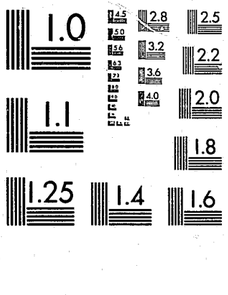

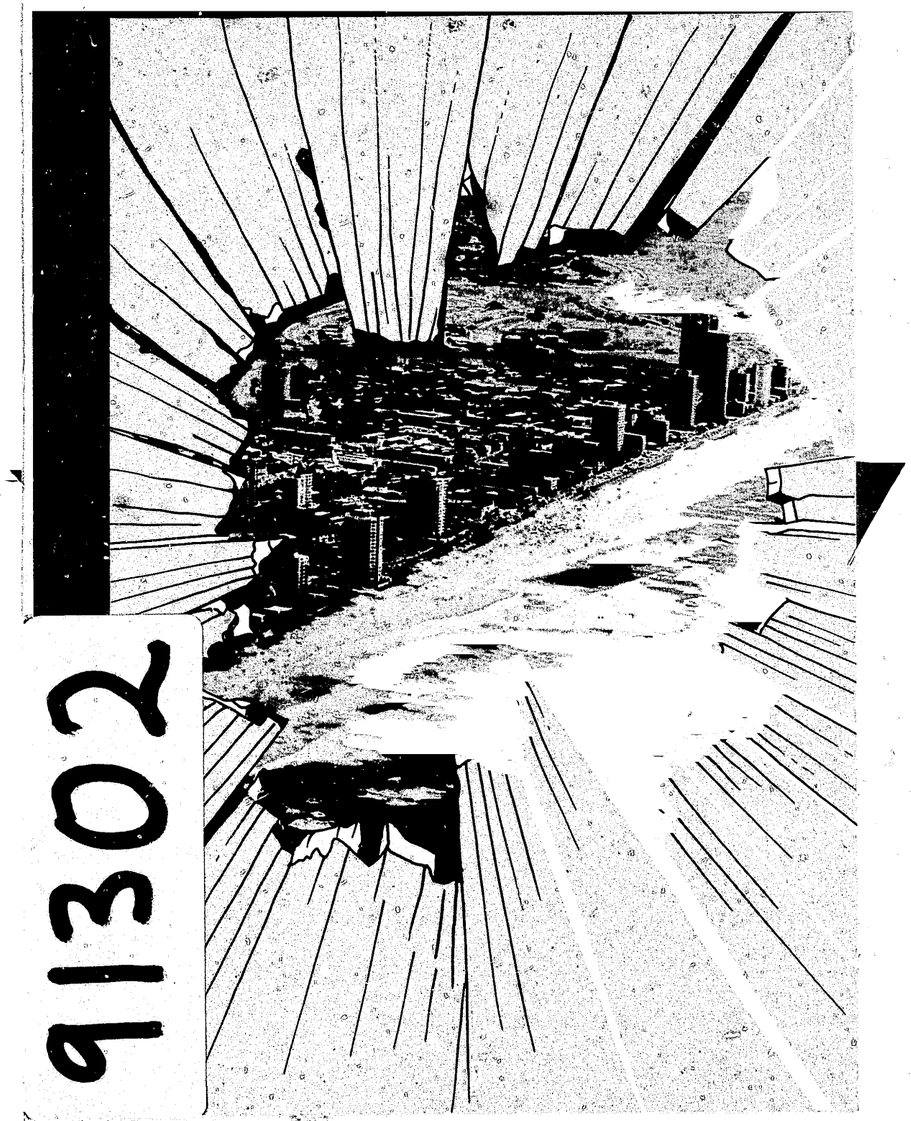

TOURISM AND CRIME

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PREFACE

This research report results from a project supported by a grant from the Criminology Research Council. We are very grateful to the Council for their financial assistance and to Mr D. Biles and Mr W. Miller for their help. The project could not have been undertaken without the co-operation of the New South Wales Police Department and we are very appreciative of the efforts of the officers in the police stations in the study area and of the staff of the New South Wales Police Department's Planning and Research Branch. Particular mention must be made of Michael Conaghan for his patient and extremely valuable assistance. Our thanks also go to the Department of Geography at the University and to Janene Smith who typed the final report.
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Armidale, December 1981.

CHAPTER 1

INTRODUCTION

In most advanced western economies there has been a rapid increase, particularly since World War II, in disposable income, discretionary time, mobility, and level of education. This has resulted in dramatic increase in the demand for leisure activities (Appleton, 1974). Australia has followed this trend: the average number of hours worked by an adult male declined from 43.6 in 1969 to 41.3 in 1974; a 35 hour week is being introduced in some industries; a 9 day fortnight is increasingly common; and flexitime has been widely adopted (Commonwealth of Australia, 1977a). As a result, Australia presents an image, particularly to overseas commentators, of an affluent, leisured population (Mercer, 1977). In this sense leisure consists of "a number of occupations in which an individual may indulge of his own free will either to rest, amuse himself, to add to his knowledge and improve his skills disinterestedly and to increase his voluntary participation in the life of the community after discharging his professional, family and social duties" (definition used by the International Study Group in Leisure and Social Sciences, cited in Appleton, 1974). Although not all authorities agree on the extent to which leisure time has increased in Australia (see Perry's (1977) observation that much "leisure" time is devoted to "overtime"), there can be no doubt that the way in which Australians use their leisure hours has attracted increasing attention, particularly in official quarters (see Bloomfield, 1974; Department of Tourism and Recreation, 1975b).

The focus for most leisure time activities in Australia is the home which may provide the venue for something like three-quarters of all leisure time pursuits (Pearson, 1977). The remaining activities are generally recreational and take place away from the home. Recreation, in this sense, is "an act or experience, selected by the individual during his leisure time, to meet a personal want or desire, primarily for his own satisfaction" (Yukic, 1970, 5). The use of leisure time for recreational activities has attracted attention throughout the world as governments, commercial organisations, academics, and planners have sought to describe, analyse, and forecast patterns of recreation activity

(see Burton, 1971; Ontario Research Council on Leisure, 1977). Such research has served as a prelude to policy initiatives and land use management strategies (Phillips, 1970). Moreover, although it can be concerned with small scale areas like bowling alleys and parks (see Cheek, Field and Burdge, 1978), most recreation research in Australia has focussed on either the needs of a particular region (such as King and McGregor's (1977) study of Diamond Valley), or the use made of a particular facility (such as the NSW Department of Lands' (1980) survey of the Lane Cove River State Recreation Area), or the manpower needs of industries catering for recreationists (see Commonwealth of Australia, 1974). This type of research has involved asking people what they want by way of recreational facilities (see Hunter Valley Research Foundation, 1974). In particular, special attention has been paid to the demands and needs of youth as, for example, in the "Youth Say" project where the views of 1258 young people were examined (Department of Tourism and Recreation, 1975a).

Surveys of the attitudes and views of recreationists have revealed that the allocation of leisure time to competing recreational opportunities varies from person to person. However the surveys have also shown that there is a certain common ground in relation to what people do. As a result, "leisure industries" have sprung up to supply the public with the goods and services used in the search for enjoyment of free time (Smith, Parker, and Smith, 1973). The most important leisure industries are associated with tourism. Some measure of the importance of tourism in Australia can be gained from the fact that the 1976 Census revealed that 47% of the population had had a holiday of one week or more in the preceeding year. More detailed information is available from the Domestic Tourism Monitor (which is a market research-type survey of over 70,000 persons commissioned by the Australian Standing Committee on Tourism which is itself a body comprising of representatives of all state governments). This source shows that in New South Wales in 1979-80 no fewer than 68 million nights were spent by individuals at locations more than 40 km from their home. This involved 16 million trips (NSW Department of Tourism, 1980). Although significant, these sorts of figures are not striking by international standards (see Bureau

of Industry Economics, 1979). They do, however, explain why the amusement, hotel, and restaurant sector is the fifth largest in the Australian economy and why annual sales for tourism and transport stood at $2400 million as long ago as 1972 (Sinden, 1977).

The study of tourism is a field of enquiry that has achieved academic respectability only relatively recently. For the most part the texts that are available deal with the structure of the tourist industry and focus on such things as accommodation, agencies, marketing, development, and management (McIntosh, 1972; Burkart and Medlik, 1974; OECD, 1974). Invariably a very positive stance is adopted whereby tourism is seen as an extremely worthy thing for governments to support (see Commonwealth of Australia, 1980). Great store is laid by the regional multiplier effect and the way in which benefits from investment in tourism supposedly trickle through to the local community in tourist areas (see Archer, 1973). Very little attention is paid to the side-effects of tourism: beneficial effects of holidays, especially in regard to health, are sometimes hinted at (Commonwealth of Australia, 1977b) but detrimental effects of tourist developments receive little attention expect perhaps when economists suggest that the local multiplier may be far less than is supposed (see Varley, 1978) or when staggered school and industrial vacations are advocated as a way of overcoming seasonal employment problems and seasonally high prices in the tourist industry (Department of Industry and Commerce, 1976). This situation may, however, be changing. Certainly it appears that increasing attention is being paid in the recreation and tourist literature to considerations of environmental quality and social justice (Mercer, 1980). For the most part, this attention has focussed on land use pressures and land management policies (see Fischer, Lewis, and Priddle, 1974; Robinson, 1976; Bosselman, 1978), and only rarely has there been any appreciation of the social costs of tourism in advanced western economies. One of the few authors to sound a cautionary note in respect of the social side-effects of tourism was Young (1973) who drew attention to the "regional and local disbenefits" of tourist development. Specifically Young suggested that tourism can grow to the point where the infrastructure of a community is unable to cope. By this he had in mind not only the inability of road and

communication systems to cope with a seasonal influx of population but also the inability of public services to cope with the heightened pressures place upon them. One such service considered by Young was the police. However Young saw the impact of tourism on the police not in terms of crime but rather in terms of increased police involvement in traffic duties and crowd control.

Very little has been written on the effect of tourism on crime despite the fact that, intuitively, the two seem to be related. For example, a concentration of tourists increases the persons and property at risk in an area and therefore possibly makes that area more attrative to criminal elements within the population. Similarly, tourist areas are characterized by anonymity and a high turnover of population with a result that it may well be easy for criminals to conceal themselves and avoid apprehension, particularly when the police have to cope with massive increases in the volume of traffic (and increases in other forms of "routine" work unrelated to crime) associated with seasonal peaks in the tourist industry. Coupled with these explanations for a possible influence of tourism on crime is the fact that, in Australia, some tourist areas are also popular retirement areas (e.g. Gold Coast, Sunshine Coast of Queensland) with a result that the persons and property at risk are increased even further. At the same time tourist areas are often centres for alternative lifestyles settlements (see Taylor, 1981), the inhabitants of which may be more prone to certain types of offences (e.g. drug offences) than the population at large with a result that there arises a further demand on police time and resources.

Curiously most of the literature relating to tourism and crime has stressed the role of tourism and recreation in lessening crime rather than increasing it. For example, Yukic (1970) has pointed out that part of the rationale for the provision of community recreation facilities has rested on the view that recreation offers a palliative to juvenile delinquency. In other words, recreation is commonly viewed as a cathartic experience and as a way of discharging violent and hostile drives in a socially acceptable fashion (Kraus, 1971). Only rarely has

tourism been viewed as a force precipating an increase in crime rates. The best example of this point of view is in fact probably best seen in Fujii and Mak's (1980) observation that tourism generates environmental externalities in the form of increased crimes against persons and property and in their calculation that tourism in Hawaii between 1961 and 1975 led to a significant increase in the number of burglaries and rapes.

The present study seeks to examine the influence of tourism on crime in the Australian context. It does this by choosing a study area, a study period, and by sampling from police records. The resultant report has a simple structure: Chapter 2 explores some of the problems involved in using crime statistics; Chapter 3 describes the study area; Chapter 4 looks at the overall pattern of serious crime in the study area relative to both metropolitan and non-metropolitan New South Wales; Chapter 5 looks at the detailed pattern of serious crime in the Police Divisions that make up the study area; Chapter 6 shifts attention to individual Police Stations; Chapter 7 cross-tabulates information on crimes, victims, and offenders; Chapter 8 maps crime-prone environments; and Chapter 9 draws a number of conclusions from the study.

CHAPTER 2

THE USE OF CRIME STATISTICS

Crime is on the increase in almost all areas of the world (see Gurr, Grabosky, and Hula, 1977; Radzinowicz and King, 1977). Moreover, crime is a topic commonly discussed in the mass media and presumably therefore it is a phenomenon the meaning and nature of which is well understood. In practice, however, two problems present themselves in any serious study of crime and both cast doubt on whether there is a commonly accepted interpretation of what is meant by criminal behaviour: the two problems are how to define crime and how to measure crime. The first problem is usually overcome by assuming that the politicolegal system protects people, protects property, and upholds social standards (Biles, 1977a, 6) with a result that criminal behaviour can be defined to encompass any action that breaks the law. The second problem is usually overcome by relying on officially published crime statistics because only rarely does the researcher have the opportunity of collecting primary data.

Ultimately, of course, an even greater problem emerges: how to explain criminal behaviour. This is not the place to review this branch of criminology because good bibliographies (e.g. Australian Bureau of Statistics, 1977) and guides to source materials (e.g. Fox, York, and Glasson, 1974) are available that cover much of this ground. However it should be noted that a great many approaches to the explanation of criminal behaviour have been suggested and that these range from an emphasis on personality and biological factors (e.g. Eysenck, 1977), through a sociological perspective (e.g. Wolfgang, Savitz, and Johnston, 1970; Quinney, 1970), to the point of view that environmental factors are important (e.g. Feldman, 1977) and the contention that improved environmental design may be a critical force in crime prevention (e.g. Jeffery, 1977). Perhaps the view that environmental factors are important is most clearly seen in work that has pointed to high crime and delinquency rates in the central city and inner city suburbs. Of course, it would be naive to assume a deterministic relationship between environment and behaviour because of the preponderance of crime and

delinquency in the inner city reflects not only the poor physical environment but also what the inner city stands for in competitive, late capitalist, western countries, namely the residence of a great number of those people who miss out in society's resource allocation (see Peet, 1975; 1976; Taylor, Walton, and Young, 1973). Undoubtedly, though, environment is of some importance as is shown by the fact that an awareness of place-to-place variations in the incidence of crime has existed for centuries (Harries, 1974, 8). In short, therefore, crime can be viewed from the perspective of man-environment interaction.

Several human geographers and human ecologists have studied a variety of crimes from the perspective of man-environment interaction. Among both groups the ecological tradition, exemplified by Shaw and McKay's (1942) study of delinquency in Chicago, has been strong despite the fact that most work has focussed on structural and social differentiation in incidence rates rather than on geographical differentiation (Herbert, 1979). When geography has been considered explicity, a variety of scales has been used. For example, there have been cross-cultural studies that have highlighted the parallels between such diverse cultures as the United States and the Soviet Union, studies of regional variations in crime rates (popular for well over a century), studies of the relationship between crime rates and city size, and studies of intra-urban variations in crime (Scott, 1972). Generally these studies have been conducted in the United States, possibly because of a readily available data base (see Harries and Brunn, 1978; Smith, 1974), and in most cases the studies have noted both offence-prone environments (see Newman, 1972) and distinct geographical patterns in the residence of offenders (often associated with "problem" housing estates) (see Herbert, 1979). The cause of these spatial variations has frequently been sought in a range of factors that relate to how an individual interacts with the rest of society and with his or her environment. Thus attention has focussed on differential opportunity and the fact that certain micro-scale environments lend themselves to crime, on the differential drift of criminals to inner city areas, on the existence of criminal subcultures, on social alienation, frustration, and disorganization, and on the differential policing and labelling of certain environments (see Murray and Boal, 1979).

Most studies have been empirical in outlook and have used one form or another of crime statistics. Generally speaking, researchers have worked in the mainstream of positivistic social science. However this does not indicate any great level of satisfaction with crime statistics. In fact the opposite seems to be the case because crime statistics have been criticised by their users for well over one hundred years (Avison, 1972, 33). Basically, two sorts of statistical measure have been used: the total number of crimes in an area in a given time period and the incidence of crime relative to population size (often expressed as a ratio of crimes per 10,000 population). There are drawbacks with both these measures: simple absolute numbers provide no basis for comparing one region with another and yet ratios of crime to population may be somewhat inappropriate for crimes against property where the wealth or property at risk would provide a bett r reference point (Smith, 1974, 13). Furthermore, there have been few serious attempts to link crime rates with other social indicators, possibly because there exist no clear and commonly accepted models of how crime relates to the overall well-being of a society (see Oosthoek, 1978).

In addition to these general and conceptual problems, there are a great many practical problems encountered in using crime statistics. To begin with, there is the fact that reported crime represents but one part of total crime (Birtles, 1978). Thus the official published figures, on which most studies are based, are an underestimate of true crime figures. Just how much of an underestimate official figures are, is difficult to say although an Australian Bureau of Statistics (1975) survey suggested that only 62% of breaking and entering is reported, only 44% of assault, only 28% of rape, and only 24% of fraud. In addition, there may well be some underrecording as when a matter is cleared up very quickly and no action taken. And this underreporting and underrecording probably varies from place-to-place and from time-to-time with a result that it is unpredictable. What is predictable, in contrast, is the fact that the crime rate will appear to be higher in areas where there are many police than in areas where there are few police. Whether this means that the real crime rate is higher,

or whether it simply indicates that the presence of more police simply increases the probability of reporting criminals, is unclear.

As with many aspects of social science and social policy, Australia has lagged behind some overseas countries in its use and development of crime statistics. In the United States, for example, the FBI have kept Uniform Crime Reports (covering over 2000 crimes) for a number of years thereby enabling researchers to trace changes in the incidence rates for different crimes and to show that serious crime increased at the rate of about 15% per annum in the 1960s and 1970s (Harries, 1974). Likewise in Britain the publication of Criminal Statistics has facilitated a similar historical perspective that curiously points to an average annual growth rate in indictable crime between 1933 and 1969 of 15%.

In Australia, the development of national crime statistics has been impeded by the fact that Section 51 of the Constitution puts criminal law under state jurisdiction. Thus Australia has been described as "nine separate systems of criminal justice working under nine different sets of laws" (Ellicott, 1977, iii). In other words, Australia has nothing to match the FBI's Uniform Crime Report that go back over a number of years. However, since 1964 the state police departments and the Australian Bureau of Statistics have cooperated to produce uniform statistics for homicide, serious assault, robbery, rape, breaking and entering, motor theft, and forgery and fraud. On this basis it can be calculated that serious crime in Australia in the late 1960s and early 1970s increased by about 9% per annum (see Biles, 1977b) which is perhaps somewhat less that the figure found overseas. There are however problems even with these statistics that prevent very meaningful comparisons being made over time; for example since 1973 manslaughter from road accidents has been included under homicide whereas in earlier years it was not included, and since 1972 all cases of breaking and entering have been recorded in contrast to the situation in the 1960s where the only cases reported were those where goods to a minimum value of $100 were stolen (see Biles 1977a; 1977b). Moreover the data do not extend beyond the level of the states. At smaller geographical scales, crime statistics are exclusively the

concern of state government (e.g. the figures produced by the New South Wales Bureau of Crime Statistics and Research). This dearth of information has no doubt contributed in part to the view that we have "only the scantiest information on the incidence of crime" (Biles, 1977a, 2) and to the opinion that criminological research in Australia is in its infancy (Biles, 1977c). However, to quote from the same source, "it is of little value to ask the general question of whether or not crime is increasing in this country. It is infinitely preferable to ask: which crime in which jurisdictions are increasing at rates higher than the norm over what period of time?" (Biles, 1977b, 33). It is to this question of specific crimes, in specific areas, over specific time periods that this study of tourism and crime is directed.

CHAPTER 3

THE STUDY AREA

Any study of tourism and crime must have limits. The present study is no exception: it is limited to a certain area, to a certain time period, and to certain data sources. The data limitations, including consideration of the time period for which data are to be collected, are discussed in Chapters 4-7. This chapter is concerned only with describing the geographical limits of the study.

It is obviously impractical to study the whole of Australia, or even the whole of New South Wales, in an examination of the impact of tourism on crime. Instead attention needs to be restricted, for practial reasons, to a relatively small study area. Ideally this area should include both tourist centres and non-tourist centres. Given the location of the University of New England (at which the researchers are based) and given that the study area had to be within New South Wales (because the project relied on the co-operation of the New South Wales Police Department in making available crime statistics), the north coast suggested itself as an obvious subject for study.

The population of the local government areas on the north coast is shown in Table 3.1. In 1979 the area had a total population of just over one quarter of a million. Three local government areas experienced very strong population growth of the period 1971-1979; Ballina; Coffs Harbour; and Port Macquarie. All are tourist resorts and their population increased at an average rate of 7% per annum which, by national standards, is a high growth rate. Three other local government areas - Byron, Nymboida, Tweed - had pronounced growth rates. Only three centres had a growth rate over the eight year period that was in single figures (Grafton, Richmond River, Tenterfield) and only one local government area actually suffered a decline in population (Kyogle). Overall, the population of the north coast increased by 23% between 1971 and 1979.

Table 3.1: The population of the study area

Local government area	1971 Census[a]	1976 Census[a]	1979 Estimate[b]	% change 1971-1979
Tweed	24 650	28 750	32 100	+30
Byron	8 050	9 250	10 450	+30
Mullumbimby	1 950	2 100	2 250	+15
Kyogle	8 950	8 450	8 700	-3
Terania	4 650	5 050		
Gundurimba	2 750	3 000	31 900	+12
Lismore	21 450	23 050		
Tenterfield	6 850	6 900	6 900	+1
Casino	9 600	10 250	10 600	+10
Ballina	10 900	14 400	17 300	+59
Tintenbar				
Richmond River	6 450	6 550	6 650	+3
Grafton	16 800	17 250	17 450	+4
Coffs Harbour	19 100	25 550	29 900	+57
Maclean	7 800	8 950	9 500	+22
Ulmarra	2 750	3 050	3 200	+16
Nymboida	1 350	1 600	1 750	+30
Copmanburst	2 300	2 450	2 550	+11
Bellingen	6 700	7 500	8 000	+19
Nambucca	9 050	10 100	10 750	+19
Kempsey	16 450	17 800	18 450	+12
Hastings	10 750	12 300	13 250	+23
Port Macquarie	9 700	14 100	16 000	+65
TOTAL	209 000	238 400	257 650	+23

Source:

a. Australian Bureau of Statistics (1978) New South Wales: Handbook of local statistics, Sydney: Gov. Printer.

b. New South Wales (1980) Estimated population of municipalities and shires at 30 June 1978, Sydney: Gov. Printer.

Of just as much interest as the overall rate of population growth is the age structure of the population. This is because, in terms of crime, both offenders and victims are often concentrated in certain age groups. For example, Biles and Swanton (1977) have drawn attention to the fact that a large proportion of offences (some of them admittedly minor) are committed by offenders in the 15-24 year old age group. Conversely, old people are often the victims of crime to the extent where this has become the subject of media attention (exemplified by the ABC's Four Corners discussion in September 1981 of crime on the Gold Coast of Queensland). The significance of these observations for the study area lies in the extent to which the proportion of the population in the 15-24 and over 60 year old age groups differs from the state average. The most recent information on age structure available at the level of local government areas is to found in the 1976 Census and this source shows that, for New South Wales as a whole, 16.7% of the population is in the group aged 15-24 years and 13.6% in the group aged 60 and over. For non-metropolitan New South Wales the respective figures are 17.0% and 13.5%. The comparative figures for the North Coast of New South Wales are shown in Table 3.2. Clearly, only two local government areas (Lismore and Gundurimba) have a greater proportion of their population in the 15-24 year old age group than the non-metropolitan average. In constrast, all but four local government areas have concentrations of elderly people that exceed the non-metropolitan state average. In some cases more than one fifth of the total population is aged 60 or more (Port Macquarie 23.2%; Mullumbimby 23.1%; Ballina 22.6%; Maclean 21.7%; Byron 20.1%). This suggests that the study area may be an attractive retirement area. It also suggests that there is a high proportion of people prone to be the victims of crime but generally low levels of population in the offender-prone age groups. Of course, these comments apply only to the resident population and the influx of tourists undoubtedly alters the situation markedly.

The tourist activity in an area is less easily measured than that area's population. However, Table 3.3 provides a simple tourist rofile of the local overnment areas. The fi ures in the table

Table 3.2: The age structure of the population in the study area

	% population aged:	
	15-24	60 or over
Tweed	15.0	19.0
Byron	14.2	20.1
Mullumbimby	14.2	23.1
Kyogle	14.2	14.3
Terania	16.4	12.6
Gundurimba	18.1	11.4
Lismore	18.7	16.9
Tenterfield	14.2	15.7
Casino	16.4	15.6
Ballina	14.5	22.6
Tintenbar	13.8	17.3
Richmond River	14.7	19.0
Grafton	16.0	16.4
Coffs Harbour	14.5	16.2
Maclean	13.3	21.7
Ulmarra	14.7	15.3
Nymboida	14.6	13.2
Copmanhurst	14.6	11.7
Bellingen	14.1	17.5
Nambucca	14.5	17.9
Kempsey	15.7	16.0
Hastings	13.0	17.7
Port Macquarie	12.4	23.2

Source: Australian Bureau of Statistics 1976 Census

derived from the New South Wales Handbook of Local Statistics, are based on the regular quarterly surveys of tourist establishments that began in the September quarter of 1975. Data in the table indicate the number of bed spaces available in each centre, the bed occupancy rate (available only for 1979), and the total money takings from accommodation. Unfortunately data are not available for all local government areas. Nevertheless the table does show strong growth in the provision of tourist accommodation in Ballina, Grafton, Coffs Harbour, Nambucca and Port Macquarie. At the same time, some areas appeared to lose tourist accommodation. This change may, however, be more apparent than real because the definition of tourist accommodation was rather more stringent in 1979 than in 1976 in that the quarterly surveys in the later year covered only guest houses with a high level of provision of bathrooms. Interestingly the bed occupancy rate is highest in the tourist centres of Tweed, Coffs Harbour, and Port Macquarie. Takings from accommodation in 1979 totalled over $12,000,000. On the basis that the Census of Tourist Accommodation Establishments at 30 June, 1974 suggested that spending on accommodation makes up only about 23% of total tourist spending (the rest going on food, drink, clubs, etc.), it is not unreasonable to assume that the tourist industry on the north coast in 1979 attracted a direct turnover well in excess of $50,000,000. In short, the area is a major tourist region.

Unfortunately the local government areas on the north coast are not congruent with Police Divisions. The local government areas are shown in Figure 3.1 and the Police Divisions in Figure 3.2. Although the overall Lismore Police District approximates the extent of the Mid-North Coast and Richmond-Tweed Statistical Divisions, the Police Divisions based on Murwillumbah, Lismore, Grafton, Coffs Harbour and West Kempsey do not always correspond closely with local government boundaries. This presents problems - but not insuperable ones - in examining the crime statistics available for Police Districts and Police Divisions.

Table 3.3: Tourist activity in the study area

	June 1976 Bed spaces	June 1976 Takings on accomm. ($000)	June 1979 Bed spaces	June 1979 Takings on accomm. ($000)	Bed occupancy rate (%)
Tweed	798	676	679	788	54
Byron	323	199	338	376	36
Mullumbimby			na	na	na
Kyogle	111	24	na	na	na
Terania					
Gundurimba	629	556	575	809	30
Lismore					
Tenterfield	231	301	269	312	32
Casino	303	148	259	253	23
Ballina	689	604	741	936	38
Tintenbar			na	na	na
Richmond River	168	63	na	na	na
Grafton	774	643	886	1002	30
Coffs Harbour	1675	1888	1838	2625	44
Maclean	435	254	303	274	30
Ulmarra			na	na	na
Nymboida			na	na	na
Copmanhurst	279	123	na	na	na
Bellingen			na	na	na
Nambucca	279	575	579	619	35
Kempsey	612	622	607	798	36
Hastings	255	157	na	na	na
Port Macquaire	2027	2551	2271	3240	41

Source: Australian Bureau of statistics (1977 and 1980), Handbook of local statistics: New South Wales, Sydney: Gov. Printer.

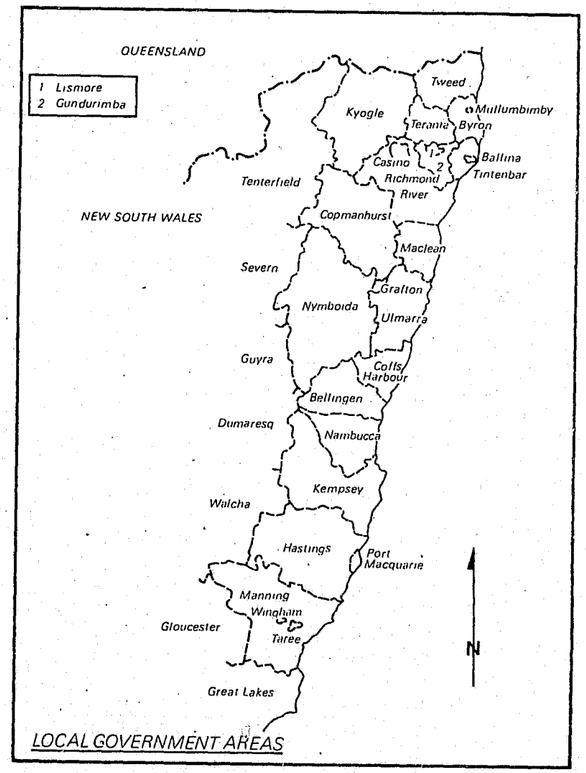

Fig: 3.1

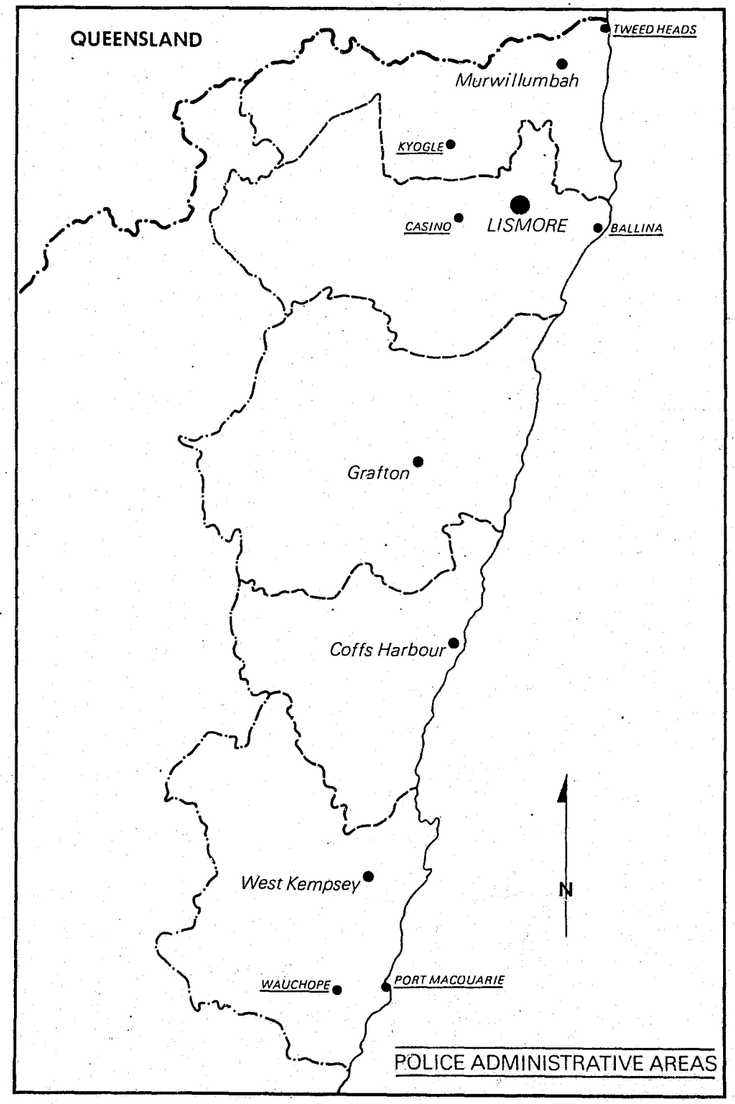

Fig: 3.2

CHAPTER 4

SERIOUS CRIME IN THE STUDY AREA

The New South Wales Police Department kindly made available to the researchers a computer print-out that showed the number of serious crimes in the study area. The print-out covered the years 1971-1979 at the district, division, and station levels. The serious crimes recorded were classified into eight categories:

1. Offences against the person
2. Stealing with violence
3. Property breaking
4. Larceny from property
5. False pretences
6. Sexual offences
7. Drug offences
8. Miscellaneous offences

The absolute number of offences in each year in each of these categories is shown in Table 4.1. The figures are for the Lismore Police District as a whole. The table also indicates the relative significance of each type of serious offence by expressing the number of occurrences of that offence as a percentage of the total amount of serious crime.

Clearly, in overall terms the amount of serious crime increased from 3456 offences in 1971 to 6590 offences in 1979 (a 91% increase or, in other words, an increase of about 11% per annum). However this overall figure masks considerable differences between the eight categories of serious crime. Drug offences increased, in the period 1971-1979, by a staggering 1405% whereas sexual offences increased by a mere 1%. The second greatest increase was for offences against the person which grew in number by 404% in eight years. All other crimes experienced very similar growth rates, with the percentage change being between 50 and 85% (between 6.3% and 10.6% per annum).

Interestingly the increase in the number of offences in individual categories of serious crime tended not to be uniform over time. Only drug offences and offences against the person increased in number every year. The rate of increase of stealing with violence fell sharply in 1976 and 1979, the rate of property breaking fell in 1972 and 1979, and the rate of larceny from property fell in 1972, 1976 and 1977. The pattern for false pretences was remarkable: in 1976 and 1978 the number of crimes more than doubled when compared to the preceeding year. A similar, but slightly less striking, pattern occurred for miscellaneous offences which reached a peak in 1975 which was not attained again until 1979. Sexual offences peaked in 1973 and 1974, declined till 1977, and increased slightly in 1978 and 1979.

There appears to be little pattern to the variations in the absolute number of serious crimes shown in Table 4.1. This observation is borne out by the percentage figures which tend to vary considerly from year to year. At this point it is important to bear in mind that the figures on which Table 4.1 is based are those for crime reports which were accepted by the police as being genuine cases. In other words the variability in the serious crime rates from year to year as shown in the table cannot be attributed to variations in the police clear-up rate (although that clear-up rate itself varied, as is shown in Table 4.2). The variability could of course be accounted for to some extent by the varying success of police crime prevention strategies, although it is impossible to test this idea given the number of years that have elapsed and therefore the impossibility of recalling precisely what the police did at particular points in time.

The figures contained in Table 4.1 do not show any obvious evidence for the impact of tourism on crime. This is because the categories are very broad and because figures for the Lismore District as a whole cover both tourist and non-tourist areas. They are presented here simply to provide a context for the more detailed examination of tourism and crime that is to follow in later Chapters. The significance of serious crime is twofold: first, serious crimes are likely to take

Table 4.1: The incidence of serious crime in the Lismore District:

absolute and percentage figures

Serious crimes		Year									% increase 1971-79
		1971	1972	1973	1974	1975	1976	1977	1978	1979	
Offences against the person	N	45	54	58	61	94	139	155	225	227	+404
	%	1.3	1.6	1.6	1.5	1.7	2.2	2.8	3.0	3.4	-
Stealing with violence	N	26	28	37	34	46	37	48	51	42	+62
	%	0.7	0.8	1.0	0.8	0.9	0.6	0.8	0.7	0.6	-
Property breaking	N	609	493	551	955	909	1133	1205	1440	1127	+85
	%	17.6	15.0	15.4	23.7	16.9	18.3	21.4	19.3	17.1	-
Larceny from property	N	1967	1663	1939	2044	2580	2477	2430	3214	3349	+70
	%	56.9	50.5	54.1	50.7	48.0	39.9	43.1	43.0	50.8	-
False pretences	N	262	400	337	304	420	1174	362	854	394	+50
	%	7.6	12.1	9.4	7.6	7.8	18.9	6.4	11.4	6.0	-
Sexual offences	N	89	92	117	97	72	82	74	86	90	+1
	%	2.6	2.8	3.3	2.4	1.3	1.3	1.3	1.2	1.4	-
Drug offences	N	41	118	158	290	501	639	819	824	617	+1405
	%	1.2	3.6	4.4	7.2	9.3	10.3	14.5	11.0	9.4	-
Miscellaneous offences	N	417	448	388	247	756	526	548	779	744	+78
	%	12.1	13.6	10.8	6.1	14.1	8.5	9.7	10.4	11.3	-
TOTAL	N	3456	3296	3585	4032	5378	6207	5641	7473	6590	+91
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-

Source: N.S.W. Police Department.

Table 4.2: The clear-up rate for serious crime in the Lismore Police District

	% clear-up rate								
	1971	1972	1973	1974	1975	1976	1977	1978	1979
Offences against the person	88.8	98.1	86.2	81.9	85.1	96.4	87.7	88.4	87.2
Stealing with violence	42.3	35.7	35.1	38.2	39.1	27.0	41.6	45.0	33.3
Property breaking	34.8	23.6	26.4	36.1	29.1	31.4	32.4	28.6	15.7
Larceny from property	30.9	24.2	27.7	27.0	28.2	25.1	24.3	27.5	19.6
False pretences	64.5	77.5	78.0	85.8	72.8	88.3	72.0	72.7	72.0
Sexual offences	83.1	92.3	91.4	84.5	76.3	93.9	82.4	76.7	72.2
Drug offences	97.5	100.0	100.0	99.6	99.0	97.9	98.7	99.3	99.0
Miscellaneous offences	74.5	67.8	71.9	52.2	74.2	58.7	48.9	50.7	44.4
TOTAL	42.4	45.2	43.3	42.7	46.6	51.1	44.9	45.7	35.5

Source: N.S.W. Police Department.

up a great amount of police time (in attending the scene of the crime, in making reports, in pursuing enquiries) and hence changes in their frequency are worthy of note; second, it is very often serious crime which attracts public attention and hence contributes to the public image of the law enforcement system. In this context it is important to note not just the absolute number of serious offences but also the per capita crime rate. In other words, it is important to know how crime varies in frequency relative to a given population base.

Table 4.3 shows the crime rate per 10,000 population for serious crimes in the Lismore District as a whole (see Appendix 1 for details of base population). The results are very similar to those contained in Table 4.1, except that the overall changes in crime rates are lower because Table 4.3 takes account of the quite substantial population increase that has occurred in the Lismore District in period 1971-1979. Indeed, with the exception of drug offences and offences against the person (which are increasing very quickly) and sexual offences (which have decreased markedly) the real per capita increase in serious crime is generally between 22 and 49% (or in the range of 2%-6% per annum). These figures are particularly interesting when compared with data for New South Wales as a whole (Table 4.4), with data for metropolitan New South Wales (Table 4.5), and with data for non-metropolitan New South Wales (Table 4.6).

A quick persual of Tables 4.4, 4.5, and 4.6 shows that, in all cases, the per capita incidence of serious crime is higher in the Sydney area than in rural areas. However, for each of the eight serious crimes listed in the tables, the rate of change is greater in the country than in the city thereby suggesting that the difference between the two areas in terms of crime is diminishing. Indeed the city and country areas seem to be exhibiting a similar crime pattern nowadays, at least to the extent that both, like the study area, experienced a downturn in the crime rate in 1979. Compared to the state as a whole, the study area has generally low crime rates. However, compared to the overall pattern for areas outside Sydney, the Lismore Police District is characterized by a high level of

Table 4.3: The incidence of serious crime in the Lismore District:

rate per 10,000 population

	1971	1972	1973	1974	1975	1976	1977	1978	1979	% increase 1971-79
Offences against the person	2.2	2.6	2.7	2.8	4.1	6.0	6.5	9.3	9.0	+309
Stealing with violence	1.3	1.3	1.7	1.5	2.0	1.6	2.0	2.1	1.7	+31
Property breaking	30.0	23.6	25.5	43.0	40.0	48.8	50.9	59.3	44.8	+49
Larceny from property	97.0	79.6	89.6	92.0	113.4	106.7	102.5	132.2	133.2	+37
False pretences	12.9	19.2	15.6	13.7	18.5	50.6	15.3	35.1	15.7	+22
Sexual offences	4.4	4.4	5.4	4.4	3.2	3.5	3.1	3.5	3.6	-18
Drug offences	2.0	5.7	7.3	13.1	22.0	27.5	34.6	33.9	24.5	+1125
Miscellaneous offences	20.6	21.5	17.9	11.1	33.2	22.7	23.1	32.1	29.6	+44
TOTAL	170.4	157.8	165.7	181.5	236.5	267.3	238.0	307.5	262.1	+54

Source: N.S.W. Police Department.

Table 4.4: The incidence of serious crime in New South Wales:

rate per 10,000 population

	1971	1972	1973	1974	1975	1976	1977	1978	1979	% increase 1971-79
Offences against the person	6.0	7.0	7.9	8.2	10.7	11.0	12.5	14.1	13.8	130
Stealing with violence	5.6	6.8	5.9	6.3	6.3	6.6	8.2	8.9	6.6	18
Property breaking	81.1	78.4	74.2	99.0	101.0	101.5	108.3	122.0	98.8	22
Larceny from property	146.5	130.4	119.4	126.2	130.0	133.4	143.1	155.2	151.6	3
False pretences	21.5	18.7	17.5	22.0	25.2	39.5	33.0	43.1	28.2	31
Sexual offences	7.8	7.6	7.6	7.0	7.3	7.3	7.1	7.2	5.3	-32
Drug offences	3.7	4.0	5.4	8.6	18.1	20.2	23.9	21.2	68.0	42
Miscellaneous offences	44.2	44.4	34.5	24.3	33.3	37.3	42.4	53.7		
TOTAL	316.4	297.3	272.5	301.6	331.8	356.7	378.5	425.5	372.2	18

Table 4.5: The incidence of serious crime in the Sydney Metropolitan Region: rate per 10,000 population

	1971	1972	1973	1974	1975	1976	1977	1978	1979	% increase 1971-79
Offences against the person	7.1	8.4	9.3	9.4	12.1	12.6	13.5	14.7	14.6	106
Stealing with violence	7.9	9.3	8.2	8.9	8.6	9.3	11.4	12.5	9.3	18
Property breaking	105.6	102.9	94.3	126.1	126.8	124.4	132.4	148.4	120.8	14
Larceny from property	170.9	150.2	134.2	142.7	141.5	147.5	155.3	165.3	160.1	-6
False pretences	23.8	19.6	18.9	21.5	29.3	46.9	36.6	47.8	30.9	30
Sexual offences	8.4	8.6	8.5	7.9	8.3	8.5	8.4	8.4	6.5	-23
Drug offences	4.4	4.7	6.2	9.8	21.3	22.2	26.5	24.3	73.5	32
Miscellaneous offences	51.1	51.4	37.3	26.6	35.7	40.0	45.9	58.3		
TOTAL	379.3	355.2	316.8	356.8	383.5	411.4	430.1	479.8	415.6	10

Table 4.6: The incidence of serious crime in New South Wales outside Sydney Metropolitan Region: rate per 10,000 population

	1971	1972	1973	1974	1975	1976	1977	1978	1979	% increase 1971-79
Offences against the person	4.0	4.7	5.5	6.0	8.3	8.4	10.6	12.9	12.3	208
Stealing with violence	1.6	2.3	1.9	1.7	2.3	2.2	2.7	2.8	2.0	25
Property breaking	38.3	35.4	39.4	52.2	56.9	62.5	67.3	77.3	61.5	61
Larceny from property	103.8	95.9	93.8	97.8	110.4	109.2	122.4	138.0	137.3	32
False pretences	17.4	17.2	15.2	16.1	18.1	26.8	26.9	35.3	23.6	36
Sexual offences	6.7	5.8	6.1	5.3	5.4	5.1	4.7	5.1	3.4	-49
Drug offences	2.3	2.7	4.0	6.5	.6	16.7	19.5	15.9	58.6	71
Miscellaneous offences	31.9	32.1	29.6	20.5	29.3	32.7	36.5	45.9		
TOTAL	206.2	196.3	195.5	206.3	243.3	263.6	290.6	333.2	298.8	45

incidence of drug offences and a low level of incidence of offences against the person, property breaking, false pretences, and overall crime. The rate for stealing with violence, larceny from property, and sexual offences is about the same in the study area as in country areas as a whole. However, this picture as at 1979 becomes rather more interesting when account is taken of the rate of change in the incidence of crime because the study area has a higher than average rate of increase of offences against the person, drug offences, stealing with violence, and total crime but a lower than average rate of change in property breaking, false pretences, and sexual offences. This higher than average rate of increase of certain categories of crime is noteworthy and may provide prima facie evidence for the impact of tourism on crime. However, such a proposition can only be tested by looking at crime at a more detailed geographical scale.

CHAPTER 5

AN EXAMINATION OF SERIOUS CRIME AT THE DIVISIONAL LEVEL

The overall pattern described in Chapter 4 provides an interesting and important context for the investigation of the impact of tourism on crime, not least because of its comparison of the study area (the centre of a substantial tourist industury) with the state as a whole. However the data contained in Chapter 4 are at a rather crude geographical scale in that they refer to the Lismore Police District as a whole. In this chapter, therefore, the same data base will be examined for five Police Divisions: Murwillumbah; Lismore; Grafton; Coffs Harbour; and Kempsey (see Chapter 3). The purpose of shifting the examination from the regional to the sub-regional scale is twofold: first, to explore whether the regional picture in respect of variations in serious crime over time which was apparent in Chapter 4 is consistent across the various sub-regions that make up the study area (and hence whether there is general trend in crime or whether the overall picture is a somewhat misleading average of different sub-regional patterns); and second to provide a bridge between the district level data contained in Chapter 4 and the information derived from individual station records contained in Chapter 6, 7 and 8.

The absolute number of serious criminal offences committed in each Police Division in each year from 1971 to 1979 is shown in Table 5.1 according to the eigthfold classification of serious crime outlined in Chapter 4. The table also shows the crime rates per 10,000 population. The table is a lengthy and complicated one that bears close scrutiny. A couple of comments need to be made. To begin with, the observation (made in Chapter 4) that the overall serious crime rate is increasing seems to be borne out. However a certain variability emerges in the data. For example, although drug offences and offences against the person are the serious crimes that are growing at the fastest rate, the growth rate varies from place to place and from year to year. In terms of drug offences there was a very high incidence in Murwillumbah in 1972, in Coffs Harbour in 1974 and 1975, in Lismore in 1976 and

Table 5.1: The incidence of serious crime in selected police divisions

1971

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	13	15	9	4	4	45
	R	3.2	2.5	3.0	1.1	1.1	2.2
Stealing with violence	N	6	7	6	2	5	26
	R	1.5	1.2	2.0	0.6	1.4	1.3
Property breaking	N	122	182	82	76	147	609
	R	30.0	30.5	27.2	21.4	39.8	30.0
Larceny with property	N	438	533	270	321	405	1967
	R	107.8	89.3	89.5	90.5	109.8	97.0
False pretences	N	73	6[illegible]	37	36	53	262
	R	18.0	10.[illegible]	12.3	10.2	14.4	12.9
Sexual offences	N	40	1[illegible]	10	8	14	89
	R	9.9	2.[illegible]	3.3	2.3	3.8	4.4
Drug offences	N	20	11	7	3	0	41
	R	4.9	1.8	2.3	0.9	0.0	2.0
Miscellaneous offences	N	117	116	71	53	60	417
	R	28.8	19.4	23.6	14.9	16.3	20.6
TOTAL	N	829	944	492	503	688	3456
	R	204.1	158.1	163.2	141.8	186.5	170.4

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1972

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	5	18	15	9	7	54
	R	1.2	3.0	4.9	2.4	1.8	2.6
Stealing with violence	N	4	8	3	8	5	28
	R	1.0	1.3	1.0	2.1	1.3	1.3
Property breaking	N	107	161	74	64	87	493
	R	25.8	26.6	24.2	17.1	22.4	23.6
Larceny from property	N	317	416	315	333	282	1663
	R	76.6	68.7	102.9	88.9	72.5	79.6
False pretences	N	98	117	97	68	20	400
	R	23.7	19.3	31.7	18.2	5.1	19.2
Sexual offences	N	25	28	7	20	12	92
	R	6.0	4.2	2.3	5.3	3.1	4.4
Drug offences	N	65	19	18	12	4	118
	R	15.7	3.1	5.9	3.2	1.0	5.7
Miscellaneous offences	N	77	145	97	64	65	448
	R	18.6	23.9	31.7	17.1	16.7	21.5
TOTAL	N	698	912	626	578	482	3296
	R	168.6	150.6	204.6	154.0	123.9	157.8

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1973

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	10	20	4	11	13	58
	R	2.3	3.2	1.3	2.8	3.2	2.7
Stealing with violence	N	16	7	10	2	2	37
	R	3.8	1.1	3.2	0.5	0.5	1.7
Property breaking	N	102	163	75	88	123	551
	R	23.9	26.3	24.0	22.3	29.9	25.5
Larceny from property	N	336	596	305	388	314	1939
	R	78.7	96.3	97.6	98.3	76.4	89.6
False pretences	N	77	108	47	85	20	337
	R	18.0	17.5	15.0	21.5	4.9	15.6
Sexual offences	N	33	27	21	17	19	117
	R	7.7	4.4	6.7	4.3	4.6	5.4
Drug offences	N	47	28	17	51	15	158
	R	11.0	4.5	5.4	12.9	3.7	7.3
Miscellaneous offences	N	73	126	70	68	51	338
	R	17.1	20.4	22.4	17.2	12.4	17.9
TOTAL	N	694	1075	549	710	557	3585
	R	162.6	173.7	175.6	180.0	135.5	165.7

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1974

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	9	17	16	6	13	61
	R	2.1	2.7	5.1	1.5	3.0	2.8
Stealing with violence	N	5	8	5	8	8	34
	R	1.2	1.3	1.6	2.0	1.9	1.5
Property breaking	N	168	264	79	207	237	955
	R	38.5	41.8	25.0	50.7	55.2	43.0
Larceny from property	N	382	593	220	457	392	2044
	R	87.6	93.8	69.6	112.0	91.4	92.0
False pretences	N	41	145	53	50	15	304
	R	9.4	22.9	16.8	12.3	3.5	13.7
Sexual offences	N	8	43	21	7	18	97
	R	1.8	6.8	6.7	1.7	4.2	4.4
Drug offences	N	35	29	26	157	43	290
	R	8.1	4.6	8.2	38.5	10.0	13.1
Miscellaneous offences	N	41	42	60	52	52	247
	R	9.4	6.6	19.0	12.7	12.1	11.1
TOTAL	N	689	1141	480	944	778	4032
	R	158.0	180.5	151.9	231.3	181.4	181.5

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1975

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	24	28	13	16	13	94
	R	5.3	4.4	4.1	3.8	3.0	4.1
Stealing with violence	N	11	12	9	5	9	46
	R	2.5	1.9	2.8	1.2	2.1	2.0
Property breaking	N	156	254	104	143	252	909
	R	34.7	39.4	32.5	33.7	57.7	40.0
Larceny from property	N	538	765	270	497	510	2580
	R	119.8	118.8	84.3	117.3	116.7	113.4
False pretences	N	33	173	66	104	44	420
	R	7.4	26.9	20.6	24.5	10.1	18.5
Sexual offences	N	10	22	9	20	11	72
	R	2.2	3.4	2.8	4.7	2.5	3.2
Drug offences	N	126	101	52	147	75	501
	R	28.1	15.7	16.2	34.7	17.2	22.0
Miscellaneous offences	N	103	411	61	91	90	756
	R	22.9	63.8	19.0	21.5	20.6	33.2
TOTAL	N	1001	1766	584	1023	1004	5378
	R	222.9	274.2	182.3	241.4	229.8	236.5

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1976

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	16	28	16	36	43	139
	R	3.5	4.3	4.9	8.2	9.7	6.0
Stealing with violence	N	4	7	5	14	7	37
	R	0.8	1.1	1.5	3.2	1.6	1.6
Property breaking	N	169	282	112	260	310	1133
	R	36.8	42.8	34.6	59.3	70.1	48.8
Larceny from property	N	516	588	307	503	563	2477
	R	112.4	89.3	94.9	114.7	127.4	106.7
False pretences	N	29	599	203	148	235	1174
	R	6.3	84.9	62.7	33.8	53.2	50.6
Sexual offences	N	9	21	10	15	27	82
	R	2.0	3.2	3.1	3.4	6.1	3.5
Drug offences	N	48	312	77	108	94	639
	R	10.5	47.4	23.8	24.6	21.3	27.5
Miscellaneous offences	N	61	154	77	105	129	526
	R	13.3	23.4	23.8	24.0	29.2	22.7
TOTAL	N	852	1951	807	1189	1408	6207
	R	185.6	296.2	249.3	271.2	318.6	267.3

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1977

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	14	30	23	26	62	155
	R	3.0	4.5	7.0	5.7	13.8	6.5
Stealing with violence	N	9	16	2	12	9	48
	R	1.9	2.4	0.6	2.6	2.0	2.0
Property breaking	N	168	280	139	319	299	1205
	R	35.6	42.0	42.6	70.2	66.4	50.9
Larceny from property	N	501	580	29.3	461	595	2430
	R	106.3	87.0	89.7	101.4	132.1	102.5
False pretences	N	25	92	106	83	56	362
	R	5.3	13.8	32.5	18.3	12.4	15.3
Sexual offences	N	13	13	11	10	27	74
	R	2.8	2.0	3.4	2.2	6.0	3.1
Drug offences	N	157	388	81	72	121	819
	R	33.3	58.2	24.8	15.8	26.9	34.6
Miscellaneous offences	N	49	153	78	113	155	548
	R	10.4	22.9	23.9	24.9	34.4	23.1
TOTAL	N	936	155	733	1096	1324	5641
	R	198.6	232.7	224.5	241.1	293.9	238.0

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1978

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	27	54	26	38	80	225
	R	5.6	7.9	7.9	8.1	17.3	9.3
Stealing with violence	N	11	14	6	13	7	51
	R	2.3	2.1	1.8	2.8	1.5	2.1
Property breaking	N	186	366	140	386	362	1440
	R	38.4	53.8	42.3	81.8	78.4	59.3
Larceny from property	N	683	783	425	626	697	3214
	R	140.8	115.0	128.5	132.7	150.9	132.2
False pretences	N	110	104	493	83	64	854
	R	22.7	15.3	149.0	17.6	13.9	35.1
Sexual offences	N	9	36	4	23	14	86
	R	1.9	5.3	1.2	4.9	3.0	3.5
Drug offences	N	171	235	115	87	216	824
	R	35.3	34.5	34.8	18.5	46.8	33.9
Miscellaneous offences	N	131	171	97	169	211	779
	R	27.0	25.1	29.3	35.8	45.7	32.1
TOTAL	N	1328	1763	1306	1425	1651	7473
	R	273.9	258.9	394.7	302.1	357.4	307.5

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

Table 5.1: (continued)*

1979

		Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	N	43	61	17	37	69	227
	R	8.5	8.7	5.1	7.5	14.5	9.0
Stealing with violence	N	9	10	6	11	6	42
	R	1.8	1.4	1.8	2.2	1.3	1.7
Property breaking	N	214	215	88	364	246	1127
	R	42.2	30.7	26.3	73.7	51.6	44.8
Larceny from property	N	791	658	418	750	732	3349
	R	155.8	93.8	124.9	151.9	153.5	133.2
False pretences	N	75	122	50	99	48	394
	R	14.8	17.4	14.9	20.1	10.1	15.7
Sexual offences	N	13	26	10	24	17	90
	R	2.6	3.7	3.0	4.9	3.6	3.6
Drug offences	N	167	200	112	73	65	617
	R	32.9	28.5	33.5	14.8	13.6	24.5
Miscellaneous offences	N	115	178	97	189	165	744
	R	22.7	25.4	29.0	38.3	34.6	29.6
TOTAL	N	1427	1470	798	1547	1348	6590
	R	281.1	209.6	238.4	313.3	282.6	262.1

* Rows marked 'N' indicate the absolute number of offences. Rows marked 'R' indicate the incidence per 10,000 population.

1977, and in Kempsey in 1978. Similarly, Kempsey had a very high incidence of crimes against the person in the three years 1977-1979. Sexual offences were generally higher in Coffs Harbour than elsewhere, although it must be noted that there were also relatively high incidences in Murwillumbah in 1971 and in Kempsey in 1976 and 1977. Although otherwise variable, property breaking peaked in Kempsey in 1975 and 1976. Alongside these peaks in the crime rate there were notable "troughs": larceny from property was low in Grafton in 1974 and 1975, and false pretences offences were relatively uncommon in Kempsey in 1972 and 1973 and in Murwillumbah in 1975, 1976 and 1977. In other words, the general pattern that was noted in Chapter 4 is rather less clear at the sub-regional scale.

A second point worth noting is that the tendency for the number of serious crimes in the various categories to increase gradually is less apparent at the Divisional scale than it was at the District scale in that some places stand out against overall incremental growth. Two types of crime serve to illustrate the point: property breaking dropped markedly in Kempsey in 1972 and in Lismore, Grafton, and Kempsey in 1979 while larceny from property dropped noticeably in Murwillumbah and Kempsey in 1972 and in Lismore in 1976 and 1979.

In short, the generality of the observations made in Chapter 4 is thrown into question to a certain degree when the focus of attention is shifted from the district to the divisional scale. Table 5.1 is however a highly complicated table that is difficult to comprehend quickly. As a result the main features are summarized in Table 5.2 which shows the percentage change in the per capita incidence of each of eight serious offences over the 1971-1979 period. The best way to interpret the table is to treat each serious crime in turn.

OFFENCES AGAINST THE PERSON

This category of offence grew very rapidly in per capita terms in all Divisions except Grafton (where the rate of increase was something less than 9% per annum). The overall figure (309%) derives

Table 5.2: The percentage change in the incidence of serious crimes per 10,000 population 1971-79

	Murwillumbah Division	Lismore Division	Grafton Division	Coffs Harbour Division	Kempsey Division	TOTAL
Offences against the person	+166	+248	+70	+582	+1218	+309
Stealing with violence	+20	+17	-10	+267	-7	+31
Property breaking	+41	+1	-3	+244	+30	+49
Larceny from property	+45	+5	+40	+68	+40	+37
False pretences	-18	+64	+21	+97	-30	+22
Sexual offences	-74	+28	-9	+113	-5	-18
Drug offences	+571	+1483	+1357	+1544	*	+1125
Miscellaneous offences	-21	+31	+23	+157	+112	+44
TOTAL	+38	+33	+46	+121	+52	+54

* Impossible to calculate a figure because of zero drug offences in 1971.

in large part from an extremely great increase in the number of offences in Kempsey and a somewhat smaller, but still very pronounced, increase in Coffs Harbour.

STEALING WITH VIOLENCE

In per capita terms, stealing with violence actually declined marginally in Grafton and Kempsey. There was a modest increase in Murwillumbah and Lismore but a very sharp increase in Coffs Harbour.

PROPERTY BREAKING

Coffs Harbour also stood out as a result of a very significant increase in property breaking. There were modest increases in Murwillumbah and Kempsey and vitually no change in Lismore and Grafton.

LARCENY FROM PROPERTY

Apart from Lismore (where the growth rate averaged only just of 0.6% per annum), the increase in the number of larceny offences was reasonably uniform (averaging 5-7% per annum in per capita terms).

FALSE PRETENCES

The overall modest increase in the number of false pretences (22%) masks substantial sub-regional differences. Modest declines were recorded in Murwillumbah and Kempsey, a modest increase in Grafton, and a significant increase in Lismore and Coffs Harbour.

SEXUAL OFFENCES

The incidence of sexual offences declined marginally in Grafton and Kempsey and declined significantly in Murwillumbah. In contrast there was a modest increase in Lismore and a significant increase in Coffs Harbour.

DRUG OFFENCES

Unfortunately no percentage change could be calculated for drug offences in Kempsey because there were no offences reported in the base year of 1971. In all other Divisions the growth rate was very dramatic, with Murwillumbah perhaps lagging a little behind Lismore, Grafton, and Coffs Harbour.

MISCELLANEOUS OFFENCES

In terms of miscellaneous offences the pattern was mixed, no doubt reflecting the varied offences that are grouped in this category. There was a modest decline in Murwillumbah, a modest increase in Lismore and Grafton, and a significant increase in Coffs Harbour and Kempsey.

OVERALL PATTERN

Overall the growth rate in serious crime was very similar in Murwillumbah, Lismore, Grafton, and Kempsey (a 30-50% increase). It was noticeably higher in Coffs Harbour (a 121% increase).

Two points need to be borne in mind in interpreting Table 5.2. First, and this applies equally to Table 5.1, some variability is to be expected in the overall pattern because the absolute number of crimes on which the percentage tabulations are based is small. For example, nine offences of a particular sort in an area where there had previously been only six is not a large increase but would nevertheless show up in percentage terms as a 50% increase. This qualification on percentage increases in serious crime rates applies particularly to the relatively rare crimes (offences against the person, stealing with violence, sexual offences). Second, in calculating percentage change 1971 was used as a base year. This was simply a matter of convenience and it is impossible to say whether 1971 was any more (or any less) "normal" than any other year. Indeed, such is the variability that has emerged in the data that the use of any one year as a base runs the risk of producing spurious results. It is therefore imperative that the tables in Chapter 4 and 5 be interpreted with great caution.

Having said this it is possible to move on to some tentative findings. In order to make these findings somewhat clearer than they might otherwise be, the year-by-year incidences of serious crimes have been converted to graph form. It was found in preparing this report that a graph of actual incidence rates per 10,000 population was singularly unhelpful because the range of scores was such that

the scale used made it extremely difficult to differentrate one line from another. As a result it was decided to plot the rank order of the Police Divisions in terms of the incidence per 10,000 population of each of the serious crimes on the New South Wales Police Department print-out. Not only was this cartographically much clearer but it also brings out very forcefully the variability in the data. The results appear in Figure 5.1. Once again the individual categories of crime are best dealt with in turn.

OFFENCES AGAINST THE PERSON

Prior to 1976 the pattern was very varied. Since that time Kempsey has emerged as the Division with the higher per capita incidence and, until 1979, Lismore and Murwillumbah had the lowest incidences.

STEALING WITH VIOLENCE

Once again the pattern prior to 1976 is extremely variable with Coffs Harbour oscillating between the highest and lowest position. Since 1976 Coffs Harbour has clearly emerged as the worst area for stealing with violence.

PROPERTY BREAKING

The pattern for property breaking is somewhat less changeable. Kempsey was the worst or second-worst Division for all but one of the years 1971-1979 and since 1977 Coffs Harbour has been the area with the highest per capita incidence.

LARCENY FROM PROPERTY

As with other serious crimes, it is only in 1976 that a stable pattern emerges. Since that time the rank ordering of the Divisions, in terms of the per capita prominence of larceny, has generally been Kempsey, Murwillumbah, Coffs Harbour, Grafton, and Lismore.

FALSE PRETENCES

The pattern for false pretences varied wildly from year to year, particularly in the early 1970s and in the late 1970s.

Fig: 5.1 A RANK ORDERING OF THE INCIDENCE OF SERIOUS CRIMES PER 10000 POPULATION IN SELECTED POLICE DIVISIONS ,1971 - 1979

SEXUAL OFFENCES

The incidence of sexual offences is so variable that no general pattern can be discerned.

DRUG OFFENCES

The incidence of drug offences, as between the different Police Divisions, seems to be getting increasing variable with the passage of time.

MISCELLANEOUS OFFENCES

Apart from an interlude 1974-1976, the pattern of miscellaneous offences has been reasonably stable over time with Coffs Harbour and Kempsey having the highest incidence, and Lismore and Murwillumbah the lowest.

OVERALL PATTERN

Predictably, for a graph that summarizes eight very varied crimes, the overall pattern is complex and defies simply description.

On the basis of Figure 5.1 certain general remarks can be made. First, the incidence of certain categories of serious crime (notably offences against the person, stealing with violence, and larceny from property) is tending to become more stable over time. Second, although the patterns that emerge are very varied, it is often possible to identify the "worst" (and sometimes the "best") area or areas. Thus Kempsey is "bad" for offences against the person, property breaking, larceny from property, and miscellaneous offences, Coffs Harbour is "bad" for larceny. Above all, though, the picture that emerges is one of very varied crime rates. To a certain extent this is to be expected because the crime rate in any one instance is partly a function of year-to-year variations in crime and partly a function of place-to-place fluctuations in the crime rate. In order to assess the relative importance of these two factors, the per capita serious crime rates were subjected to the type of analysis of variance statistical test known as randomized block design (RB - k). The purpose of this test was to assess the impact of years (Y) and places (P) on crime

rates (C). In general notation, the model used was:

$$C = M + Y + P + e.$$

In other words, this means that any particular per capita score for any one of the eight serious crimes is made up of the overall mean (M), the influence of year-to-year changes (Y), the influence of place (P), and the error for that particular score (e) (see Kirk, 1968, 131-50). With this model it is possible to hold constant the influence of place in order to examine the influence of year, and vice versa.

The results are present in Table 5.3. Each serious crime was examined in turn and the results were expressed in terms of an F- ratio, the significance of which is indicated by an asterisk. Clearly, there is no significance difference from year-to-year, or from place-to-place, in stealing with violence, false pretences, sexual offences, and miscellaheous offences. In other words, the crime rates for these offences are so variable that it is impossible to identify any general trends. A significant difference emerged in terms of year-to-year variations in offences against the person, property breaking, larceny from property, drug offences, and the total amount of serious crime. Reference back to Table 5.1 shows that this significant result is attributable to the increasing prevalence of these crimes. Interestingly, in only one case was there a significant place-to-place variation in crime. That case was property breaking. In all other instances the crime rates were so very varied that no significant place differences could be discovered.

Associated with this issue of place-to-place and year-to-year variations in crime rates is the question of whether the eight categories of serious crime can be grouped into different types. For example, it may well be that crimes against the person (including sexual offences) differ in their incidence from both crimes against property (stealing, property breaking, larceny) and so-called victimless crimes (drug offences). In order to investigate this possibility the total incidence rate per 10,000 population for each serious crime (the right hand column of Table 5.1) was correlated with the total per capita incidence

Table 5.3: A randomized block analysis of variance of year-by-year and place-by-place fluctuations in per capita crime rates

	SS	df	MS	F - ratio
OFFENCES AGAINST THE PERSON				
Total corrected	567.75	44		
Year	311.35	8	38.92	6.74*
Place	71.51	4	17.88	3.09
Error	184.89	32	5.78	
STEALING WITH VIOLENCE				
Total corrected	24.78	44		
Year	3.36	8	0.42	0.67
Place	1.22	4	0.31	0.31
Error	20.19	32	0.63	
PROPERTY BREAKING				
Total corrected	12222.15	44		
Year	5969.40	8	746.18	7.47*
Place	3055.15	4	763.79	7.64*
Error	3197.59	32	99.92	
LARCENY FROM PROPERTY				
Total corrected	23642.30	44		
Year	14272.13	8	1784.02	8.71*
Place	2816.88	4	704.22	3.44
Error	6553.29	32	204.79	

Table 5.3: (continued)

	SS	df	MS	F - ratio
FALSE PRETENCES				
Total corrected	26264.17	44		
Year	7263.97	8	908.00	1.94
Place	4022.18	4	1005.54	2.15
Error	14978.02	32	468.06	
SEXUAL OFFENCES				
Total corrected	146.20	44		
Year	24.04	8	3.01	0.80
Place	1.76	4	0.44	0.12
Error	120.40	32	3.76	
DRUG OFFENCES				
Total corrected	9305.16	44		
Year	5478.74	8	684.84	6.08*
Place	222.29	4	55.57	0.49
Error	3604.13	32	112.63	
MISCELLANEOUS OFFENCES				
Total corrected	4448.51	44		
Year	1682.89	8	210.36	2.68
Place	255.87	4	63.97	0.82
Error	2509.75	32	78.43	

Table 5.3: (continued)

	SS	df	MS	F - ratio
TOTAL SERIOUS CRIME				
Total corrected	172480.62	44		
Year	121829.00	8	15228.63	10.63*
Place	4790.23	4	1197.56	0.84
Error	45861.39	32	1433.17	

* Statistically significant at the 95% confidence level

for every other serious crime. The results appear in Table 5.4. In terms of this table, the most significant postive intercorrelations (and hence the greatest levels of similarity) occur between offences against the person, property breaking, larceny from property, and drug offences. Sexual offences were significantly and negatively correlated with most other serious offences, thereby indicating that they are dissimilar from other serious crimes. False pretences were not significantly correlated with any other offence. And, in the case of stealing with violence and missellaneous offences, the correlations were variable.

The analysis contained in Tables 5.3 and 5.4 suggests that there are significant differences from year-to year in per capita crime rates and similarities between diferent sorts of crime. Place-to-place variations in crime rates - and hence the posible differential impact of tourism - are less easily identified. This may well be because Police Divisions are still rather crude geographical units that possibly mask important small scale, place-to-place differences. It is important therefore that the study of tourism and crime focus attention on a finer mesh of geographical units.

Table 5.4: Correlations between the per capita incidences of serious crimes over the period 1971-1979

1.	Offences against the person	-						
2.	Stealing with violence	0.65	-					
3.	Property breaking	0.82*	0.70*	-				
4.	Larceny from property	0.89*	0.65	0.74*	-			
5.	False pretences	0.42	0.19	0.49	0.30	-		
6.	Sexual offences	-0.66*	-0.60	-0.76*	-0.63	-0.35	-	
7.	Drug offences	0.85*	0.82*	0.92*	0.71*	0.49	-0.83*	-
8.	Miscellaneous offences	0.66*	0.64	0.42	0.77*	0.26	-0.67*	0.56
		1	2	3	4	5	6	7

* Statistically significant at the 95% confidence level.

CHAPTER 6

TOTAL CRIME AT THE LEVEL OF INDIVIDUAL STATIONS

The analysis in Chapters 4 and 5, at the District and Divisional levels, has shown that serious crime as a whole is growing in the study area despite variations between specific categories of serious crime and between specific areas. However, it became apparent during that analysis that the impact of tourism on crime could only really be pursued by focussing on crime in general and by looking at individual stations. A focus on crime in general rather than serious crime is necessary because it may be that many of the offences related to tourism are not serious offences but are nevertheless very demanding of police time. Similarly, only by looking at the records of individual stations, and therefore contrasting tourist and non-tourist resorts, is it possible to see how the nature of offences varies with the time of year (e.g. holiday periods and non-holiday periods) and in terms of specific locations (e.g. tourist facilities such as beaches and motels, and non-tourist facilities such as private homes).

In order to pursue the investigation of the impact of tourism on crime, it was decided to study three tourists resorts (Tweed Heads, Ballina, Port Macquarie) and three "control" towns that were not noted for their tourist activity (Casino, Kyogle, Wauchope). Unfortunately this selection of study areas had to be made before the research began in order for permission to visit these stations, and to examine their records, to be obtained from the New South Wales Police Department. Had the selection of study areas been delayed until after the analysis contained in Chapter 5, it is quite likely that Coffs Harbour (where serious crime was increasing most quickly) and Kempsey (which had high incidences of offences against the person, property breaking, and larceny) would also have been included. Nevertheless, the six study areas selected do provide a range of population sizes and tourist accommodation as is shown in the very brief profile presented in Table 6.1. In the table, Tweed Heads has been incorporated with the Gold Coast as a whole since it is an integral part of that major tourist complex. Clearly the tourist resorts have

Table 6.1: Towns in the study area

	Permanent residents of urban centre at 1976 Census[a]	Number of hotel/ motel rooms in 1976[b]	Ratio of permanent residents to each hotel/motel room
Ballina	6451	217	30
Casino	8937	124	72
Kyogle	2848	26	110
Port Macquarie	11474	694	17
Gold Coast (inc. Tweed Heads)	87442	2686	33
Wauchope	3374	44	77

Sources: a. 1976 Census
b. NRMA Accommodation Directory

a much lower ratio of permanent resident per hotel/motel room than the non-tourist towns. The figures in Table 6.1 should, however, be interpreted with caution because they are an indicative rather than a definitive measure of tourism in that they take no account of accommodation and attractions other than hotels and motels.

Once the study areas had been selected the question arose as to what indicators of crime to record. After a visit to each station to be studied, and discussion with some of the officers involved in the day-to-day running of these stations, it was decided to focus on four information sources:

1. Crime information reports (CIRs)
2. Occurrence pad entries
3. Charge books/records of arrest
4. Traffic accident reports.

Crime information reports are the most obvious source of information on crime in the area covered by each police station. They are the forms filled out by police officers when an offence is either reported at the police station or encountered on patrol. A copy of this form is forwarded to police headquarters and a copy retained in the station concerned. As a result it was relatively easy to inspect this source of information.

Not all approaches by the public to the police concern criminal activity. Many are concerned with lost dogs and the like. Moreover, not all offences reported turn out to be genuine (and hence "accepted" in terms of police records). Accordingly, it was decided to examine occurrence pad entries, that is the entries made by the police in a record at the station whenever an incident of any sort comes to their notice. Naturally, some of the entries in the occurrence pad are transcriptions from the notebooks of patrolling officers. Additionally, some occurrence pad entries concern routine police tasks (such as checking the cells, and checking the cash-in-hand). In short,

occurrence pad entries were studied because they provide an index, albeit a crude one, of the total volume of police work. The significance of this for the study of tourism and crime lies in the fact that the total volume of police work (and hence of occurrence pad entries) is possibly at a peak when thereis a high volume of tourists visiting a centre (such as during school holidays).

It was decided to study the charges and arrests at individual stations for much the same reason that serious crime was studied in Chapters 4 and 5. That is, the charging and arrest of offenders is an important and time consuming task that makes heavy demands on police resources, not only at the time but also in terms of associated activities like the serving of summonses and associated court appearances. It was decided to look at both charges and arrests because it often happens that one offender is charged with more than one offence.

The fact that activities other than the combatting of crime take up a large proportion of police time led to the decision to study traffic accident reports. These are the forms filled out by the police when notified of a traffic accident. The rationale for studying these records was that traffic accidents may be more likely to occur when there is a high volume of traffic on the roads (such as in the main holiday and tourist periods). In other words, it may well be that traffic accident reports, like occurrence pad entries, are more common in tourist than in non-tourist areas.

It is realised that these four measures (crime information reports, occurrence pad entries, charge/arrest books, traffic accident reports) do not account for all police work. In fact it is appreciated that police are often involved in a very wide range of other activities that range from motor registry duties through to school road safety visits. However, from the point of view of the present study of tourism and crime, the four measures do seem the most appropriate.

Having decided to focus on these information sources, one specific problem and one general problem were encountered. The specific problem was that crime information reports from Wauchope were collated

and filed in Port Macquarie, as were details of charges, arrests, and traffic accidents. This was a problem that was unforeseen when the study areas were selected in negotiation with the New South Wales Police Department prior to the commencement of the research. Moreover, because the Wauchope records were pooled with the Port Macquarie records (rather than kept separate) there was no alternative but to treat Port Macquarie and Wauchope jointly as a single study area. This was unfortunate because it detracted from the selection of three tourist resorts and three "control" towns. However, it was unavoidable and even made sense given the very short distance (c.20km) between the two towns. Furthermore, the pooling of Wauchope and Port Macquarie data did not inhibit the analysis in Chapter 7 where a distinction was able to be made in terms of the location of an offence.

The general problem encountered in focussing attention on individual stations centred on the very high volume of crime information reports, occurrence pad entries, charges, arrests, and traffic accident reports in each of the study areas. Table 6.2 lists the numbers for 1979 alone. Clearly, there were almost ten thousand "events" recorded in the four data sources in the study area in 1979. In view of this enormous volume of information it was decided to restrict the examination of trends in crime information reports, occurrence pad entries, charges, arrests, and traffic accident reports to the five year period 1975-1979. This (admittedly subjective) limitation was imposed in order to keep fieldwork to manageable proportions. In the event it was proved to be a fortuitous limitation, not only because inter-regional patterns of crime became rather more stable in the second half of the 1970s (as was shown in Chapter 5) but also because it transpired that pre-1975 records for various stations had been destroyed or were otherwise unavaiable at some of the stations concerned.

Before going on to look at trends in the various information sources, Table 6.2 is worthy of further attention. Particularly interesting is the fact that the larger centres seem to have more CIRs than occurrence pad entries compared to the smaller centres: in Tweed Heads the ratio is 1.27:1 and in Port Macquarie 1.98:1. This

Table 6.2: The volume of police work at individual stations in 1979

Station	Crime Information Reports	Occurrence Pad Entries	Charges & Arrests	Traffic Accident Reports	TOTAL
Tweed Heads	947	747	1303	287	3284
Ballina	302	419	562	210	1493
Port Macquarie & Wauchope	1033	521	909	382	2845
Kyogle	42	130	102	93	367
Casino	482	318	508	292	1680
TOTAL	2806	2215	3384	1264	9669

CONTINUED

1 OF 2

pattern seems unrelated to tourism in that Casino (a non-tourist centre) has a ratio of 1.21:1 whereas Ballina (a tourist centre) has a ratio of 0.72:1. Overall, each crime information report generates 1.21 charges or arrests, but the pattern is very varied from centre to centre. Interestingly, the range of workload in terms of traffic accident reports is much less than that for crime information reports: for the former the difference between the quietest and busiest centre is a factor of 4 whereas for the latter it is a factor of 24.

The monthly figures for crime information reports are set out in Table 6.3, for occurrence pad entries in Table 6.4, for charges and arrests in Table 6.5, and for traffic accident reports in Table 6.6. Except in Ballina (where some records were unavailable) and in Casino (where 1975 CIRs were numbered in such a way as to make it difficult to calculate the volume involved), all figures relate to the 1975-1979 period. The data have been set out for financial years rather than calendar years so as to list together the summer months that are the main tourist and holiday periods.

The information in Tables 6.3-6.6 is provided in detail for the benefit of planners concerned with manpower allocations in the areas involved. The data are however very difficult to comprehend quickly. In order to facilitate comprehension, the information has been plotted in graph form in Figure 6.1 (crime information reports), Figure 6.2 (occurrence pad entries), Figure 6.3 (charges and arrests), and Figure 6.4 (traffic accident reports). What emerges from a persual of these graphs is a picture of peaks increasing in magnitude over time, and of troughs that are relatively unchanging - though perhaps increasing slightly - in magnitude. However the picture is far from clear. The upward trend in the data is not apparent in all areas and for all four measures. Nor do the peaks and troughs coincide from year to year.

A lot of reasons may contribute to this month-to-month variability, It is not beyond the bounds of possibility that an officer applying but no attempt will be made to explore them here. The only

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TOTAL	2806	2215	3384	1264	9669

Table 6.3: Crime Information Reports

BALLINA

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	6	*	20	20	12
August	-	7	*	22	16	18
September	-	8	*	29	26	28
October	-	9	*	11	23	21
November	-	14	*	19	17	22
December	-	16	*	51	34	19
January	15	*	17	47	70	-
February	25	*	20	19	18	-
March	18	*	22	20	22	-
April	6	*	11	16	33	-
May	17	*	19	11	24	-
June	7	*	24	5	15	-

CASINO

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	**	42	137	26	45
August	-	**	20	33	46	36
September	-	**	17	14	34	31
October	-	**	41	31	29	44
November	-	**	28	50	57	20
December	-	**	21	39	42	66
January	**	78	45	42	58	-
February	**	47	39	45	48	-
March	**	29	43	43	47	-
April	**	113	34	51	29	-
May	**	30	47	54	25	-
June	**	44	19	36	33	-

KYOGLE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	4	3	1	1	5
August	-	7	3	2	2	0
September	-	7	0	2	4	9
October	-	5	2	4	4	5
November	-	7	3	3	10	3
December	-	2	4	0	3	1
January	*	4	6	5	2	-
February	*	4	2	0	3	-
March	*	5	2	1	10	-
April	2	7	3	3	2	-
May	2	5	6	3	0	-
June	3	1	3	7	2	-

PORT MACQUARIE AND WAUCHOPE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	39	38	66	93	75
August	-	37	78	52	100	84
September	-	12	49	24	76	53
October	-	46	69	43	78	57
November	-	48	55	38	113	79
December	-	42	80	61	123	99
January	47	79	79	94	116	-
February	53	39	78	59	104	-
March	43	58	37	59	71	-
April	33	62	45	77	138	-
May	52	65	30	54	74	-
June	38	42	38	88	83	-

TWEED HEADS

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	*	*	6	68	98
August	-	*	*	56	71	115
September	-	*	*	55	50	77
October	-	*	*	46	47	53
November	-	*	*	30	29	43
December	-	*	*	51	92	102
January	*	*	44	54	103	-
February	*	*	19	33	66	-
March	*	*	37	56	64	-
April	*	*	39	47	86	-
March	*	*	39	137	64	-
June	*	*	39	78	76	-

* Data unavailable

** Records available but the numbering system made it impossible to calculate the volume involved.

Table 6.4: Occurrence Pad Entries

BALLINA

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	*	*	32	23	41
August	-	*	*	42	42	31
September	-	*	*	28	61	46
October	-	*	*	33	41	49
November	-	*	*	19	48	21
December	-	*	*	35	52	32
January	*	*	23	50	36	-
February	*	*	30	29	28	-
March	*	*	28	32	40	-
April	*	*	22	13	34	-
May	*	*	21	30	38	-
June	*	*	43	40	23	-

CASINO

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	35	31	28	27	31
August	-	15	17	30	20	35
September	-	54	30	28	30	34
October	-	46	19	24	28	26
November	-	41	17	29	15	36
December	-	111	16	25	21	39
January	59	44	20	28	38	-
February	24	45	26	18	35	-
March	41	32	19	38	27	-
April	57	29	26	21	41	-
May	30	22	22	29	21	-
June	42	30	19	37	35	-

KYOGLE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	9	11	10	15	19
August	-	18	16	18	10	5
September	-	9	8	12	17	7
October	-	8	8	8	8	12
November	-	12	19	35	14	15
December	-	16	11	9	12	15
January	5	15	34	8	8	-
February	9	20	18	15	15	-
March	8	12	20	8	7	-
April	12	9	17	8	11	-
May	11	15	10	14	8	-
June	13	9	11	7	8	-

PORT MACQUARIE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	34	17	21	31	31
August	-	38	36	38	50	36
September	-	40	36	20	40	29
October	-	35	43	31	36	29
November	-	38	52	26	41	26
December	-	33	40	45	44	27
January	65	44	29	47	78	-
February	38	24	35	18	69	-
March	58	29	24	35	68	-
April	49	14	29	32	41	-
May	39	24	28	27	42	-
June	29	27	22	35	45	-

TWEED HEADS

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	44	49	63	62	66
August	-	48	58	59	73	72
September	-	40	65	54	54	64
October	-	50	50	156	31	64
November	-	48	60	46	46	59
December	-	58	64	64	82	66
January	49	39	58	78	53	-
February	40	45	61	35	49	-
March	142	50	58	58	63	-
April	53	50	58	43	79	-
May	42	75	59	73	62	-
June	48	60	74	54	50	-

* Data unavailable

Table 6.5: Charges and Arrests

BALLINA

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	19	9	45	38	52
August	-	31	22	36	85	25
September	-	48	28	51	86	47
October	-	54	50	57	48	47
November	-	26	48	26	82	24
December	-	41	76	82	104	56
January	54	51	190	96	120	-
February	51	44	168	50	35	-
March	53	51	82	30	53	-
April	22	88	60	36	29	-
May	19	57	12	43	38	-
June	26	72	56	32	26	-

CASINO

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	72	29	53	36	48
August	-	42	47	46	54	39
September	-	75	30	35	40	18
October	-	71	49	63	52	20
November	-	46	34	58	39	32
December	-	85	36	22	37	55
January	75	39	31	33	36	-
February	73	36	41	66	19	-
March	55	53	49	40	68	-
April	32	46	40	72	114	-
May	30	29	43	73	36	-
June	36	56	41	56	23	-

KYOGLE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	2	14	12	14	14
August	-	24	4	7	6	13
September	-	12	6	13	2	7
October	-	31	9	11	4	9
November	-	35	17	6	33	7
December	-	17	16	30	29	5
January	7	10	25	3	19	-
February	17	9	8	11	17	-
March	19	11	10	2	2	-
April	21	8	27	18	7	-
May	5	18	4	2	2	-
June	15	21	11	9	0	-

PORT MACQUARIE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	64	69	62	138	93
August	-	49	67	89	99	72
September	-	51	53	76	107	46
October	-	98	105	131	115	141
November	-	61	53	90	141	98
December	-	90	94	129	122	88
January	85	69	66	114	76	-
February	59	96	59	118	93	-
March	70	147	118	103	49	-
April	79	113	61	118	63	-
May	77	90	34	100	44	-
June	45	75	44	81	46	-

TWEED HEADS

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	114	64	82	153	120
August	-	69	69	95	167	178
September	-	80	34	80	81	125
October	-	120	62	73	118	87
November	-	55	74	127	134	109
December	-	84	101	129	142	131
January	152	52	91	147	114	-
February	51	57	61	100	76	-
March	73	60	89	108	106	-
April	31	67	75	84	65	-
May	117	81	70	93	82	-
June	79	126	85	124	110	-

Table 6.6: Traffic Accident Reports

BALLINA

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	19	17	24	10	14
August	-	21	17	14	15	19
September	-	12	15	28	22	19
October	-	12	22	19	17	15
November	-	16	21	20	28	15
December	-	35	28	26	30	21
January	36	31	29	42	27	-
February	23	23	22	14	15	-
March	20	12	17	29	12	-
April	19	13	22	17	20	-
May	16	16	24	18	19	-
June	18	18	6	17	14	-

CASINO

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	28	24	30	36	35
August	-	25	28	29	36	14
September	-	32	29	37	32	19
October	-	29	32	25	34	21
November	-	21	12	21	32	23
December	-	21	23	22	22	31
January	19	15	29	24	19	-
February	30	21	20	29	29	-
March	24	27	20	28	28	-
April	19	33	21	29	23	-
May	30	23	27	36	25	-
June	27	30	31	30	25	-

KYOGLE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	9	7	7	6	8
August	-	9	7	8	7	11
September	-	4	6	8	12	7
October	-	9	6	10	8	8
November	-	6	3	8	4	9
December	-	13	7	9	15	12
January	7	9	7	7	8	-
February	4	6	9	12	5	-
March	5	5	12	8	6	-
April	3	8	8	6	6	-
May	6	10	15	5	7	-
June	4	8	8	9	6	-

PORT MACQUARIE

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	29	24	32	41	37
August	-	31	47	27	45	29
September	-	33	27	40	36	29
October	-	27	41	23	33	28
November	-	39	31	33	38	38
December	-	34	41	37	39	24
January	55	36	47	29	35	-
February	39	40	27	44	35	-
March	38	36	39	44	31	-
April	23	26	37	45	32	-
May	37	43	37	40	32	-
June	45	20	26	38	32	-

TWEED HEADS

	1974/5	1975/6	1976/7	1977/8	1978/9	1979/80
July	-	27	24	27	47	28
August	-	30	24	28	47	21
September	-	24	23	17	23	28
October	-	28	29	19	36	20
November	-	16	36	28	20	20
December	-	25	21	41	46	33
January	20	33	45	33	24	-
February	17	19	19	14	18	-
March	10	24	18	18	28	-
April	13	18	27	24	31	-
May	22	36	33	24	19	-
June	21	26	34	29	17	-

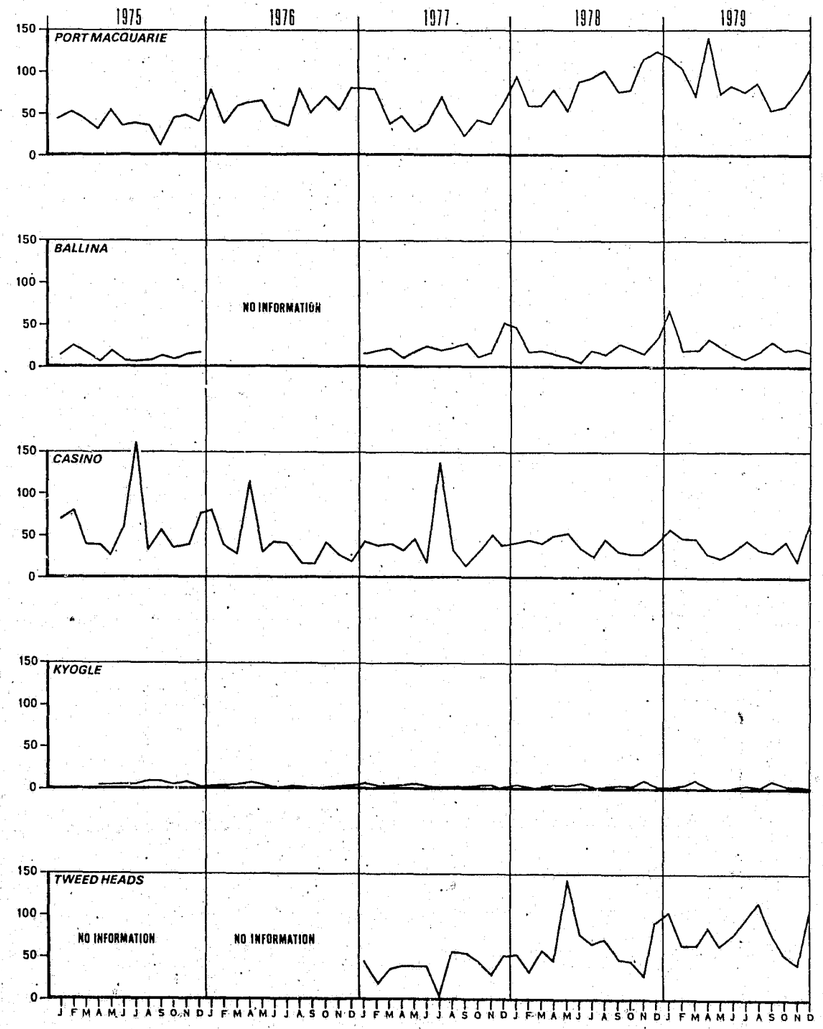

Fig: 6.1 CRIME INFORMATION REPORTS

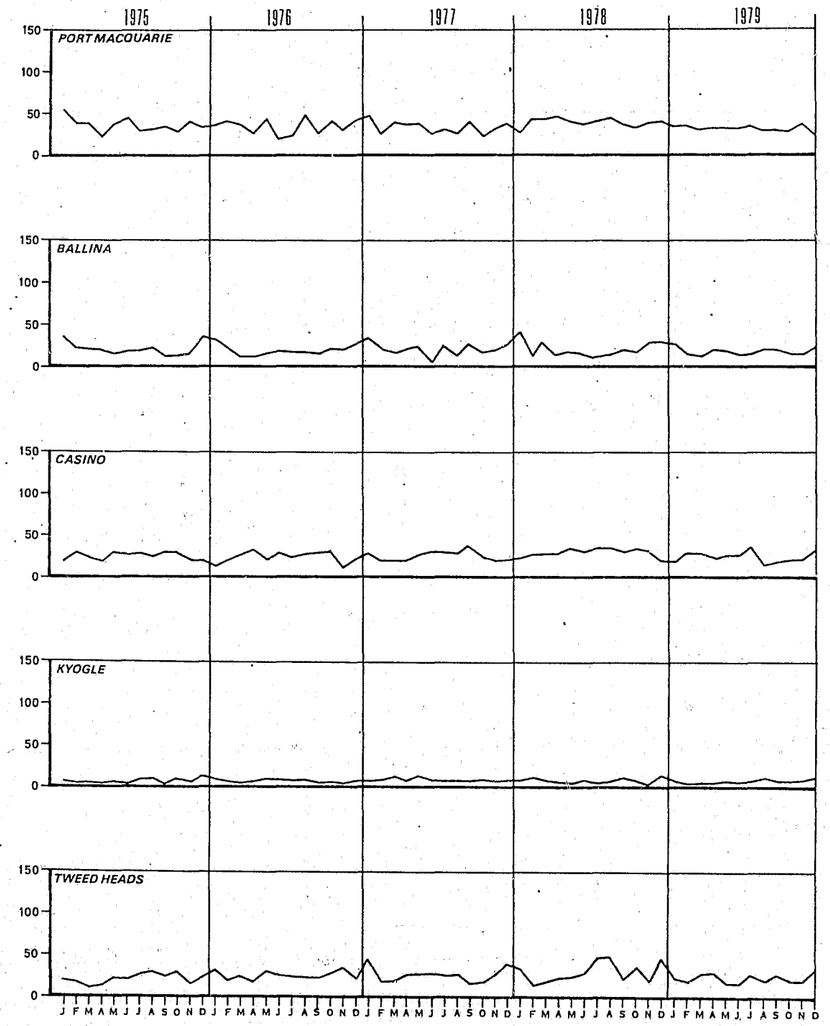

Fig: 6.2 TRAFFIC ACCIDENT INFORMATION

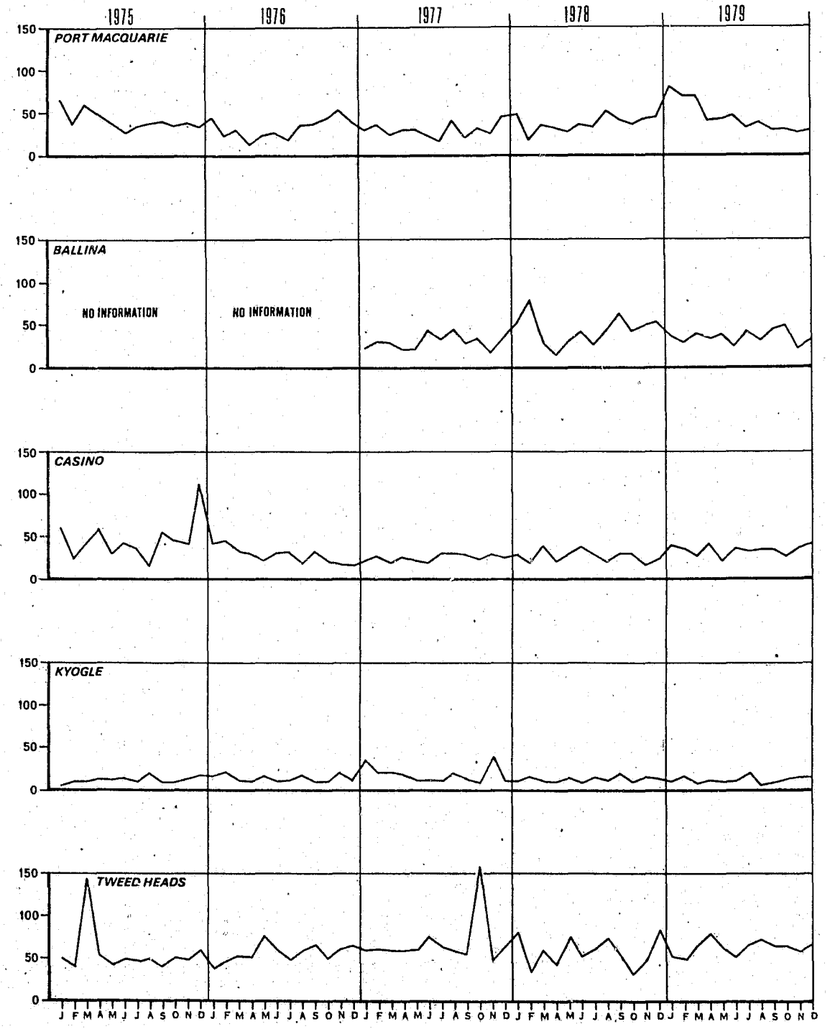

Fig: 6.3 OCCURANCE PAD ENTRIES

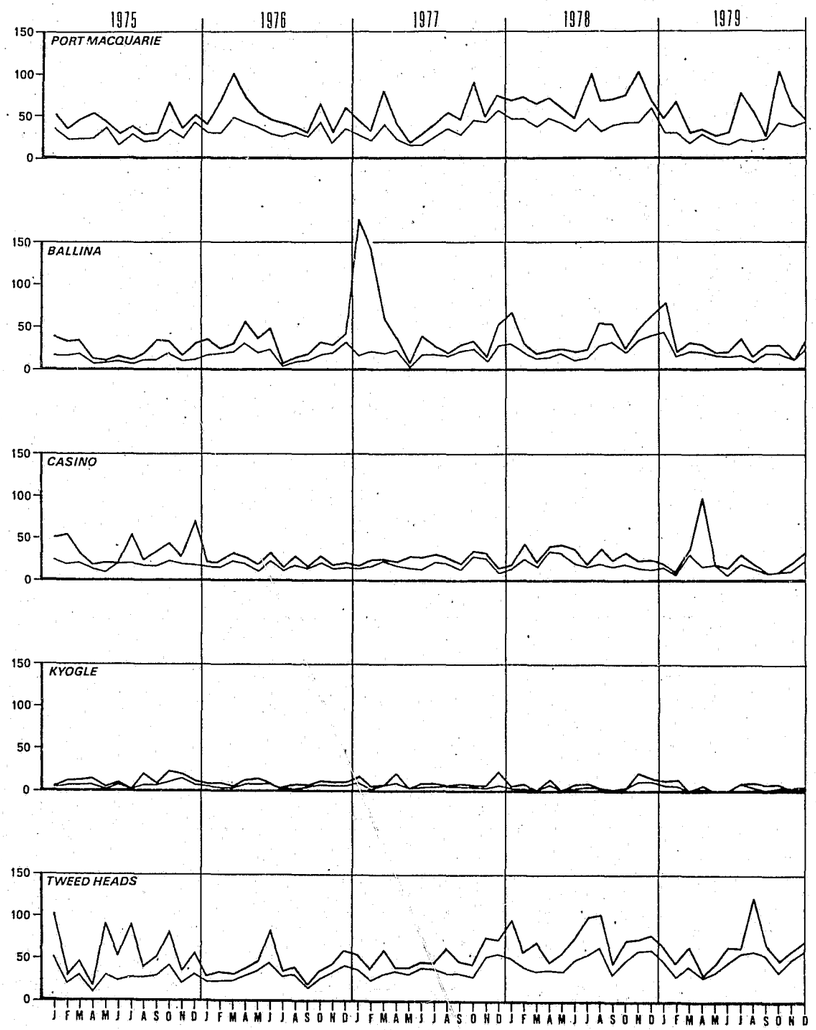

Fig: 6.4 CHARGES AND ARRESTS

way of overcoming these problems is to take a long enough sample for such vagaries to cancel each other out. This has been attempted in Table 6.7. An average was calculated for crime information reports, traffic accident reports, occurrence pad entries, and charges and arrests in each month of the year over the period 1975-1979. The two busiest months and the two quietest months are listed in Table 6.7 for each station, together with an indication of the percentage increase in work load in the busy times as opposed to the quiet times.

At this point the impact of tourism starts to be a little more apparent. In terms of crime information reports, the three tourist resorts (Ballina, Port Macquarie, Tweed Heads) all have their busiest time in the summer months (although Tweed Heads has its second busiest time in August, coinciding with a school holiday period). In contrast the busy times in the non-tourist centres of Casino and Kyogle are January, March, April and July. In fact the summer month of December is the second quietest time in Kyogle. It should be noted that the work load in the busy time generally more than doubled when compared to the quiet time.

In terms of traffic accident reports, a similar pattern emerged. Ballina and Tweed Heads peaked in December and January while Port Macquarie peaked in January and May (school vacations). However the distinction between tourist and non-tourist centres was not very distinct because the pattern in Kyogle was very similar to that in Port Macquarie. Also worth noting is the fact that the increase in work in the busy months was less dramatic than in the case of crime information reports.

Occurrence pad entries showed much less of a tendency to vary with holiday seasons and, even in tourist resorts (e.g. Ballina and Tweed Heads), busy months were often out-of-season times (e.g. October).

Table 6.7: The Distribution of Work Throughout the Year

		Ballina		Casino		Kyogle		Port Macquarie		Tweed Heads	
		Month	% inc.*	Month	% inc.*	Month	% inc.*	Month	% inc.*	Month	% inc.*
Crime Information Reports	Quietest Month	Jun	-	Sep	-	Aug	-	Sep	-	Nov	-
	2nd quietest month	Jul	7	Jun	38	Dec	14	Mar	25	Feb	16
	2nd busiest month	Dec	122	Apr	136	Mar	143	Dec	89	Aug	137
	Busiest month	Jan	192	Jul	160	Jan	143	Jan	94	Dec	140
Traffic Accident Reports	Quietest Month	Jun	-	Jan	-	Nov	-	Oct	-	Feb	-
	2nd quietest month	Jul	15	Nov	3	Apr	3	Jul	7	Mar	13
	2nd busiest month	Dec	92	Sep	41	May	43	May	24	Jan	78
	Busiest month	Jan	116	Jul	44	Dec	87	Jan	34	Dec	91
Occurrence Pad Entries	Quietest month	Apr	-	Aug	-	Oct	-	Jul	-	Feb	-
	2nd quietest month	Feb	26	May	6	Jun	9	Jun	18	Jan	20
	2nd busiest month	Oct	78	Jan	62	Feb	77	Mar	60	Oct	53
	Busiest month	Sep	96	Dec	81	Nov	123	Jan	96	Mar	61
Charges and Arrests	Quietest month	Jul	-	Sep	-	May	-	Jun	-	Apr	-
	2nd quietest month	May	4	May	7	Mar	42	Sep	14	Feb	7
	2nd busiest month	Dec	120	Mar	34	Dec	213	Dec	80	Aug	79
	Busiest month	Jan	214	Apr	54	Nov	216	Oct	103	Dec	82

* Indicates the percentage increase in load over the quietest month.

Similarly, charges and arrests showed a very varied pattern. The tourist resorts tended to peak in summer (except that October and August were busy in Port Macquarie and Tweed Heads respectively), while the non-tourist resorts peaked in the off-seasons of April and November.

The findings in Table 6.7 suggest that tourism may have some impact, although a complicated impact, on crime. Moreover the table suggests that, if this influence is to be identified more clearly, it is most likely to be identified in a close scrutiny of crime information reports.

CHAPTER 7

A DETAILED EXAMINATION OF CRIME AT THE LEVEL OF INDIVIDUAL STATIONS

In the five stations under study, there were 9208 crime information reports (CIRs) in the period 1975-1979. This figure is made up of 2170 in Tweed Heads (in the period 1977-1979), 3842 in Port Macquarie and Wauchope combined, 969 in Ballina (excluding 1976 for which data are unavailable), 199 in Kyogle, and 2028 in Casino (excluding 1975). Although Chapter 6 suggested that it was important to study these reports in detail in order to uncover the precise nature of the influence of tourism on crime, it was obviously impractical, given constraints on time and resources, to attempt to cover all such reports. As a result a sample had to be taken.

The design of a sampling procedure was not an easy task. To begin with, little was known about the nature of the crime information reports under study and hence there was no prior information on which to base the sampling design. All that was available was the computer print-out of serious crime provided by the New South Wales Police Department. Given, as was noted in Chapter 4, that serious crimes are very demanding on police manpower resources, it was decided that a sample had to be chosen that was big enough to give a reasonable coverage of the different sorts of serious crime. Thus the question "what sample size should be chosen?" was transformed into the question "what sample size will give a reasonable chance of picking up some of the least common serious crimes?" No attempt was made to work out a different sampling method for each station because of the amount of "noise" in the data (see Chapter 5 and Appendix 2). Instead it was decided to work out what sample size would be necessary from each station in order to get a reasonable chance of covering crimes that account for 5% of the total number of crimes. This is an admittedly arbitrary approach. However any greater attention to detail would have been prohibitive given constraints on time and resources and, in any case, the purpose of the study is to look at the impact of tourism on crime in general, not to examine features of less common crime.

The actual sample size necessary was found by substituting values for each station in the following equation:

$$n = \frac{pqN}{Ep^2 (N-1) + pq}$$

Where N = total number of crimes
n = number of crimes in the sample
p = relative frequency of the least occurring crime (i.e. 5%)
q = relative frequence of other crimes (i.e. 95%)
Ep = sampling error of the proportion p.

The problem of deciding just what was a "reasonable chance" of covering the crimes in question was overcome by resolving, in an admittedly arbitrary fashion, that coverage of "a 5% crime" ± 30-40% would be acceptable. On this basis it was calculated that a 10% sample of Port Macquarie CIRs (which included Wauchope CIRs) would give an accurate coverage of a 5% crime ± 41%, a 50% sample of Ballina CIRs would give an accurate coverage of a 5% crime ± 30%, a 10% sample of Tweed Heads CIRs would give an accurrate coverage of a 5% crime ± 41%, and a 20% sample of Casino CIRs would give an accurate coverage of a 5% crime ± 38%. The number of CIRs in Kyogle was so small that a 100% sample (i.e. total cover) was necessary. These sampling fractions form the basis for the data collected and analysed in this chapter.

The data were collected at individual stations in person between April and September 1981. In view of the fact that the records to be sampled at each station were numbered consecutively, the sample was drawn by using a random numbers table to generate a list of numbers. The police records corresponding to the random numbers generated were the ones that were sampled. Data were recorded on data sheets (see Appendix 3). No major problems were encountered in the data collection.

Once the fieldwork had been completed the data were coded for computer analysis. In all 19 variables were recorded, 7 relating to the crime, 5 relating to the victim, and 7 relating to the offender

(Table 7.1). Obviously, the nature of the information recorded was limited to that available on the CIRs. Moreover, the form in which information was recorded on the CIRs dictated in part the categories that were used in coding each variable.

The variables relating to the crime were coded simply. Note was taken of the police station to which the CIR related and of whether or not a second police station was involved (e.g. the arrest in one town of a criminal wanted for an offence elsewhere). This involvement of other police stations was recorded because the resultant need for liaison could add to police work and might be particularly common in tourist areas with a transient population of both victims and offenders. Crimes were classified into the categories suggested by the Australian Bureau of Statistics (1980, 6-7) (see Appendix 4). The time of day at which an offence occurred was, if known, classified into one of 8 three-hour time periods beginning with midnight to 3 a.m. Crimes which occurred overnight were classified into category 8 (9 p.m. to midnight). Month and year of crime were also noted. The manner in which the offence came to the attention of the police was classified according to whether it was reported by the victim, noticed by police on patrol, reported by staff of the organization that was victimized (e.g. school principals reporting break-ins), reported by witnesses, reported by the offender (i.e. confession), or reported by another source (e.g. relations of the victim).

The five variables relating to the victim provided a simple profile. To begin with note was taken of whether the victim was an individual (and a distinction was made between a local and someone resident more than 30 km from the scene of the offence) or an organization (differentiated into commerical organizations like motels and non-commercial organizations such as schools). In some cases there was no victim as such (e.g. possession of marihuana) and in such instances the offence was recorded as being against the Crown. The socio-economic status of the victim was categorized in terms of Congalton's (1976) seven-point scale of occupational status augmented by two categories that covered those not in the work-force

Table 7.1: The variables under study

Variables relating to the crime

1. The area in which the crime was committed
2. Whether or not a second police station was involved
3. The crime committed
4. The time of day at which the crime was committed
5. The month in which the crime was committed
6. The year in which the crime was committed
7. The manner in which the crime came to police attention

Variables relating to the victim

8. Whether the victim was an individual, an organization, or Regina
9. The socio-economic status of the victim
10. The sex of the victim
11. The age of the victim
12. The extent of damage or injury

Variables relating to the offender

13. The residence of the offender
14. The birthplace of the offender
15. The age of the offender
16. The sex of the offender
17. The race of the offender
18. The socio-economic status of the offender
19. The time that elapsed between the date of the offence and the date of apprehension of the offender

(students, housewives, pensioners) and those classified on the CIRs as being unemployed (see Appendix 4). Inevitably problems of classification arose when individuals were described as "managers" or "proprietors" without any indication being given of the size of the undertaking concerned. In such cases owners and proprietors were classified as level 3 on Congalton's scale and managers as level 4 (see Appendix 4). The sex of the victim was classified in the obvious way. In contrast the age of the victim was classified into just two categories - adults, and those in full-time education - since this was all the detail given on most CIRs. The extent of damage or injury was coded in terms of eight classes: minor injury (not needing medical treatment); major injury (needing medical treatment); property damage; theft of goods worth less than $100; theft of goods worth $100-$499; theft of goods worth $500-$1999; theft of goods worth $2000-$9999; and theft of goods and money worth $10,000 or more. These class intervals are admittedly arbitrary but they do provide a reasonable degree of differentiation among the offences encountered in the sample.

The variables relating to the offender recorded residence (differentiating between locals, those living from more than 30 km away, and those from interstate and overseas), birthplace (recorded as New South Wales, interstate, English-speaking overseas countries, and non-English speaking overseas countries), and age (classified as under 15, 15-17, 18-24, 25-39, 40-59, and 60 or over). The sex of the offender was also noted as was the offender's racial origin. The manner in which the box relating to "racial appearance" was completed on the CIRs varied a great deal and, as a result, it was only possible to classify racial origins in terms of "white" and "coloured". The socio-economic status of the offender was recorded in the same way as the socio-economic status of the victim. A check was also made of the time that elapsed between the offence and the apprehension of an offender.

In total, 19 variables were recorded for a sample of 1728 CIRs. This is a massive amount of data. For example, a simple cross-tabulation of each variable against all other variables would result

in over 170 tables. Clearly this is too much information to present in full in a report such as the present one (and, besides, many of these cross-classifications would throw little light on the impact of tourism on crime). Instead, attention will be restricted to a few key tables that show how crime varies from year to year, from season to season, and from place to place. However, before looking at the detailed cross-tabulation, it is important to get a general picture of the sorts of crimes that were encountered in the sample because these crimes form the basis for the subsequent analysis. They provide an insight into the overall pattern of crime in the Lismore Police District.

CRIME IN THE STUDY AREA: A PROFILE

A profile of crime in the study area is most easily provided by describing the crimes, then the victims, and then the offenders.

Crimes

A total of 1728 offences was covered by this sample. These were distributed over the stations in question in the manner shown in Table 7.2: 1004 offences were in the three tourist centres of Port Macquarie, Ballina, and Tweed Heads, and 724 offences in the non-tourist centres of Wauchope, Kyogle, and Casino. The table also shows that about 10% of offences in the major tourist centres of Port Macquarie and Tweed Heads necessitated the police liaising with another station. In all other areas (except Casino) the degree of liaison was virtually non-existent. The high figure (46.2%) for Casino derives from the fact that CIRs for a number of small stations (e.g. Woodburn, Coraki, Tabulam, Kyogle) are filed at Casino (much in the same manner that Wauchope CIRs are filed at Port Macquarie). This was not realised until data collection began. However this central filing in no way upset the sampling design. When a Kyogle entry was sampled in the file at Casino it was simply ignored and a replacement sample drawn. When an offence relating to one of the other small stations was encountered it was included in the sample thereby emphasising the non-tourist nature of the Casino records.

Table 7.3* shows that the offences in the sample can be classified in terms of the Australian Bureau of Statistics (1980) system, into 17 categories. The categories of "Other Theft" (comprising mainly shoplifting) and "Breaking and Entering" are the most common offences and account for almost two-thirds of all crime. Next most common were the possession/use of drugs (9.9%), property damage (6.8%), fraud and misappropriation (4.2%), and non-sexual assault (4.1%). No other crime constituted more than 2% of total offences. The clear up rate (i.e. the percentage of offences for which an offender was recorded on the CIRs) varied a good deal but was generally high for all categories except breaking and entering and "other theft".

The timing of offences is shown in Table 7.4 in terms of year, month, and time of day. Clearly the sample draws a higher proportion from recent years than from the early part of the study period. This simply reflects the fact that 1975 data were not available in Casino and Tweed Heads and 1976 data were not available in Ballina and Tweed Heads. The pattern of month by month offences is interesting in that it reveals a trough in mid-winter (June), a peak in mid-summer (January), and a consistent progression between these two extremes. In other words, between one fifth and one quarter of all offences occur in December and January (and this of course corroborates the findings in Chapter 6). The time of day at which offences occurred showed no such simple pattern: almost 40% of offences for which a time was recorded occurred between 9 pm and 6 am but the remainder were spread throughout the day. No time was recorded for 16% of offences.

Most offences (56.1%) came to attention of the police as a result of being reported by victims (Table 7.5). A further 17.6% were reported by the staff of the institution that was victimized. Only 19.1% of offences were encountered directly by police on patrol.

* In the remaining tables relating to the incidence of crime in this chapter frequencies are expressed in percentage rather than absolute terms since that procedure serves to emphasise the relative prominence of different categories much more effectively than would the inclusion of raw data.

Table 7.2: The geographical distribution of sampled offences

	Number	% offences involving another station
Port Macquarie	338	10.7
Wauchope	41	0.0
Ballina	441	0.0
Tweed Heads	225	9.8
Kyogle	187	0.5
Casino	496	46.2

Table 7.3: The crime in the sample*

	% total	% clear-up
Homicide	0.3	100
Assault (excluding sexual assault)	4.1	90
Sexual assault	2.0	94
Robbery	0.2	50
Extortion	0.1	0
Breaking and entering	16.3	23
Fraud and misappropriation	4.2	82
Receiving/unlawful possession	2.0	100
Other theft (inc. shoplifting)	49.5	30
Property damage	6.8	48
Offensive behaviour	0.2	100
Unlawful possession of weapons	0.7	100
Offences against good order (eg. consorting)	0.8	100
Possession/use of drugs	9.9	99
Dealing/trafficking in drugs	0.2	100
Manufacture/growing of drugs	0.8	100
Motor vehicle offences	1.9	97
TOTAL	100.0	48

*n = 1728

Table 7.4: The timing of crimes*

Year	%	Month	%	Time of day	%
1975	13.6	January	12.3	Midnight - 0300 hrs	5.1
1976	12.0	February	7.6	0301 - 0600 hrs	3.6
1977	22.1	March	9.3	0601 - 0900 hrs	5.7
1978	26.5	April	8.3	0901 - 1200 hrs	8.5
1979	25.8	May	7.3	1201 - 1500 hrs	10.5
		June	6.8	1501 - 1800 hrs	11.4
		July	7.3	1801 - 2100 hrs	7.9
		August	7.5	2101 - 2400 hrs	31.2
		September	7.7	Not stated	16.1
		October	8.0		
		November	8.0		
		December	9.7		
		Not stated	0.2		

*n = 1728

Table 7.5: The manner in which offences come to the attention of the police*

	% offences
Reported by victim	56.1
Encountered on patrol	19.1
Reported by staff of institution concerned	17.6
Reported by witness	3.7
Confession by offender	0.5
Reported by friends/relatives of victim	2.4
Not stated	0.6

*n = 1728

Victims

Just over half of the victims of the crimes in the sample were residents of the local area in which the crime was committed (Table 7.6). A further 18.3% of victims were resident more than 30 km from the scene of the crime. In all, 1192 persons were the victims of crime in the sample. Non-commercial organizations and commercial organizations were each the victim of about 8% of offences. The 13.9% of offences where the Crown was listed as the victim were made up mainly of drug offences.

Theft occurred in over 70% of offences and, generally speaking, most thefts (87% of them) involved sums of less than $500. Injury to the person occurred as a result of only 5.2% of offences. The 17.1% of offences for which no damage was recorded includes 11% of drug offences where the victim was nominally the Crown.

A brief profile of personal victims (n=1192) is contained in Table 7.8. Clearly, victims were predominatly male and overwhelmingly adult. Moreover, victims tended to be middle class (39% being classed as 3, 4, or 5 on Congalton's scale of occupaticnal status) or housewives, pensioners, and students (and therefore not in the workforce and not on Con alton's occupational status scale).

Offenders

There were 822 offenders contained in the sample. On some CIRs more than one offender was listed. However, for convenience in the analysis, the only details recorded were those relating to the offender listed first. A profile of these offenders is presented in Table 7.9. As with victims, offenders were predominantly male (88%). They were also predominantly white (89%). Just over 60% of offenders lived within 30 km of the scene of the crime, one quarter were from outside the local area

Table 7.6: The victims of crime*

	% total
Local residents	50.5
Person resident >30 km from scene of crime	18.3
Regina	13.9
Non-commercial organization (eg. schools)	8.0
Commercial organization	8.2
Not stated	1.1

* η = 1728

Table 7.7: Damage*

	% total
Minor injury	3.6
Major injury	1.6
Property damage	6.0
Theft < $100	38.2
Theft $100 - $499	23.9
Theft $500 - $1999	7.5
Theft $2000 - $9999	2.0
Theft $10,000 or more	0.1
Not stated	17.1

* η = 1728

Table 7.8: A profile of personal victims*

%total sample

Age		Sex		Socio-economic status	
Adult	95.6	Male	78.7	Class 1 (High)	2.3
At school	4.2	Female	21.2	Class 2	2.4
Not stated	0.2	Not stated	0.1	Class 3	19.9
				Class 4	9.1
				Class 5	10.0
				Class 6	7.4
				Class 7 (Low)	6.5
				Housewives/students	16.0
				Unemployed	2.7
				Not stated	23.7

*n = 1192

Table 7.9: A profile of offenders*

Sex	% total	Race	% total
Male	88.3	White	89.4
Female	11.6	Coloured	10.3
Not stated	0.1	Not stated	0.3

Residence	% total	Birthplace	% total
Local	62.6	N.S.W.	73.7
> 30 km	25.8	Interstate	15.0
Interstate/Overseas	10.0	Overseas (Eng. speaking)	8.2
		Overseas (non Eng. spkg.)	2.3
Not stated	1.6	Not stated	0.8

Age	% total	Socio-economic status	% total
< 15	6.9	Class 1 (High)	0.2
15-17	19.2	Class 2	0.1
18-24	40.6	Class 3	1.5
25-39	23.3	Class 4	3.0
40-59	7.3	Class 5	4.7
60 and over	2.6	Class 6	14.0
Not stated	0.1	Class 7 (Low)	24.6
		Housewives/students	21.2
		Unemployed	30.3
		Not stated	0.4

*n = 822

but within New South Wales, and 10% from interstate (including Queensland) or overseas. In contrast over 25% of offenders had been born interstate or overseas. In terms of age, most offenders were in 18-24 age group regarded by many (eg. Biles and Swanton, 1977) as being particularly prone to crime. A further 19.2% of offences were committed by immediate school leavers or by individual still at school. In all, two-thirds of offenders were under the age of 25. Offenders were frequently unemployed or in low status (Class 6 or 7) occupations. Together these categories accounted for two-thirds of all offenders. Interestingly, housewives, students, and pensioners accounted for 21.2% of offenders (although most of these were students). Just over 40% of offenders were apprehended on the day of the offence or the day afterwards (Table 7.10).

VARIATIONS IN CRIME FROM YEAR TO YEAR

Table 7.11 sets out the percentage occurrence of each of the seventeen crimes identified in the sample for each year 1975-1979. Predictably, the percentage figures for the rare crimes tend to vary markedly from year to year. However, in no case is their occurrence of more than minor significance. The six most common crimes present a more interesting picture. "Other theft" declined in each year from 1975 till 1978 and then increased substantially. The opposite was the case with breaking and entering which increased in relative importance in each year until 1979 when a reversal of the trend occurred. Offences involving the possession of drugs increased from 1975 to 1977 but thereafter declined. Property damage increased in relative importance throughout the study period. Fraud and assault both showed some decline in prominence over time from relatively high early figures. Of course, Table 7.11 only shows the relative importance of the different crimes in the sample of CIRs. Therefore in interpreting the table it should be borne in mind that the total amount of crime increased in per capita terms between 1975 and 1979 (see Chapter 5) with a result that a figure of 5% of total crime in 1979 represents many more offences than are represented by 5% of total crime in 1975.

Table 7.10: The time that elapsed before the apprehension of an offender*

	% total
0-1 days	40.6
2-7 days	11.1
1-2 weeks	6.2
3-4 weeks	3.9
> 1 month	4.6
Not stated	33.6

* n = 822

Table 7.11: Crimes against year

	% total in each year				
	1975	1976	1977	1978	1979
Homicide	0.0	1.0	0.0	0.7	0.2
Assault	0.9	6.3	5.0	4.6	3.6
Sexual assault	2.6	1.9	2.3	1.5	1.8
Robbery	0.4	0.0	0.3	0.2	0.2
Extortion	0.0	0.0	0.0	0.0	0.2
Break and enter	14.5	15.0	16.2	17.7	16.9
Fraud	7.7	3.9	3.4	3.7	3.6
Receiving	1.7	2.9	1.0	2.8	1.8
Other theft	56.6	48.3	46.7	46.5	51.9
Property damage	4.7	5.8	6.0	6.6	9.2
Offensive behaviour	0.0	0.0	0.3	0.2	0.2
Weapons	0.4	1.0	0.5	1.1	0.4
Offences ag. good order	1.3	1.0	0.3	0.7	0.9
Possession drugs	8.5	8.7	15.1	11.1	5.4
Dealing drugs	0.0	1.5	0.3	0.0	0.0
Growing drugs	0.0	0.0	0.0	0.9	2.0
Vehicle offences	0.9	2.9	2.6	1.7	1.6
TOTAL	100	100	100	100	100

VARIATIONS IN CRIME FROM MONTH TO MONTH

Chapter 6 provided evidence that the incidence of crime varied from month to month. Specifically it showed that there was a seasonal component to crime in that the date at which offences were committed peaked in many areas in the summer months (i.e. the main tourist period). This seasonal pattern was also apparent in Table 7.4. It is interesting therefore to examine the relative importance of each crime in each month of the year (Table 7.12). Unfortunately, however, such an examination presents a confusing pattern in that the relative importance of many crimes varies greatly from month to month. Very few trends are obvious. Nevertheless, it is possible to identify what may well be important differences in the relative importance from month to month of certain crimes. For instance, breaking and entering tends to peak in the winter months of June and July, and in November. A similar winter bias is evident for vehicle offences. In contrast, both property damage and the possession of drugs tend to be most common in summer months. The relative importance of sexual assaults is greatest in the January, May and August-September holiday periods.

VARIATIONS IN CRIME FROM PLACE TO PLACE

Table 7.12 provides some evidence of a seasonal effect on the incidence of some crimes. By implication this suggests that tourism, which also varies seasonally, might have some impact on the incidence of crimes. In order to investigate this possibility, Table 7.13 cross-tabulates crime and area. Some trends emerge from this table. For example, offences involving homicide and "other theft" tend to be more common in the tourist areas (Port Macquarie, Ballina, Tweed Heads) than in the non-tourist areas (Wauchope, Kyogle, Casino). Generally, however, it is difficult to identify trends in Table 7.13 partly because the table is based on percentage figures rather than absolute or per capita frequencies. In order to rectify this it was decided to focus on the tourist areas, and to pool the data for the three non-tourist areas. In this way there emerged a matrix with one axis comprising the two sorts of area (tourist and non-tourist) and the other axis comprising seventeen categories of crime. This type of matrix lends itself to a two-sample chi-square test (see Siegel, 1956).

Table 7.12: Crimes against month

% total

	J	F	M	A	M	J	J	A	S	O	N	D
Homicide	0.0	0.8	0.0	0.0	0.0	0.9	0.0	0.8	0.0	0.0	1.4	0.6
Assault	4.2	3.8	3.8	2.8	1.6	4.2	5.6	3.1	6.0	2.2	2.2	8.9
Sexual assault	3.3	0.8	0.0	2.8	3.2	0.0	1.6	3.1	2.2	2.9	0.7	2.4
Robbery	0.0	0.0	0.6	0.0	0.8	0.0	0.0	0.0	0.7	0.7	0.0	0.0
Extortion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Break & enter	14.2	15.9	17.5	12.6	17.5	24.6	20.6	10.8	17.2	17.4	20.1	11.3
Fraud	1.9	3.0	5.0	4.2	5.6	2.5	6.3	3.9	8.2	5.1	1.4	3.6
Receiving	1.9	3.8	0.6	0.7	0.8	4.2	2.4	4.7	0.7	2.9	2.2	0.6
Other theft	50.9	43.2	56.3	51.7	54.8	43.2	46.8	54.2	48.5	50.0	51.8	42.9
Property damage	6.1	9.1	4.4	7.7	6.3	4.2	4.0	7.0	6.7	5.1	4.3	14.3
Offensive behav.	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.8	0.0	0.7	0.0	0.0
Weapons	1.9	0.0	0.0	0.0	0.0	0.9	0.0	0.8	0.7	1.4	0.7	1.2
Offences ag. order	0.5	0.8	1.3	0.0	0.0	0.9	0.0	1.6	0.7	1.4	0.7	1.2
Possession drugs	12.7	13.6	8.1	14.0	8.7	9.3	7.9	7.7	6.0	7.2	10.8	10.7
Dealing drugs	0.0	1.5	0.0	0.7	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Growing drugs	0.0	0.0	0.0	2.1	0.0	0.0	0.8	0.0	0.7	2.2	2.2	1.2
Vehicle offences	2.4	3.8	2.5	0.7	0.8	4.2	4.0	0.8	1.5	0.7	1.4	0.6
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

Table 7.13: Crime against area

	% total in each area					
	Port Macquarie	Wauchope	Ballina	Tweed Heads	Kyogle	Casino
Homicide	0.3	0.0	0.2	0.4	0.0	0.6
Assault	5.0	2.4	3.2	3.1	1.1	6.0
Sexual assault	1.5	0.0	0.5	2.2	1.1	4.0
Robbery	0.0	0.0	0.5	0.0	0.5	0.2
Extortion	0.0	0.0	0.0	0.4	0.0	0.0
Break & enter	16.3	26.8	18.8	13.8	25.1	11.3
Fraud	4.7	7.3	3.6	4.0	4.3	4.0
Receiving	1.8	0.0	2.3	2.7	1.1	2.2
Other theft	52.7	36.0	47.4	61.8	52.9	43.3
Property damage	7.1	4.9	7.3	5.3	6.4	7.1
Offensive behaviour	0.3	0.0	0.5	0.0	0.0	0.0
Weapons	0.0	0.0	0.7	0.9	0.0	1.4
Offences ag. order	1.5	0.0	0.2	0.9	0.5	0.8
Possession drugs	7.7	17.1	14.1	3.1	5.9	11.7
Dealing drugs	0.0	0.0	0.0	0.0	0.0	0.8
Growing drugs	0.0	0.0	0.0	0.4	0.5	2.2
Vehicle offences	1.2	2.4	0.9	0.9	0.5	4.2
TOTAL	100	100	100	100	100	100

This is a simple test for determining the significance of differences between groups. The only problem with using it in the present context arises from the fact that the test is invalid if there are low values in a critical number of cells in the matrix. Accordingly, in order to avoid such low frequences, the category of homicide was omitted from the analysis, the categories comprising offensive behaviour, unlawful possession of weapons, and offences against good order were combined into a single class, as were the three types of offences dealing with drugs. The application of a 2-sample chi-square test to the resultant 2 x 10 matrix gave a chi-square (χ^2) value of 26.80 with 9 degree of freedom. This turned out to be a very significant result. In words, tourist areas differed from non-tourist areas in having fewer than expected drug offences, fewer sexual assaults, but more offences than expected in the category "other theft" and slightly more breaking and entering offences. Moreover the difference between the tourist and non-tourist areas was so significant that the probability of it coming about by chance was less than 1 in 100.

This statistically significant result suggested that it was worth looking at the difference between the tourist and non-tourist areas in terms of the other variables listed in Table 7.1. The variables relating to whether or not another station was involved, and the year in which the offence was committed were not considered in the analysis because they are dealt with adequately in Tables 7.2 and 7.4. For the most part, a two-sample chi-square test was appropriate. However in some cases, categories had to be combined in order to avoid low frequencies while in other cases data were ordinal rather than nominal and hence were more suited to the two-sample one-tailed Kolmogorov-Smirnov test. Details of whether or not categories were combined, and of how the tests were carried out, are contained in Appendix 5. The results of these tests are presented in Table 7.14. For nine of the sixteen variables considered, there was a difference between the tourist and the non-tourist area.

The significant differences were as follows. In terms of the time of day when offences were committed, tourist areas had fewer offences than expected late at night and overnight and more than expected during

Table 7.14: A comparison of tourist and non-tourist areas

Variables	Test*	Chi-square value	Degrees of freedom	Significance**
Crime	χ^2	26.80	9	Very significant
Time of day of crime	K-S	13.12	2	Very significant
Month of crime	K-S	3.94	2	Not significant
Source of information	χ^2	36.30	4	Very significant
Nature of victim	χ^2	26.09	4	Very significant
Social status of victim	χ^2	23.72	7	Very significant
Sex of victim	χ^2	0.15	1	Not significant
Age of victim	χ^2	2.14	1	Not significant
Damage or injury	χ^2	8.74	6	Not significant
Residence of offender	χ^2	19.87	2	Very significant
Birthplace of offender	χ^2	5.58	3	Not significant
Age of offender	K-S	7.67	2	Significant
Sex of offender	χ^2	3.12	1	Not significant
Race of offender	χ^2	59.20	1	Very significant
Social status of offender	χ^2	6.11	5	Not significant
Time lapse in apprehending offencer	K-S	19.36	2	Very significant

* The two-sample chi-square test is shown as χ^2 and the two-sample one-tailed Kolmogorov-Smirnov test is shown as K-S.

** Results where the probability of error is less than 1% are described as "Very significant", results where the probability of error is less than 5% but greater than 1% are described as "Significant", and results where the probability of error is greater than 5% are described as "Not significant".

the day. Tourist areas also had more offences reported by the victim than was expected. There were also more local residents than expected among the victims in tourist areas and fewer non-commercial organizations. The prominence of local residents is a little puzzling since it might have been expected that many tourists (ie non-residents) would have been the victims of crime. This was apparently not the case. Offences against the crown were also lower than expected in tourist areas, no doubt reflecting the low importance of drug offences relative to other offences in such areas. In terms of the socio-economic status of victims, tourist areas differed from non-tourist areas in that they had more victims than expected in the high and middle occupational status range and fewer than expected in the occupations with low status.

Four of the seven variables relating to offenders revealed statistically significant differences between tourist and non-tourist areas. Tourist areas had more offenders than expected who were resident in the local area, and more from overseas, but fewer than expected from the rest of New South Wales. Again this tends to conflict with the idea of there being an influx of offenders amongst the tourist population. Of course it must be remembered that in only 822 of the 1728 offences under study was an offender apprehended and hence it is entirely possible that some tourist offenders committe[d] crimes that were among the 906 in the sample that went unsolved. The age of offenders in tourist areas also differed from the age of offenders in non-tourist areas in that tourist areas tended to have a lesser number of young offenders (under 18) and a greater preponderance of these over 18. Likewise there was a difference between the two areas in terms of the race of offenders: tourist areas had fewer coloured offenders than non-tourist areas. Finally, and perhaps very significantly, there was a marked difference between tourist and non-tourist areas in the time it took to apprehend offenders, in that, in tourist areas far fewer offenders were caught within one week of the crime than was the case in non-tourist areas. This undoubtedly reflects the mobile nature of the population in tourist areas and the scope for offenders to move on even before a crime has been reported.

CHAPTER 8

A SPATIAL ANALYSIS OF CRIME

This chapter examines the spatial distribution of criminal offences for the year 1980 at the level of individual police stations. It therefore focusses on Ballina, Casino, Kyogle, Port Macquarie, and Tweed Heads. The year 1980 was chosen because it was the most recent period for which information was available.

Due to the large number of criminal offences in the stations under study a sample had be taken. This was done according to the formula set out in Chapter 7, except that the sampling fraction in Ballina was reduced to 30% on account of the large number of CIRs in that centre in 1980. Table 8.1 shows the total number of criminal offences for each station and the size of the sample extracted.

The information recorded from the CIRs included, besides demographic and socio-economic data, the location of each criminal offence, that is the street or particular locality where the crime occurred. Of course the records themselves contain details of street numbers but the conditions of access to police records (agreed with the NSW Police Department prior to the research) stipulated that no street numbers were to be recorded for fear of breaching confidentaility. Instead note was taken simply of the street where offences occurred.

This system of recording only street names presented problems as regards the cartographic portrayal of the sampled information. Conventional dot maps were considered inappropriate for fear that the positioning of a dot might be confused with the actual location of a specific crime. Instead, and after long deliberation, it was decided to portray the information in the form of five different intensities of shading (the darkest representing the streets with the highest incidence of crime). Furthermore, in order to highlight the streets that were prone to crime it was decided to map them in double lines (cf. the single lines used for all other streets) and

Table 8.1: The 1980 data

Station	No. offences	Sample size
Ballina	380	114
Casino	550	111
Kyogle	55	55
Port Macquarie	1230	123
Tweed Heads	1230	123

to label the major ones. When a particular location was the scene of a number of crimes and could be mapped without breaching confidentiality (eg. beaches), that location was shown by a circle shaded on the same scale as that used for the streets.

Although this shading technique generally worked well, and certainly brought out the overall pattern of crime in each town, it did have one major weakness, namely the fact that some streets are much longer than others and hence tend to stand out more because the street as a whole was shaded rather than any particular section of it. However this is not an important criticism providing that care is taken in the interpretation of the maps. After all, from a planning point of view, police patrols are likely to cover streets as a whole rather than specific points along the street.

In order to make the spatial pattern of crime comprehensible to the reader it was decided to restrict the maps to the built up areas of the towns and the immediate environs and to forego portrayal of crimes that took place outside the towns. This obviated the need to have maps at such a scale that it would have been difficult to identify particular streets.

8.1 Ballina

There were 380 criminal offences in Ballina for the year 1980. By using a 30% sample, 114 offences were randomly extracted and plotted. Of the 114 offences 19 were committed outside the Ballina town area. The distribution of criminal offences within the town follows a pattern whereby most offences are committed in the central business district. Other nodes of criminal activity are at popular recreation sites, beaches, clubs, and boating facilities. River Street is the worst affected street, followed by Tamar Street also feature relatively high crime rates; however it should be stressed that the crimes that are mapped in these streets tended to occur at the business district end of these streets and not uniformly as the maps might suggest. With reference to particular nodes, criminal activity was recorded at Ballina's two main beaches (Shelly and Lighthouse beaches), the Golf Club, the Docks, and the area around Shaws

Bay (the location of a hotel and a caravan park). Other areas of criminal activity are spread rather evenly throughout the town and comprise mainly residential areas and areas of tourist accommodation (see Fig. 8.1).

8.2 Casino

Casino is one of the control towns chosen for the present study. It is not a major tourist resort. The main function of the town is that of a rural service centre providing commercial facilities for the surrounding area. It is also an important stock selling outlet and has a large abattoir. Furthermore, Casino is located at the intersection of the Bruxner Highway (Goondiwindi-Ballina) and the main trunk road from Grafton to Beaudesert and Brisbane. It therefore experiences considerable through traffic.

There were 550 offences in Casino in 1980. A 20% sample produced 111 offences for mapping. Of these 111 offences 61 were committed outside the Casino town area (because, as was noted in Chapter 7, Casino serves as a recording centre for crimes in a number of smaller, surrounding communities). The most striking feature of the distribution of criminal acts in Casino is the relatively even rate of distance decay that operates away from the central business district. The main streets in which crimes occurred were Barker, Johnson, Canterburry, and Centre Streets (all in or around the business centre). It is also noticeable that a number of criminal offences were committed on the main through road, both towards Lismore and towards Kyogle. Nodes of criminal activity are also evident at the airport, the high school, and the abattoir, and in some residential streets away from the business area (see Fig. 8.2).

8.3 Kyogle

Kyogle is another of the control towns in this study. Like Casino it is a rural service centre, though on a much smaller scale. Basically, Kyogle provides shopping, schooling, and health facilities for the surrounding dairying communities. The town is situated along

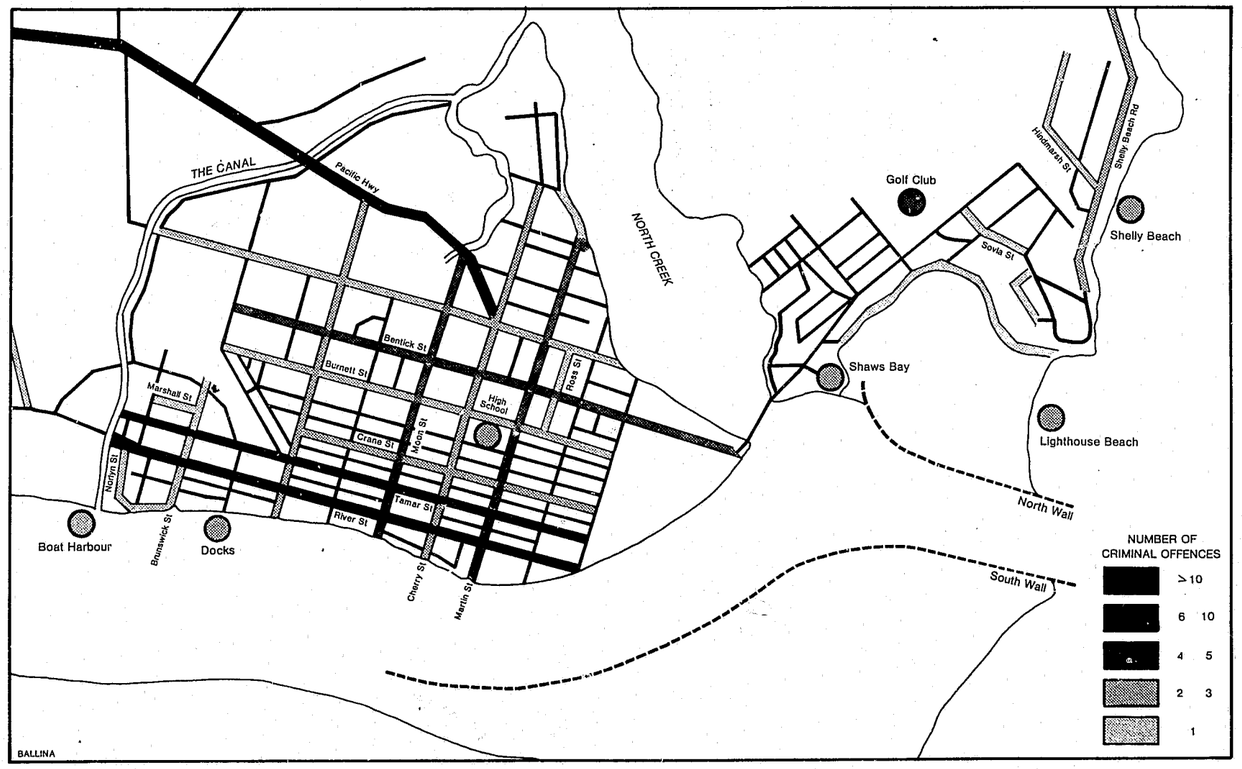

Fig: 8.1 DISTRIBUTION OF CRIMINAL OFFENCES, BALLINA 1980

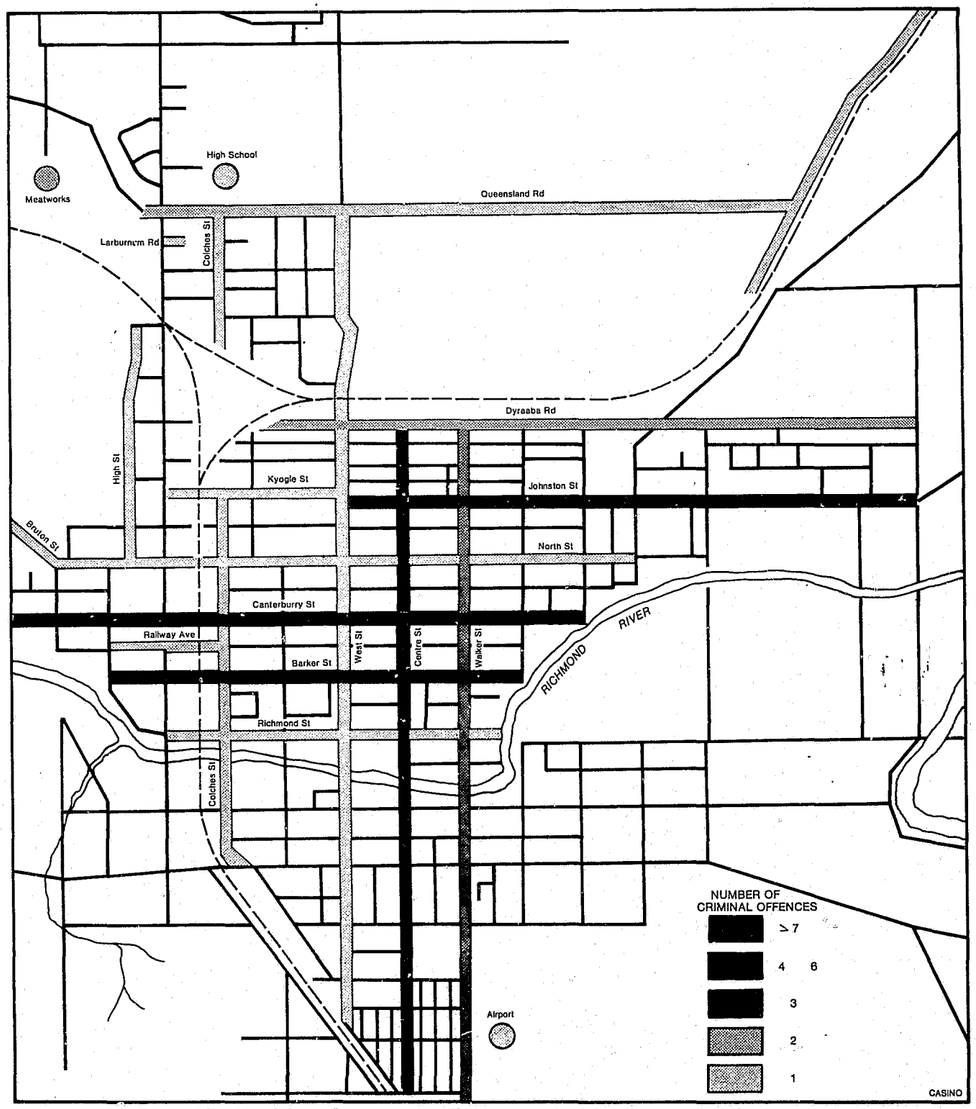

Fig: 8.2 DISTRIBUTION OF CRIMINAL OFFENCES, CASINO 1980

both the main northern railway line (Sydney-Brisbane) and the main trunk road between Grafton and Brisbane. In the past few years Kyogle has experienced an increase in through traffic, mainly from haulage contractors travelling from Brisbane to the south who prefer the trunk road to the much slower Pacific Highway (via the Gold Coast). This may have had some influence on the pattern of criminal activity in the town. For example, Fig. 8.3 reveals quite clearly that most offences have taken place along the main thoroughfare - the Summerland Way - which, for a part of the way, also forms the central business district of Kyogle. As with other towns, a number of criminal offences are in evidence in the street that lead off the main street and once more these decrease in frequency with increasing distance from the main business area. Another important location of crime was the Murwillumbah Road.

There are several specific nodes of criminal activity within the town, the main ones being the high school, the golf club, the railway station and the showground. Of these, the railway station is the worst affected. Presently, the local government authorities at Kyogle are endeavouring to promote the town as a tourist area (with the accent on scenic view ans easy access to national parks and state forests). It remains to be seen to what extent this will encourage an increase in the crime rate.

8.4 Port Macquarie

Port Macquarie is the largest tourist town in the present study. It had 1230 offences during 1980. By taking a 10% sample, 123 offences were recorded for plotting on Fig. 8.4. Of these 123 offences, 29 took place outside the immediate town area. Several of these took place, as was explained in Chapter 7, in Wauchope. However, the number in that settlement was too small to justify a map of its own.

The most striking feature of the distribution of criminal offences in Port Macquarie is the fact that it focusses on specific nodes to a significant degree. That is to say, many offences took place at

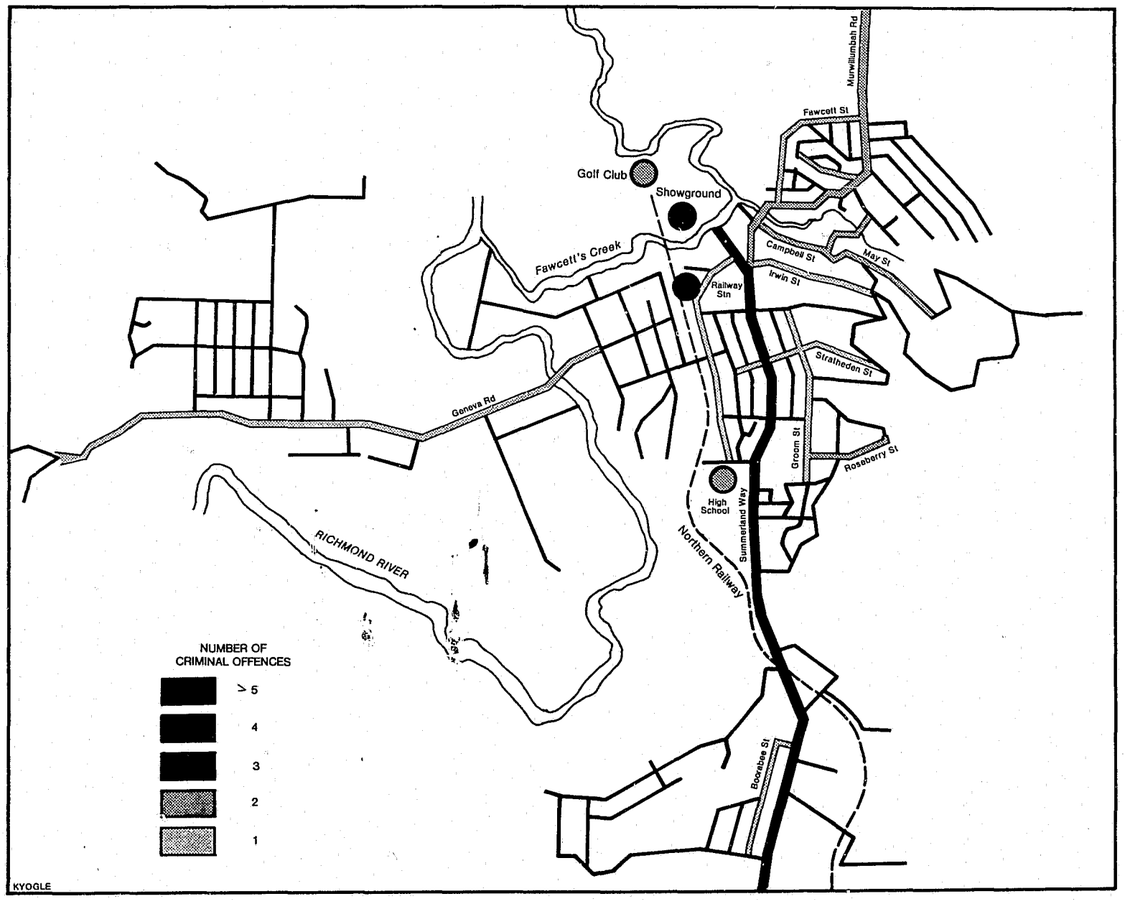

Fig: 8.3 DISTRIBUTION OF CRIMINAL OFFENCES, KYOGLE 1980

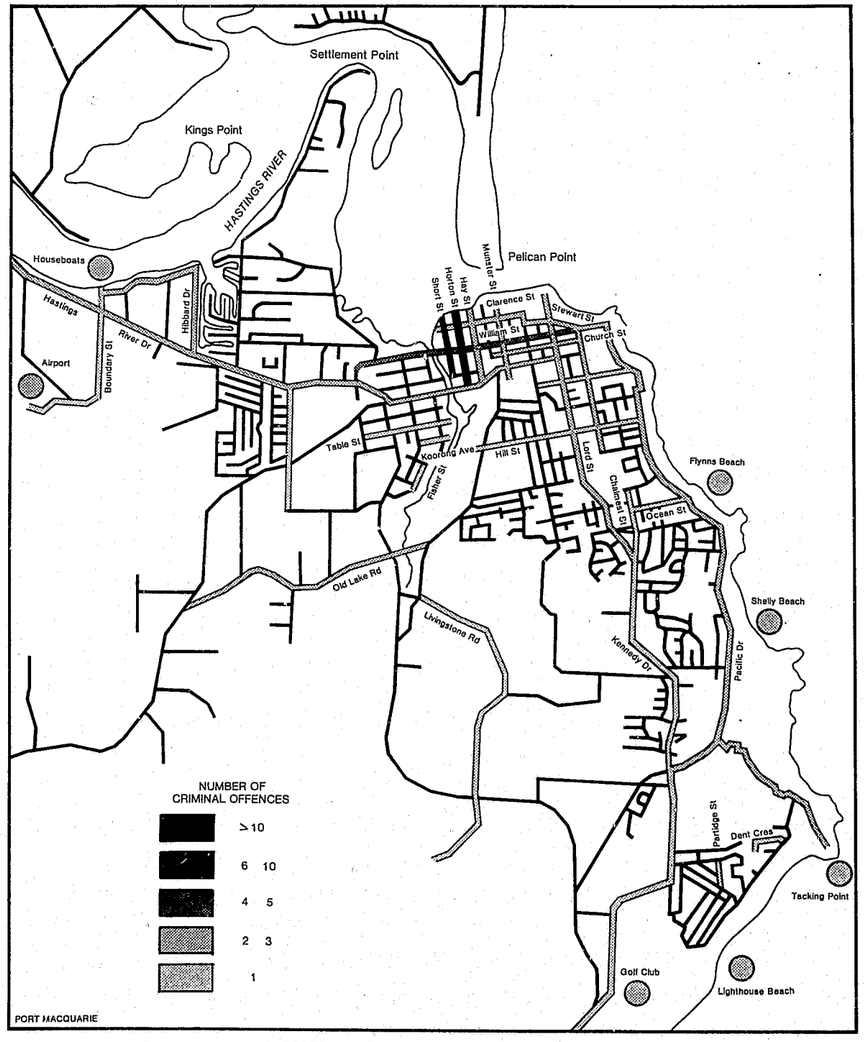

Fig: 8.4 DISTRIBUTION OF CRIMINAL OFFENCES, PORT MACQUARIE 1980

identifiable localities. Fig. 8:4 reveals that the most prominent node is, as in other towns, the central business district (namely Horton, Short and William Streets). Other nodes are Port Macquarie's five beaches. Although the number of criminal offences shown for Flynns, Shelly, and Lighthouse Beaches and Tacking Point is the same for 1980, there is some evidence from previous years that Shelly Beach is the worst affected. Further nodes of criminal activity are the golf club, the houseboat anchorage, and the airport. Unlike Ballina and Tweed Heads, there are large areas of Port Macquarie that are unaffected as yet by criminal activity. However, this may chance with further tourist development.

8.5 Tweed Heads

Tweed Heads was chosen for inclusion in this study because of its character and location. It is one of the fastest growing towns in New South Wales and it is adjacent to the famous Queensland Gold Coast and the resort town of Coolangatta. Furthermore, Tweed Heads only became a 'tourist' resort, in the true sense of that work, in the 1970s, having served previously as a commercial and business centre (a function which it still provides). Its proximity to the state border and differences in state laws on tourist facilities, daylight saving, and other features makes the town an interesting one to study.

During the year 1980, 1230 criminal offences were committed in Tweed Heads. A 10% (123) sample was extracted for the purpose of mapping. Of these 123 criminal acts, 31 were committed outside the immediate town area, mainly in Kingscliff and the smaller settlements in the Tweed Valley and on the Tweed Coast. The most striking feature of the crime distribution in Tweed Heads is its ribbon like appearance along the Pacific Highway (in parts also know as Wharf Street, the main shopping area of the town). Further ribbons can be noted along Kennedy Drive and along Dry Dock Road. A third robbon is evident along Terranora Road (which, like Kennedy Drive, leads to a major recreation facility).

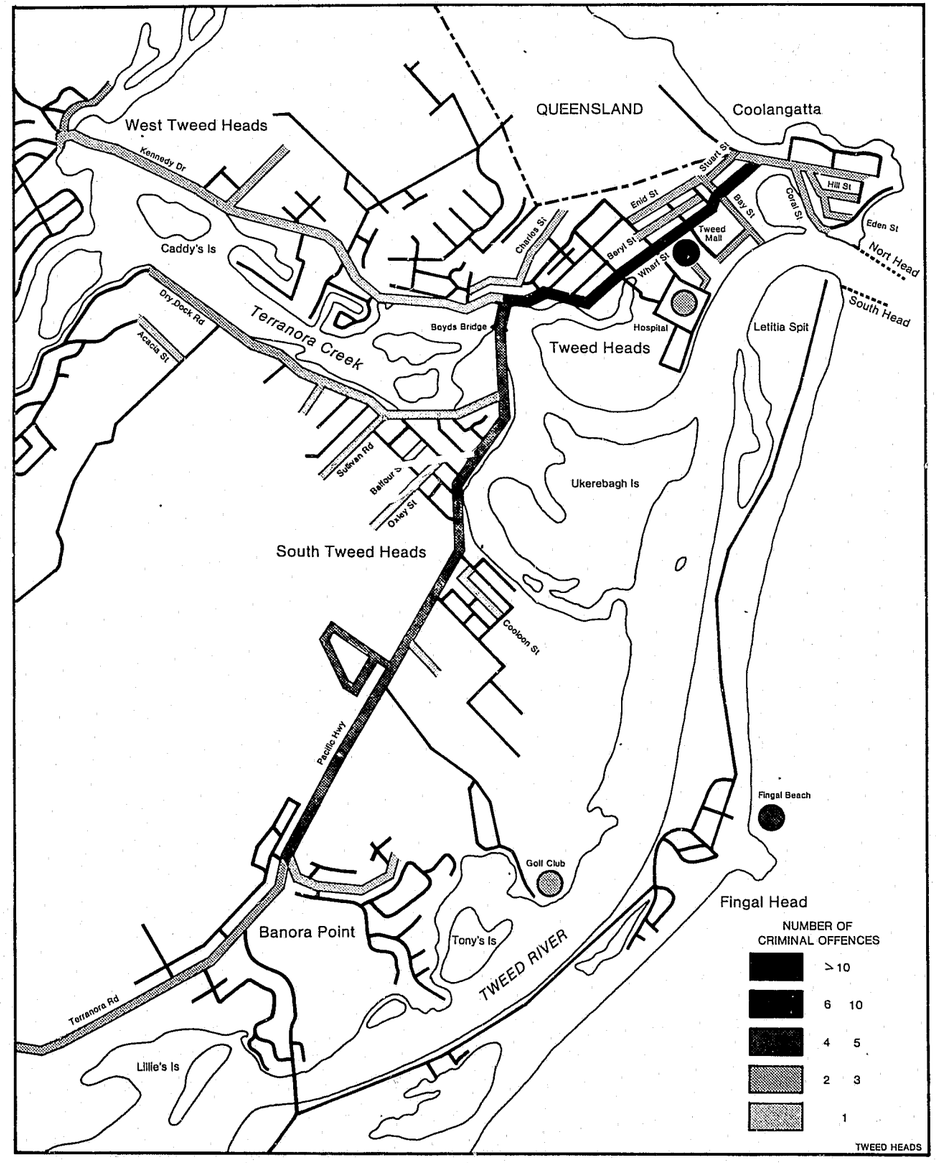

Fig: 8.5 DISTRIBUTION OF CRIMINAL OFFENCES, TWEED HEADS 1980

Along Wharf Street are located the Twin Towns Serivces Club, the Tweed Heads Bowling Club and the Tweed Heads-Coolangatta Gold Club. All of these clubs open their doors to visiting tourists and provide a great many amenities. Many criminal offences were committed in or around these places (and this includes being under the influence). However the most important area of criminal activity in Tweed Heads is the Tweed Mall shopping complex. Here are located some major retail stores and an agglomeration of speciality shops with many open displays and self-service facilities. Predictably, shoplifting is common. A rough calculation during the data collection suggested that over three-quarters of all shoplifting offences are committed by people from Queensland.

One peculiar feature of Tweed Heads is the absence of beaches. The nearest beach to Tweed Heads in New South Wales is Fingals Beach and, as might be expected, this is the focal point for a number of offences.

8.6 Overall comments

All the towns examined in this study had a reasonable number of criminal activities, with Port Macquarie and Tweed Heads being the worst affected areas. Each town also had its distinct pattern of distribution of criminal acts, often reflecting the morphology and geography of the town. The Ballina and Port Macquarie distribution was essentially nodal due to the compact nature of the business districts in these areas and the availability of beaches and other recreation facilities. Tweed Heads showed criminal activities in the form of a ribbon with a major node at the major shopping complex (a feature absent in the other towns under study). Casino, with its location on the intersection of major transportation routes, had a central core of criminal activity that decreased in intensity towards the periphery of the town, and Kyogle has a ribbon like distribution along the major through road. However, in all areas most criminal activity was noted in the central business areas and areas where people congreated (eg. beaches and clubs). Any improved patrolling of these areas, coupled with security improvements, therefore has great potential for ameliorating the crime rates.

CHAPTER 9

CONCLUSIONS

This report began with the premise that Australia is like other advanced western societies to the extent that the population has available to it increasing amounts of leisure time. Although the home is the focus of most recreation, increasing affluence and increasing mobility over the last three decades has led to the development of non-home-based leisure industries. The most prominent of these is tourism and its development has generally been regarded by governments, developers, and local communities alike as an unmitigated success. The conventional wisdom is that investment in tourist industries generates spending by visitors which, in turn, provides benefits for the local community, largely in the form of increased employment opportunities. Only rarely has any attention been paid to the detrimental side effects of the development of tourism. These negative externalities of tourism are however important: most obviously, the influx of large numbers of tourists into an area runs the risk of damage to the environment; less obviously, the influx places great strains on existing social services and infrastructure.

One of the social services most affected by the influx of tourists into an area is the police. For example, traffic control problems increase as does the population and the value of property at risk. The report therefore set about examining the impact of tourism on crime. Unfortunately, this is a topic of study on which little has been written. As a result the study was very largely exploratory in emphasis. Moreover, as with all studies in criminology, fundamental problems were encountered in respect of the definition and measurement of crime. These problems were overcome by defining crime as a transgression of the criminal law and measuring crime in terms of reported offences. There are problems with both these approaches because the law changes over time (and with it the definition of what is a crime) and because a great many offences (about three quarters in the case of rape and fraud) go unreported. Nevertheless there was no real alternative given the time and resources available to the researchers.

The North Coast of New South Wales (which covers approximately the same area as the Lismore Police District) was selected as the study area because of its standing as one of the state's most prominent tourist areas. The study period was restricted to 1971-1979. The data sources used were the New South Wales Police Department computer print-out of serious crimes and the crime information reports, occurrence pad entries, traffic accident reports, and charge books kept at three tourist resorts (Tweed Heads, Ballina, Port Macquarie) and three "control" towns not noted for their tourist activity (Kyogle, Casino, Wauchope).

The analysis of serious crime (offences against the person, stealing with violence, property breaking, larceny from property, false pretences, sexual offences, drug offences, and miscellaneous offences) showed an increase of about 11% per annum in the Lismore Police District over the eight year period 1971-1979. However, the rate of increase varied from crime to crime: for example, over eight years drug offences increased by 1405%, offences against the person increased by 404%, but sexual offences increased by only 1%. Obviously some of this increase can be attributed to population growth (a 23% increase 1971-1979). In fact when population growth is taken into account, serious crime on the North Coast seems to be growing in real terms by 2%-6% (except for drug offences and offences against the person which are increasing much more rapidly, and sexual offences which are declining in real terms). On a per capita basis the North Coast has crime rates that are lower than non-metropolitan New South Wales for offences against the person, property breaking and false pretences but higher for drug offences. Clear up rates were generally high for crimes like offences against the person (c. 90%) and drug offences (c. 100%) but relatively low for larceny (c. 30%). Interestingly, the crime rate in the Lismore Police District appears to be increasing more rapidly than the crime rate in non-metropolitan New South Wales as a whole.

Overall crime figures for the Lismore Police District mask considerable variability between the Divisions (Murwillumbah, Lismore,

Grafton, Coffs Harbour, Kempsey) that make up the District. This variability is apparent for all crimes, including drug offences and offences against the person. For example, Coffs Harbour recorded a very significant increase in the study period in offences against the person, stealing with violence, property breaking, false pretences, sexual offences and drug offences, and Lismore has similar increases in offences against the person, false pretences, drug offences, and (to a lesser extent) sexual offences. In contrast, Murwillumbah had a declining incidence of false pretence offences and sexual offences and Kempsey a decline in stealing with violence, false pretences and sexual offences. Grafton lay between these extremes with a decrease in stealing with violence and sexual offences but a marked increase in drug offences. These place-to-place variations in crime rates were matched by year-to-year variations. In order to try to differentiate between place-to-place and year-to-year variations, the crime rates for the five divisions for the eight years were subjected to a randomized block analysis of variance. This showed that there was a significant increase over time in the per capita incidence of offences against the person, property breaking, larceny from property, and drug offences and a significant difference between areas for only property breaking. For stealing with violence, false pretences, sexual offences, and miscellaneous offences there was so much variability in the data that no significant results were obtained. Analysis also suggested that the oft-cited distinction, in terms of incidence, between crimes against the person and crimes against property does not obtain in the North Coast study area.

Of course Police Divisions on the North Coast include both tourist centres and non-tourist centres with a result that it is difficult to identify the impact of tourism in overall figures. To rectify this, attention was directed to the scale of detailed station records. Because of the great volume of crime information reports, occurrence pad entries, traffic accident reports, and charges and arrests at the stations in question, the only figures examined were those for the period 1975-1979. This period coincided with the time when the crime rates in the study area appeared to describe a relatively stable pattern as

indicates by the rank ordering of per capita figures for the various Police Divisions. When plotted graphically, the volume of police work can be seen to vary markedly with the peaks in the graphs generally increasing in magnitude and the troughs remaining approximately the same. In tourist resorts, the peak of crime information reports tends to coincide with holiday periods (especially in summer) and often involves an increase in workload of between 100% and 200%. In non-tourist areas the highest incidence for crime information reports is spread more throughout the year but is scarcely less intense in its magnitude. Traffic accident reports showed a summer bias in tourist and non-tourist areas alike. No clear patterns emerged for occurrence pad entries, charges or arrests.

A sample of 1728 crime information reports from Tweed Heads, Ballina, Kyogle, Casino, and Port Macquarie (which included Wauchope records) showed that almost half (49.5%) of all the offences committed were in the category described in the draft national classification of offences as "other theft" (primarily motor vehicle theft, pickpocketing, shoplifting). A further 16.3% of offences concerned breaking and entering, 9.9% drug offences and 6.8% property damage. All other offences accounted for less than 5% of total crime. Victims were characteristically middle class, adult males. Offenders were overwhelmingly male (88%), mainly local residents (60%), and generally aged under 25 (67%). The highest incidence of crime was in January and the lowest incidence in July, with a steady progression between these extremes. About 40% of crimes were committed overnight. In order to examine the specific effect of tourism, data for the tourist centres and the "control" towns, were pooled to form two groups that could be compared by non-parametric statistical tests. The results showed that, relative to the "control" towns, tourist centres had significantly fewer sexual offences and drug offences and significantly more "other theft" and breaking and entering offences. Tourist areas also had significantly more offences committed in daytime, more local residents among the victims, and generally victims of higher socio-economic status than was the case in non-tourist areas. Likewise, relative to the "control" towns, tourist areas had significantly more crimes committed by local and fewer committed by individuals under 18 years of age. In tourist areas it took significantly longer to apprehend an offender than in non-tourist

Unfortunately the variability in the crime rates from place-to-place and from year-to-year preculded any social area analysis, based on census data, of offence-prone environments or of the areas in which offenders live. Instead maps were complied and these pointed to the prominence of business districts, beaches, and a few housing estates as areas where the incidence of crime is particularly high. However, such was the variability in the data and the resultant patterns that it is impossible to talk in terms of criminogenic environments. In consequence, there are no obvious environmental design measures that can be suggested in order to mitigate the crime rates. Nor are there any suggestions to be made in regard to police manpower planning, except for the obvious point that the variability in crime from place to place, from year to year, and from month to month necessitates great flexibility in resource allocation. What seems to be needed is a greater emphasis on secruity generally, particularly in view of the fact that a large number of offences in the "other theft" category involved losses from parked cars. Such a secruity drive may however conflict with the promotion of tourism in so far as knowledge of the prevalence of crime may inhibit potential tourists from visiting an area.

Appendix 1

CALCULATION OF PER CAPITA CRIME RATES

The Serious Crime Statistics provided by the New South Wales Police Department were converted in Chapters 4 and 5 to rates per 10,000 population. This was necessary in order to compare the occurrence of crime in areas with different sized populations and in order to take account of the population increases that occurred over the period 1971-1979.

Information on the population of the Lismore District was available from three sources:

1. New South Wales Government (1978) Handbook of local statistics 1978. Sydney: Government Printer (which provided information on the census "as adjusted" in 1971 and 1976, and estimates for 1972, 1973, 1974, 1975 and 1977);

2. New South Wales Government (1979) Estimated population of municipalities and shires at 30 June 1978. Sydney: Government Printer;

3. New South Wales Government (1980) Estimated population of municipalities and shires at 30 June 1979. Sydney. Government Printer.

Unfortunately the boundaries of the Murwillumbah, Lismore, Grafton, Coffs Harbour, and Kempsey Police Divisions (which go to make up the Lismore Police District) do not coincide with the boundaries of the local government authorities for which population figures and population estimates are produced. As a result, it was necessary to "allocate" the population of a local government authority that lay astride a Police Division boundary to the two Police Divisions in question. The results of this allocation process are listed below.

1. The Murwillumbah Division was taken to include:

   Tweed
   Byron
   Mullumbimby
   Kyogle (50%)
   Tenterfield (5%)
   Lismore (4%)

2. The Lismore Division was taken to include:

   Casino
   Ballina
   Richmond River
   Lismore (96%)
   Kyogle (50%)
   Copmanhurst (10%)
   Tenterfield (5%)

3. The Grafton Division was taken to include:

   Maclean
   Grafton
   Nymboida (95%)
   Copmanhurst (90%)
   Ulmarra (80%)

4. The Coffs Harbour Division was taken to include:

   Coffs Harbour
   Bellingen
   Nambucca
   Ulmarra (20%)
   Nymboida (5%)

5. The Kempsey Division was taken to include:

   Kempsey
   Hastings
   Port Macquarie

Although based on a thorough perusal of a settlement map, this allocation process was admittedly subjective. To have done otherwise and to have located the boundaries in terms of census collectors districts would have been extremely tedious and time consuming. Moreover the boundaries between Police Divisions generally lay in sparsely populated districts with a result that the error in the subjective estimates is unlikely to be very large given that the bulk of the region's population is in towns that are unequivocally in one Division or another.

The net result of the allocation process was the following table of estimated base populations:

	Estimated Population								
	1971	1972	1973	1974	1975	1976	1977	1978	1979
Murwillumbah Division	40617	41406	42676	43605	44919	45914	47132	48494	50771
Lismore Division	59693	60558	61893	63220	64411	65871	66697	68090	70124
Grafton Division	30153	30600	31263	31600	32033	32365	32653	33085	33468
Coffs Harbour Division	35467	37440	39453	40815	42377	43840	45452	47165	49377
Kempsey Division	36900	38900	41100	42900	43700	44200	45050	46200	47700
LISMORE DISTRICT	202830	208904	216385	222140	227440	232190	236984	243034	251440

Appendix 2

THE VARIABILITY IN THE DATA

The information on serious crime contained in the New South Wales Police Department computer print-out is in the form of nominal data. For example, in each year the number of crimes in each division in each of the eight categories of serious crime is listed.

A comparison of the overall Lismore District pattern in each year 1975-1979 with each other year (by means of a 2 sample chi-square test) revealed very highly significant differences between all years. In other words, the pattern of serious crime varies markedly from year to year (see Table A2.1). Moreover, when each Police Division was compared with the overall District pattern in each year 1975-1979 (again by means of a chi-square test) statistically significant differences emerged indicating variability in the pattern of crime from Division to Division (see Table A2.2). Furthermore, when each Division was compared with itself over the eight types of serious crime for the period 1975-1979, no fewer than 47 of the 50 tests revealed statistically significant differences (see Table A2.3). In other words there is tremendous variability in any one Division from year to year.

Some variability in serious crime rates is to be expected as the nature of crime changes. However, the extent of the variability - and hence of the "noise" - in the data understudy in the present report is both remarkable and suprising.

Table A2.1: Chi-square values for inter-year comparison of overall district pattern

	1975	1976	1977	1978	1979
1975	-				
1976	394.3	-			
1977	168.8	431.3	-		
1978	133.7	161.9	129.6	-	
1979	71.3	567.2	151.1	187.3	-

Table A2.2: Chi-square values for a comparison of each division with overall district pattern in each year

	1975	1976	1977	1978	1979
Lismore	103.3	165.2	102.0	60.5	48.5
Murwillumbah	52.2	201.5	68.8	55.4	29.5
Grafton	17.1	24.1	69.8	604.3	36.6
Kempsey	67.5	34.1	54.6	109.8	52.2
Coffs Harbour	53.3	40.8	72.9	105.8	67.5

Table A2.3: Chi-square values for a comparison of each division with itself in different years

	Lismore	Murwillumbah	Grafton	Kempsey	Coffs Harbour
1975/6	457.8	40.2	46.1	106.8	49.1
1975/7	332.3	26.5	14.5	35.5	105.0
1975/8	200.4	26.3	171.2	64.4	177.5
1975/9	131.9	11.6*	34.4	53.7	115.9
1976/7	307.3	58.8	32.9	118.2	32.7
1976/8	368.6	71.4	42.4	181.0	54.4
1976/9	270.6	38.3	121.3	169.8	63.2
1977/8	85.7	59.3	60.9	20.9	8.6*
1977/9	532.9	36.8	60.9	40.1	23.9
1978/9	30.9	18.6	271.0	83.5	10.8*

* No statistically significant difference

Appendix 3

THE CODING SHEET

Information relating to the sample of CIRs was recorded on coding sheets. A specimen of these sheets follows.

STATION: ______________ DATE: ______________ REMARKS: ______________

C.I.R. Nº:	CRIME								VICTIM						SUSPECT/OFFENDER (1/2)							
	CTN.	PATROL GRID CODE	TYPE	TIME OF DAY	LOCATION	DATE	REPORTED BY	REMARKS	RESIDENCE	OCCUPATION	SEX	AGE	INJURY	REMARKS	RESIDENCE	BIRTH PLACE	AGE	RACE	OCCUPATION	ARREST	SEX	REMARKS

Appendix 4

CODING DETAILS

THE CLASSIFICATION OF CRIMES

After examining a variety of classifications of crime, both from Australia and from overseas, it was decided to adopt the classification suggested by the Australian Bureau of Statistics in 1980 in a document entitled Draft Australian National Classifiction of Offences. This document classifies offences into divisions (8), subdivisions (25), and groups (60). It was felt that the eightfold classification was too crude for the purposes of the present study but that the use of 60 categories was unwarranted. As a result it was decided to classify crime according to the 25 subdivisions suggested by the Australian Bureau of Statistics. In the event, only 17 of these categories were encountered in the sample. These were:

1. Homicide
2. Assaults (excluding sexual assaults)
3. Sexual assaults and offences
4. Robbery
5. Extortion
6. Breaking and entering
7. Fraud and misappropriation
8. Receiving and unlawful possession of stolen goods
9. Other theft (inc. shoplifting, motor vehicle theft)
10. Property damage
11. Offensive behaviour offences (inc. drunkenness)
12. Unlawful possession of weapons
13. Other offences against good order (liquor, betting, gaming, trespass offences)
14. Possession/use of drugs
15. Dealing and trafficking in drugs
16. Manufacturing, growing and other drug offences
17. Motor vehicle, traffic and related offences (including illegal use of motor car).

THE CLASSIFICATION OF SOCIO-ECONOMIC STATUS

It is a commonly held idea, both among social scientists and among the population at large, that socio-economic status can influence behaviour. As a result a good deal of effort has gone into measuring socio-economic status. There are however no entirely satisfactory measures. After all, socio-economic status is a multidimensional phenomenon that covers education, income, life style, housing and many other attributes and it is entirely possible for an individual to score lowly on one dimension but highly on another.

A sophisticated measure of socio-economic status was clearly beyond the scope of the present study, given the limited information available on the CIRs. Instead, a simple surrogate measure was used. CIRs provide information on the occupation of both victims and offenders. As a result

it was decided to interpret socio-economic status in terms of occupational status and to use the seven-point scale developed by Congalton (1976). This scale is a complicated one but some impression of what goes to make up each class is given below:

High status	1	Doctors, solicitors, directors
	2	Lecturers, accountants, graziers
Medium status	3	Farm owner, manager, librarian
	4	Primary teacher, estate agent, plumber-own business
	5	Typist, tenant farmer, motor mechanic
Low status	6	Farm labourer, brick layer, taxi driver
	7	Shearer, miner, barman

In addition to these seven categories, a further two classes were used:

8	Unemployed
9	Housewives, students, pensioners

Appendix 5

STATISTICAL TESTING

The data collected in the sample of CIRs related to the variables described in Table 7.1. For each variable the data were coded into discrete classes as a prelude to cross-tabulations of one variable against another. For example, offences were coded into one of the 17 classes of crime outlined in Appendix 4 while socio-economic status was coded according to Congalton's (1976) scale of occupational status augmented to take account of people not in the workforce. For the most part this coding of information into discrete classes produced nominal scales in the sense that observations were allocated to one of a set of mutually exclusive alternatives about which the only statement that could be made was that they were different. Only occasionally did the coding process produce an ordinal scale such that the categories into which observations were coded were not just different but were also related to each other in the sense that some were "greater than", or "less than", others (see Siegel, 1956, 22-4). For instance, the classification of the age of the offender into the intervals <15, 15-18, 18-24, 25-39, 40-59, and 60 or over produced an ordinal scale.

In order to compare tourist and non-tourist areas the data from the three tourist areas (Port Macquarie, Ballina and Tweed Heads) were pooled to provide one "sample" and the data from the non-tourist areas (Wauchope, Kyogle, and Casino) were pooled to provide another "sample". Thus there resulted from the cross-tabulation two types of matrices:

Type A matrices — Nominal scale data

Tourist areas 1.	
Non-tourist areas 2.	

Type B matrices — Ordinal scale data

Tourist areas 1.	
Non-tourist areas 2.	

The difference between tourist and non-tourist areas in Type A matrices was assessed by applying a two-sample chi-square test. The difference between tourist and non-tourist areas in Type B matrices was assessed by applying a one-tailed Kolmogorov-Smirnov test (see Siegel, 1956). Both of these tests produce a χ^2 value the significance of which can be assessed by taking account of the degrees of freedom (which vary according to the size of the matrix in the chi-square test but which are always set at 2 for the Kolmogorov-Smirnov test). A "significant" difference between the tourist and non-tourist areas was said to exist if the χ^2 value resulting from the statistical test was sufficiently large that the probability of it having come about by chance was only 5 in 100. If the probability was 1 in 100 the difference between the tourist and non-tourist areas was described as "very significant".

Of course it is not enough to say that a statistically significant difference exists between tourist and non-tourist areas. It is important to go beyond this and to describe the nature of the difference. To do this

requires an appreciation of how the two tests operate. The two-sample chi-square test compares the observed frequency in each cell of the matrix with the expected frequency. This expected frequency is calculated by pooling the data for the two samples and working out what number of observations would be expected if there were no difference between the samples. The greater the discrepancy between the observed and expected frequencies the greater the likelihood of a statistically significant result. And because the test compares one sample with the other, statements about the differences are comparative. Thus a statement that tourist areas had fewer coloured offenders than expected means perforce that non-tourist areas had more coloured offenders than expected. As a result all statements about tourist areas in the discussion of statistical tests in Chapter 7 imply a statement about non-tourist areas. These comparative statements about non-tourist areas have, generally speaking, been omitted in order to keep the discussion as concise as possible. The same applies to the Kolmogorov-Smirnov test. Although based on cumulative frequencies rather than the absolute number of observations, this test also compares two groups with a result that statements about tourist areas imply an opposite statement about non-tourist areas.

One of the difficulties with the chi-square tests is that it can be invalidated when there is a high proportion of small expected frequencies. In order to avoid this situation certain class intervals on some variables were combined. In addition to the combination of certain classes of crime (described in Chapter 7) the following combinations were used in the analysis: in terms of the manner in which an offence came to the attention of police confessions by the offender were omitted because of their small number; in terms of the socio-economic status of victims Congalton's occupational groups 1 and 2 were combined; in terms of the damage done in an offence all thefts involving more than $2000 were combined into a single category; and in terms of the socio-economic status of offenders low frequencies necessitated the combination of Congalton's classes 1, 2, 3 and 4.

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