Injury Treatments and Physiotherapy to correct Wing Damage in Threatened Flying-Foxes

Hopper-Hallinan, J. A and O'Brien, G. M.
School of Biological Biomedical and Molecular Sciences *University of New England, NSW, 2351* judy@waif.org.au

Flying-foxes, Genus *Pteropus*, are critical to the health of native forests. Most species are in decline and many are listed as vulnerable. Interactions with human environments frequently result in sufficient damage to the wing that the animal must be euthanised.

This research is aimed at improving the chances of release after injury. Trials are focusing on damage from entanglement (barbed wire and loose fruit-netting) but also cover wing damage from any source. The goal is to develop treatments which are not only effective but which can be easily applied by any carer with average facilities.

Healing to the point of release involves several stages:

- healing the injury,
- ensuring the wing is aerodynamic, and,
- ensuring that the bat is capable of sustained and controlled flight.

Several treatments, for injuries, have been trialled to date and three appear to be very effective:

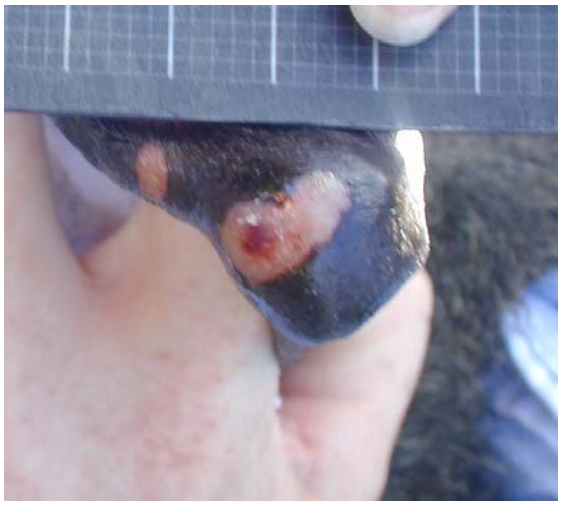
- macadamia oil,
- a hydrogel with a film dressing, and,
- Ilium Oticleans.

Ensuring wing dynamics and flight strength requires prevention or reduction of scarring, joint problems and muscle deterioration. Different physiotherapy techniques have been used with success:

- massage
- stretching
- joint exercises, and,
- flight practice.

The oticleans treatments have been successful on areas where it is hard to apply a dressing. Particularly thumb and wrist grazes which can be further damaged by cage living.

Spray bandages are also being investigated for these types of wound situations.



Macadamia oil is successful on new injuries, arresting membrane die back and hence preventing deterioration of the wound.

The baby flying-fox pictured suffered burns when her mother was electrocuted,10 days before the photograph was taken.

Macadamia oil treatment was instigated and followed up by intensive physiothreapy, resulting in successful release.

The hydrogel-dressing combination appears to be successful with more complex wounds.

This flying-fox from barbed wire had a compound fracture of the fingerbone and severe membrane loss around the break.

The dressing and hydrocoloidal gel supported the area and kept the wound moist until healing occurred. The female was released after flight exercises to rebuild muscle tone.

Physiotherapy has successfully reduced scarring contraction and associated damage enabling bats, believed to be unreleasable, to fly free. The results and details of the techniques are presented in the presentation.

This is the first quantitative information on wound healing and treatment in Megachiroptera. The research is only partially completed and other treatments are currently under trial.