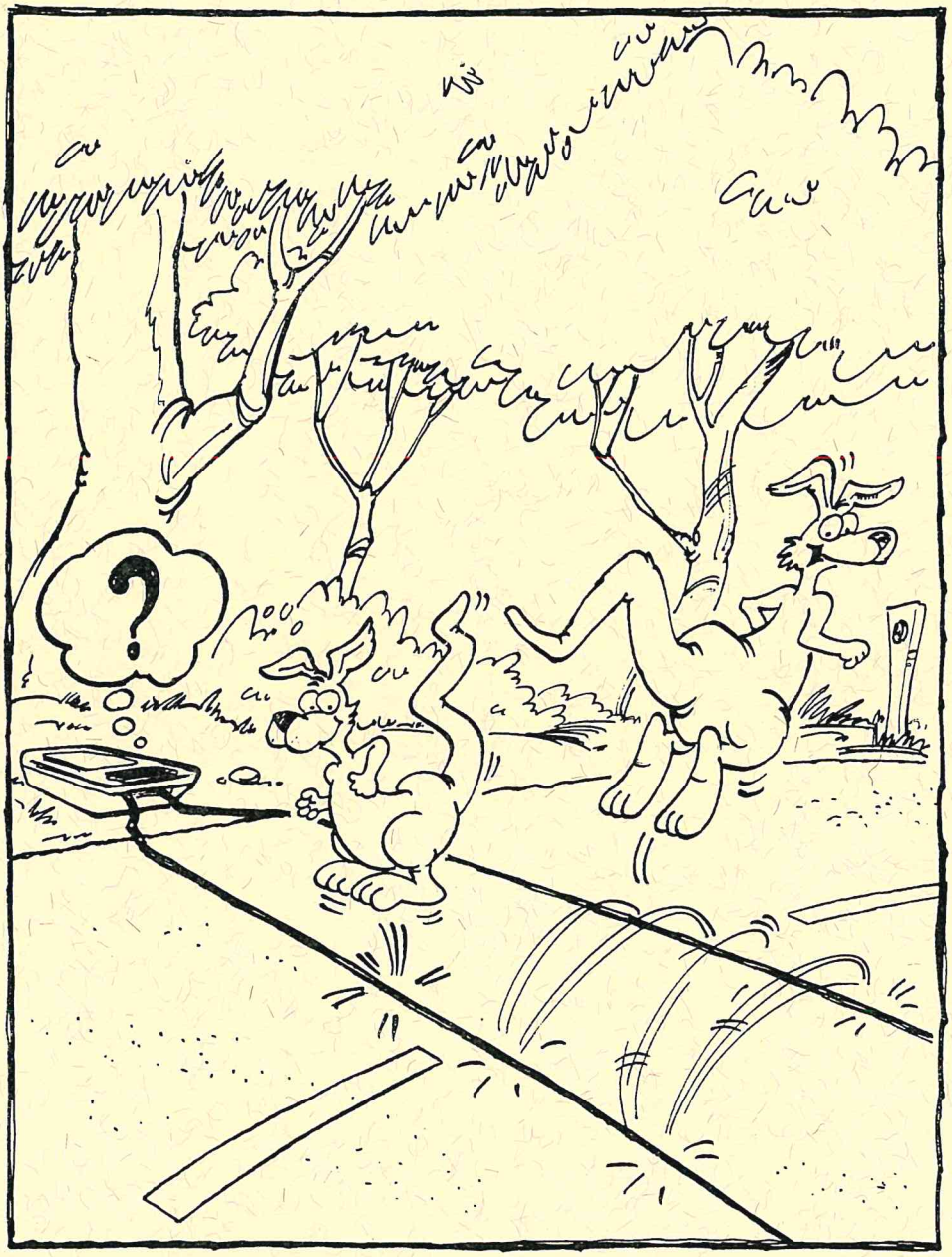
VISTAT 2000



Guidelines for the Collection of Visitor Information Data on CALM-Managed Lands and Waters

T OF CONSERVATION
D MANAGEMENT

Department of Conservation
and Land Management

17 Dick Perry Avenue
KENSINGTON WA 6151
Telephone (08) 9334 0333
Web site: http://www.calm.wa.gov.au/

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CONTENTS

1. INTRODUCTION

The Department of Conservation and Land Management (CALM) manages over 20 million hectares of the State's lands and waters, natural areas that protect invaluable natural assets. These assets include many of Western Australia's principal nature-based recreation and tourism attractions which provide significant social and economic contributions to Western Australia.

As part of its corporate vision, CALM is actively seeking to provide world-class recreation and tourism opportunities, services and facilities for visitors to lands and waters managed by the Department, while helping to maintain in perpetuity Western Australia's natural and cultural heritage. The Department's Recreation and Tourism Strategy *People in CALM Places* spells out the Department's role in and ongoing commitment to providing sustainable recreation and tourism opportunities of the highest quality in partnership with other key stakeholders. The Department has a significant role in not only ensuring that the natural environment is managed sustainably, but also working with all sections of the community to further develop the industry by providing infrastructure and providing quality visitor experiences. In this regard, CALM has developed and currently manages over 800 nature-based recreation and tourism areas around the State which attract in excess of 8 million visits annually.

Accurate information on visitor needs and expectations and on levels and patterns of use is essential if the Department is to make informed decisions on the provision and management of nature-based recreation and tourism opportunities and the ongoing monitoring of visitor activities. Such data is important for:

- Preparation of regional and area management plans;
- Broadscale recreation resource planning;
- Detailed site design;
- Scheduling of facility maintenance activities and other field operations;
- Visitor management and interpretative planning;
- Output based management and budgeting;
- Business planning and the preparation of economic analyses and forecasts;
- Visitor communications, marketing and information dissemination;
- Performance evaluation; and
- Environmental and social impact assessment and monitoring.

In summary, the main aim of CALM's Visitor Information Statistics (VISTAT) Program is to ensure that we have access to the type of visitor information needed to make strategic decisions on all facets of planning, funding, developing, managing and monitoring nature-based recreation and tourism opportunities. It is important that this data is accurate, reliable, relevant, up-to-date and cost effective to collect.

2. OBJECTIVES

These guidelines seek to address four key objectives as follows;

1. To outline CALM's basic requirements for collecting, processing, interpreting and utilising visitor information on a continual basis to meet both operational and corporate needs.

2. To provide a standardised approach to the collection and processing of visitor use data throughout the Department. Standardisation offers financial benefits in terms of reduced data collection and processing costs and enables comparisons to be made within and between regions and over time.

3. To provide basic instructions to regional, district and park staff on where and how to install traffic and pedestrian counters and classifiers and to properly service and maintain this hardware.

4. To provide methodology guidelines to regional, district and park staff regarding the implementation of CALM's visitor satisfaction survey.

The following sections will outline:

- **What** data to collect;
- **How** to collect data;
- **Where** to collect data;
- **When** to collect data; and
- **What** to do with the data collected

In addition, the guidelines also include instructions on how to develop your own regional, district or park specific VISTAT Plan for collecting visitor information to suit both local and corporate needs.

3. WHAT DATA TO COLLECT

As indicated, information on visitor use patterns, numbers, needs and expectations is used for a variety of purposes including recreation resource planning, site design, visitor management, business planning and the assessment of performance. Every region, district and park will, to a certain degree, have differing visitor information needs and data collection capabilities. These needs and capabilities will vary according to the type, level and distribution of visitor activity which is occurring over a given area as well as the availability of staff and/or volunteers to initiate and maintain the required data collection program.

It is expected that all districts will use vehicle counters or traffic classifiers and pedestrian counters to record visitor movements and estimate numbers and will also periodically conduct surveys to monitor visitor satisfaction levels and obtain feedback on other issues.

Principles

There are a number of basic principles which should be taken into account when determining what visitor information to collect. In particular, the data collected as part of CALM's VISTAT program should:

- apply to the most relevant parts of CALM's Recreation and Tourism activities (ie address core business aspects);
- be useful in making resource planning, visitor management and financial management and business planning decisions;
- address both corporate and field requirements;
- where appropriate, satisfy statutory requirements (ie Treasury and Auditor General requirements);
- be able to be measured and monitored in a cost effective manner;
- be part of the management cycle and allow for continuous measurement and use over both the short and longer term;
- be compatible so that information on the performance of individual units or components of CALM's Recreation and Tourism business can be readily aggregated and/or compared as required;
- where applicable, be forward looking.

Performance Indicators and Output Based Management Measures

There are certain visitor data collection requirements which are common to all of the Department's cost centres. These include the need to collect information relating to CALM's Recreation and Tourism performance measures. Most Western Australian government agencies and statutory authorities are required to monitor and report on key performance indicators in their annual report to Parliament. These indicators are an important aspect of public sector accountability, as they enable the community to assess the efficiency and effectiveness of public sector operations. Equally important, such indicators provide public sector managers with a measure of how their "business" enterprise is performing in relation to specified objectives and targets (which in this case of CALM's Recreation and Tourism program is the efficient provision and management of quality nature-based recreation and tourism experiences and the effective protection of natural and cultural resource values).

In recent years, the State Treasury has adopted a system of output based management and budgeting in which public sector agencies such as CALM are required to prepare budget statements which forecast service outcomes in terms of four key measures; quantity, quality, timeliness and cost. Output based management measures are also being used as the primary basis for monitoring improvements in productivity needed to justify salary and wages increases linked to enterprise bargaining and workplace agreements.

Current Recreation and Tourism Performance Measures

The Department currently monitors and reports on the following key effectiveness and efficiency performance indicators for Tourism and Recreation as part of its annual reporting to Parliament and the wider community.

MEASURE	REQUIRED FOR	BY WHOM
Effectiveness & Efficiency Measures (Annual Report)		
Number of visits to CALM-managed sites	Annual Report, planning management, budgeting purposes	CALM, Auditor General, Treasury
Visitor satisfaction as measured through customer surveys	Annual Report, planning management, budgeting purposes	CALM, Auditor General, Treasury
Number of volunteers and hours contributed	Annual Report, staff management purposes	CALM, Auditor General
Cost per visit	Annual Report, OBM Treasury statements	CALM, Auditor General, Treasury
Ratio of total cost of service to operating revenues	Annual Report, OBM Treasury statements	CALM, Auditor General, Treasury
Additional Output Based Management Measures (Treasury Statements)		
Number of sites managed	OBM Treasury statements, accrual accounting and management purposes	CALM, Treasury
Activity programs/visitor services delivered within advertised time frames (%)	OBM Treasury statements	CALM, Treasury
Other Performance Measures		
Total annual program expenditure on visitor services and facilities	Planning, budgeting purposes	CALM, Auditor General, Treasury
Replacement cost of recreation facilities	Accrual accounting, budgeting purposes	CALM, Auditor General
Number of licensed commercial tour operators	Management purposes	CALM
Number of personal injuries reported by visitors or incidents recorded on CALM-managed lands and waters	Visitor Risk Management System	CALM

The relevancy of these indicators to the Department's Recreation and Tourism Strategy and Business Plan needs to be constantly reviewed. It is imperative that we adopt indicators that will not only satisfy Government budgeting and auditing requirements, but which will also enable CALM's regions and districts to monitor their own performance and make strategic planning and management decisions.

4. UNDERSTANDING THE VISITOR:

DATA COLLECTION METHODS AND TECHNIQUES

There are a range of methods and techniques which can be used to compile information about visitor use levels and patterns and their needs and expectations. Table 1 summarises the main types of visitor data collection techniques that can be employed. Briefly, some of the most useful techniques include:

1. Mechanical and Electronic Counters

Counters which record the passage of vehicles and people past a fixed point have been used as a traditional source of information on visitor numbers and patterns of use. Such devices range from pneumatic tube and inducted loop axle counters to more sophisticated traffic classifiers which are able to distinguish between different types of vehicles and their direction of travel, speed and weight. Similarly, counting devices which incorporate pressure pads or electronic/infra-red beams are commonly used to record the movement of walkers or trail riders.

Properly installed and maintained, mechanical and electronic counters can provide a reliable record of traffic movements over time. Their main disadvantage is cost, as many counter devices and the associated hardware and computer software can be quite expensive to purchase. Some devices are also prone to breakdown and may have a significant margin of error. Please refer to Chapter 9 for more details on this subject.

2. Questionnaires and Feedback Forms

Questionnaires are usually completed without assistance and consist of one of three forms as follows:

- Hand out - hand back questionnaires: these are distributed to visitors on their way into a recreation area or site and then handed back, after completion, when the visitor departs. This method is not generally applicable where there are a large number of entry and exit roads. Response rates are normally lower than with personal interviews, but more visitors can be contacted and more information gained over a given period.

- Hand out - mail back questionnaires: these are administered as for the previous type, but are better suited to large survey areas where there are numerous access routes. Response rates are lower than with the previous type and postage should preferably be pre-paid.

- Mail out - mail back questionnaires: potential respondents are either selected randomly or from existing address lists (eg addresses obtained from self-registration forms, sale of park passes, etc). Unlike on-site questionnaires, mail out questionnaires are more open to bias as

they are largely dependent upon the recall of the visitor about visits or experiences that may have occurred some time ago. Response rates are generally the lowest of all three forms of questionnaire survey.

These questionnaires offer several advantages as compared to personal interviews. These include:

- normally cheaper than interviewing and less time is required; lower number of researchers and less training is required to sample a given population;
- respondents feel more confident of their anonymity and are therefore often more frank with their responses;
- potential for personal antagonism towards the interviewer is avoided;
- mail out surveys can be used to reach recreationists who visit remote or less accessible areas;
- more convenient for obtaining a large amount of information (ie. increased number of completed questionnaires), especially when asking personal questions.

On the negative side, the response rate to self-administered questionnaires is generally lower than for other visitor survey techniques and hence a larger sample size may be required. Written survey forms are also less flexible than personal interviews in that they offer no opportunity to clarify ambiguities (either in terms of the respondents interpretation of questions or the researchers interpretation of subjective responses). Consequently, the responses obtained are largely restricted to questions which can be answered simply and straight forward. Chapter 10 explains in more detail the visitor survey and associated methodology guidelines to conduct the survey.

3. Personal Contact or Interviews

A considerable amount of additional information useful for recreation site planning and visitor management purposes can be obtained by informally talking with and/or interviewing visitors. This includes feedback on visitor needs, expectations and satisfaction with areas and facilities. Personal interviews can be conducted either along roads, trails or other access routes or at a specified recreation site. The length of roadside interviews must by necessity be shorter than on-site interviews to avoid traffic congestion. Information which is commonly collected includes type of vehicle, number of people in the vehicle, type of group, age groups, postcode or home address, destination and intended length of stay.

On-site interviews on the other hand can be employed to gain more in-depth information such as visitor needs and perceptions, as more time is usually available providing the interviewer does not excessively intrude on the visitor's recreational experience. Advantages of interviews include:

- greater flexibility in eliciting information;
- subjective evaluations can be made by the interviewer;

- visual material such as maps can be presented to the respondent at the time of interview;
- the interviewer can confine the questions to a particular representative of a group, thereby minimising group influences to a certain degree;
- the interviewer can explain difficult questions or concepts more easily and adapt their wording to suit the level of understanding of the visitor;
- a higher response rate is generally achieved than with other methods such as written questionnaires.

On the down side, personal interviews are often time consuming and therefore expensive to conduct. They also require an experienced interviewer to ensure that personal bias, either associated with the survey or any particular class of visitors, does not influence responses.

4. Telephone Surveys

Another type of personal interview is the telephone survey, where members of the public are contacted over the phone to solicit information on their recreational activities and needs and/or attitudes on various planning and management issues. Potential respondents are either selected using systematic or random sampling techniques or alternatively drawn from existing lists of recreationists (eg people who purchase park passes). Telephone surveys are comparatively inexpensive to conduct, require a reasonably skilled interviewer and generally have a lower response rate that do personal interviews.

5. Field Observations

A considerable amount of information about visitor numbers, activities, length of stay, origin and travel patterns can be gleaned from simple field observations. One common technique is to periodically record information such as car registration plates either on a written form or electronically (ie tape recorder). This information can be used to generate data on:

- average and total vehicle numbers for a given location over a specified time period;
- length of stay of visitors at designated sites;
- origin of vehicles as determined from the registration details.

Another technique is to observe and record data on visitor numbers and behaviour at specific sites, again using a written form or tape recorder. The main advantage of observation is that it provides a reliable measure of actual visitor behaviour (eg what activities visitors are undertaking and which facilities they're using). However, it yields minimal information about visitor expectations, perceptions and attitudes and is generally better suited for assessing smaller groups and sites. Chapter 11 shows examples of observation studies and Appendix VII, a case study for Matilda Bay Reserve.

6. Aerial Photographs

Aerial or oblique photographs can provide a useful means of recording and assessing visitor use levels and activities at specific recreation sites as well as patterns of dispersal across larger areas of the landscape. The use of aerial surveillance is most effective in open, non-forested landscapes without dense overstory vegetation which might otherwise obscure visibility. Used over large areas, aerial reconnaissance is a very cost effective monitoring technique and can be combined with ground observations or interviews where more information is required.

7. Visitor Books and Log Books

Where volume of use of a local site is expected to be low due to the remoteness of the area or where road access is diffuse and normal traffic counting devices are not practical, the visitor books or self-registration log books may prove useful. Log books are a particular type of visitor book used in more remote or inaccessible areas to record visits by bush walkers, horse riders, trail bike riders, 4WD drivers and other users.

8. Other Recorded Data

These may include such information as gate receipts, revenue generated from park entry and camping fees, returns from licensed commercial tour operators and the recorded activities of organised recreation groups. All of these sources of data can provide simple measures of visitors at particular sites or by activity.

There are also external sources of data from other organisations such as the West Australian Tourism Commission, Main Roads WA, Agriculture WA (Quarantine Checkpoints), local shires, Australian Bureau of Statistics, to name a few, which can complement the knowledge base of visitor use of CALM lands.

In addition, there is a research database in CALMweb which lists and summarises known nature-based recreation and tourism research studies (completed and proposed), accessible at the following address:

ratis.calm.wa.gov.au/research/search.html or in the main Reference Group Home Page:

calmweb.wa.gov.au/drb/rptd/pptb/research.html by clicking on Research Projects Database.

Table 1. Description of techniques for collecting data.

Technique When to use it	Where (location)	Rationale	Reliability
Traffic counters and traffic classifiers When you have good control over entry/ exit points. With conventional counters you need to calibrate the counter to ensure a minimum estimated error (less than 10%). Classifiers should be used when you have various types of vehicles such as cars, buses and others.	At a one way entry location preferably, counter should not be visible and should be attached to a fixed object such as a tree or post.	Traffic counters provide no. of axles or no. of vehicles through a pneumatic tube or an induction loop depending on the type of counter. Need to observe car occupancy to obtain total visitation levels. Recording at least on Fridays (pm) and Mondays (am) can provide you with weekday/end trends. Traffic classifiers, using double pneumatic tubes, provide data on number of vehicles in each type (cars, buses, etc.), as well as speed, direction of travel, times and dates.	One of the most reliable ways of estimating visitor numbers.
Observation counts Opportunistic, when you are conducting other field duties.	All sites.	Estimation of peak use. Ideally record as often as patterns of use for each type of site dictates.	Reliable, although reliability will increase with the frequency of sampling.
Interviews/Questionnaires When you need additional data about users that other techniques cannot provide.	Usually the main exit/s should be the survey point, when visitors are leaving the site and have had their recreational experience.	It will depend on your data requirements. Important to obtain feedback from visitors.	Usually very reliable (you are taking samples of the visiting population).
Entry fees/ charges To cross check traffic counter estimations as well as total visitation levels estimations for areas where no other method is possible.	Parks/reserves/ sites where entry fees apply.	Total revenue collected from admission boxes, entry fees, sales of tickets. Need to convert the revenue figures into total visitor numbers.	Variable reliability as not all visitors pay for each visit they make (some may have annual passes), others don't pay during weekdays.
Camping fees When you need data about dominant activities (one of which is camping).	Sites where camping fees apply.	Total revenue from camp fees. Need to convert the figures into number of campers.	Very reliable to estimate camping figures.

Table 1. Description of techniques for collecting data (cont.).

Technique When to use it	Where (location)	Rationale	Reliability
Permits When permits are issued for specific purposes.	Sites/activities where permits apply.	Origin of visitors, destination, size of groups, age, etc (depending on the information requested on the permit).	Lower reliability, permits are not issued by CALM frequently.
Registration log books When registrations are high and therefore indicative of number of visitors to certain sites.	At information bays or at the start of walk trails.	Depends on the level of information requested on registration book, basically you can obtain numbers of people registering at a specific site.	Lower reliability as not all users of sites register.
Commercial tour operators When applicable.	Request data from commercial tour companies operating in park/ areas in your District/Region.	Provides an indication of number of buses/coaches etc that operate in park. You can then calibrate the figures from traffic count visitation numbers to account for these visitors.	Reliable to estimate activities and numbers associated with those activities.
Other Operators/ organisations When applicable.	As above.	As above. Also allows you to estimate demand/preferences for certain groups based activities.	Reliable to estimate activities and numbers associated with those activities.
Associations/ clubs When applicable.	As above.	Provides an indication of group demand/preferences as well as participation in certain activities/ settings.	Reliable. It may provide you with a good indication of activities and numbers related to those activities, visitor experiences.
Public enquiries When applicable.	N/A.	It may provide an indication of public demand/preferences for certain areas or activities/settings as well as their attitudes.	Very low reliability as public enquiries may be very infrequent and on a wide range of issues.
Photographs When you want photo-graphic records (aerial and time lapse for the same area).	As required.	Indication of levels of use for the areas you choose to photograph.	Reliable, it will also depend on the frequency that you photograph.

5. WHERE TO COLLECT DATA

A Visitor Data Collection Plan which clearly identifies data requirements and methods of collection should be prepared by all regions and districts (refer to Chapter 7). As a general rule, priority should be given to the collection of visitor data where:

- Long-term trends in high profile parks are required; those parks/areas which are deemed 'indicator parks/areas' are particularly important;
- Rates of resource and/or social change are the highest;
- Quality of base data is the poorest;
- Understanding of the effects of planning decisions and management actions on visitor use and enjoyment is the poorest;
- There have been unanticipated changes in factors such as access or adjacent land uses.

6. WHEN TO COLLECT DATA:

TIMING AND FREQUENCY OF DATA COLLECTION

The frequency of collecting data will depend on many factors such as the weekly and seasonal variation in visitor use, location and type of site/area and the type of data required. Some types of data can be collected less frequently than others. For example, the type of activities visitors undertake whilst visiting sites may not vary considerably throughout the year, although in some parks/areas seasonal variations may occur. Therefore, collecting data on visitor activities can be done less frequently than, for example, on number of visitors to sites. There is no one standard frequency of collecting data that will apply to all parks/areas and even sites within each park.

However, for the purposes of consistency of the overall program and uniformity of collecting essential data throughout the Department, the recommended minimum frequency of collection required of Districts/Regions for the most common techniques used is as follows:

Table 2. Techniques, data provided and frequency of collection for the most common data collection techniques used.

Technique	Data Provided	Minimum Frequency of Collection
Traffic classifiers.	Vehicle types and numbers, speed, date and time and direction of travel.	Once a month. If you require more frequent readings/reports, the classifiers will allow you to generate these.
Conventional traffic counters such as inductive loop, pneumatic and data loggers.	Vehicle numbers only. Most data loggers give date-time series, in addition to number of vehicles.	Once a month. If you require more frequent readings, for example, weekly readings, you may do so.
Visitor surveys- customer feedback.	Visitor satisfaction levels, uses/ activities and characteristics of visitors to recreation sites.	Twice a year for selected park/area. See Chapter 10 for further details.
Field observations/ counts.	Activities, which sites are used and number of people undertaking each activity at one time. Many other types of data such as vehicle type, group size and group type can also be obtained from an Observation Survey/ Count.	Once a month. More frequent observation surveys during peak use/ seasons for areas that have extreme fluctuations in use or rely heavily on this technique to obtain visitor numbers. These should be twice weekly, one on a weekday and one on a weekend, until a pattern of use is established, for at least 12 observations in each 'pattern day', from Winter to Summer. See Chapter 11 for details.

Table 2. Techniques, data provided and frequency of collection for the most common data collection techniques used (cont.).

Technique	Data Provided	Minimum Frequencv of Collection
Ticket sales/entry fees.	Number of paying visitors.	Daily/weekly–totals aggregated monthly.
Camping fees.	Number of registered campers.	Daily/weekly–totals aggregated monthly.
Bookings/registration log books.	Number of people in the party and total number of people in party bookings.	Once a month or when available.
Tour operators/associations/ clubs/special groups.	As above.	Once a month or when available.

7. PREPARING A DATA COLLECTION PLAN

Each District and/or Region is expected to prepare and implement a visitor data collection plan for the lands and waters under its control. This plan should clearly outline what data is to be collected and should specify:

- the data collection techniques to be employed (eg traffic counters, questionnaire surveys, field observations, etc);
- which areas are to be included in the data collection program and the specific location where vehicle and pedestrian counters are to be installed;
- how often different data such as traffic counter readings are to be collected or visitor satisfaction surveys conducted;
- the staff responsible for collecting, processing and maintaining visitor data records.

The data collection plan may also be designed to provide the park and district or region with important information on relevant recreation site planning, facility maintenance and visitor management issues. These may include such things as the standard/condition of roads, car parks, trails, toilets and other facilities, site capacity, provision of signs, maps, information and interpretation as well as disabled access and visitor safety.

The following steps may prove useful when preparing your visitor data collection plan:

Step 1 Assess your district/park/reserve: Prepare a sketch map of the district, park, reserve or forest area to be surveyed. This plan should indicate the location of the main public access routes, key natural features and visitor attractions, recreation sites and facilities as well as undeveloped areas where it is known visitor activity is occurring. List and name all the sites and recreation opportunities that the area offers and briefly summarise what is known about patterns of use for each site. Consult other staff members who have local knowledge and record their views and opinions. Utilise all available information sources to compile an accurate and up-to-date picture of existing visitor use as practicable.

Step 2 Identify your data needs: Identify what type of information is to be collected and where this collection is to occur.

Step 3 Review existing data: Check other potential sources of visitor data such as the WA Tourism Commission, Main Roads, Ministry for Planning, local tourist bureaus or the Australian Bureau of Statistics. By investing a little time at the onset, you may be able to avoid duplicating existing data.

If you require assistance in tracking down and assessing other sources of visitor data, contact the Department's VISTAT Coordinator, Luisa Liddicoat.

Step 4 Assess data collection constraints and opportunities: Identify possible factors which are likely to constrain the collection of visitor data such as the remoteness of a particular area or the lack of staff resources. Be on the lookout for opportunities to collect visitor data on an opportunistic basis and, wherever possible, ensure the data collection program is integrated with other field activities. For example, if an activity such as routine site maintenance is conducted by staff on a regular basis, this can be integrated with field observations and/or the reading of traffic counters.

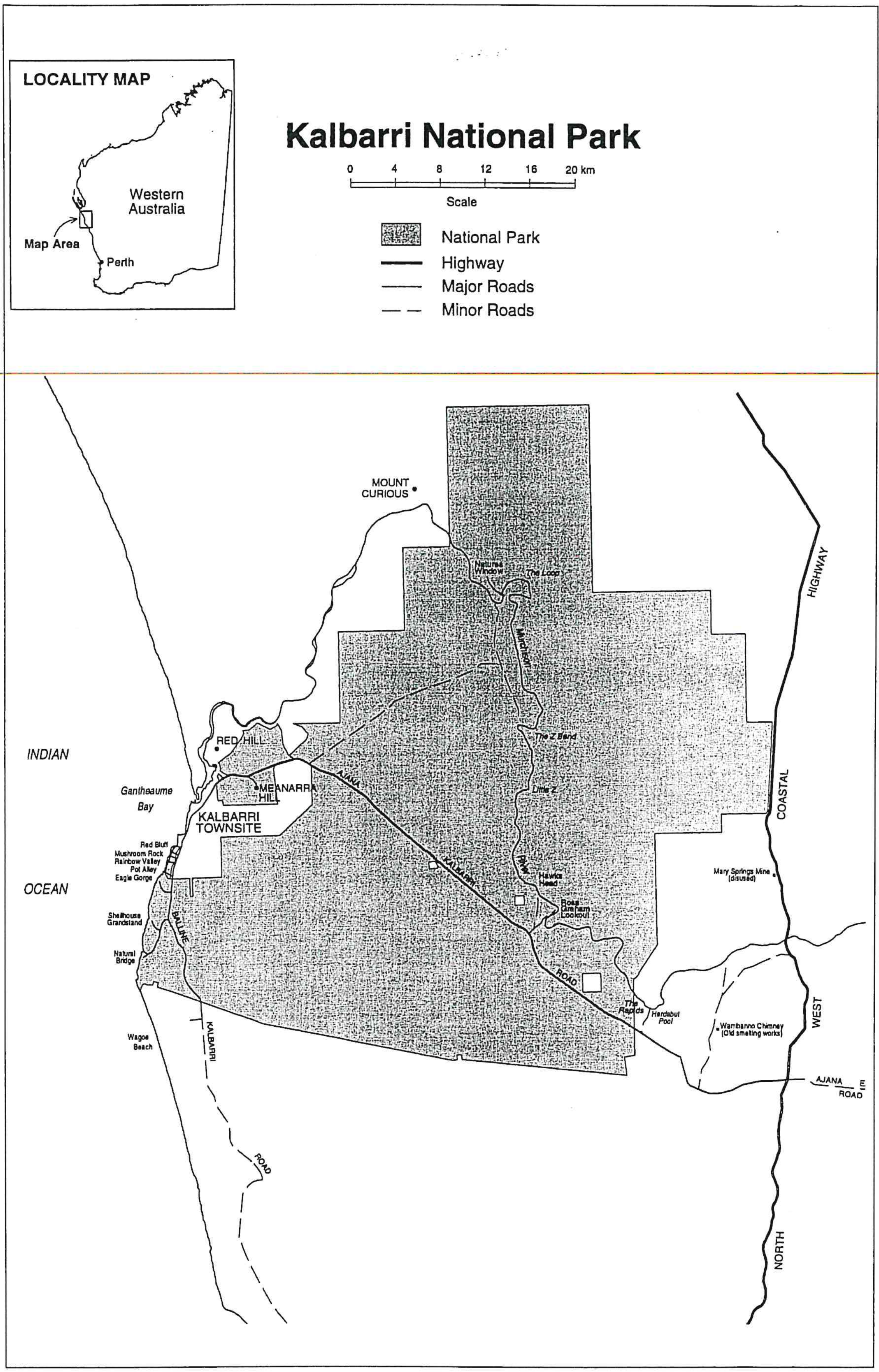
Step 5 Decide on the survey techniques to be used: Select the data collection technique(s) which best suit your data requirements and staff resources. As outlined in Table 1, a combination of techniques can be employed. It is expected that all districts will use vehicle counters or traffic classifiers and pedestrian counters to record visitor movements and estimate numbers and will also periodically conduct surveys to monitor visitor satisfaction levels and obtain feedback on other issues. Finalise the data collection plan and commence the data collection program.

Step 6 Review and update your data collection program as required: Your visitor data collection program should be reviewed periodically to ensure that both field and corporate information needs are being adequately addressed and that the most appropriate data collection techniques are being employed.

Sample Data Collection Plan

An example of a Data Collection Plan for Kalbarri National Park is presented. In preparing such a plan, it is important to first list all of the recreation facilities which exist and where these are situated. This information can be readily obtained by interrogating the RecData database on the Department's Recreation and Tourism Information System (RATIS). As indicated below and on the accompanying plan, the main recreation sites and visitor nodes within the Park are as follows:

- The Loop/Nature's Window - scenic lookout with barbecue/picnic facilities and toilets;
- Z Bend - scenic lookout with barbecue/picnic facilities and toilets;
- Hawks Head - scenic lookout, picnic facilities and toilets;
- Ross Graham Lookout - scenic lookout, picnic facilities and toilets;
- Meanarra Hill Lookout - scenic lookout.
- Coastal Gorges including Red Bluff, Mushroom Rock, Rainbow Valley, Pot Alley, Eagle Gorge, Shellhouse Grandstand, Island Rock and Natural Bridge - scenic lookouts.


LOCALITY MAP
Western Australia
Map Area
Perth
Kalbarri National Park
0 4 8 12 16 20 km
Scale
National Park
Highway
Major Roads
Minor Roads
MOUNT CURIOUS
INDIAN
OCEAN
Gantheaume Bay
RED HILL
MEANARRA HILL
KALBARRI TOWNSITE
Red Bluff
Mushroom Rock
Rainbow Valley
Pot Alley
Eagle Gorge
Shellhouse Grandstand
Natural Bridge
Wagoe Beach
BALLINE
KALBARRI
ROAD
AJANA
KALBARRI
ROAD
Natures Window
The Loop
Murchison
The Z Bend
Little Z
River
Hawks Head
Ross Graham Lookout
The Rapids
Hardabut Pool
Mary Springs Mine (disused)
Warribanno Chimney (Old smelting works)
HIGHWAY
COASTAL
WEST
NORTH
AJANA
ROAD

Data Collection Plan
Kalbarri National Park

REGIONAL COORDINATOR : Sue Hancock

DISTRICT COORDINATOR : District Manager and Ranger in Charge

Type of Data	Techniques	Location	Frequency	Rationale	Responsible
Numbers	1. Traffic classifiers.	Loop & Z Bend Hawks Head – ideally, in the near future.	Monthly.	Best suited for the site.	Park staff.
	2. Traffic counter.	Coastal Road	Monthly.	Best suited for the site.	Park staff.
	3. Entry fee.	Loop & Z Bend	Monthly.	Check number paying fees.	Park staff.
	4. Pedestrian counters.	Loop and Hawks Head – ideally, in the near future.	Monthly.	Planning needs.	Park staff.
Activities, Satisfaction	1. Observation counts.	Coastal sites.	Weekly.	Site access.	Park staff.
	2. Visitor feedback (surveys).	Loop, Z Bend, Hawks Head & coastal sites.	Twice yearly.	Need for feedback on visitor satisfaction.	Park staff.
Sites Visited	1. Observation counts.	Loop, Z Bend, coastal sites & gorge hiker sites.	Weekly.	Planning needs.	Park staff.
	2. Visitor feedback.	As above.	Twice yearly.	Need for feedback on visitor satisfaction.	Park staff.

Other known sources of data availalbe include:

1. CALM Visitor Surveys for 1995 - 98;

2. Kalbarri Visitor Survey, July/August 1994. Kalbarri Community Development and Tourist Association;

3. WA Tourism Commission - Tourism Research Brief on the Midwest: Summary of Key Findings (1995 & 1996); and

4. Main Roads WA publication on traffic patterns and volumes (1996/97).

8. DATA RECORDING AND PROCESSING

As previously indicated, responsibility for recording and processing visitor data will continue to be a shared responsibility between regions and districts and the Parks, Recreation, Planning & Tourism Division. It is a requirement that Regions and Districts collect data on:

- visitor numbers;
- visitor satisfaction;
- numbers of volunteers and hours contributed;
- number of personal injuries reported or incidents recorded;
- the number of activity programs/visitor services delivered within advertised timeframes.

Other measures including the number of sites managed and the number of commercial tour operators can be directly accessed through RATIS. This data will be periodically updated by the PRP&T Division while financial measures will also be calculated and updated annually by the Division. Regions and districts who wish to collect other visitor data as part of their Recreation and Tourism action plans are welcome to do so and this information can be incorporated into RATIS at a local level.

Please see Traffic Recording Systems in the next chapter for details on collecting visitor numbers from traffic counter data and chapter 10 for collecting Visitor Survey Data.

9. TRAFFIC RECORDING SYSTEMS

Traffic Classifiers

A common way of collecting visitor numbers is through traffic counters. The most accurate, 'state of the art technology' are the traffic classifiers. These have double tubes which allow for precision counts and classification of vehicle types, speeds, direction of travel as well as time and date.

The MetroCount Traffic Classifier is now widely used in the Department. It offers numerous advantages including:

- it is easy to install, use and maintain;
- it is of robust, sturdy construction and is waterproof, dustproof and shockproof
- it is very accurate, providing classification of vehicle types (cars, buses, etc.), speed, direction of travel, date and time;
- the software allow for generation of flexible reports, which will suit local needs;
- the components are easily upgradeable;
- for remote areas with no access to power supplies, there is provision for solar power and the accessories fit neatly into the unit; and
- it is supplied by a West Australian company based in Fremantle with technical backup and expertise readily available.

There are two aspects to the traffic classifier system: the **data logger** device itself which records all the axles and time/date events and the **software** which then interprets this information to produce reports. The reports can be as simple or as complex as you want, depending on your own data needs and on what information you want to extract from the datasets. For example, you may wish to separate only four major types of vehicles and have just monthly totals for those or alternately have all the categories available listed on an hourly basis.

The MetroCount System as mentioned previously, consists of a data logger which is a sealed rectangular box enclosed in a steel road case with sloping ends, about 35 x 12 x 10 cm (see Figures 1 and 2). The battery is totally enclosed within the data logger and is rechargeable via a battery charger.

These guidelines do not in any way replace the MetroCount manual 'MetroCount Operating and Reference Manual'. They are mere pointers to assist you to follow the manual efficiently. Start by reading **Chapters 1, 2, 3 and 4**, as they are brief and easy to follow. Please consult the relevant sections of the manual for instructions on **charging the battery,** especially **section 6.8**. A solar hat panel is an alternative power source available and fits neatly on top of the unit. They are particularly suited to areas with no direct access to a power supply to recharge the batteries.

Two pneumatic tubes connect to the unit. **Sections 2-3** and **2-4** of the manual outline the procedure for **installing the tubes** on the road. To communicate with the unit or **download data** onto a PC or a laptop computer, there is a data communications cable which connects the data logger road unit to the computer and **sections 3-2 to 3-4** explain this. The **software** is presented in a 3.5" disk and is discussed in detail from **Chapter 6** onwards. Please spend the necessary time to familiarise yourself with the procedures contained in the MetroCount manual, as these are user friendly, easy to put into practice and will equip you to obtain the best performance and outcomes out of this technology.

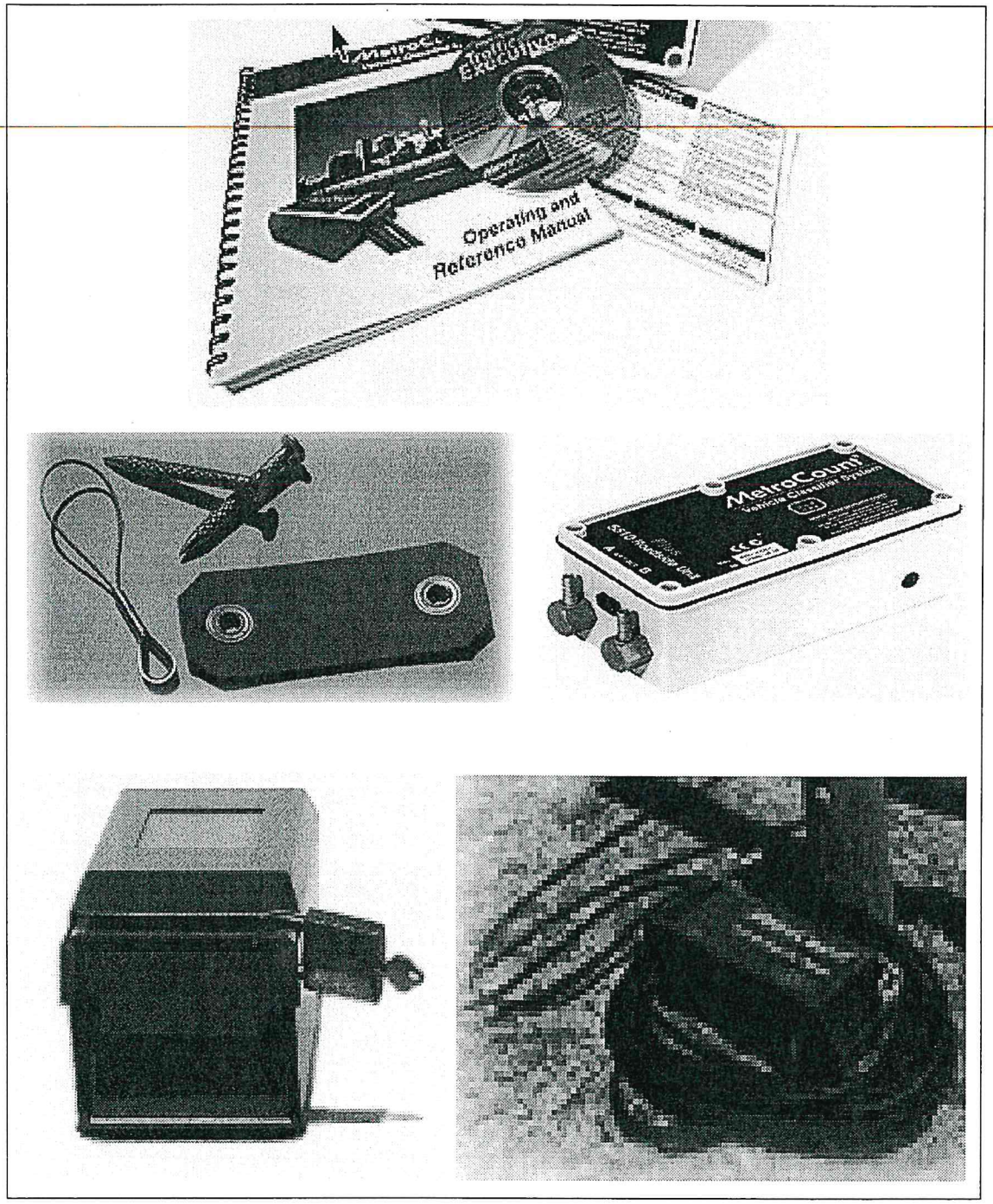


Figure 1. The MetroCount system and accessories.

After installing the MetroCount in the field data can be down loaded and reports obtained which detail vehicles classes 1, 2 and 3 and 4 and respective speed bins. It is important to follow **Chapters 5, 6, 7 and 8** of the MetroCount manual as all the necessary procedures are explained there. Reports need to be generated monthly for vehicles going in one direction. For costs centres with no access to the CALMweb, these reports should be forwarded to the VISTAT Coordinator, Luisa Liddicoat at CALM, Como. For cost centres that have direct access to CALMweb and the RATIS database, please input the data (number of vehicles in each of the four classes), directly into RATIS, as shown in Figures 3 and 4, using the following procedures:

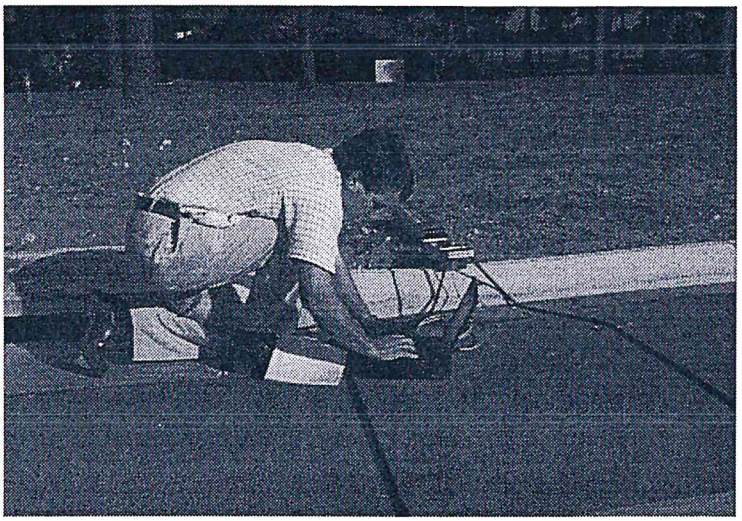


Figure 2. Installing the MetroCount system.

MetroCount Analysis - Ver. 270

Class speed matrix

Report Id : ClassMatrix-18
Site No. : 35291.ON
Site Id. : GRT.NORTHERN HWY SOUTH OF WEST SWAN RD.
Time range : [13:00 Mon 20 Sep 1993] to [14:24 Mon 27 Sep 1993]
Scheme : AustRoads94
Filter : CL(1 2 3 4 5 6 7 8 9 10 11 12 13) DR(N) SP(8,161) HW(all)

Speed Bin (km/hr)	Class 1	2	3	4	5	6	7	8	9	10	11	12	13	Speed Total	
0 - 8	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0.0%
8 - 16	10	.	.	.	.	.	.	.	.	.	.	.	3	13	0.1%
16 - 24	22	.	.	.	3	.	.	.	.	.	.	.	5	30	0.1%
24 - 32	74	6	7	8	11	1	.	.	.	.	.	.	9	116	0.5%
32 - 40	68	3	5	8	2	.	2	1	1	1	.	.	7	98	0.4%
40 - 48	65	9	4	4	1	.	1	1	1	.	.	.	5	91	0.4%
48 - 56	101	9	4	5	3	.	1	4	6	1	.	.	.	134	0.6%
56 - 64	309	33	28	11	4	1	3	8	8	9	1	.	4	419	1.8%
64 - 72	1214	86	125	36	19	6	19	31	71	51	2	.	4	1664	7.0%
72 - 80	4030	337	361	112	118	21	49	101	205	160	6	.	6	5506	23.3%
80 - 89	7083	391	462	119	105	37	68	134	257	200	5	.	11	8872	37.5%
89 - 97	4144	175	186	54	20	14	29	42	99	83	4	.	7	4857	20.5%
97 - 105	1244	44	46	15	1	4	1	4	18	2	.	.	.	1379	5.8%
105 - 113	309	5	10	1	.	1	1	.	.	.	.	.	.	327	1.4%
113 - 121	107	.	2	.	.	.	.	.	.	.	.	.	1	110	0.5%
121 - 129	24	.	2	.	.	.	.	.	.	.	.	.	.	26	0.1%
129 - 137	4	.	.	.	.	.	.	.	.	.	.	.	.	4	0.0%
137 - 145	3	.	.	.	.	.	.	.	.	.	.	.	.	3	0.0%
145 - 153	2	.	.	.	.	.	.	.	.	.	.	.	.	2	0.0%
153 - 161	1	.	.	.	.	.	.	.	.	.	.	.	.	1	0.0%
Class	18814	1098	1242	373	287	85	174	326	666	507	18	0	62		
Total	79.5%	4.6%	5.3%	1.6%	1.2%	0.4%	0.7%	1.4%	2.8%	2.1%	0.1%	0.0%	0.3%		

Figure 3. An example of a dataset from the MetroCount traffic classifier.

The total figures for the four classes 1, 2, 3 and 4 (in rectangle in Figure 3) are to be inserted in the following screen from RATIS (Figure 4), by accessing the CALMweb at the following address:

http ://ratis.calm.wa.gov.au/vistat/add_vistat.html

or by accessing the CALMweb home page, then clicking on DIVISIONS, REGIONS, BRANCHES, then PARKS, RECREATION, PLANNING & TOURISM, then RATIS, followed by VISTAT and ADD A RECORD TO VISTAT. Once you have been to this location, you can add a 'Bookmark' or 'Favourites' for quick access next time (all you will need to do next time you want to access the screen is to click on this location from the 'Bookmark/Favourites').

Please also use this screen to input data from conventional traffic and pedestrian counters and estimates based on observations, if you have access to the CALMweb. A screen example (see Figure 4) is provided at the end of this chapter. If you don't have access to the web, please forward all monthly data to the VISTAT Coordinator Luisa Liddicoat at CALM Como. The Form for recording this data for conventional and pedestrian counters is provided in Appendix I (see page 38).

If you have further questions or encounter any difficulties with this technology, please contact the VISTAT Coordinator, Luisa Liddicoat at CALM Como, on (08) 9334 0595 or Matt Sapsworth also at CALM Como on (08) 9334 0119.

CALMweb HOME

Add a record to VISTAT

ONLY RECORD TOTAL MONTHLY FIGURES.

EACH RESERVE SHOULD HAVE **ONE** RECORD PER MONTH ONLY.

SHOULD INFORMATION BECOME AVAILABLE AFTER A MONTHLY RECORD IS CREATED FIND THAT RECORD TO ADD OR MODIFY INFORMATION

PLEASE USE

Vehicle Classes based upon the AustRoads94 Classification Scheme

You can print out and use the following Vistat Recording Sheet (pdf) for your own records

Area code:	[ ] Area code listing (the RecordID on the following page) Region, District and Tenure details are automatically generated from this value
Site code:	[ ] Search RecData for a Site Code Only use this if traffic reading relates specifically to a recreation site
Location of counter:	[ ]
Month:	[ ]
Year:	[ ]
MetroCount Vehicle Classifier	Number of vehicles — Vehicle Class A [ ] Class 1: Sedan, Wagon, 4WD, Utility, Light Van, Motorcycle etc B [ ] Class 2: Class 1 towing - Trailer, Caravan, Boat etc C [ ] Class 3: Two axle buses and trucks D [ ] Class 4: Three axle buses and trucks Email your MetroCount data files to matthews@calm.wa.gov.au as soon as possible
Traffic Counters (Non-Classifier type counters)	E ○ 1 Counter registers one count per vehicle on the way in only E ○ 2 Counter registers one count per vehicle on the way in and out OR counter registers two counts per vehicle (one count per axle), on the way in only E ○ 4 Counter registers two counts per vehicle (one count per axle), on the way in and on the way out F [ ] Previous month's final recording G [ ] Current month's final recording (Date recorded [ ]) H [ ] Estimated Class 3 and 4 (buses only) for month
Estimated Vehicle Counts (No recording device used)	I [ ] Total Class 1 and 2 J [ ] Estimated number of buses Class 3 and 4

Figure 4. Screen example from RATIS.

Must be completed for classifiers, traffic counters and estimated vehicle counts	K [ ] Estimated number of passengers per Class 1 and 2 vehicles L [ ] Estimated number of passengers per Class 3 and 4 vehicles (buses only) M [ ] Estimated number of service/staff Class 1 and 2 vehicles going into the reserve N [ ] Estimated number of service/staff Class 3 and 4 vehicles going into the reserve
Monthly visitor numbers based upon visitor fee receipts (if **available**):	O [ ] Class 1 and 2 (Number of vehicle receipts multiplied by estimated number of passengers per vehicle. Figures based on park passes will be added at a later stage) P [ ] Class 3 and 4
Pedestrian visitor numbers:	Q [ ] Exact pedestrian visitor number from counter R [ ] Estimated pedestrian visitor numbers
Comments:	[ ]
Recorder:	[ ]

RATIS will automatically calculate vehicle and visitor counts. If you want to work out total visitor numbers use the following formula.

	No. of visitors Class 1 and 2	No. of visitors Class 3 and 4
MetroCount Vehicle Classifier	(A+B-M) * K	(C+D-N) * L
Traffic Counters (Non-Classifier type counters)	(((G-F)/E)-M) * K	(H-N) * L
Estimated vehicle counts	I * K	J * L
Monthly visitor numbers based upon visitor fee receipts	O	P
Total by vehicle class	Sum of the above	Sum of the above
Total visitor numbers	Total Visitors Class 1 and 2 + Total Visitors Class 3 and 4 + Q +R	

Executive Director's Office | Corporate Services | Corporate Relations
Nature Conservation | Parks Recreation & Tourism | Science & Information
Forestry Resources | Regional Services

Figure 4. Screen example from RATIS (cont.).

The MetroCount system components:

Each of the MetroCount traffic classifier units which were purchased by CALM in mid 1999 consists of the following items:

1. Roadside data logger unit with internal rechargeable battery, housed in a heavy duty protective metal enclosure, complete with double tubing and clamps and nails to secure the tubing on the road;

2. Battery charger;

3. Solar hat (one per Region);

4. Data communications cable, to allow downloading of data to Laptop or PC (one per District);

5. 3.5" disk with software package (one per District) to enable data summary and reporting;

6. MetroCount Operating and Reference Manual (one per District);

7. Chain and padlock to secure the road unit to a fixed object, such as a tree, a post, etc. in the field; and

8. Nails, decking nails, flaps and figure 8 cleats.

Field guidelines and general guidelines for traffic counters - where to install the MetroCount system:

✓ Traffic counters/classifiers are obviously best suited to areas with all kinds of vehicle traffic and preferably with limited number of entry/exit points to capture the maximum traffic volume at that point.

✓ They should be set up in such a way so that it is not possible to drive around the double tubes to avoid being counted and preferably not in a road bend as this may give incorrect readings.

✓ It is also desirable that the tubes are stretched across the whole width of the road, so that no traffic is missed because the traffic classifiers will also give you the direction of travel.

✓ The tubes should not be located in a conspicuous spot to avoid/minimise tampering or vandalism. In some instances, however, it may be better to have the counter located in busy areas, in full view of everyone. Use your judgement of the area and the circumstances to assess each case, as there are no set rules on particular situations.

✓ Choose a shady position for the counter, but if you have a solar hat with the unit, ensure that there is enough sunlight for it. Areas prone to flooding should be avoided, or the counter removed prior to or during those flood periods.

- ✓ All counters should be attached to something immovable like a tree, a post, a gate, etc. with a chain and padlock. The unit should be hidden from view. Use your judgement and knowledge of the area to assess each case. Staff in some districts bury the whole unit (inside a container) together with the last two metres of tubing attached to the figure of 8 cleats. These secure the tubing quite firmly and make it very difficult for vandals to remove it (the most they can do is break the tubing).

- ✓ Usually, batteries are recharged with the battery charger connected to the power source at the office or via a generator. The solar hats are provided for remote areas only, with limited access to the office or site generators. Counters with solar hats should be protected, as much as possible, from mud or other substances that may affect solar exposure and their performance.

- ✓ The nine-pin blue plastic port where the data communications cable and the battery charger plug into, should be protected with silicon or other substance to insulate it on the outside where it joins the grey plastic side of the logger to avoid moisture penetrating the inside of the logger. With continuous plugging and unplugging, the blue plastic can perish along the sides and allow moisture to get into the unit, so the silicon sealant should prevent this from happening.

Training will be provided to familiarise staff with traffic classifiers and VISTAT procedures. This set of instructions are only broad guidelines on installation and use of counters, all the details are contained in the manuals supplied. Please spend the time necessary to familiarise yourself with the procedures contained therein.

Traffic and pedestrian counter equipment - rules for use:

Districts and regions that have been issued with traffic and pedestrian counter equipment for parks, forests and reserves should follow the procedures below:

1. Traffic and pedestrian counter units are Departmental property and expensive pieces of equipment, not to be sold, transferred, hired, borrowed, lent, shared, misplaced, damaged or misused in any way.

2. There should be an officer(s) responsible for this equipment in each district/region.

3. Each MetroCount unit has a serial number and an asset number and these details are on record in the Assets Register at Head Office and at the Parks, Recreation, Planning and Tourism Division.

4. Each unit that is allocated to an area is for full-time use in the VISTAT program.

5. There are internal audit forms that you are required to complete. Please check these in your district.

6. Should any damage or malfunction occur to any of the units (theft, damage by fire, vandalism, other), a report must be immediately submitted to the VISTAT Coordinator, as well as the usual procedure for reporting assets in your district followed. The report should include traffic counter type, make and model, serial number, description, accessories, district, exact location, description of damage, repairs required, if the unit is inoperative or still in working order but requiring attention, date, time of damage or when it was noticed, officer reporting, officer responsible for this equipment and any comments.

7. For details on installation, use and maintenance, consult the manufacturer's manual (MicroCount Operating and Reference Manual for MicroCount units). For other information on conventional traffic and pedestrian counters see Appendix II; Appendix VIII has a list of names and addresses of known suppliers.

10. VISITOR SURVEYS

Introduction

A recreation/tourism visitor survey plays a valuable role in the provision and management of CALM's nature-based recreation and tourism sites, as outlined in the Introduction (please refer to Chapter 1).

The visitor feedback form (refer to Appendix III) is designed to provide information about:

- the level of satisfaction derived from the visitor to the recreation site;
- characteristics of the visitor to the recreation site; and
- uses/activities undertaken at the recreation site for a specific period of time known as the survey period.

Convenience versus random sampling

CALM's feedback form is conducted using a 'convenience' sample of recreation site visitors as opposed to a random sampling technique.

Random sampling is a survey technique enabling any person to have an equal or known chance of being selected (including both visitors and potential visitors to parks) which ensures statistically rigorous results. On the other hand, convenience sampling allows the surveyor to select the survey respondents, which will allow for results specifically about visitors to CALM managed recreation areas. Convenience sampling is considered the most appropriate technique to determine satisfaction levels of visitors recreating in CALM areas, given the type of information required and the resource constraints associated with a random approach. Therefore caution should be taken when interpreting the results using this sampling technique, as it is a non-random means of obtaining visitor data.

About these visitor survey guidelines

This chapter aims to provide guidelines designed to enhance the random nature of selecting visitors and parks/recreation sites for surveying using the convenience sampling technique. This 'randomness' combined with an appropriate sample size (which is discussed later in this chapter) will ensure that the survey sample is representative of all visitors to a park/recreation site during the survey period.

The chapter is divided into a number of sections which will assist staff to implement the survey. These include how to determine the survey sites, the sample size (the number of surveys to be completed), the timing and frequency of surveying and how to distribute the survey.

A summary of the key points for conducting the survey is provided in Appendix IV.

10.1. Survey sites: At which parks/sites should the visitor survey be conducted?

The survey form needs to be conducted at a range of different types of park/sites to determine the overall measure of visitor satisfaction to CALM managed recreation sites.

The Recreation Opportunity Spectrum (ROS) is a useful planning framework which provides a stratified means of selecting parks/sites to conduct the survey. Recreation areas are categorised into one of three ROS classes; primitive, intermediate or developed. The appropriate ROS class for a park/site is determined according to the recreation site setting. This setting is described by four key factors which are access, visitation, on-site modification and management. These factors are listed in the Factors influencing ROS Classification table (see Appendix V) which provides guidance in determining the ROS class category for each park/site.

The ROS Classification Matrix (see Appendix VI) lists the number of parks/sites in each ROS class where the survey will be conducted for each CALM region. The number of survey sites for each region has been determined using several parameters such as the number of visits and recreation sites in each region (see Appendix VI for further details). This matrix lists the minimum number of sites where the survey is to be conducted, but further survey sites in each region is encouraged. The region/district is to nominate the specific park(s)/site(s) where the survey will be conducted according to this matrix.

It is at the discretion of the region/district to determine whether the survey is conducted across an entire park or at a recreation site within a park/recreation area. When deciding upon the survey area, it is important to note that the results obtained will generally be indicative for the survey area only (although visitors to a site may choose to comment on the entire park or recreation area).

10.2. Sample size: How many surveys should be completed?

Statewide

The total of 1470 survey forms will be completed each year, taken from all the recreation/tourism sites chosen to conduct the survey. There will be a minimum of 21 parks/recreation sites across the State conducting the survey, with an absolute minimum of 70 survey forms completed at each park/site during the year.

Individual park/site

The 70 survey forms (minimum) completed at each park/site are collected during two survey periods within a year, therefore 35 completed survey forms are required each survey period. The survey period is discussed in further detail later in the chapter.

The completed survey forms are collated to determine the Visitor Satisfaction Index (VSI) for each park/site for the year. The VSI is a percentage derived from the aggregation of results of question 3 and 6 on the survey form. The sample size needs to be increased if a more detailed analysis of the results is required (eg. a comparison of the VSI between people from Western Australia, interstate and overseas would require a minimum sample size of 90 completed survey forms).

Each park will receive 200 survey forms from the VISTAT Co-ordinator, with further supplies provided where necessary.

10.3. Timing and frequency of surveying: How often does the survey need to be conducted?

Statewide

There are four set survey periods throughout the year:

- December- January
- March - April
- June - July
- September - October

Individual park/site

The survey should be conducted during two of the four survey periods each year. This allows general comparisons to be made about visitors to the park/site at two different times of the year.

The two survey periods chosen to conduct the survey (from the months given above) should also be two different times of the week or year as follows:

- Week days or weekend days
- Days within or outside of a school holiday period
- Days during the season of peak use or off-peak use

This will increase the chance of obtaining a representative sample of park/site visitors considering seasonal, weekly and daily variations in visitor use patterns.

Note: Remember that the results which provide information about visitors to a recreation site apply only to the survey period and survey results cannot be extrapolated outside this period with any degree of confidence.

The duration of the survey should be one of the following:

- For one or two days for a set 8 hour period (eg. between 10am-6pm or an 8 hour period during the day when the majority of use occurs). This may be best suited where surveys are handed out at an entry point to a park/site or where volunteers/students are conducting the survey.
- For a number of consecutive days for a shorter period at different times (eg. 10am-12pm Monday, 12-2pm Tuesday, 2-4pm Wednesday etc). This may suit staff who conduct surveys while completing other duties such as collecting camp fees.

10.4. Surveying technique: How should the sample of survey respondents be selected at each park/site?

The survey form should be handed to all visitors at the park/site during the chosen survey periods. Where there is a large group of visitors at a park/site, the survey should be offered to each member of the group, but if this is not practical a smaller distribution will suffice.

Note: Only those visitors entering the site for the purpose of recreation/tourism should be handed a feedback form. Anyone working at the site or visiting for business purposes is not considered part of the survey population.

10.5. Surveyor briefing: What does the person conducting the survey need to know?

Visitors will be encouraged to complete the survey form if the person conducting the survey explains the purpose of the survey with a BRIEF introduction, such as:

G 'day/Good Morning/Good Afternoon
My name is [NAME]. I work for the Department of Conservation and Land Management. We are interested to know if people enjoy their visit to [NAME OF SITE]. Would you mind taking a few minutes at the end of your visit today to fill out this feedback form? This information can be used to help us improve the management of this area. You also have the chance to win a prize.

You may wish to mention how the respondent can return the survey on completion - hand back to surveyor, place in the box provided or post to CALM.

Please also note the following when conducting the survey:

- ✓ Keep the survey introduction brief so as to minimise bias in a visitor's response.
- ✓ An enthusiastic and appreciative manner when asking for a visitors feedback to complete the form may increase the response rate.
- ✓ Use the term 'feedback form' rather than 'survey' when introducing the form - people generally don't like the word!
- ✓ Suggest that the visitor complete the form near the end of their visit so as to obtain maximum opportunity for feedback.
- ✓ Do not persist where a visitor does not wish to complete the form.
- ✓ A CALM name badge (or other identification) will help to reinforce your identity when greeting or approaching visitors.
- ✓ An incentive handed to the visitor with the form may increase your response rate (eg. sticker for children).
- ✓ You may wish to have some pencils handy to offer visitors to complete the form.

11. OBSERVATION STUDIES

Observation studies are very useful to understand visitor patterns of behaviour such as activities carried out, which sites are being used and the times and seasonality of use. In addition, observation studies and counts can provide a basis for estimating the number of visitors to a particular location when no other method is possible. Some estimates made by staff through this methodology have proved to be quite accurate in that traffic counter devices installed at a later stage confirmed the estimates and assumptions made.

Observation counts give you the number of people present at one time in a particular area. To facilitate counting large numbers of people in a site, one way is to group them into activities carried out, as the example below shows:

Name of site ---------- Baden Powell ---------- **Date** 23/10/1999

Time 11.00 **Day of the Week** ---------- Saturday ---------- **Weather conditions** ---------- Fine ----------

Activity	No. of People observed	Comments
swimming	23	
canoeing	5	
walking	10	
relaxing	7	
cycling	28	organised bike group/club
Total number of people observed	**73**	

Over time these observations form a pattern and seasonal use trends will begin to emerge (ie. weekday-weekend trends, public holiday patterns, Summer-Winter patterns and so on). You may also detect particular user groups and their usual patterns in the park/area. The standard form for recording observations is presented in Appendix I (see page 39).

To illustrate this and the methodology followed to estimate the total number of visitors to an area, the following example was obtained from Marmion Marine Park:

Marmion Marine Park Estimation of Total Visits

Water activities			
Boat Launches	HILLARYS	22,094 x 3.5 persons on board	77,329
Boat Launches	OCEAN REEF	7,100 x 3.5 persons on board	24,850
Beach Fishing			20,000
Surfing			52,000
Wind Surfing			1,200
Jet Skis			1,500
		Sub-Total	**176,879**
Beach activities	JUL/AUG/SEP	(92 days x 900 visits/day)	82,800
	OCT/NOV	(61 days x 3,500 visits/day)	213,500
	DEC/JAN/FEB	(90 days x 6,500 visits/day)	585,000
	MAR/APR	(61 days x 5,000 visits/day)	305,000
	MAY/JUN	(61 days x 1,500 visits/day)	91,500
		Sub-Total	**1,277,800**
		TOTAL	**1,454,679**

As long as all assumptions made are explained or justified, this method of estimating total visits to an area is a valid method and should be used whenever other methods are not available or possible.

Some areas can be more difficult or complex to evaluate, as for example in high 'turn over' areas where visitors only spend short periods of time. New visitors who arrive or are just passing through the area may therefore be missed by the observation counts. In other cases visitors may not be seen at all at the time of the observation. In such instances, using more than one method to estimate numbers may prove helpful, such as a visitor survey to find out how long visitors spend in an area and where they go to. This will help determine 'turn over' rates and which locations to include in the estimates.

The example for Matilda Bay Reserve in Appendix VII illustrates how this can be achieved.

12. DATA OWNERSHIP AND SECURITY

Even though each local district accesses its own datasets and wherever possible is responsible for updating and maintaining its VISTAT database within RATIS, the data is corporate and should be regarded as any other corporate database with the same rules that apply to such data.

Requests for VISTAT information from the public or other organisations/agencies should be referred to the VISTAT Coordinator Luisa Liddicoat, who deals with such requests.

All VISTAT data is auditable, given that it generates most of the Department's performance indicator measures for the Recreation and Tourism Program. Therefore, for audit purposes and also for future reference, any raw field data reports used to produce figures, graphs and tables for the Annual Report must be kept on file for inspection/verification if required, together with all the hard copies/printouts from the traffic classifiers, done on a monthly basis for each monitored site. You are not required to do back ups of your database, as the RATIS administrator manages that aspect of database maintenance.

Each cost centre will be able to access, input and modify their own records, but only view other cost centres' datasets, without being able to change them. A password will be issued to all cost centre users. To obtain the password to access VISTAT from RATIS, please contact Matt Sapsworth at CALM Como on (08) 9334 0119.

13. FURTHER READING

Auditor General (1998) *Listen and Learn; Using customer surveys to report performance in the Western Australian public sector*, Report No 5 - June 1998, Office of the Auditor General, Western Australia.

Eagles, P. Hornback, K.E. and Macintyre N. (1999) *Best Practice Guidelines for Public Use Measurement and Reporting at Parks and Protected Areas*, IUCN.

Pitts, D (1986) *A Field Manual for Basic Visitor-Use Monitoring*, prepared for the N.S.W. National Parks and Wildlife Service by Parkplan Australia.

The National Parks Service, Victoria (1996) *National Data Standards on Protected Areas Visitation,* ANZEEC Benchmarking and Best Practice Program.

Tourism and Recreation Research Unit, Edinburgh (1983) *Recreation Site Survey Manual; methods and techniques for conducting visitor surveys*, E. & F.N. Spon, New York.

Webb, D (1999) *CALM Visitor Satisfaction Survey Development Project*, University of Western Australia.

APPENDICES

APPENDIX I - Standard Data Collection Forms

for Conventional and Pedestrian Counters

TRAFFIC COUNTER RECORDING SHEET

DISTRICT _____ MONTH AND YEAR _____ *Please use this space*

PARK/FOREST/RESERVE _____ *to count no. people/car:*

LOCATION OF COUNTER _____

Please tick appropriate box :

Counter registers one count per vehicle, on the way in only ☐

Counter registers one count per vehicle, on the way in and on the way out (figures need to be divided by 2) ☐

Counter registers two counts per vehicle (two axles), on the way in only (figures need to be divided by 2) ☐

Counter registers two counts per vehicle (two axles), on the way in and on the way out (fig. need to be divided by 4) ☐

Please tick appropriate box :

COUNTER TYPE

Pneumatic ☐

Induction Loop ☐

Pedestrian/trail ☐

Other_____ ☐

Average No. People/Car Observed: ☐

DATE	TIME	RECORDINGS - Previous month final counter reading = T.COUNTER READING	DIFFERENCE	No. Buses	No.Passengers in buses	Staff trips	Other(eg.Business, deliveries,Shire,etc.)			COMMENTS
1										
2										
3										
4										
5										
6										
7										
8										
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1. **MONTHLY TOTALS=**

Divide above figure by : = _____ 4. Car Visitors = C x Av./car = **CV** = _____

2. ADJUSTED TOTAL (less staff & other trips) _____ 5. **Total Visitors** = CV + Total Bus pass. = _____

3. CARS ONLY (less Buses) = **C** = _____

Note: If you have access to the CALMweb please enter the required figures on screen as in Figure 4, E to H (see page 24) and Q and R for pedestrian counters (see page 25). If you don't have access to the CALMweb please return completed forms to the VISTAT Coordinator, Luisa Liddicoat, at CALM Como or Fax: (08) 9334 0253.

VISITOR ACTIVITY OBSERVATION SHEET

Park/Forest/Reserve ______________ District ______________

Weather conditions ______________ Temperature (approx.) ______________

Date ______________ Day ______________ Observer's name ______________

Recreation Site/Area ______________

Time observed (am/pm) ______________

Activity	No. of People Participating

Comments

Recreation Site/Area ______________

Time observed (am/pm) ______________

Activity	No. of People Participating

Comments

Recreation Site/Area ______________

Time observed (am/pm) ______________

Activity	No. of People Participating

Comments

Recreation Site/Area ______________

Time observed (am/pm) ______________

Activity	No. of People Participating

Comments

APPENDIX II - Other Information on Traffic and Pedestrian Counters

Where to install the counter

1. Traffic counters are best suited to areas with predominant vehicular traffic and limited number of entry/exit points.
2. They should not be used where it is possible to drive around the loop or tube and preferably not in a road bend, as this could give incorrect readings (although some sophisticated models allow for this).
3. Generally, loops are located on the entry side of the road. With tubes, it is desirable to stretch the tubing across the whole width of the road, so that no traffic is missed. However, there are situations when this is not necessarily so. Use your judgement of the area and the circumstances to assess each case, as there are not set rules on this particular situation.
4. Traffic counter units should not be located in a conspicuous spot.
5. Choose a shady position for the counter.
6. All counters should be attached to something immovable.
7. Induction loops need a hard surface, although they can also be buried on unsealed roads.
8. Several permanent loops can be installed at different locations and then the counters can be moved to those locations.

On Gravel Roads:

- After installing the loop and backfilling the hole, if the road is not sufficiently compacted, use a cement stabiliser to compact the soil.

- If a road is going to be sealed in the near future, it is a good opportunity to install a loop prior to the sealing of the road.

On bitumen roads, you will need to backfill and re-seal the slot.

How to Install the Inductive Loop Counter

With each inductive loop counter you should have:

✓ Loop wire (30m);
✓ 2.5m of heavy galvanised chain; and
✓ Padlock.

You will need:

✓ Batteries
✓ A diamond or abrasive saw to cut slots on the road.
✓ A sealant, where specified in instructions.
✓ Conduit pipe/wide tape where specified in some models.
✓ Nails, where specified in some models to help install the loop.

Batteries

Batteries need to be purchased from local district funds. Please monitor the battery life.

Loop Wire
Follow instructions in manufacturer's manual.

Chain and Padlock
Use the padlock and chain to secure the instrument to a fixed point (eg. tree, post, building, gate, etc.) and to lock the lid of the counter. After linking the chain to the fixed point, the two ends of the chain should be attached to the padlock at the lid cover lock. Some models have a separate eyelet for the chain.

Instructions for Diamond Counter Model TT-41-D – Inductive Loop Type

Suggested installation procedure for inductive loop sensors in rigid or semi-rigid pavements.

1. The slot size for the inductive loop shall be 20mm wide x 50mm deep, with the overall loop dimension 2 metres along the roadway length x 1.5 metres across, in the middle of each lane.

   The roadway shall be slotted using a diamond or abrasive saw. The slots shall be overrun so as to be full depth at all corners. Before cables are placed, the slot shall be blown dry so that no moisture, dust, oil or other foreign matter remains in the slot. The cable shall be installed at the bottom of the sawcut so that there are no kinks, curls or stretching of the cable. Care should be taken not to damage the insulation when placing the cable. Metal implements such as screwdrivers shall not be used to seat the cable down. When the cables have been placed, the slot shall be sealed with sealant to the top of the pavement with care taken not to overfill or spill the sealant on the pavement surface.

2. Each loop installation shall comprise 3 turns of cable. Sealants for saw cuts shall be a two part bituminous epoxy sealant such as Epirex 24 (Note: this may not be required) or equivalent, of such consistency as to be readily poured into the saw cuts at a temperature not exceeding 60°C. The local agent for Epi-rez in WA is:
   Mr Graeme Northrope
   Epi-rez
   Unit 5, 176 Start Street
   CARLISLE WA 6010
   Note: (address may be out of date)

   Epi-rez recommend a 40% mixture of sand (Quartz aggregate 2) with the epoxy. Medium grade sand blasting sand will be acceptable and can be obtained at low cost.

3. The cable shall be twisted from the loop to the counter at the rate of 6 twists per metre and protected by conduit.

4. Where the counter is located at distances greater than 2 metres from the roadside, please use a screened two pair lead in cable to the counter. Make sure the two cables are soldered and insulated. Insulation may comprise heat-shrink tubing or 3-M self-vulcanising tape. It is preferable to make the join in a weather-proof junction pit.

5. For connection of loop to counter, follow instructions inside the counter.

Instructions Inside the Counter

1. Loop Connection:

An external socket and matching plug is provided for loop installation. If you have previously installed a connector for a Safetran LOC 355 or Stevens CV510L counter, you will not have to change connectors on the loop leads. The Tally Counter 41 uses the same connector. If you need to connect the matching plug to loop lead, solder the two GREEN wires extending from the connector to the two loop leads. Insulate the connections with a watertight insulating material. The RED and BLACK leads are for triggering an external device as described in the next section. With plug connected to loop, remove protective cap from external socket and insert plug. Tighten locking ring for secure connection.

2. Connecting an External Device:

The RED (positive) and BLACK (negative) leads on the external plug area are for triggering an external device from the Tally Counter 41. Devices having trigger voltages up to 20 volts and current draw of up to 150 millamps can be used. Inductive loads are allowed. This trigger gives a .1 second positive to negative pulse for each count on counter. To connect an external device to the Tally Counter 41, connect the positive lead to the RED lead and the negative lead to the BLACK lead of the external plug. You may have to use a voltmeter to determine the polarity of your device leads. If you don't have a voltmeter, you can make the proper connections by first connecting only one lead to the plug. Next, momentarily touch the other lead to the plug. If the external device is activated, the leads are reversed.

Operating Instructions

1. After completing the above installation procedure, the Tally Counter 41 is ready for operation. The following describes operation of the Tally Counter 41.

2. Detector Reset:
   To fast tune the loop detector to the loop installation, press the button for one to two seconds and release. For loops having an inductance of 70 to 500 microhenrys, the detector will tune within 20 seconds after release of button.

3. Adjustable Time Delay:
   This delay is provided to allow the operator to adjust the detector to eliminate multiple counts from certain type trucks (example a utility truck hauling a telephone pole). Time delay is adjustable from 1/10 of a second to approximately 4 seconds with the delay time adjustment knob on panel. The "S" and the "L" are for short and long delay times. The delay time is shown by the panel light when the switch marked "Light" is in the "On" position. Light should be turned off after to conserve the battery when not needed. The light of a properly adjusted time delay will turn off after the last truck's trailer axles have crossed the loop. This will assure a count for a vehicle close behind a truck.

4. L.C.D. Resettable Counter:
   This counter will show the vehicle count registered by the loop detector. To reset the counter to zero, press the small red button on the counter housing. Note that during installation and tuning operations, the counter will show one or two counts. The counter should be reset after loop detector is tuned to keep false counts from being registered.

5. If you have an Omni Data Pod, plug into socket marked "Count On" on face panel.

Instructions (Inside Counter) for Traffic Tally 77 – Pneumatic Tube Type

"D" cell flashlite batteries: Install 8 alkaline "D" cells in battery clip. Battery life is about 18 months.

Rechargeable batteries: Recharge battery once per year, preferable in the fall, for 8 hours using a Diamond Traffic Product charger or a charger with 9 volts D.C., 1 amp. to 2 amps. output. Do not leave the battery on the charger longer than 8 hours unless the charger has trickle charge (float) provision.

Lantern Batteries: Install two NEDA type 915 batteries. Battery life is about 18 months.

Divide by 1/Divide by 2 switch

In the divide by 1 position, the counter will increment for each and every axle that passes over the road tube.

In the Divide by 2 position, the counter will increment one count for every two axles that pass over the road tube.

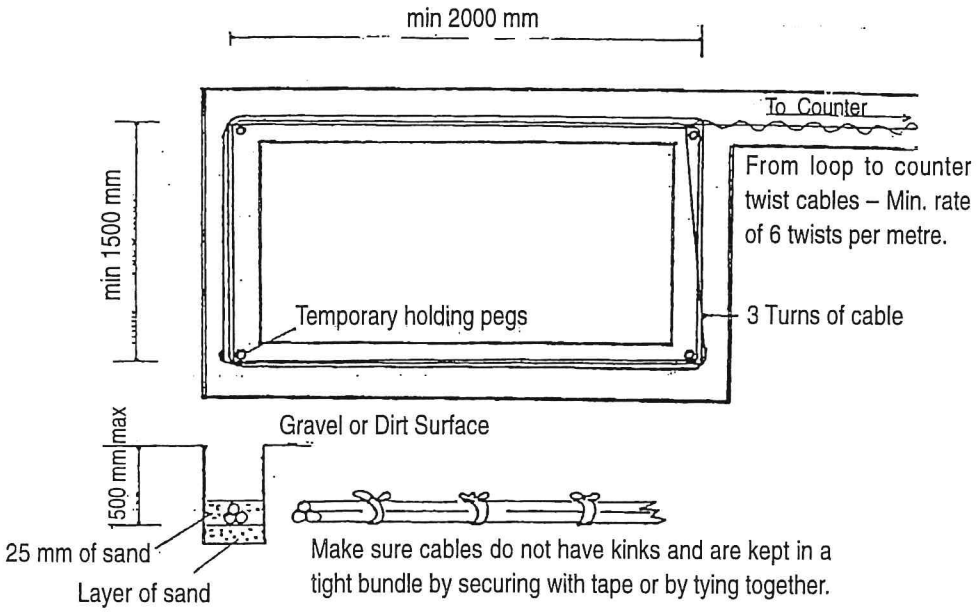
LOW SPEED POSITION: Use this setting to help reduce multiple counts caused by vehicles turning across road tube such as an intersection. Speed range 1 thru 40 MPH.

HIGH SPEED POSITION: This is the normal setting. Use this setting for counting traffic under all conditions except where vehicles cross the road tube at an angle. Speed Range 5 thru 80 MPH.

Connecting road tube:

Install road tube across the road using suitable devices to hold tube in place. Attach the tube to the counter.

Inductive Loop Installation for Gravel Roads



- Mark out a rectangle in the centre of the road, approximately 2000 mm x 1500 mm (note this is the minimum size).

- A mattock is an ideal implement for excavating the trench, as the width of the mattock allows ample room to place the cables.

- Excavate the trench to a depth of 200 mm. This will allow for 50 or 60 mm of sand in the bottom of the trench to guard against stones, etc damaging the cable.

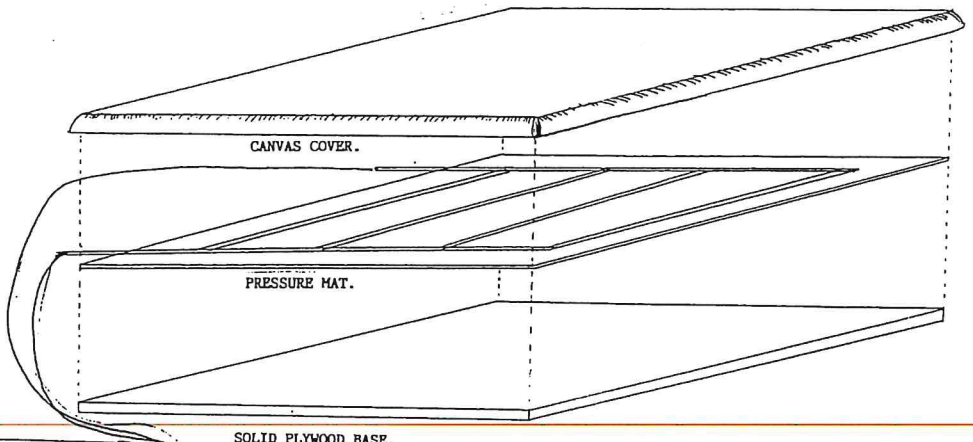
- Four temporary pegs placed in the middle of the trench as per diagram will allow the cable to be laid in the centre of the trench and to be held in place while it is being tied (Note: flagging tape works well in tying the cables together).

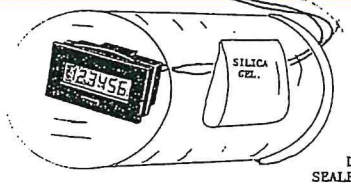
- Before placing cable in trench it will need straightening. This is accomplished by laying out the desired length of cable along the road and holding a rag firmly around the cable. Run this along the entire length several times.

- When laying the cable in the trench, it is a good idea to start with the free end. There is no chance of wastage this way.

- Cover the cables with more sand (carefully removing the pegs) and then back fill with gravel. Cement dust can be used to consolidate the gravel. Tamp down well (or use the expensive epoxy resin as per instruction sheet).

Trail Counters





DIGITAL COUNTER SEALED IN GLASS JAR

The pressure mat is simply strips of metal contact hermetically sealed in plastic. The pressure mat is then connected to a digital counter. The counter is sealed in a suitable sized glass jar. A 100 gram bag of Silica Gel will help protect the counter from humidity and moisture.

The counter is light and two spots of silicon adhesive are sufficient to adhere the counter to the bottom of side of jar. (It is important to keep out moisture).

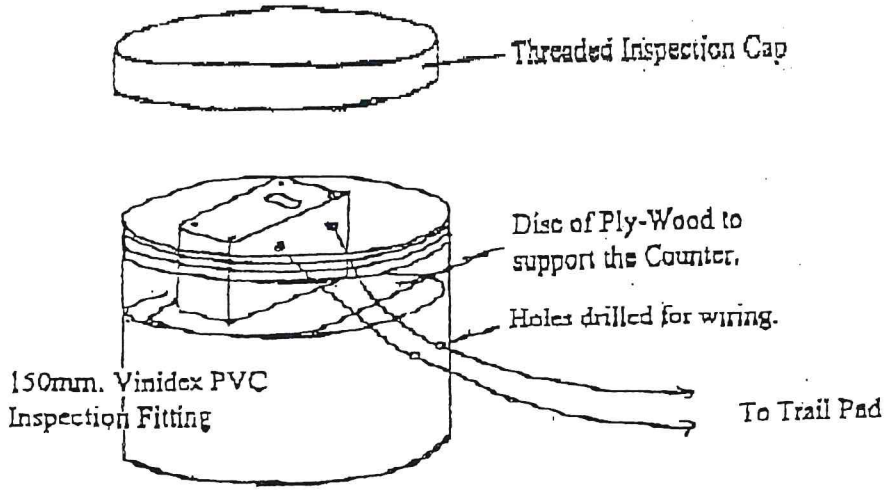
Fix the pressure mat on a suitable plywood base. Cover with canvas or similar protection. The canvas cover will help protect the plastic pressure mat from stones, etc. Once again silicon is a useful medium to seal the edges of the canvas.

When burying the pressure mat and glass jar it is important to select a reasonably dry site.

- Once the Pressure Mat has been attached to a firm base and wrapped in canvas, the Foot Pad and Counter are robust and reliable.
- If the Trail Counter and Foot Pad are installed as below, accurate and reliable information should follow.
- Most problems will be the result of moisture creating corrosion, usually where wires have been joined together. It is therefore imperative that after soldering connecting wires to the Pressure Pad, the soldered joints and any bare wire should be covered with a protective coating of Silastic.
- Likewise when attaching the Pressure Pad (via wires) to the Counter, ensure the joints are protected with Silastic, Putty or kept dry.
- The Counter is water resistant so that it can be buried to avoid detection by walkers. Experience has shown that if walkers can detect the Counter or Pressure Pad, it will get vandalised or stolen.

METHOD

- Bury the foot pads in a suitable section of path 50 to 100 mm in depth.
- Do not bury pads too deep as the contacts will not be compressed properly.
- Avoid heavy clay soils as they can set hard in summer months and prevent true counts.
- Place mats where the trail naturally converges so that walkers can not accidentally walk around them. Steps can be a good location.
- Extra Protection for Trail Counter.
  Mike Paxman, Ranger in Charge at Kalbarri National Park, has value added in an effort to keep the wire connections dry.



Place "Vinidex" Inspection Fitting in the ground, with Trail Counter, screw on lid and camouflage.

APPENDIX III
VISITOR SURVEY FORM

TELL US ABOUT YOUR EXPERIENCE!
Your feedback is important to us.

Hello

You are visiting an area managed by the Department of Conservation and Land Management (CALM).

We would like to know how you enjoyed your visit today. We hope you can spare the time to fill out this feedback form as you will be assisting us to manage the area. You will also have the chance to win a PRIZE (see details on inside back cover).

This feedback form will only take a few minutes to complete. Please drop it in the box provided, give it to a CALM Officer or send it back to CALM in the envelope provided.

Please fill out the form just before you leave.

Thank you.

Department of Conservation and Land Management

1 What was the MAIN purpose for your visit to this area today?

Please circle one number only in each row.

2 Please tell us the extent to which you agree/disagree with the following statements.

Please mark 'not applicable' (n/a) if the statement does not apply to your visit. We would appreciate other comments you may have.

STATEMENT	Strongly disagree						Strongly agree	n/a	COMMENTS
I enjoyed the leisure activities I participated in	1	2	3	4	5	6	7		What activities did you participate in?
The condition of the site was excellent	1	2	3	4	5	6	7		
The rangers and other CALM staff were helpful	1	2	3	4	5	6	7		
Road access and conditions were reasonable	1	2	3	4	5	6	7		
The facilities were well managed (quality & cleanliness)	1	2	3	4	5	6	7		
I thought this was an attractive natural area	1	2	3	4	5	6	7		Why?
Features such as walking tracks, lookouts and boardwalks were well maintained	1	2	3	4	5	6	7		

3 How did you feel about your visit today?

Extremely displeased						Extremely pleased
1	2	3	4	5	6	7

4 To what extent do you agree/disagree with the following statements about your visit?

STATEMENT	Strongly disagree						Strongly agree	n/a	COMMENTS
The facilities provided were ideal (type, location and number)	1	2	3	4	5	6	7		Please elaborate:
This area provided a sense of adventure	1	2	3	4	5	6	7		
Sufficient information was provided about the area (such as signs and brochures)	1	2	3	4	5	6	7		
Being here I felt close to nature	1	2	3	4	5	6	7		
Areas such as this provide solitude and isolation	1	2	3	4	5	6	7		
Features of cultural/historic value were well preserved *(where applicable)*	1	2	3	4	5	6	7		
I saw evidence of environmental degradation (eg. erosion, littering, vandalism)	1	2	3	4	5	6	7		Please specify:
My visit provided value for money	1	2	3	4	5	6	7		
The information provided was useful	1	2	3	4	5	6	7		

5 How could we MOST improve your next visit?

6 How would you rate your visit overall?

Much worse than expected						Much better than expected
1	2	3	4	5	6	7

Please tell us a few things about yourself. It will help us to better understand our visitors.

Please tick one box and answer for yourself only.

7 To which age group do you belong?

- Under 15 ☐
- 15-24 ☐
- 25-39 ☐
- 40-59 ☐
- 60 & over ☐

8 Are you?

- Male ☐
- Female ☐

9 How many times a year do you visit this park/area?

- First visit ☐
- Less than once a year ☐
- Once a year ☐
- 2- 5 times a year ☐
- More than 5 times a year ☐
- On a weekly basis ☐

10 From where are you visiting?

- Live locally ☐
- WA Country ☐
- WA Perth Metro Region ☐
- Interstate ☐ Please state which state: _____
- Overseas ☐ Please state which country: _____

11 Are you visiting?

- By yourself ☐
- With friend(s) and/or family ☐
- With a school group ☐
- With a club or organisation ☐
- As part of a commercial tour ☐
- Other (please specify) _____

12 How did you first find out about this park/area?

Please tick one or more.

- Word of mouth ☐
- Tourist bureau ☐
- Tourist magazine/map ☐
- Radio/newspaper ☐
- Local knowledge ☐
- Don't recall ☐
- Other (please specify)

Thank you very much for taking the time to complete this survey.
Have a safe journey.

date

Would you like to be in the running for a great PRIZE?

You have the chance to win one of five annual subscriptions to *LANDSCOPE*, WA's conservation, wildlife and forests magazine.

Just fill in your name and address below (please print clearly), detach from the questionnaire form and return both to the box provided or to a CALM Officer. The draw will take place on [date] and the winners will be notified by mail.

Name _____

Address _____

_____

_____

Good luck in the prize draw!

Please note that your name and address will only be used for the competition and will not be linked to your feedback form.

APPENDIX IV - Summary of Methods for Conducting Field-based Questionnaire Surveys

SURVEY SITES

- The *ROS Classification Matrix* (Appendix VI) lists the number of sites to be surveyed within each CALM region according to one of three ROS classes; primitive, intermediate or developed.

- The region/district is to nominate the specific parks/sites where the survey will be conducted within the confines of the *ROS Classification Matrix.*

- The *Factors influencing ROS Classification* (Appendix V) provides guidance in determining the appropriate ROS class category for each park/site to be surveyed.

Note: The matrix lists the minimum number of sites where the survey is to be conducted in each region, but further survey sites are encouraged.

SAMPLE SIZE

- a total of 1470 survey forms will be completed each year, from a minimum of 21 recreation/ tourism sites across the CALM estate.

- an absolute **minimum** of 70 survey forms will be completed at each park/site during two survey periods each year (which is 35 completed survey forms each survey period).

- completed survey forms are collated to determine the Visitor Satisfaction Index (VSI) for each park/site for the year. The VSI is a percentage derived from the aggregation of the results of question 3 and 6 on the survey form.

- each park will receive 200 survey forms from the VISTAT Coordinator for each survey period, with further supplies provided where necessary.

TIMING & FREQUENCY OF SURVEYING

- There are four set survey periods throughout the year:

  December - January
  March - April
  June - July
  September - October

- The survey should be conducted during TWO of the four survey periods (stated above) which should be two different times of the week or year as follows:

  Week days or weekend days
  Days within or outside of a school holiday period
  Days during the season of peak use or off-peak use

- The duration of the survey should be:

  - for one or two days for a set 8 hour period (eg. between 10am-6pm or an 8 hour period during the day when the majority of use occurs), or

  - for a number of consecutive days for a shorter period at different times (eg. 10am-12pm Monday, 12-2pm Tuesday, 2-4pm Wednesday etc).

SURVEYING TECHNIQUE

- The survey form should be handed to ALL visitors at the park/site during the chosen survey periods. Where there is a large group of visitors, the survey should be offered to each member of the group, but if this is not practical a smaller distribution will suffice.

SURVEYOR BRIEFING

- Keep the survey introduction brief so as to minimise bias in a visitor's response.

- An enthusiastic and appreciative manner when asking for a visitor's feedback to complete the form may increase the response rate.

- Use the term 'feedback form' rather than 'survey' when handing the form to a visitor - people generally don't like the word!

- Suggest that the visitor complete the form near the end of their visit so as to obtain maximum opportunity for feedback.

- Do not persist where a visitor does not wish to complete the form.

- A CALM name badge (or other identification) will help to reinforce your identity when greeting or approaching visitors.

- An incentive handed to the visitor with the form may increase your response rate (eg. sticker for children).

- You may wish to have some pencils handy to offer visitors to complete the form.

APPENDIX V -
Factors Influencing ROS Classification

Factor	ROS Class		
	Primitive	Intermediate	Developed
ACCESS			
Distance from nearest town	Over 80kms.	50-80kms.	Less than 50kms.
Access	Foot/Bicycle/4WD /limited 2WD.	2WD gravel.	2WD bitumen/public transport/bus & caravan access.
Parking Capacity	Up to 3 cars (non designated parking area).	4-10 cars and 2 buses (designated parking area).	Over 10 cars and 2 buses.
VISITATION			
No. of recorded visits per year	Less than 20,000 visits.	Between 20,000-80,000 visits.	Over 80,000 visits.
ON-SITE MODIFICATION			
Visual Impact/Facilities	Minimal, only those for conservation purposes.	Basic facilities eg. barbecues, pit toilet, picnic tables.	Modified site with large scale developments and/or substantial facilities.
Disabled access	No disabled access.	Site accessible with assistance to a degree.	Disabled facilities provided.
Information/ interpretation	Minimal, possibly site orientation.	Site/park brochure or information, panels.	Visitor centre, organised activities, display/information shelters.
Appropriate Use	Activities requiring little or no equipment eg. birdwatching, bushwalking, swimming, fishing.	Activities requiring equipment and/or vehicle access eg. vehicle based camping.	A range of activities.
MANAGEMENT			
Management presence	Irregular, as required (approx. once a month).	Regular (daily at certain times of the year, and at other times, once a week).	All year round, daily.
Visitor management	Subtle guidance eg. tracks.	Definition of use areas by provision of facilities eg. bollards to guide vehicles.	Provision of different access routes eg. vehicle, foot, bicycle and/or parking areas for different vehicles provided.

Note: The ROS class (primitive, intermediate or developed) for each park/site is determined where the **majority** of the factors are applicable to that park/site.

APPENDIX VI - ROS Classification Matrix and Methodology for Survey Sites

ROS Classification Matrix

	ROS Class			
CALM Region	Primitive	Intermediate	Developed	TOTAL no. of parks
Goldfields			1	1
Wheatbelt			1	1
Kimberley	1	1		2
Midwest			2	2
Pilbara		1	1	2
South Coast	1	1	1	3
Southern Forest		2	1	3
Central Forest		1	2	3
Swan			4	4
TOTAL no. of parks	2	6	13	21

METHODOLOGY FOR SURVEY SITES

The visitor survey will be conducted at a total of 21 recreation/tourism sites will conduct the visitor survey across the CALM managed estate.

The parks/sites chosen to conduct the survey have been determined using the following parameters:

- survey site/s in all CALM regions
- survey sites to be classified into one of the three ROS classes; primitive, intermediate or developed, with the number of sites in each class to be 10% (primitive), 30% (intermediate) and 60% (developed) of the total number of sites surveyed (21 sites).
- number of visits to each region (taken from 1998/99 VISTAT figures), see Table 1.
- number of recreation sites in each region (taken from RATIS), see Table 1.

Table 1

CALM Region	No. of visits 98/99 (% of total no. of visits to all regions)	No. of recreation sites (% of total no. of recreation sites)
Goldfields	86000 (1%)	11 (1%)
Wheatbelt	39000 (1%)	26 (3%)
Kimberley	186000 (2%)	53 (5%)
Midwest	689000 (8%)	64 (6%)
Pilbara	321000 (4%)	104 (11%)
South Coast	518000 (6%)	166 (17%)
Southern Forest	988000 (11%)	144 (15%)
Central Forest	2035000 (24%)	168 (17%)
Swan	3806000 (43%)	246 (25%)
TOTAL	**8668000 visits (100%)**	**982 sites (100%)**

The figures provided in Table 1 are used to determine the number of sites surveyed in each region as shown in the ROS Classification Matrix.

APPENDIX VII - An example of an Observation Study: a case study of Matilda Bay Reserve

Estimated total number of visits for 1998/99:

264,000

Introduction

Situated between Hackett Drive and the Swan River, Matilda Bay Reserve is a very popular recreation area for the Perth metropolitan area people in general, as well as local residents.

Numerous recreational activities are pursued by visitors on the reserve. These range from passive activities such as reading, picnicking or relaxing to cycling, jogging and various water sports on the foreshore. In addition, there is a constant influx of transient visitors from the adjacent University and, on special event days, such as Australia Day, the reserve is overflowing with people, as Perth residents crowd the Swan River foreshore and other vantage points to observe the fireworks display.

In 1990/91, an estimate of 400,000 visits/year was made for Matilda Bay, as part of the management planning process for the reserve. This figure was based on visitor survey data, Restaurant patrons and Yacht Club users.

As part of CALM's Swan Region VISTAT program, observation surveys commenced in November 1997 to provide a more accurate, up to date estimate of the number of visits to Matilda Bay.

The aim of this paper is to update the 1990/91 visitation figures to Matilda Bay Reserve in light of the new data available.

Method

Sources of data

To obtain total annual visits to Matilda Bay Reserve, the estimates were based on:

1. **Observation surveys** carried out by the Ranger mainly on weekends. Sampling is conducted at regular time intervals by recording the number of visitors and the activities they are engaged in, throughout the Reserve. To facilitate observation counts, the Reserve was divided into six survey zones, A-F (see map over).

2. **The 1991 Visitor Survey** carried out as part of the management planning process. Patterns of visitor use, namely length of stay, were established through this baseline survey.

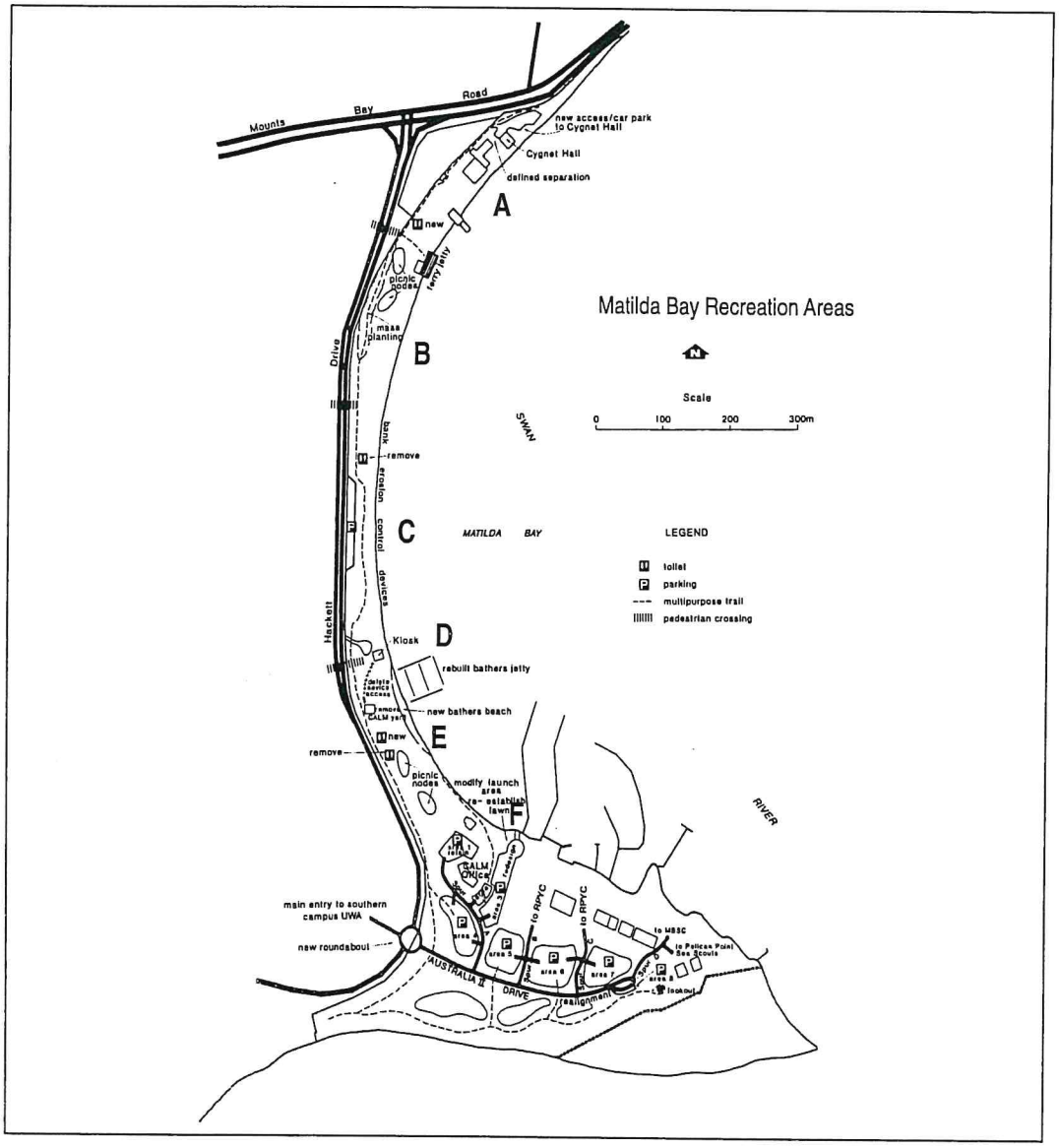
3. **Records of reserve bookings.** Large party bookings are recorded, although not all parties make a prior booking when using the Reserve. This estimate however conservative, gives an indication of group use which is another component of the total visitation.

4. **Discussions with kiosk staff** on visitor levels throughout the year and visitor patterns of use was very useful to complement existing knowledge.

It appears that Matilda Bay Reserve has two distinct seasons of visitor use levels during the year. The first consists of the late Spring-Summer-early Autumn months from October to April and is characterised by relatively high visitation levels. The second, from late Autumn-Winter months including May to September, has lower levels of use (Ranger surveys and discussion with kiosk staff).

There also appears to be different trends for weekdays and weekends/public holidays, as shown by the Ranger surveys. According to the management plan visitor survey, the 'turn over' rates are relatively high, as visitors tend to spend short periods of time in the Reserve, given the types of activities undertaken and reasons for visiting the area.

The following visitor use estimates have been derived from the latest Ranger survey results and reflect the patterns of visitation observed both in the 1991 survey and more recently.



Matilda Bay - Total Visits Estimation

1. Calculation of Average no. visits/day

Assumption 1: There are two distinct visitor seasons, a high Summer season and a low Winter season.

Assumption 2: Sundays and public holidays have similar visitation patterns and are busier than Saturdays and weekdays (also with similar visitation patterns).

These assumptions were made on the basis of Ranger surveys and discussions with kiosk staff.

RANGER'S OBSERVATION SURVEYS

A. Summer - Sundays and P.Holidays

Survey Time	No. Visits (Average)
8.30	129
9.00	118
10.00	379 (1 observation)
10.30	205 (1 observation)
11.00	249
11.30	323 (1 observation)
12.00	419
12.30	311
13.00	303
13.30	330
14.00	357
14.30	323 (1 observation)
15.00	305
15.30	315
16.00	134 (1 observation)

Ranger surveys show that the average number of people observed on a Sunday varies from 118 to 419. However, these surveys were carried out over very limited number of days and given the difficulty in accurately estimating the total no. of visitors at one time, the above averages are under estimates of the actual use that occurs on a typical Summer Sunday, as discussions with kiosk staff and Ranger suggest. This underestimation arises mainly from the vastness of the Reserve and the type of transient visitors/ activities undertaken, indicating high turn over rates, as visitors spend short periods of time in the Reserve. Also, peak usage occurs later in the afternoon. Therefore a median figure of 400 was taken as better representing the number of visits at one particular time for a typical Summer Sunday ***(Assumption 3).*** *As the turn over rate is 5 (see calculation 2.), the total no. visits/day* ***=2,000*** *for a Summer Sunday and a public holiday (400 x 5 = 2, 000).*

B. Summer - Saturdays and Weekdays

Survey Time	No. Visits (Average)
8.00	72 (1 observation)
8.30	81
10.00	72
10.30	103
11.00	136
11.30	95 (1 observation)
14.30	139 (1 observation)
16.00	139 (1 observation)

Data from very limited no. of observations, the median value used was 100, which is ¼ of Sunday use ***(Assumption 4).*** *As the turnover rate is 5, as calculated in 2, the total no. of visits/day = 500, for a Summer Saturday and a weekday (100 x 5 = 500).*

C. Winter - Sundays and P.Holidays

Survey Time	No. Visits (Average)
8.30	37 (1 observation)
9.00	15 (1 observation)
10.30	63
11.00	113 (1 observation)
12.00	122
12.30	166
13.00	178
13.30	64
14.00	152
14.30	184 (1 observation)
15.00	134
15.30	248

D. Winter - Saturdays and Weekdays

Survey Time	No. Visits (Average)
8.30	41
9.00	41 (1 observation)
9.30	34 (1 observation)
10.30	61
11.00	92
11.30	87 (1 observation)

*As the above data were obtained from limited no. of sample days and these were not spread out across the visitation season, nor the visitation hours, they are not entirely reflecting the Winter patterns of use. Discussion with kiosk staff and Ranger suggest that **160** and **100** visits at one time for a Winter Sunday and Saturday respectively, are a reasonable estimation for those days **(Assumptions 5 and 6)**.*

As a result, the following adjustments were made for turn over rates: 160 x 5 = 800 and 80 x 5 = 500.

2. Average Length of Stay and turnover rates

We know from the Visitor Survey the length of stay in the Reserve:

33% of visitors spend	0.75 hours	(0.33 x 0.75)	=	0.2 hours
15% of visitors spend	4 hours	(0.15 x 4)	=	0.6 hours
52% of visitors spend	2 hours	(0.52x2)	=	1.0 hours

Average length of stay (weighted) **1.8 (2 hours) =**

*Turn over rate of 5 each day (conservatively) **(Assumption 7).***

No. of Summer days	No. of Sundays and Public Holidays	No. Saturdays and Weekdays
Oct - Apr = 211 days	38	173
No. of Winter days	**No. of Sundays and Public Holidays**	**No. Saturdays and Weekdays**
May - Sep = 153 days	24	129

(Assumption 8).

3. Total Visits

38 days x 2, 000 visits	=	76, 000
173 days x 500 visits	=	86, 500
24 days x 800 visits	=	19, 200
129 days x 500 visits	=	64, 500
Sub-Total		246,200
Records of Party Bookings (the majority happen A/H)		12,323
Special Event Day (Australia Day Fireworks), estimate		5,000
TOTAL		**263,523**

Note: The figures below have not been included in the main calculations. Provided for information purposes only.

Matilda Bay Restaurant Patrons (95 to 98,000 Figure provided by Restaurant Manager)	98,000
Yacht Club users 950 x 52 =	49,500
	147,500

(Managing Secretary stated that the Club has 950 senior voting members + 650 country and other members and that there were weekly events in the Club. The 49,500 figure is a conservative estimate, as members can easily be accompanied by family members and friends and use the club more than once/week.

263,523 + 147,500 = 411,023 ~ 411,000

Discussion

The total of 264,000 visits a year calculated for Matilda Bay Reserve is a conservative estimate. The Reserve has a very busy pattern of visitor use throughout Summer, with recreation activities continuing in the evenings and well into the nights, with activities such as water sports and BBQs. Also, the turn over rates are high, as visitors tend to spend short periods of time given the type of activities engaged in and the reasons for visiting the Reserve, according to the visitor survey.

In addition, there is a constant flow of transient visitors from the adjacent University, who cross the Reserve or park their cars along the road side and these have been excluded from the calculations. Also excluded from the figure were the Restaurant patrons and Yacht Club and Sea Scout users, as they are part of separate lease arrangements within the Reserve. The previous 1991 estimate of 400,000 included those users.

The Ranger observation surveys, however limited, have provided the basis to update the 1991 estimate. These observations will continue in 1999/2000, when more frequent and spread out data will become available to improve and update the existing figure.

APPENDIX VIII - Addresses of Suppliers of Equipment and Accessories

Supplier of MetroCount Traffic Classifiers, Solar Hats, Data Communications Lead, CD ROM Software Package and MetroCount Manual:

MICROCOM PTY LTD
1st Floor, Atwell Chambers
7 Cantonment Street
FREMANTLE WA 6160
or
PO Box 1182
FREMANTLE WA 6959
Ph: (08) 9430 6164
Fax: (08) 9430 6187

Prices per Unit:
Solar Hat $ 220.00
CD ROM $ 45.00
Data Lead $ 30.00
Manual $ 25.00

Supplier of accessories/fittings such as Road Nails, Clamps, Securing Tabs/Flaps and Steel Cleats:

TISCO
207 Railway Road
SUBIACO WA 6008
Ph: (08) 9381 6000
Fax: (08) 9388 1587
Contact: John McGregor

Comment: the prices they have quoted are cheaper than the ones quoted by Microcom for these items.

Supplier of deck spikes for gravel roads. There are probably many other suppliers, the following was the one we used:

AJAX FASTENERS
35 A Cowell Street
WELSHPOOL

Please contact us if you know of any others, so we can add them to this list.

Pedestrian Counters purchased from:

BALLINGER TECHNOLOGY
PO BOX 50
MORELAND PO COBURG
VICTORIA 3058
Ph/Fax: (03) 9386 6615

Suppliers of Traffic Counter Rubber Tube:

BEAVER MINING SUPPLIES
Perth
58 Clavering Road
BAYSWATER WA 6053
Ph: (08) 9271 3599
Fax: (08) 9271 3699

Bunbury
6 Beddingfield Street
PO Box 695
BUNBURY WA 6231
Ph: (08) 9725 6622
Fax: (08) 9725 6600

Suppliers of Batteries for Laptop Computers:

SIOMAR BATTERY INDUSTRIES
2 MacAdam Place
BALCATTA
Ph: (08) 9240 5000

Other Suppliers (please list your own local suppliers here)

1.

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