Friends of the Western Swamp Tortoise

Tortoise Tales

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Newsletter of the Friends of the Western Swamp Tortoise

Quest for a happy wetland home for Western Swamp Tortoise

Hasnein Tareque is a PhD candidate at UWA and part of Project SWAMPI (South West Assisted Migration for endangered Populations Initiative), which is working to find new habitat for the Western Swamp Tortoise (WST). All evidence about the current habitat of the WST and climate trends suggests that assisted migration/colonisation will be its only long-term hope for survival in the wild. The species is an ideal candidate for assisted colonisation and any risks associated with the latter are totally outweighed by the almost certain risk of extinction that it faces.

Hasnein with a tortoise friend!

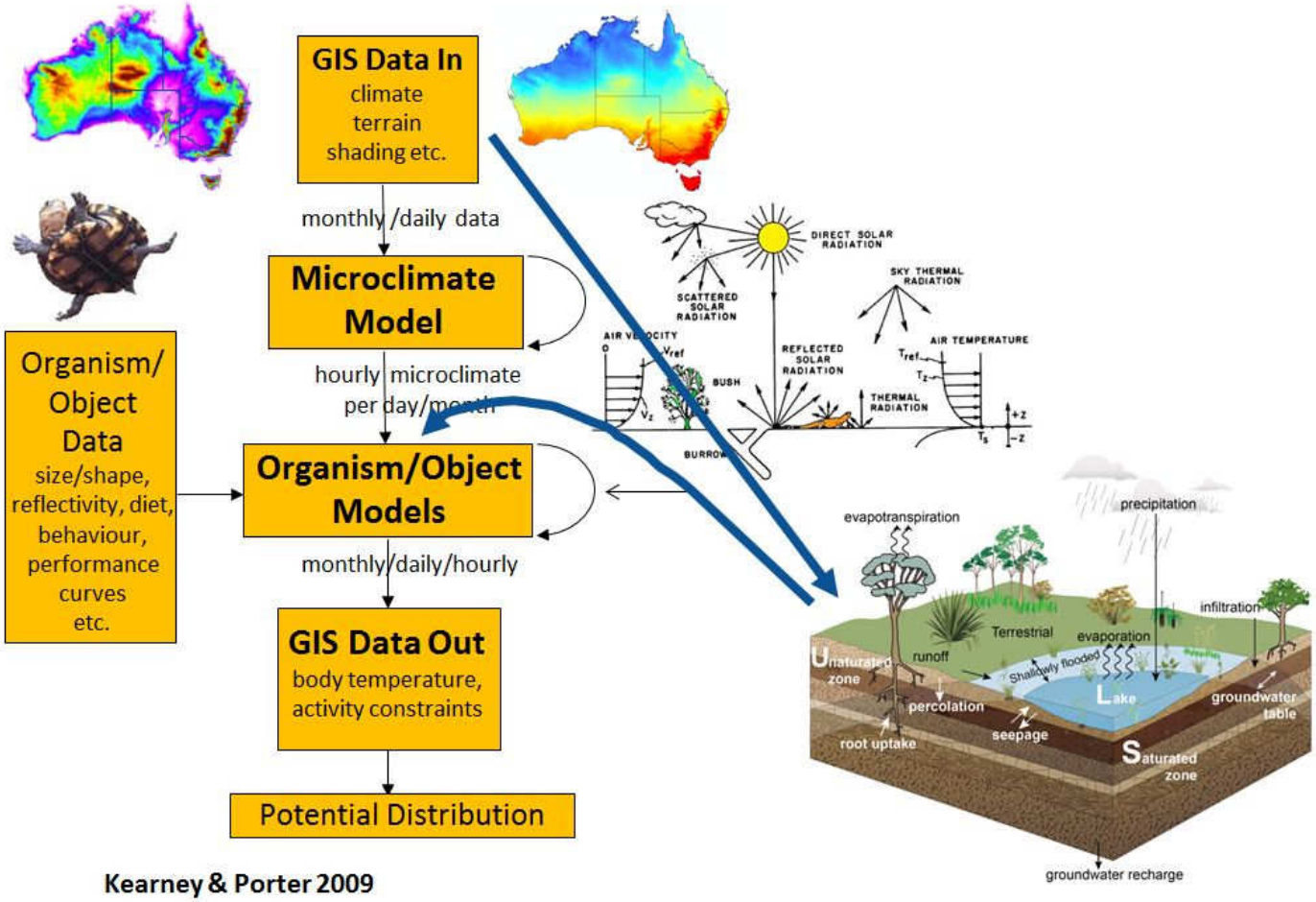
To succeed in predicting future habitat that will be suitable for assisted colonisation of the WST, researchers found they need to combine two existing models in order to factor in the dynamic nature of our wetlands. One approach was biophysical—the NicheMapper™, which was what Sophie Arnall, another PhD candidate at UWA, was working on. The other approach was tackled by Hasnein and covered the eco- hydrological modelling.

Hasnein with his equipment

Hasnein found that even two wetlands that are close together can differ considerably. For example, Ellenbrook NR is much better able to sustain its population of WST than Twin Swamps NR, which is only 4 km away! Why is it so? Hasnein found that the geomorphology, eco-hydrology and microclimate of each reserve play a large part. For example, TSNR has lots of little ponds, compared to one larger pond at EBNR, making it more prone to evaporation and changes in soil moisture patterns. Also TSNR is sandier than EBNR, which has more clay and this clayey soil of course holds the moisture better. Soil moisture has a great influence on vegetation and also the suitability of the ground for the tortoises' aestivation and egg incubation. Research has shown that EBNR has a hydroperiod (period in which the swamp is full enough to support life) of five to six months, whereas TSNR has a hydroperiod of only four to five months. Sophie Arnall's research suggests that the latter is not long enough to support a self-sustaining population of WST. So, predicting the hydroperiod for any new habitat is crucial.

The good news is that Hasnein's model is predicting well and that, combined with Sophie's biophysical research and current study by a Master's candidate into specific site selection, means we are edging closer to finding a new happy wetland home for our tortoises!

Tanya Marwood



Above: Methodology behind Project SWAMPI. Input from many researchers will lead to the goal: potential distribution, i.e. a new home for the tortoises.

Where are they now?

The rains of winter having triggered the tortoises' movement into the rapidly filling wetland pools, they are now swimming and basking while there is water in the swamp.

They will be feeding on small insects and aquatic creatures to build up their body weight.

Then, as the swamps dry up in late spring/ early summer, they will come out and back into their natural (or artificial) aestivation places or into deep leaf litter. Aestivation is a type of hibernation or torpor that protects the tortoises from the hot Western Australian summer and—if they find suitably deep places—from bushfires. It is here the females lay their eggs, before repeating the annual cycle.

Frequently asked questions

How do you raise awareness of your campaign?

Awareness-raising has been an ongoing project - in fact it's why we exist. Our group was formed in 2004 as the education arm of the Western Swamp Tortoise Recovery Team, consisting of scientists, university and zoo staff and DPaW (formerly DEC) land managers. It was decided to start a Friends group to get the message about the critical status of the WST out to the general public. Author Guundie Kuchling, wife of the Chief Investigative Scientist, Gerald, allowed us to use one of her stunning illustrations as the logo for the group. We quickly became incorporated in order to apply for grants for on-ground works such as funding a new prototype breeding tank for the Perth Zoo. We have a website and promote news events to the media, as well as speaking to schools and community groups.

Are there any other places besides Ellen Brook and Twin Swamps that the tortoises can live in?

A current University of WA project is attempting to find other suitable habitats for the WST (see front page). This Australian Research Council funded ARC Linkage project is factoring in climate change, the very specialised requirements of the animal, both physical and hydrological, and other parameters which limit the areas for relocation. The project will identify suitable areas for translocation or assisted colonisation, which means moving the species to places where it hasn't been found in the past. At the moment areas around the Scott River near Walpole look promising. If suitable areas are not found, or identified locations need extensive on-ground works or revegetation, tortoises may not be released in 2014. Perth Zoo has advised they have room to hold hatchlings for the interim period.

Can Western Swamp Tortoises only survive in WA?

In captivity, WST can survive in any similar climate to Perth. The Recovery Team has recently started an insurance colony at the Adelaide Zoo, in case disease decimates the main population. The recent facial tumour disease of the Tasmanian Devil has been an example of the benefits of isolating some animals of a species to ensure its continuation.

Winter 2013 planting at Ellen Brook NR

The Friends (and friends of Friends!) recently planted around 1300 tube-stock of various species on bare land previously infested with weeds, near the western gate of Ellen Brook Nature Reserve. Check out the photo galleries at www.westernswamptortoise.com/photo-galleries for pictures! The campaign happened in two stages in June and July 2013 and also included removing plastic guards from maturing plants from previous years' plantings. The melaleuca shrubs and other vegetation will provide cover for the tortoises, protecting them from the attention of birds like ibis, ravens and raptors. It will also encourage invertebrates that will ultimately result in more aquatic food for the tortoises.

Water levels are depressingly low in the reserve due to less-than-average rainfall this winter, so everything we can do to enhance the site will make a difference to the resident tortoises' survival rate.

On the final day's planting, the workers enjoyed a barbeque lunch on site, courtesy of Dept of Parks & Wildlife—and a feeling of a job well done!

A couple of young Friends help with the planting.

You can help save an endangered species, right on your doorstep!
Membership of the Friends is **free** and we have lots of great activities (see previous page).

Join us to help save the tortoise… because EXTINCTION SUCKS!

Some founding members of the Friends group.

Did you know?

- Western Swamp tortoises live in swamps that only fill during winter and spring. While the swamps have water, the tortoises swim around and feed on aquatic invertebrates, small fish, tadpoles and frogs. They are entirely carnivorous.
- Turtles have been around since the time of the dinosaurs – nearly 200 million years.
- Tortoises lay their eggs on land and don't care for their hatchlings.
- Tortoises can't chew as they have no teeth.
- Researchers estimate that 1 in 5 reptiles faces extinction, with 12% already listed as critically endangered. The biggest threats are habitat loss, predators and illegal trading.
- September 2013 will be the 50th anniversary since the first Western Swamp Tortoise was marked in the wild after being rediscovered.

For further information on any of the group's activities, contact Jan on 9344 2872 or 0408024800
Email: westernswamptortoise@yahoo.com.au
or check out the website
www.westernswamptortoise.com

Our current sponsors and recovery partners include:

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