

## A.C.T. HERPETOLOGICAL ASSOCIATION



18 March 1986

### ACT Herpetofaunal data collection

In 1985 the ACT Herpetological Association set up a standardised system for recording field observations of reptiles and amphibians in the A.C.T. This involved filling in either a habitat or species orientated data sheet each time observations were collected. Examples of these forms are enclosed with this newsletter for anyone who has not received them. At least some members of the HA have filled in a number of the forms so it would be a good idea to appraise their usefulness as soon as possible. If you have completed forms and would like to submit them to the HA could you bring them to the next meeting or post them to Klaus Henle or Will Osborne at the Department of Zoology, Australian National University, P.O. Box 4, Canberra, ACT 2601.

### Jervis Bay Survey

During the summer the HA in conjunction with the ACT Parks and Conservation Service commenced a survey of the herpetofauna of the Jervis Bay area. The survey was given a high priority because of the lack of information on the herps of the JB area and because of the recent proposed changes in land use (see enclosed newspaper cutting). Three successful trips were made to JB to survey frogs and to establish pit trap-drift fence systems. However a fourth trip was attended by one lonesome member only (MB)! Whilst initial enthusiasm was shown for the survey it is disappointing that so few people could make it down for a weekend. Some of us from the Zoology Department are planning to carry out some opportunistic searching of different habitats at Jervis Bay in April. REB is also taking 2nd year students on a collecting trip so hopefully further observations will be made before the weather cools.



## Meetings and talks

It is proposed to continue with monthly meetings at the Department of Zoology. We need to arrange for suitable talks by different people for these meetings. If you would like to give a talk on some aspect of herpetology could you please contact WO or KH on 494268 Or 494074.

The next meeting of the ACT Herpetological Association will be held at the Department of Zoology downstairs on *Wednesday 9th* of April. The business meeting will start at 8pm sharp and the general meeting and talk will start at 8.30pm.

# The ever-changing face of Jervis Bay

By ALAN BONHAM and IAN FITZGERALD\*

**J**ERVIS BAY is in the unfortunate position of being the favoured site of the Navy for the location of massive industrial port, armament loading and storage facilities. These proposals are shaping up to be a most significant environmental issue.

Jervis Bay is in many ways the most outstanding bay on the Australian coast, with a remarkable variety of landforms, vegetation communities and fauna.

Shoalhaven Shire is a principal retirement, tourist and holiday centre, bringing with it development and prosperity. People are attracted to this superb natural environment and will not come to live here with a large industrial port to the south and armament loading port and storage facilities to the north. Environmental degradation and pollution are inevitable consequences.

At present, the clarity of water in Jervis Bay is comparable with that of the Barrier Reef. The sea grasses (*Strapweed*, *Posidonia*) which rely on the clear water, are the healthiest and most extensive in Australia. These sea grass areas are vital fishery habitats and their disruption would adversely affect commercial fishing. There are some 200 species of fish in Jervis Bay, some of which are rare and endangered — for example the Leafy Sea Dragon shown on the current 33 cent stamp. Pollution from an industrial port complex cannot possibly be avoided, as has proved to be the case in Botany Bay where the sea grasses have been severely degraded. Coral communities exist in colourful profusion around the deep headlands at the entrance of Jervis Bay.

Some 60 per cent of the north-west half of Jervis Bay's shoreline has been developed but no development has taken place on the north-east side. The Beecroft Peninsula in particular is pristine, apart from four-wheel-drive tracks. The undeveloped land all round the bay is so superb that proposals are in hand to create a series of national parks and nature reserves to establish marine reserves.

The changes in topography around the bay are many and various. Outside the bay, the impressive cliffs are the highest in NSW (up to 135 metres). Inside the bay, especially at the northern end, the topography is low and swampy.

The vegetation around the bay is as varied as the topography. Vegetation behind the sandy beaches includes fine examples of rainforest, sclerophyll forests, woodlands, heath, wetlands, swamp communities, mangroves, and rich coastal scrub.

Unfortunately this rosy picture is in jeopardy. At the north end of the bay, a proposed one-kilometre breakwater extending eastwards from Green Point one of the most beautiful parts of the Beecroft Peninsula. The breakwater is to provide protection for the extensive armaments loading facilities. A substantial road system would extend through unique wetlands and mangrove communities behind Hare Bay and westwards to proposed store and factory establishments in the Currumbene State Forest, midway between Nowra and Huskisson.

Areas of proposed marine reserves, including the most extensive sea-grass beds on the east coast, would be sacrificed. The breakwater would have a profound effect on sand movement in Hare Bay. The diffraction associated with the breakwater would produce an easterly littoral current and longshore drift of sand in Hare Bay behind the breakwater, overwhelming the sea grass beds. To supply the longshore drift of sand the natural dune system would be destabilised.

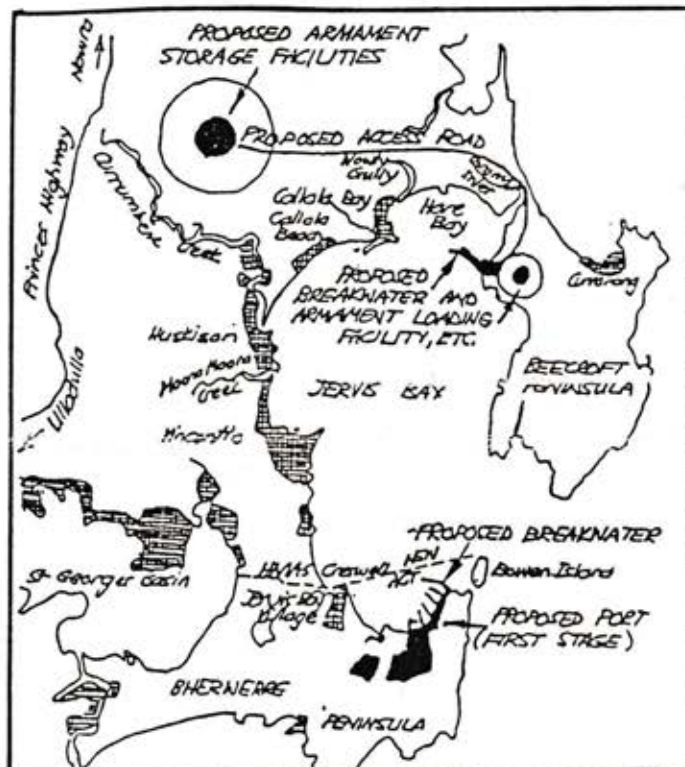
At the south end of the bay, a port is envisaged occupying virtually the entire southern bay coastline from HMAS Caswell to Murrays Beach, near Bowen Island. The first phase includes a deep water breakwater extending more than one kilometre west of Murrays Beach and backed by an industrial port behind the breakwater at the cost of some billion dollars.

Defence of Australia is important and suitable locations for defence installations must be found. But defence installations must not sacrifice the environmental quality of Jervis Bay and with it the livelihood of the people.

Time is short for effective opposition to these proposals, which have not been adequately presented to the Australian people for discussion.

\* Mr A. J. Bonham is Senior Lecturer in Civil Engineering at the University of NSW with expertise in coastal engineering and the environment.

\* Mr I. L. Fitzgerald is a student of psychology and the environment and has been involved in research on issues concerning the National Parks and Wildlife Service of NSW as a research assistant.



The approximate location of the proposed naval facilities (above) and the as yet unspoiled coastline of Jervis Bay.





ACT HERPETOFANAL SURVEY

Guide to Completing the Habitat and Species Forms

Examples of both the habitat and species data forms are appended to this guide. Please refer to them if you require an example of how a form should be completed.

Where different categories are listed under a single heading (eg. weather, slope, habitat description), please tick the appropriate box(es). For sections without listed categories (eg. abundance, micro-habitat, reproduction) choose the number code(s) from the categories listed below, and record in the appropriate place on the sheet.

If you are unsure which category applies to your observation, or you did not note it at the time of the observation, please record a zero.

**a) Location:** Describe in a few words as accurately as possible the location of the site where the observations were made.

**b) Latitude and Longitude:** Can be taken directly from maps such as the 'Territory of Jervis Bay Vegetation Map' or the 1:100,000 Map of the ACT. Remember to record from the top, left-hand corner of the Lat. Long. cell the locality is in.

**c) Aspect:** Use only with sites that are sloping. Use the symbols N, S, E, W, to refer to the direction the site faces.

**d) Weather:** Please use the corresponding number(s) to record the weather conditions at the time the observations were made:

1. Clear
2. Partly cloudy
3. Overcast
4. Light rain
5. Heavy rain
6. Windy
7. Snow/hail

**e) Habitat:** This section should be used for recording the type of environment (vegetation type, water body, etc.) that the observation site is in.

- For the habitat/community orientated sheet please mark appropriate boxes.
- For the species orientated sheet please select the appropriate number from the following list, and place it in the box on the data sheet.

1. Rainforest
2. Tall open-forest (wet sclerophyll)
3. Open-forest (dry sclerophyll)
4. Savannah woodland
5. Riverine woodland/forest
6. Subalpine woodland
7. Pine forest
8. Tea-tree scrub
9. Heath
10. Grassland
11. Pasture
12. Sphagnum bog\*
13. Swamp\*
14. Lake\*
15. Pond/Dam\*
16. River\*
17. Creek\*
18. Large rock outcrop\*
19. Suburban
20. Other (please specify)

\* You may wish to record the type of habitat surrounding these areas. Please place these remarks under the heading 'General description' or comments.

**f) General Description:** Record any comments which may further describe the area (eg. conservation area, construction area, detailed notes on the habitat(s)).

**g) Species List:** If possible use the corresponding numbers from the attached list of species. However, you may write the name of the species if you find it easier. If the species is not on the list, write its full name, and briefly describe your method of identification under the 'comments' section.

**h) Microhabitat:** Microhabitats are listed on the attached sheet. Please select the appropriate number(s) and record in the box on the data sheet. If the microhabitat is not listed please describe it in the comment section.

**i) Abundance:** Please record either the actual number of individuals observed, or one of the abundance rankings from below.

A - 1 to 5 individuals	E - 50 to 100 individuals
B - 5 to 10 individuals	F - 100 to 1000 individuals
C - 10 to 20 individuals	G - 1000 + individuals
D - 20 to 50 individuals	

**j) Reproduction:** Use one or more of the following categories.

- 0 - No comment
- 1 - Eggs
- 2 - Larvae
- 3 - Juveniles/subadults
- 4 - Gravid female
- 5 - Male in nuptial colours, or with nuptial pads
- 6 - Mating
- 7 - Calling
- 8 - No sign of reproduction, reproductive behaviour not observed.

**k) Comments:** Please record any additional information that you think may be relevant. Use the back of the form if necessary. Any negative observations; eg. not finding any specimens in an area which you knew from previous observations had supported a good population, would be valuable to note here. Other comments could describe habitat disturbances such as rocks being overturned or removed, logging operations, recent fires, signs of recent flooding, etc.

SPECIES L.

- |                                      |  |
|--------------------------------------|--|
| 1. <i>Adelotus brevis</i>            | 46. <i>Ctenotus robustus</i>           |
| 2. <i>Raietopus australis</i>        | 47. <i>C. taeniolatus</i>              |
| 3. <i>Limnodynastes dunermilli</i>   | 48. <i>C. uber</i>                     |
| 4. <i>L. peronii</i>                 | 49. <i>Egernia cunninghami</i>         |
| 5. <i>L. saxatilis</i>               | 50. <i>E. saxatilis</i>                |
| 6. <i>Mizophya balbus</i>            | 51. <i>E. whitii</i>                   |
| 7. <i>M. fasciolatus</i>             | 52. <i>Remfuria decresiensis</i>       |
| 8. <i>Neobatrachus sudelli</i>       | 53. <i>R. maccoyi</i>                  |
| 9. <i>Pumiliactis hammondi</i>       | 54. <i>Lampropholis deloata</i>        |
| 10. <i>Pseudophryne bibronii</i>     | 55. <i>L. gulchenoti</i>               |
| 11. <i>P. cornubona</i>              | 56. <i>L. mustelina</i>                |
| 12. <i>P. dandyi</i>                 | 57. <i>Lefolopisma coventryi</i>       |
| 13. <i>Ranidella purpurinifera</i>   | 58. <i>L. entrecasteauzii</i>          |
| 14. <i>R. signifera</i>              | 59. <i>L. entrecasteauzii</i> (Form A) |
| 15. <i>Uperoleia mugosa</i> (Form B) | 60. <i>L. entrecasteauzii</i> (Form B) |
| 16. <i>U. laevigata</i>              | 61. <i>L. platynota</i>                |
| 17. <i>Litoria aurea</i>             | 62. <i>L. trilineata</i>               |
| 18. <i>L. atrorufa</i>               | 63. <i>Menetia greyi</i>               |
| 19. <i>L. dentata</i>                | 64. <i>Morethia boulengeri</i>         |
| 20. <i>L. freytagi</i>               | 65. <i>Pseudomia spenceri</i>          |
| 21. <i>L. jervisiensis</i>           | 66. <i>Sphenomorphus kosciuskoi</i>    |
| 22. <i>L. lesueurii</i>              | 67. <i>S. quoyii</i>                   |
| 23. <i>L. peronii</i>                | 68. <i>S. tympanum</i>                 |
| 24. <i>L. phyllonhoa</i>             | 69. <i>S. tympanum</i> V77             |
| 25. <i>L. uniformis</i>              | 70. <i>S. tympanum</i> C77             |
| 26. <i>L. uerueauii</i>              | 71. <i>Tiliqua asauwamas</i>           |
| 27. <i>Chelodina longicollis</i>     | 72. <i>T. nigrolutea</i>               |
| 28. <i>Diplodactylus vittatus</i>    | 73. <i>T. saimacoides</i>              |
| 29. <i>Oedura lesueurii</i>          | 74. <i>Trachydromus rugosus</i>        |
| 30. <i>Phyllodactylus marmoratus</i> | 75. <i>Typhlops nigrescens</i>         |
| 31. <i>Phyllurus platurus</i>        | 76. <i>Python epiotes</i>              |
| 32. <i>Urodactylus millii</i>        | 77. <i>Acanthophis antarcticus</i>     |
| 33. <i>Apsasia parapulchella</i>     | 78. <i>Austrelaps superbus</i>         |
| 34. <i>Delma impar</i>               | 79. <i>Cacophia krefftii</i>           |
| 35. <i>D. inornata</i>               | 80. <i>C. squamulosa</i>               |
| 36. <i>Lialis burtonii</i>           | 81. <i>Cryptophis nigrescens</i>       |
| 37. <i>Pygopus lepidopodus</i>       | 82. <i>Dryadula coronoides</i>         |
| 38. <i>Amphibolurus barbatus</i>     | 83. <i>D. rhodogaster</i>              |
| 39. <i>A. diemensis</i>              | 84. <i>Pumila diadema</i>              |
| 40. <i>A. muricata</i>               | 85. <i>Pseudochia porphyriaca</i>      |
| 41. <i>Physignathus lesueurii</i>    | 86. <i>Pseudonaja textilis</i>         |
| 42. <i>Tympanocryptis lineata</i>    | 87. <i>Uroechia spectabilis</i>        |
| 43. <i>Varanus varius</i>            | 88. <i>Yermicola annulata</i>          |
| 44. <i>Carlia tetradactyla</i>       | 89. <i>Pelamias platurus</i>           |
| 45. <i>Cryptoblepharis virgatus</i>  |  |

*Litoria tyleri*  
*Litoria latopalmata*

MICROHABITAT CATEGORIES

1. Tree/tall shrubs (>2 m high) = on trunk or main branches
2. Trees/tall shrubs (>2 m high) = on foliage or small branches
3. On shrubs (<2 m high)
4. Amongst shrubs on the ground
5. In or on leaf and bark litter
6. On logs
7. Under logs
8. Inside logs (hollow or rotting)
9. On stones/rocks
10. Underneath stones/rocks
11. In rock fissures
12. In soil/sand
13. In burrows
14. Underneath other objects (eg. rubbish)
15. On bare ground
16. In dry grass/herbs
17. In swampy wet grass or herb vegetation
18. In moss
19. On emergent/floating aquatic vegetation
20. In water amongst emergent/floating aquatic vegetation
21. On open water surface
22. Beneath water surface
23. At water's edge
24. In small water bodies such as puddles, ditches, seepages
25. In gardens/parks
26. Buildings
27. Road
28. Other (please specify in comment)





# SPECIFIC HABITAT SHEET

## A.C.T. REPTILE AND AMPHIBIAN INVENTORY

OBSERVER'S NAME:

DATE:

SEARCH EFFORT: Active Search : : Man hours . . . . . Time of Day . . . . .  
 Chance encounter : : Approx. size of area searched . . . . .

WEATHER: Sunny : : Windy : : Overcast : :  
 Partly cloudy : : Light Rain : : Heavy Rain : :  
 Snow : :

LOCATION: Name . . . . . Latitude . . . . . Longitude . . . . .  
 Description . . . . .  
 . . . . .  
 . . . . .  
 . . . . .

DESCRIPTION OF ENVIRONMENT FOR EACH HABITAT EXAMINED

SLOPE: Steep (>30°) : : Hill Top : :  
 Gentle : : Valley : :  
 Plain : : Large Plain : :

ASPECT: . . . . .

ALTITUDE . . . . . (metres above sea)

HABITAT DESCRIPTION:

Rainforest : :	Pine Forest : :	Sphagnum Bogs : :
Tall Open Wet	Tea Tree Scrub : :	Swamps : :
Sclerophyll Forest : :	Heath : :	Lake : :
Open Dry	Sub-Alpine	Pond/Dam : :
Sclerophyll Forest : :	Woodland : :	River : :
Woodland : :	Native tussock	Creek : :
Riverine Woodland : :	grassland : :	Suburban : :
	Pasture : :	

Other (specify) . . . . .

Evidence of a Burn (comment) . . . . .

GENERAL DESCRIPTION:

. . . . .  
 . . . . .  
 . . . . .  
 . . . . .

Comment:

SPECIES

MICROHABITATS

ABUNDANCE

ACTIVITY

REPRODUCTION

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

(Species No. )

Microhabitats grid

Abundance grid

Comments

The boxes in MICROHABITAT and ABUNDANCE are designed to be separated and are intended to use for different microhabitats.