



Mammal Mail

Newsletter of the Tree Kangaroo and Mammal Group

April - June 2001

TKMG Case Studies Project

The TKMG has received funding from the Natural Heritage Trust for the project, *Conservation of remnant vegetation on private property on the Atherton Tablelands*. The project will work with private landholders to conserve and restore remnant vegetation and wildlife habitat on the Atherton Tableland. In a series of case studies, the project will identify major issues associated with the conservation of remnant vegetation in key industries (cattle, dairy and ecotourism), and devise and implement a wildlife habitat management plan for each property. The results of each case study will be communicated to other landholders through field days, the media and industry networks. On-ground works, tied where possible to voluntary management agreements, will be used to encourage landholders to adopt the approaches



Some on-ground work has already commenced at the properties including this 500 tree planting at Mt Quincan Crater Retreat by QPWS and TREAT volunteers.

demonstrated in the case studies.

Sue Mathams has been contracted by TKMG to manage the Case Studies project. Sue is based at Malanda having recently moved to the area from South East Queensland. She has a background in remnant vegetation management, having coordinated a

program for a local government authority.

During June, Sue was introduced to three of the property owners (first three listed below) by TKMG VP Tania Murphy and had a tour of their properties. Sue was impressed by the enthusiasm of the property owners and was confident that the project

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RESEARCH

Gourmet Gliders

The intriguing life and times of the Canadian northern flying squirrel

Visitors to north Queensland's forests at night might be lucky enough to witness one of the more exciting forms of mammal locomotion – one of our several species of gliding possums leaping from a great height, arms and legs outstretched to spread its gliding membrane while it silently disappears into the darkness.

On the far side of the world in eastern Canada, **Dr Karl Vernes** (pronounced Ver-ness) has been working on the eutherian version of these gliding marsupials, a small (100 gram) mammal called the **northern flying squirrel**

(*Glaucomys sabrinus*).

His work began two years ago when he was employed as a postdoctoral fellow at Mount Allison University in the province of New Brunswick, having finished his PhD at James Cook University (Townsville) on a Wet Tropic endemic – the northern bettong (*Bettongia tropica*).

Dr Vernes works at Fundy National Park in southern New Brunswick, where he has so far undertaken 2 years of trap and release of flying squirrels. In doing so, Dr Vernes and his students have described the squirrel's gourmet-like diet, made observations on their gliding abilities and drawn some

commonly called 'truffles', that they excavate from the forest floor", he said.

"These fungi form important symbiotic relationships with forest trees and are vital to a healthy forest ecosystem. At least 12 different kinds of fungi are consumed by flying squirrels, and they eat them at all times of the year – a

great surprise given that winter in this part of the world usually means several feet of snow and very low temperatures of around -20°C . Most likely, summer and winter, or fall, when truffles are most abundant, is a time of harvest for storage in the hollowed

out crevices of trees. The squirrels are active all year though, and one of the most enjoyable tasks is to trudge around on snowshoes in temperatures well below zero to find animals snug and warm in traps, seemingly oblivious to the freezing temperatures around them."



rather interesting links between their ecology, and that of the entire ecosystem in which they live.

Dr Vernes has observed the dietary ecology of the northern flying squirrel to be particularly interesting.

"They consume large amounts of hypogeous (occurring below the surface of the ground – Ed.) fungi –

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Dr Vernes' work on gliding has established that northern flying squirrels have very similar gliding abilities to the sugar glider (*Petaurus breviceps*) – a well known marsupial of eastern Australian forests that is about the same size as *Glaucomys*. When he compared his data to that collected on sugar gliders by Stephen Jackson (also formally of JCU), Dr Vernes found that the height of launch from the canopy, the height of landing, the distance glided and the angle at which the animal glides are very similar for both species. Dr Vernes noted that this is not surprising given that both mammals have a similar body size. "However," he said, "It becomes more intriguing when one considers that these two species evolved gliding completely independently. Interestingly, both species also have a food source that is 'patchy', both in space and time. Presumably, one of the benefits of gliding is to get around to such patches as quickly and efficiently as possible."

Recently, Dr Vernes' work took on a laboratory component, as he and an honours student attempted to determine whether flying squirrels might help disperse truffles and enhance their germination on the roots of seedlings from fungal spores via their faecal pellets. What

they found was quite exciting. Passage of spores through the gut of a squirrel resulted in greater fungal growth on seedlings than if the spores were administered on the seedlings directly from the truffle itself. This means that flying squirrels might be quite important in keeping forests healthy by spreading spores of hypogeous fungi to newly developing trees – undoubtedly a similar role to that played by bettongs and potoroos in Australia.

The final component of this work is now in progress, as Dr Vernes and his team of students attempt to find out how commercial forestry is affecting flying squirrel populations. Preliminary data suggests that flying squirrel density declines or disappears in the fragmented landscape. It remains to be seen how this may affect relationships between forest trees and mycorrhizal fungi, and ultimately, the overall dynamics of the forest ecosystem.

If you want to know more about the northern flying squirrel or Dr Vernes' (pictured) research, he is only too happy to be contacted at kvernes@mta.ca



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will be well supported.

"This project should be beneficial for all parties." Sue said, adding, "As most conservation challenges occur outside protected areas I look forward to the challenges of this project and working with TKMG members".

Case Study Properties:

- Mt Quincan Crater Retreat
- Jungle Tours – Peterson Ck, Yungaburra
- Merragallan Park Dairy Farm, Malanda
- Mappas Beef Cattle Farm, Malanda



T-shirts and Magnets !!

t-shirts \$22
polo \$27.50
magnets \$2

These can be purchased at meetings or by contacting TKMG.

Trees for Mahogany Gliders

Bushcare introduces "Trees for Mahogany Gliders" program for primary schools

Mahogany Gliders live in woodland vegetation communities on the coastal lowlands between Crystal Creek, south of Bambaroo, and the Tully River east of Tully. Today, only 20% of their habitat remain in a network of remnant and isolated patches of woodland.

Today the animal is classified as *endangered*, meaning that it is in danger of extinction, and that the survival of the species in the wild is unlikely if the processes that are threatening their survival continue to occur. Vegetation clearance and consequent habitat loss due to landscape fragmentation is the main threatening process to the survival of this species.

Kennedy, Lower Tully, Ingham, Bambaroo and Murray River Upper primary schools have recently been engaged in a new program called "Trees for Mahogany

Gliders". This program coordinated by the Queensland Parks and Wildlife Service (QPWS), with the assistance of Greening Australia (GA) and the Wet Tropics Tree Planting Scheme (WTPS), ultimately aims to educate

species, landscape fragmentation, and habitat loss. The workshops also give children the chance to be actively involved in growing food and den trees for wildlife corridor plantings, whilst learning about shade-house and

nursery management and hygiene, hardening bay management and hygiene, and propagating native plants from seed. Children are also involved in a series of field days to look at mahogany glider habitat and identify the important food and den trees.



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primary school children about the importance of managing, maintaining and re-establishing mahogany glider habitat.

A series of workshops is being conducted within each of the primary schools giving children the opportunity to learn about the mahogany glider as a threatened

For further information on the *Trees for Mahogany Glider Program* and Bushcare, please contact Peta Standley, Bushcare Facilitator at the Queensland Parks and Wildlife Service on 40914262, or Lindi Berghammer at the Greening Australia Bushcare Support Centre on 40922839.

The two cute gliders pictured above are "Milo" (left) and "Blossom mungarru". They will become T.V. stars on 19th July when they appear on *Totally Wild* (Ten, 4pm). Mungarru is the Cardwell/Upper Murray aboriginal name for a flying possum.

PROJECTS

Tree Kangaroo Shelter Poles !!

Goings on at the Anderson Road Landscape Linkage Project

The project at Anderson Road moves into a new phase following our March tree planting. Over the next couple of months the main objective of the project is to raise public awareness of the main threats to tree kangaroos and other wildlife – and of course those threats are dogs and cars.

The project working group is currently reviewing suggestions from a local graphic designer and wildlife illustrator for a road sign and a poster and brochure series. The road sign will go up in the Anderson Road area to raise the awareness of locals and visitors of the threat to

wildlife and the endangered status of the local remnant rain forest in the area known to scientists as rain forest Type 1b. Posters and brochures will be distributed widely in the local community at schools, libraries and council shire office.

Neil McLoughlin, is also working on a design for a tree kangaroo/wildlife shelter pole. **Ergon** will donate the poles and assist with the erection of these shelter poles in the Anderson Road project area. The idea is to provide tree kangaroos and other wildlife with an escape option if they come under

threat from dogs in 'hostile' locations with few trees for them to climb up. We will then monitor the poles to determine usage.

The project is a cooperative effort between TREAT, Queensland Parks and Wildlife Service – Centre for Tropical Restoration and TKMG with funding support from the WWF Threatened Species Community Grants fund. A continuing project application has been submitted for a further year of funding. For further information on the project contact Tania Murphy 4095 3406.

Dots before your eyes?, then your dues are due

If you have a red dot on this newsletter it is a gentle reminder that your TKMG subscription is due. Please fill out the application form on page 11, and either mail it or bring it along to our next meeting at the Malanda Hotel on Thursday, September 6th.

Subscription is \$11 (inc. GST) per year per couple or single (\$11 = one vote) and is due every June 30.

Dugong - *Dugong dugon*

Order: Sirenia
Family: Dugongidae
Genus: *Dugong*
Species: *dugon*

• Description

Dugongs are easily distinguished from manatees by their split tail fluke, they are also more streamlined and spindle-shaped than manatees. The adult dugong averages about 2.7 m in length, and weighs about 250-300 kg. Calves are about 1 m in length at birth, and weigh 20-35 kg. Males and females are similar in size. Adult males can usually be distinguished by their short tusks which erupt at 12-15 years, although tusks are occasionally found in old females as well. The dugong's paddle-like flippers do not have nails. Dugongs are a pale cream colour at birth darkening to grey-brown with age. The skin is smooth, with hairs scattered over the surface. The valve-like nostrils are located at the tip of the snout, so that it is only necessary for a small portion of

the head to be above the surface in order to breathe. The muzzle is turned downward, an adaptation to bottom feeding, and the upper lip is covered with bristles which are used to locate and manipulate seagrass into the mouth.

• Distribution and Habitat

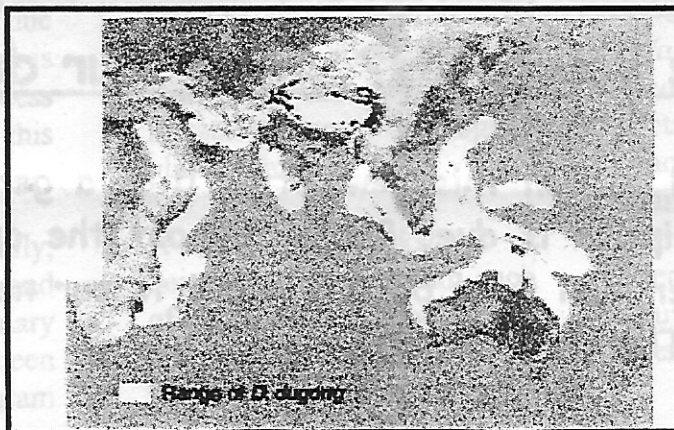
The dugong is widely distributed, and found in the waters of 43 countries along the western Pacific and Indian Oceans. Dugongs are the most marine of the sirenians in their habitat preference, and almost

were found throughout most of the coastal areas of the tropical and subtropical Indo-West Pacific where shallow seagrass meadows existed.

• Natural History

Although generally elusive and shy, dugongs have been observed feeding in groups of 100 animals or more. Dugongs breed in all seasons, with seasonal peaks in different areas of their range. Sexual maturity is reached at 9-10 years of age, although some females do not reproduce until they are 15-17 years. A mother may give birth to a single calf every 3 to 5 years. Calves are nursed for over a year, and may remain with their mothers for 2 years or more.

Dugongs may live up to 70 years



never enter fresh water. Dugongs are often found in shallow water, less than 5 metres deep. Historically, dugongs

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Dugongs have long been considered the only completely herbivorous marine mammals.

Like manatees, dugongs have been reported to feed almost exclusively on a variety of seagrasses, especially those of the Families

Potamogetonaceae and *Hydrocharitaceae*.

However, there is growing evidence that dugongs in subtropical areas feed deliberately on sessile benthic invertebrates (ascidians and polychaetes), perhaps as a result of nutritional stress caused by seasonality in the abundance of seagrasses in the southern edge of their range.

The dugong swims using its tail fluke, with the pectoral flippers tucked against its sides. These flippers are used for braking, turning, and for sculling in order to keep the nostrils above waves in rough water.

Dugongs are slow swimmers, usually

travelling at less than 10 km/h, but they can accelerate to more than 25 km/h for short distances.

• Status

The dugong is the most abundant of the sirenians, and the only one found in the Indo-Pacific. There are an estimated 100,000 dugongs worldwide, with the largest population in Australia.

• Threats to the Species

Sharks, marine crocodiles, and killer whales prey on dugongs. Cyclones may also pose a threat by stranding animals. Dugongs have historically been hunted for meat and oil throughout most of their range, and continue to be hunted for subsistence use in many countries. Dugongs often become entangled and die in shark nets set

off beaches to protect swimmers, and in gill nets set by fisherman. Loss of coastal habitat and increasing boat traffic are also blamed for declines in the dugong population.

• Sources

Reeves, R., B. S. Stewart, and S. Leatherwood 1992 *The Sierra Club Handbook of Seals and Sirenians*. Sierra Club, San Francisco 359 pp

Reynolds III, J.E. and D.K. Odell. 1991, *Manatees and Dugongs. Facts on File*, Inc New York 192 pp,

Rice D.W. 1998. *Marine mammals of the world; systematics and distribution*. The Society for Marine Mammology. Special Publication Number 4, 231 pp

Ripple, J. 1999 *Manatees and dugongs of the world*. Voyageur Press Inc., Stillwater, MN. 131 pp

Information for dugong articles hunted and gathered from www.sirenia.org

A book you may wish to peruse

Platypus - The Extraordinary Story of How a Curious Creature Baffled the World

By Ann Mogal

Published by Allen & Unwin

Dugongs in Okinawa

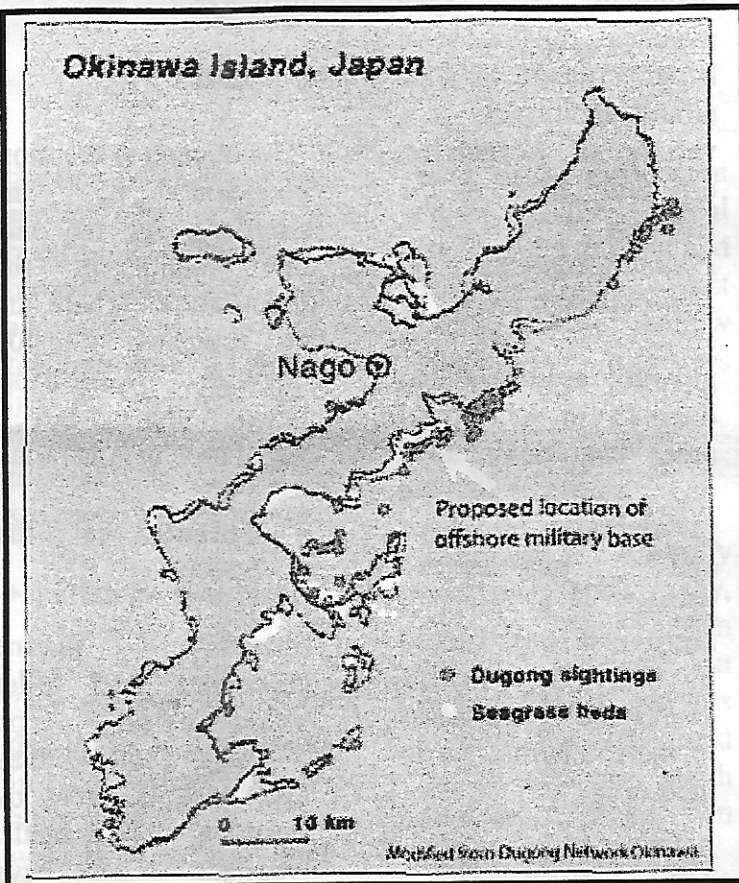
The island of Okinawa, in Japan, is home to the most northern population of dugongs in the Eastern Asian Sea.

The Japanese dugongs are very isolated, as the nearest neighbouring population is in the Phillipines. No surveys of the population have been conducted, but the number of dugongs off Okinawa is thought to be very small, possibly less than 50 animals.

Although it is thought that dugongs were once plentiful and widely distributed around Japan, their current year-round distribution is restricted to the east coast of the middle and northern part of Okinawa Island. A single dugong was spotted on the west coast near Nago during the summer of 2000.

- **Relocation of U.S. military base**

On November 22, 1999, it was announced that the US military airport at Futenma will be relocated to the coastal area of Henoko in Nago City. The proposed facility is a marine air



base (heliport), to be built either as a solid structure on piles driven into the seabed, or on pontoons. The proposed heliport, dubbed the "megafloat", would be 1,500 m long and 600 m wide, with the ability to accommodate 2,500 troops and 60 helicopters.

The proposed area for relocation is in important dugong habitat, and the construction and operation of a military base in this area may pose a severe threat to the survival of the Okinawa dugongs.

There is concern that the relocation of the military airport will destroy coral reefs and seagrass beds which are important resting and feeding areas for dugongs. Relocation of the base to Henoko may also pose additional disturbance to the dugongs such as increased noise pollution from construction, helicopters, and boats and an increased risk of other types of pollution such as fuel leakage and chemical pollution.

In July 2000, the Japan Federation of Bar Associations presented

a *Request for Protection of the Dugong*. The Request calls on the Environmental Agency, the Fisheries Agency and the Okinawa Prefectural Government to immediately conduct a detailed investigation of the dugong and its habitat and implement conservation measures to ensure its protection. The Association argues that Japan's lack of action in protecting the dugong population is in violation of its commitment to the Convention on Biological Diversity. The Request also demands that an environmental impact assessment of the proposed relocation of the military base be conducted.

In October, 2000, the IUCN Second World Conservation Congress in Amman, Jordan, adopted a Recommendation for the conservation of dugongs in Okinawa. The recommendation urges the Government of Japan so complete (and the government of the United States to cooperate with) an Environmental Impact Assessment on the construction of the military facilities, to conduct a detailed study

of the dugong population, and to implement conservation measures for its recovery.

• Other threats to the Okinawa dugongs

Dugongs are also accidentally caught and killed in fishing nets. On average, one death every two years is attributed to incidental take in nets. For such a small, isolated population this mortality may pose a significant threat to the Okinawa dugong's survival.

Critical dugong habitat is also being destroyed by land development and shoreline construction which causes soil erosion and kills the seagrass beds on which the dugongs feed. Habitat may also be damaged by pollution, water contamination, and the destruction of seagrass beds by military exercises. Currently, the dugong habitat along the eastern coast of Okinawa is used daily as a location for military exercise drills by the US military, such as large scale landing practice using amphibian

vehicles. Okinawa is also in the general area of typhoons which may increase the risk of accidental oil spills.

• Current Status

Globally, the dugong is listed by IUCN as Vulnerable, and all ranging populations (except the Australian) are listed on Appendix 1 of CITES

The Mammalogical Society of Japan has designated the Japanese population as 'endangered' using the IUCN criteria. The Fisheries Agency lists the dugong as an endangered species, and the Ministry of Agriculture lists it under wild marine plants and animals that require protection. Japan's Law for the Conservation of Endangered Species of Wild Fauna and Flora designates the dugong an internationally rare wild species, but the animal is not designated domestically rare and no aggressive protection measures have been enacted. There are currently no laws in place to protect the dugong's habitat or reduce incidental mortality in fishing nets.

REPORTS

From the Secretary's desk.....By Gary Wilson, Honorary Secretary, TKMG Inc.

This short note provides an opportunity for members who do not attend business meetings or who are unable to attend meetings to be informed about machinations within the organisation. Copies of the minutes and incoming and outgoing mail are kept on file and members are most welcome to peruse it if they so desire – please contact me if you wish to.

The TKMG may be contacted via conventional mail, by email or via our web site, and we receive a broad range of inquiries from both Australia and overseas. Some recent correspondence and activities are worthy of comment and they emphasise the important role of the TKMG as a focal point and catalyst in projects relating to our local fauna and their habitat. In late 2000 we provided information to Suzanne Arnold of National Geographic Television in Washington D.C. to allow her to clarify and bring up to date a few points in the text of the documentary of tree kangaroos that we have previously viewed here on Australian television. A copy of our technical report on tree-kangaroos on the Atherton Tablelands was also lodged in the National

Geographic Society library. (I suspect that those with cable television will see this documentary in its American format on Nat Geo Channel at some time in the future).

A little closer to home we have had communication with the **Department of Natural Resources and Mining**, seeking their assurance that in their application of the *Vegetation Management Act 1999* that they would take due notice of the maintenance of habitat and habitat linkages. Elsewhere we have had discussions with NRM officers regarding the effects of dog baiting programs on **Quolls** and the need for consultation with us and member and researcher **Scott Burnett** before their implementation. On another tack we have been in communication with Mayor Mary Lyle of **Eacham Shire Council** supporting their adoption of Lumholtz's tree-kangaroo as the Shire emblem and making some suggestions as to how the community and the animals might both profit from the move.

These tasks compliment the more mundane and sometime less obvious work that goes on behind the scenes in

completing applications for funding of various projects. This activity has primarily been undertaken by other TKMG members and they deserve our thanks as we have enjoyed considerable success in the applications. Projects that spring to mind are *The Awareness Program Among School Children of the Importance of Freehold Land for the Conservation of Quolls and other Wildlife*, *the Conservation of Remnant Vegetation on Private Property on the Atherton Tableland*, and *Scott's Protecting Quoll's on the Atherton Tablelands*.

The amount of paperwork involved in the securing and maintenance of these projects is considerable and often required at short notice and the input of some members far exceeds that which might reasonably be expected – I thank them for that work.

From the correspondence that passes through my hands it is apparent that the TKMG is a well-regarded, effective group, doing work on a predominantly volunteer basis that is of world class and considerable importance. I think the membership should be proud of their activities and effectiveness.

TKMG Inc.

(Tree Kangaroo & Mammal Group Inc.)

(ABN 66 316 466 220)

Membership Application / Renewal Form

Subscription is \$11 (incl. GST) per year per couple or single (\$11 = one vote) and is due every June 30.

Name: _____

Postal Address: _____

Phone No.: _____

Date: _____

Subscription \$ _____

New Member ☐

Donation \$ _____

Renewal ☐

Cheques to be made out to Tree Kangaroo and Mammal Group Inc.
Mail to TKMG, PO Box 1409, ATHERTON 4883

Next meeting

7.30pm Thursday 6th September...Malanda Hotel Ballroom

Nigel Tucker Manager of the Centre for Tropical Restoration,
Queensland Parks and Wildlife Service, will present
Small Mammal Movement in Reconstructed Corridors

Everyone is warmly welcome to attend and a light supper (small donation please) will be served. For further details ring Carol on 4095 3495 A.H. or John on 4097 6503. The next BUSINESS meeting will be held at the same venue, same time on Thursday 2nd August.



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Photo by Steve Parish

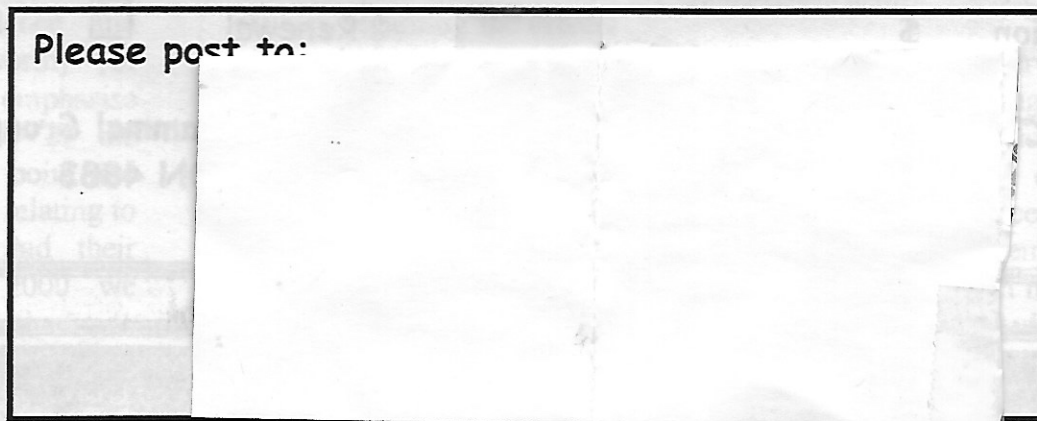


Mammal Mail

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April - June 2001

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