

PROPOSED RESEARCH OUTLINE

*FORM 5*

Title: Thermal Ecology and Diel Cycle of Podocnemis vogli  
in the Venezuelan Llanos

Investigator: Scott, Jay Maness

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Location of Study: Venezuela, State of Apure, Hato El Frio.

Duration of Study: 13 February - 30 August 1977.

Introduction:

- Brief review of Podocnemis fossil history
- World distribution of living species
- Distribution in Venezuela
- Define thermal ecology
- Define diel cycle
- Description of study area

Nature of the Problem:

- Objectives
  - To define and characterize thermal ecology of Podocnemis

Key areas of investigation:

- Temperature ranges of activity *body.*
- Define preferred body temperature in Podocnemis
- Describe basking activity
- Affect of basking postures, feeding activity,  
reproductive condition and social status on  
thermal ecology of Podocnemis

*Fels to Aug. 77*



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### Nature of the Problem:

#### - Objectives

- To define and characterize diel cycle in Podocnemis

### Key areas of investigation:

- Characterize daily and seasonal migrations
- Define "home range" in Podocnemis
- Characterize daily and seasonal activity patterns
- Estimation of seasonal density and biomass of Podocnemis

### Materials and Methods:

Thermal ecology and diel cycle investigations will be made by direct observation from blinds, and will be aided by use of photography, binoculars and electronic radio tracking devices.

10 - 15 turtles will be equipped with temperature sensitive radio transmitters to gather data on deep core body temperature and to monitor movements.

Water, Air and substrate temperatures will also be recorded.

Censuses of turtles will be taken to determine changes in biomass and density over an extended period which includes a variety of ecological conditions, (mid dry to mid wet season).

Basic biological observations will be made to gather data on the natural history of the study species and to relate these observations to the thermal and diel cycle of Podocnemis.



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PROVISIONAL RESEARCH TIMELINE FEBRUARY - AUGUST 1977

- February.....Move to El Frio study area, set up base camp, selection of study areas (to include 1 seasonal caño, 1 seasonal pond and 1 ~~pre~~mo which contains water year round), construction of blinds, begin monitoring environmental conditions (evaporation, percipitation, air and water temperatures, etc.), make contact with study species.
- March.....Begin censuses, capture of individuals for mark-recapture study, continue gathering climatic data.
- April.....Capture of individuals for radio tracking study, basking behavior, biomass and density estimates, continue censuses and climatic data.
- May.....Continue censuses and thermoregulatory studies, climatic data, biomass and density estimates for end of dry season. 1st progress report due.
- June.....Migration studies, censuses and climatic data, biomass and density studies for early wet season, diel cycle and thermal ecology studies.
- July.....Continue censuses and climatic data, additional wet season ecology; thermalregulation, diel cycle.
- August.....Censuses and climatic data, biomass and density estimations mid wet season, continue thermal and diel cycle studies, 2 nd report due, termination of study.
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Projected Benefits:

- Hato El Frio - 6 months climatic and environmental data  
(precipitation, evaporation, solar radiation etc.)
- Color slides of Llanos flora and fauna.
  - Copies of published scientific papers.  
(at least two are anticipated)
  - Copies of two progress reports.
  - Data on the natural history of the Galapago, an important and conspicuous element of the Llanos ecosystem; this data is essential for any serious future attempt at a rational management plan.
  - A new stove with oven and refrigerator.
  - Illustrated guide to the reptiles and amphibians of Hato El Frio.

National Zoological  
Park, Smithsonian

- Important contribution to overall Smithsonian Llanos research project regarding biomass and density, natural history and thermal ecology of Podocnemis.

Investigator - Masters thesis.  
(data gathered during this field session will be used toward Scott J. Maness's thesis)

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Basic understandings, equipment and regulations desired of the personnel of Hato El Frio:

- ✓ - Use of 1 horse. *Best.*
- ✓ - Advice on the purchase of a second horse. *Best on order*
- ✓ - Discount on the purchase of a Suzuki TS 250 dirt bike. <sup>185</sup> ~~3800~~
- ✓ - Monthly gas ration. *on much use*
- Use of air photographs. *None*
- ✓ - One aerial survey.
- Use of suitable dwelling. (2 full time investigators, 2 more April-May) *Esteban*
- ✓ - 50s monthly ration at the bodega.
- ✓ - Occasional use of one or two workers as field assistants for the construction of blinds and capture of Galapagos.
- ✓ - Use of INVEGA's mailing address in Valencia for letters.
- ✓ - Use of observation tower.  
(at present in the hands of the Spainards')
- Occasional dinner or lunch with manager. *Best.*