because of the general scarcity of caves which exhibit a certain morphology in the rock types involved.

Four categories are recognised in this report:

Category A ***Intensely karstified or probably intensively karstified***: carbonate rock formations known to be highly susceptible to karstification; on the basis of existing knowledge well developed karst is to be anticipated.

Category B ***Substantially karstified or probably substantially karstified:*** carbonate rock formations known to be susceptible to karstification; on the basis of present knowledge karst is more likely to occur than not.

Category C ***Partially karstified or potentially partly karstified:*** carbonate rock formations that may be susceptible to some forms of karstification or within which some karst may be present within specific horizons, topographic situations or in response to other environmental factors.

Category D ***Possibly partially karstified:*** rock formations that are not predominantly carbonate but which contain subordinate carbonates within which karst may have evolved; in cases where there is a high likelihood that carbonates occur within more extensive formations that have not been sufficiently differentiated in geological mapping to allow the specific localities to be indicated, the whole area of undifferentiated rocks has been recorded as Category D pending clarification.

This system has been developed with the intention that it is accessible to any land manager dealing with a Tasmanian carbonate area, rather than being geared solely to any particular agency or sectional interest. However, from the perspective of the forest industry, and the Management Decision Classification (MDC) system employed by Forestry Tasmania (1991), it is suggested that categories A and B should be included in Special Management Zones (SMZs) where geomorphological values are listed as a primary focus of management concern, and that category C areas be included as SMZs where geomorphological values may be a subordinate focus. Category D areas need not be placed in an SMZ at this stage unless specific karst phenomena are identified. Specific Protection Zones or Hazard SMZs may be warranted in karsts of any category pending detailed investigation of particular karsts, such as the Protection Zones recommended for the Junee-Florentine karst by Eberhard (1994).

INVENTORY AND MANAGEMENT OF INDIVIDUAL KARST AREAS

The purpose of the present study has been to develop a broad overview of the distribution, significance and management implications of Tasmania's karst estate. It is obviously not feasible for this project to develop detailed inventories of the karst phenomena in each of the many carbonate areas identified. Although detailed inventories of parts of the Mole Creek and Junee-Florentine karsts have previously been undertaken (Kiernan 1984a, 1989c, Eberhard 1994) and case studies of some examples of particular types of karst have been prepared as part of the present project for presentation elsewhere, for the most part specific area inventories do not yet exist. This is the logical next level of analysis, and given the resource implications, the sequence of priority needs to be given careful thought.

There are two fundamental pre-requisites for karst management. The first is flow trajectory and catchment area determination. Figure 3.12 (foldout at back) presents the results of extensive water tracing experiments conducted in the Mole Creek karst. The second fundamental pre-requisite is sensitivity or vulnerability mapping (Cave Management Services 1982, Kiernan 1984a, 1988a, R. Eberhard 1993, 1994, Aley and Aley 1991, Aley *et al.* 1993). However, as Aley *et al.* (1993) emphasise, vulnerability mapping in karst is sometimes based solely on hydrological considerations and does not take other environmental risks into account - slope stability, soil vulnerability, geoconservation and geodiversity issues and related matters also warrant attention if the aim is sustainable management.

Karst inventory processes involve the location of the karst features present in an area - the individual sinkholes or polygonal karst zones, streamsinks, springs, dry valleys, caves, residuals, karren etc - and integrating that information with water-tracing results (Kiernan 1984a, Kochanov 1989, Eberhard 1994). Delineation of actual karstic drainage patterns often reveals major differences from the picture that may be suggested by surface topography. Indeed, attempting to plan any management initiative or development on karst without first determining the patterns of subsurface drainage is akin to not having a topographic map on hand in non-karst landscapes. The situation is further complicated by the fact that it is common for karst