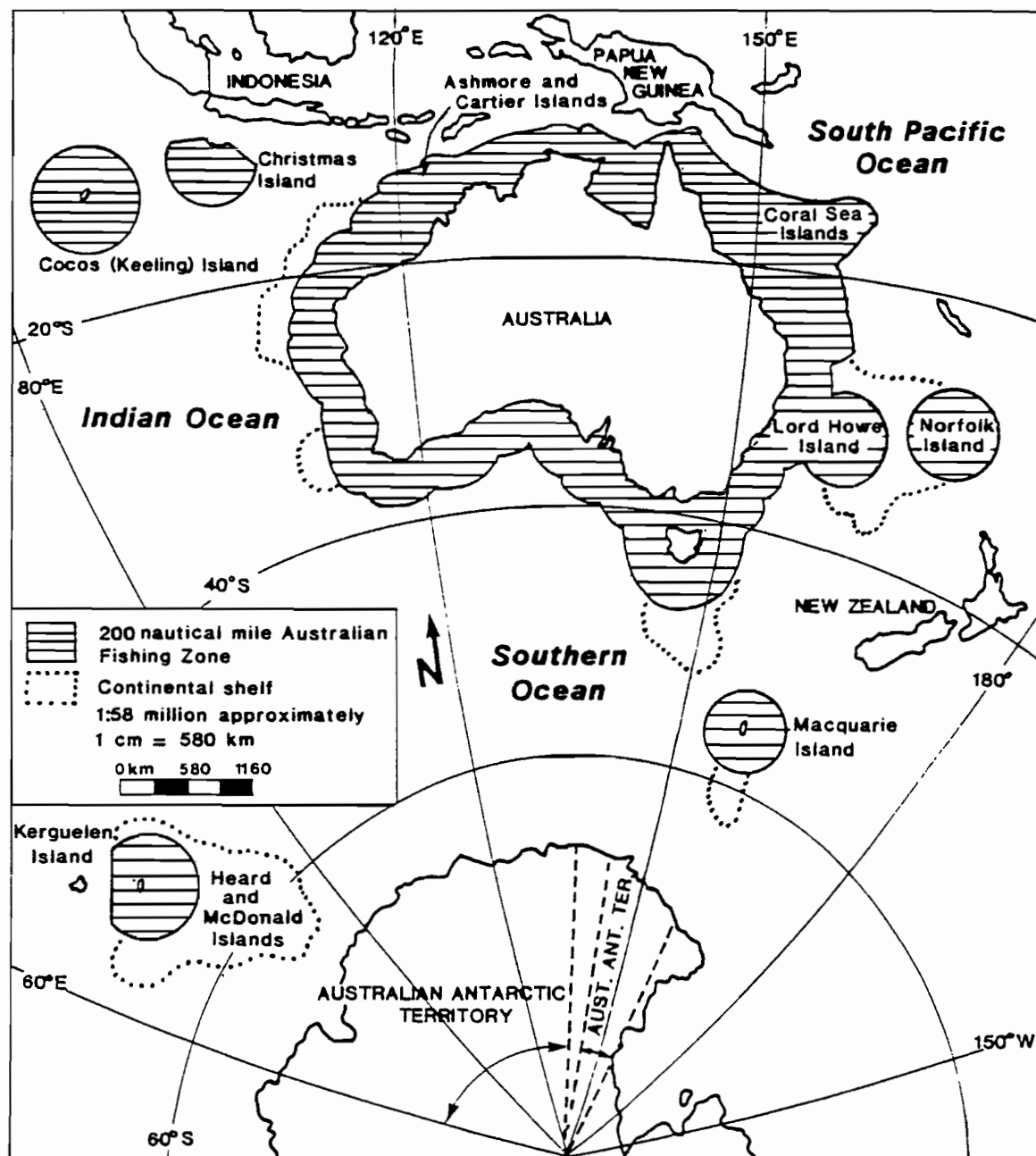
Postscript

The sea dumping occurred in February 1988. A draft of this paper was forwarded to the Australian Antarctic Division in March 1989, and was tabled at the Environment Committee meeting. The Antarctic Division subsequently undertook an internal investigation into the sea dumping activities. On 15 November 1989 the authors received an official response from the Antarctic Division which "confirmed that some waste had been dumped. The material appears to have been the remnants of rusted 200 litre drums collected around the Atlas Cove station site. This material had not been packed for safe carriage at sea." The Division expressed real concern that the dumping had occurred.

This paper raises the question of compliance by Australia's military services with the *Environment Protection (Sea Dumping) Act*. The response from the Division states: "Because the vessel (a LARC) involved in the dumping was from an arm of the Defence Services the provisions of the act do not apply, although it is accepted that in normal circumstances military craft should comply with the provisions of the act". Australian service personnel are legally exempt from this act. It is also possible that other nation states operating in the Antarctic region do not legally require compliance of military personnel with domestic environmental acts and regulations.

The paper also mentions that a member of the Policy Branch was present who had responsibility for inspecting protected areas. The Division states that this person "was only given this responsibility in respect of protected areas at Davis and Casey as part of a review called for by the Antarctic Treaty Consultative

Figure 1 - Location of Heard Island and McDonald Islands, External Territory, Australia



Parties ... and only as an additional task to the main purpose of his visit ... [he] had no such role at Heard Island, nor was he necessarily in a position to know whether or not the dumping of waste was permitted ...". It seems inconsistent that an officer would be engaged in protected area inspection in the Antarctic but not be aware of activities north of 60° South at a place which, although outside the area covered by the Antarctic Treaty, is protected by being listed on the register of the National Estate.

The Antarctic Division is now "implementing some modifications to the briefing process which should assist in preventing a recurrence". At a more general level, the Division has with some success "endeavoured, through an environmental education program, to engender appropriate environmental attitudes in expedition staff."

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