Western Australian Wildlife Research Centre

ATLAS OF THE WESTERN AUSTRALIAN FLORA

SIGHT RECORD SHEET

INSTRUCTION BOOKLET

by

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Please return completed sheets to

Flora Atlas

Western Australian Wildlife Research Centre, P.O. Box 51, WANNEROO W.A. 6065

Telephone enquiries : Ph. (09) 405 1555

1980

98373/10/80—500—H/1605

INTRODUCTION

The Atlas of the Western Australian Flora is a project initiated by the Western Australian Department of Fisheries and Wildlife. It aims to involve interested amateur and professional botanists in the collection of information on the geographical distribution and habitat of selected groups of native plants. Observations on the occurrence of species in Nature Reserves and National Parks are particularly sought. This information will be used to assess the conservation status of native plants and to stimulate appropriate action where species appear to be endangered. Apart from this valuable function, it is hoped that the Atlas will provide a meaningful and enjoyable reason for contributors to travel in the bush and learn about their native plants first hand.

Because of the large amount of information that the Atlas project will generate, it is intended to use computers as an aid to store the information and to rapidly retrieve desired tabulations and maps for particular species. This short booklet explains how to correctly complete a Sight Record Sheet. If these instructions are followed, your observations will be punched directly onto computer cards with a minimum of delay. All contributors will receive newsletters from time to time explaining how the Atlas is progressing.

Any questions about the Atlas should be directed to:

Flora Atlas
Western Australian Wildlife Research Centre
P.O. Box 51, WANNEROO W.A. 6065. Ph. (09) 405 1555.

COMPLETING A SIGHT RECORD SHEET

General Information

The information sought on each Sight Record Sheet is grouped under three main headings:

LOCALITY, HABITAT and SPECIES PRESENT

In total, this information includes the observers' initials, what plants were sighted, where, when and how many were sighted, whether they were in flower or not, what landforms, soils and vegetation they occurred in, and any other relevant notes on their biology or habitat.

When completing the Sight Record Sheet always use BLOCK LETTERS when filling boxes and use only one letter per space provided. Dashed lines are for you to write on in your normal handwriting.

Write zero as 'Ø', letter 'i' as 'I', letter 'z' as 'Ƶ'.

This helps the punch card operators to punch your information correctly.

Accuracy needs to be stressed, so that information received and the maps generated from that information may be regarded as reliable.

1.0 LOCALITY

The place where you actually sight a species of plant is termed the 'record locality' throughout these instructions. The record locality is a particular point identified by you by latitude and longitude coordinates.

Only those species identified at a single record locality are to be entered onto the Sight Record Sheet. If you walk

outside a half kilometre square or into different habitat (e.g. from a hillslope to a creek bed) or vegetation (e.g. Jarrah woodland into Sheoak thicket) a new record locality is defined and a new Sight Record Sheet should be used.

1.1. Voucher Specimens

When you first record any species on a Sight Record Sheet, it would be desirable to collect, dry and label a voucher specimen and send it to the Western Australian Herbarium for verification. This will enable future botanists to confirm that you were using the correct name for species of interest on your Sight Record Sheets. Details required on labels of voucher specimens are plant name, habit (herb, shrub, tree etc.), flower colour or other features of note, associated vegetation and dominant species, soil, landform, collector's name, collection number, date of collection and locality of collection (preferably with latitude and longitude coordinates).

To be able to collect voucher specimens it will first be necessary to obtain a license for the taking of flora. Applications for such a license should be made to the Senior Clerk Flora, Department of Fisheries and Wildlife, 108 Adelaide Terrace, Perth.

1.2. Observer Code:

On receipt of an application form to become an observer for the Atlas of the Western Australian Flora, you will be issued with your own personal observer code. It is hoped that your initials will become your observer code, but a situation may arise when this is not possible. If such a situation does arise you will be issued with a three letter code as your observer code.

1.3. Date of Observation:

The sequence for entering the date is Year (Yr), Month (Mn), Day (Dy). All spaces must be filled in, those that are not filled by a number 1 to 9, must have a zero (Ø) entered.

1.4. Nearest Named Place:

The information to be entered here is the officially recognised name of a town, siding, mountain, lake or other land mark nearest to the record locality.

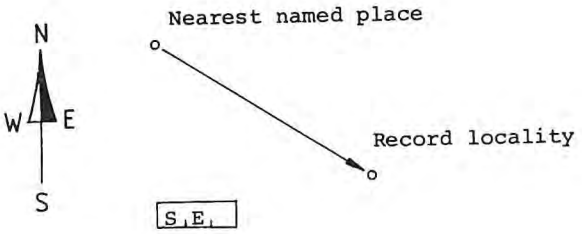
1.5. Air Distances from Nearest Named Place:

This particular box is not like all others, as it is filled in from right to left. For example, the distance from the nearest named place is either (a) 7 km; (b) 15 km, or (c) 124 km. These would be entered:

(a) | | | 7 | (b) | | 1 | 5 | or (c) | 1 | 2 | 4 |

1.6. Direction from Nearest Place:

The direction is FROM the nearest named place TO the record locality.

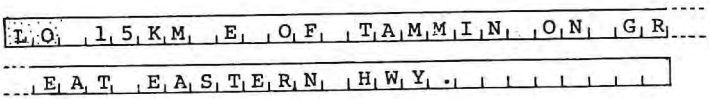


When entering this information, the standard form for the sixteen major compass points should be used; they are N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW WSW, W, WNW, NW, NNW and should be entered from left to right as follows:

1.7. Further Details of Location:

There are a number of conventions used when describing further details of location. Firstly, there is the plain word description (Example one below). Since it is frequently difficult to distinguish direct distance in a certain direction from distance along a road or river, the following convention should be adopted. Where distance is in a straight line from a named point, the distance should be entered first, followed by direction, followed by any additional qualifiers (see second example below). Where distance is measured along a road or a river the direction should be entered first, followed by distance, the road or river name, and any additional qualifiers, (see third example below); the use of the word 'along' is recommended in such a case.

Abbreviations for some words, such as Road (Rd), may be used where space is limited, but consistency should be maintained.



1.8. Map Used:

Enter a two-letter code from the list of codes below to identify which map you used to obtain your latitude and longitude coordinates.

Code	Map	Scale
RD	Readers Digest *Atlas of Australia*	1:1 000 000
LS	Lands and Surveys *Travellers Atlas of W.A.*	1:1 000 000
FD	Forestry maps	
TF	1:250 000 Topographical (Army) Maps	1:250 000
NN	National Parks Nature Reserves Map	

1.9. Latitude:

This is the Southern component of the coordinates in degrees (^{o}), minutes ('), seconds ("), that define any record locality. Mainland Western Australia stretches between approximately 13^{o}44'00" and 35^{o}08'00" South; all latitudes given for mainland record localities should lie between these coordinates.

1.10. Longitude:

This is the Eastern component of the coordinates that define any record locality. Mainland Western Australia stretches between approximately 113°07'00" and 129°00'00" East; all longitudes given for mainland record localities should lie between these coordinates.

1.11. Resolution:

This indicates the degree of accuracy to which you have located the record locality on a map and given the latitude and longitude. Adjacent to the Resolution box (No. 18 of line 3) are the Resolution Codes. The numbers 1 to 7 are used to fill in the Resolution box depending on the degree of accuracy.

For example, you know that the record locality is definitely located within a 27 kilometre radius of the point defined by your latitude and longitude entries. As thirty minutes (30') is approximately 54 kilometres, you would enter Resolution Code 6 in the Resolution box.

If you were sure that the record locality was within a 450 metre radius of the point defined by your latitude and longitude entries, the Resolution Code to be entered would be number 3.

The table below sets out approximately the relations between Resolution Codes, Degrees and Distance.

Resolution	Degree	Distance
7	1°	108 km
6	30'	54 km
5	10'	18 km
4	1'	1.8 km
3	30"	900 m
2	10"	300 m
1	1"	30 m

1.12. Vegetation Restricted to Road Verge:

This item refers to the vegetation associated with the species observed. If the vegetation is restricted to the road verge only, that is if it is surrounded by cleared land, then enter 'Y' in this box.

If the vegetation is not restricted to the road verge, but stretches back into bushland then enter 'N' in this box.

1.13. Shire Name:

The dashed line beside Shire Name is to be filled in by you by writing in the name of the Shire in which the record locality is to be found. The Box title Shire Code is for office use only. A map (scale 1:1 000 000) of the South West Land Division showing shire boundaries and locations of Nature Reserves and National Parks will be provided to each Atlas contributor.

1.14. Reserve Name:

Reserves are areas of reserved Crown land set aside for a specific purpose, e.g., Nature Reserves, National Parks, Water Reserves. We would encourage you to search for plants in reserves as this will provide essential information on the conservation status of the species recorded. If the name of a reserve is known, e.g., Thompson Lake Nature Reserve, or John Forrest National Park, please write it on the dashed line. If the name of the reserve is not known, but you are sure that the record locality is on a reserve, write "sighting on reserve".

The boxes Reserve Number, Reserve Class are for office use only.

2.0 HABITAT

The vegetation, landform and soil that are associated with the species of plant being observed are collectively called the Habitat.

2.1. Landform:

To the right of the Landform/Aspect boxes are the Landform Codes. They are self explanatory. Simply match up the landform of the record locality with one of the categories described and enter the code in the Landform box. If none of the landforms described are suitable then enter (zero) for other, and describe the landform in Other Habitat Notes at the bottom of the page.

2.2. Aspect:

Note the way the land surface faces and enter it by using one of the sixteen points described in Direction from Nearest Place (p. 5). The convention used to enter Direction from Nearest Place also applies here.

2.3. Surface Soil:

Only information about the surface soil is required. If a deeper stratum of soil is known it may be entered in Other Habitat Notes at the bottom of the page. To the right of the surface soil boxes are Soil Type, Soil Colour Codes. Note the major soil type in the box titled Major; any secondary soil that is discernable note in the box titled Minor, and note the colour of the major soil type in the box titled Major Colour. If you feel that the soil type and/or soil colour of the soil at any given record locality does not appear in the choices available, enter (zero) in the appropriate box and describe the soil type/colour in the Other Habitat Notes at the bottom of the page.

2.4. Vegetation structure:

On the inside cover of the pad of Sight Record Sheets is a table entitled Vegetation Structure Classification. At first glance it may appear complicated but it is, in fact, very simple. The observer has to make only two choices, one the Lifeform/Height class (whether it is tree, mallee, etc.), and the other, percentage canopy cover of that Lifeform/Height class. As a rule of thumb for defining percentage canopy cover take the percentage of shade the canopy of a particular lifeform gives to the ground when the sun is directly overhead.

Having made the two choices it is a simple matter of following the horizontal Lifeform/Height Class line and the vertical Canopy Cover line to their intersection. The vegetation structure code (three characters) is to the left of the intersection.

VEGETATION STRUCTURE CLASSIFICATION

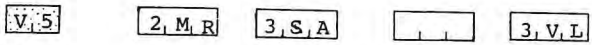
LIFE FORM/HEIGHT CLASS		CANOPY COVER			
		DENSE 1 70-100%	MID-DENSE 2 30-70%	SPARSE 3 10-30%	VERY-SPARSE 4 2-10%
TR	Trees>30m	1TR Dense Tall Forest	2TR Tall Forest	3TR Tall Woodland	4TR Open Tall Woodland
MR	Trees 15-30m	1MR Dense Forest	2MR Forest	3MR Woodland	4MR Open Woodland
LA	Trees 5-15m	1LA Dense Low Forest A	2LA Low Forest A	3LA Low Woodland A	4LA Open Low Woodland A
LB	Trees<5m	1LB Dense Low Forest B	2LB Low Forest B	3LB Low Woodland B	4LB Open Low Woodland B
KT	Mallee Tree Form	1KT Dense Tree Mallee	2KT Tree Mallee	3KT Open Tree Mallee	4KT Very Open Tree Mallee
KS	Mallee Shrub Form	1KS Dense Shrub Mallee	2KS Shrub Mallee	3KS Open Shrub Mallee	4KS Very Open Shrub Mallee
SR	Shrubs>2m	1SR Dense Thicket	2SR Thicket	3SR Scrub	4SR Open Scrub
SA	Shrubs 1.5-2.0m	1SA Dense Heath A	2SA Heath A	3SA Low Scrub A	4SA Open Low Scrub A
SB	Shrubs 1.0-1.5m	1SB Dense Heath B	2SB Heath B	3SB Low Scrub B	4SB Open Low Scrub B
SC	Shrubs 0.5-1.0m	1SC Dense Low Heath C	2SC Low Heath C	3SC Dwarf Scrub C	4SC Open Dwarf Scrub C
SD	Shrubs 0.0-0.5m	1SD Dense Low Heath D	2SD Low Heath D	3SD Dwarf Scrub D	4SD Open Dwarf Scrub D
PR	Mat Plants	1PR Dense Mat Plants	2PR Mat Plants	3PR Open Mat Plants	4PR Very Open Mat Plants
HR	Hummock Grass	1HR Dense Hummock Grass	2HR Mid-Dense Hummock Grass	3HR Hummock Grass	4HR Open Hummock Grass
GT	Bunch Grass>0.5m	1GT Dense Tall Grass	2GT Tall Grass	3GT Open Tall Grass	4GT Very Open Tall Grass
GL	Bunch Grass<0.5m	1GL Dense Low Grass	2GL Low Grass	3GL Open Low Grass	4GL Very Open Low Grass
JR	Herbaceous spp.	1JR Dense Herbs	2JR Herbs	3JR Open Herbs	4JR Very Open Herbs
VT	Sedges>0.5m	1VT Dense Tall Sedges	2VT Tall Sedges	3VT Open Tall Sedges	4VT Very Open Tall Sedges
VL	Sedges<0.5m	1VL Dense Low Sedges	2VL Low Sedges	3VL Open Low Sedges	4VL Very Open Low Sedges
XR	Ferns	1XR Dense Ferns	2XR Ferns	3XR Open Ferns	4XR Very Open Ferns
RR	Mosses, Liverworts	1RR Dense Mosses	2RR Mosses	3RR Open Mosses	4RR Very Open Mosses

* The appendix at the rear of this booklet defines the various life forms used in the vegetation structure classification.

There are four spaces provided for vegetation structure descriptions, from left to right they are to describe the structure from the highest stratum to the lowest stratum.

Example. To describe a particular vegetation structure which had Trees 15-30 metres tall with 30-70% canopy cover, Shrubs 1.5-2.0 metres tall with 10-30% canopy cover, and Sedges<0.5 metres tall with 10-30% canopy cover the form would be completed as follows:

Vegetation Structure



2.5. Dominant Species:

The dashed lines are for observers to write down the dominant species to be found at the record locality. If the most noticable and plentiful plants present were Jarrah and Marri, then these would be written out on the dashed lines. Common names and scientific names may be used, whichever the observer is sure of.

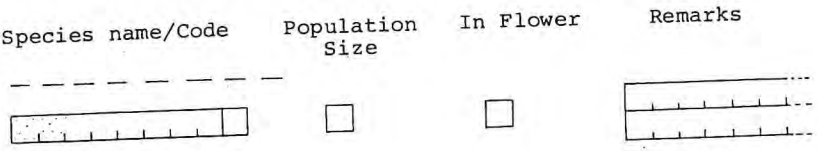
2.6. Other Habitat Notes:

Mention has been made of these boxes already in the discussion on Landform (p.9) and Surface Soil (p 9). As well as the examples mentioned in those discussions other notes about the habitat are to be entered here. For example if the habitat had been recently disturbed by bulldozers, or had been burnt then these would be noted in the Other Habitat Notes boxes.

3.0 SPECIES PRESENT

This section records all species of interest at the locality. If you are not sure of any species' name, Please don't guess. Leave it out or record the genus only and make notes about the uncertain species in the space for remarks. Collect a voucher specimen, if possible, and submit it to the Western Australian Herbarium for identification.

For every species of plant that you wish to note, one line of the species present section should be filled in. An individual species record thus consists of the following:



3.1. Species Name/Code:

When at the record locality write on the dashed line the name of the species of plant being observed. At some later time, carefully code the Species Code box by matching up the species code from the list of codes provided with the name you have written above the Species Code box. If you know that the particular species observed is a sub-species, then enter the relevant sub-species letter in box number 9.

3.2. Population Size:

Complete this box by inserting the appropriate code for the estimated population size for the species of plant being observed. The population size codes are

to the right of the Population Size box and are self explanatory, but it is better to under-estimate if you are unsure of the population size.

3.3. In Flower:

The Codes are above the In Flower box. If the plant population observed is in flower, enter Y in box number 11. If there is no sign of any flowers, enter N. If the plants are in bud but there are no flowers enter N in box number 11 and note in the Remarks box that the plants were in bud. If the plants are in bud, and there are a few flowers, enter Y in box number 11 and note in the Remarks box that the plants are in bud with a few flowers.

3.4. Remarks:

This box is available for notes of particular interest about the species being observed to be written in. The example of a plant or plants of one species being in bud has been noted. Other remarks could deal with insects, birds and other animals feeding on nectar, pollen, seeds and so on. Also notes on the distribution of the plant may be noted.

If the observer had seen a population of 40 orchids, *Caladenia flava*, which were in bud but not flowering the completed species present record would appear as follows:

Species name/code	Population size	In flower	Remarks
Caladenia flava			
0B1400019	2	N	IN BUD ONLY

If the observer locates more than twelve species of plant that are to be recorded from any one record locality, then she/he should proceed on to the next sheet in the pad, crossing out the LOCALITY and HABITAT sections with one diagonal line and continue recording the species located.

Attached is a completed form ready to send back to the Flora Atlas. The form describes a record location in Wongamine Nature Reserve, a woodland of Wandoo, Powderbark and Acacia, where three flowering orchid species were found on gravel/sand soils, and it was noted that the area had been recently burnt.

APPENDIX

Plant Lifeforms used in the Vegetation Structure Classification

Trees. Single-stemmed, or if multi-stemmed, with fewer than 5 individual trunks that result from branching of a single trunk (which may be quite short) and which do not arise from a mallee-like lignotuber.

Mallees. Multi-stemmed, the individual trunks arising from a lignotuber or swelling at the base of the stem, at or below soil-level.

Shrub mallee - less than 6-7 m tall, usually 5 or more trunks of which at least 2 do not exceed 10 cm - diameter at breast height.

Tree mallee - Usually 8 m or more tall, with fewer than 5 trunks, of which at least 3 exceed 10 cm in diameter at breast height.

Shrubs. Multi-stems and branches arise from a rootstock or very short common trunk. Lignotubers of the mallee type absent.

Mat Plants. Herbaceous or woody plants, prostrate and cushion-like. Densely compacted foliage, usually numerous very short stems. Rarely exceed 10 cm in height.

Hummock Grasses. Herbaceous grasses, have a typical mount-like form due to trapping of debris and soil within the stem bases.

Bunch grass. Herbaceous, rarely woody plants, generally erect or spreading, with distinct individual shoots arising from a single root system, or if not, then not forming a hummock.

Sedges. Generally of tufted habit. Arise from stolens, tubers, bulbs, rhizomes or seeds. See table to differentiate from grasses.

To differentiate Grasses and Sedges when not in flower:

Grasses	Sedges
Leaf sheath always split	Leaf sheath never split
Ligule present	Usually no ligule
Leaf always flat	Leaf not always flat
Stem cross section circular	Stem cross section circular, triangular or polygonal.
Evenly spaced internodes	Extended internode below infloresence.

Herbs. Herbaceous annual species are commonly erect, and, woody perennial species commonly creepers or climbers.

Some species are tufted. Foliage usually covers the majority of the branches in shrubby and creeping forms. May arise from stolens, tubers, bulbs, rhizomes or seeds, but usually not from lignotubers. Rarely exceed 0.5 m unless climbing form.

ATLAS OF THE WESTERN AUSTRALIAN ... SHEET ...

Western Australian Wildlife Research Centre

SIGHT RECORD SHEET

(Write zero as 'Ø'; letter 'i' as 'I'; letter 'z' as 'Ƶ')

LOCALITY

Observer Code: RC0ZSPH (1-7)

Date of observation (Yr Mn Dy): 8ØØ617 (8-13)

Nearest named place: TOODYAY (14-38)

Air distance from nearest named place: 12·4 (39-43)

Direction from nearest place: NE (44-46)

Further details of location: 10 NW, 2KM ALONG GRAVEL ROAD FROM BOLGART/NORTHAM RD. (1-52)

Map used: GD (1-2); RD (3-4)

Latitude: 31°30'30" (5-10)

Longitude: 116°36'ØØ" (11-17)

Resolution: Codes: 1=1" 2=10" 3=30" 4=1' 5=10' 6=30' 7=1° — 3 (18)

Vegetation restricted to road verge: N (19) Y=Yes N=No

Shire Code (20-22)

Reserve number (23-27)

Reserve class (28)

Shire name: TOODYAY

Reserve name: WONGAMINE

HABITAT

Landform Codes: 1=Hilltop 2=Steep hill slope (>20°) 3=Gradual hill slope (5-20°) 4=Valley bottom or swale 5=Rock outcrop 6=Flat 7=Winter wet swamp 8=Lake edge 9=Riverbank or dry bed Ø=Other

Landform: LF (1-2); 3 (3)

Aspect: SW (4-6)

Surface Soil: SL (1-2)

Major: 4 (3)

Minor: 1 (4)

Major Colour: B (5)

Soil Type: 1=Sand 2=Loam 3=Clay 4=Gravel 5=Stone Ø=Other

Soil Colour: B=Brown G=Grey K=Black R=Red W=White Y=Yellow Ø=Other

Vegetation structure: VS (1-2)

highest stratum: 3MR (3-5)

4SC (6-8)

3VL (9-11)

lowest stratum: 4RR (12-14)

Dominant species names

OS (1-2)

1 Wandoo (3-9)

2 Powderbark (10-16)

3 Acacia sp. (17-23)

4 (24-30)

Other habitat notes: HN RECENTLY BURNT (1-55)

	Population size codes	In flower	Remarks
Caladenia menziesii	1=1-10 2=10-50	Y=Yes	
0 8 1 4 Ø Ø 3 1	3=50-100	N=No	
1 2 3 4 5 6 7 8 9	4=100-500	Y	A FEW PLANTS ONLY IN FLOWER, RE
C. patersonia	5=500-1000	10 11	ST IN BUD.
0 8 1 4 Ø Ø 3 4 4	6>1000	Y	FULL FLOWER. SMALL BEES SEEN AT
C. gemmata gemmata	Ø=unknown		FLOWERS CARRYING POLLINIA.
0 8 1 4 Ø Ø 2 Ø A 2		Y	FULL FLOWER.
0 8			
0 8			
0 8			
0 8			
0 8			
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