

## Australia's Vanishing Frogs 2010/2011 Field Report

Dear Volunteers,

The summer field season of 2010-11 is now well behind us. The season was one of mixed weather conditions in the field with all the attendant surprises that it brings. We managed to time two Earthwatch field trips with unseasonal rainfall of which we have not seen for some time. This weather made camping in the field uncomfortable and even the frogs seemed to have made a decision that there was no point in being active around flooding streams. There is a silver lining to every grey cloud and the good news is that the January team finished achieving one of our research targets at one of the lowland sites and we decided to move to an upland site, and just as well we made that decision, because within a few hours rain set-in and had we not moved we would have been flood bound for up to a week.

Even in the face of rainy and cold weather all of the volunteers on both teams were still keen to catch frogs and tadpoles, enjoy the wonders of the rainforest and have some good cheer around the camp.

Following up from the field collections we have analysed all of the swab samples that we collected at the various field sites. Unfortunately, our results are not good for the frogs, we found that the emerging infection disease chytridiomycosis that affects amphibians, occurred at each of the selected field study sites, and in our targeted threatened species. We observed no evidence of sick and dying frogs in the field but that is not all that surprising because it is so hard to find frogs that are ill and are not active. As we discussed in the field one of the major questions that we face is understanding how the frogs are coping with a chronic infection of the disease organism. Field investigations in the past decade have revealed that numerous populations of the frogs have gradually declined, and in some cases species are now extinct. The current progress of the disease appears to be operating in a different fashion, perhaps the frogs have evolved some immunity and they are coping with the disease or perhaps the disease has become less virulent. We are moving forward to answer these hypotheses and the field work provides an invaluable contribution to understanding what is happening and thus provides us with vital information for conservation management.

The second target of our field program was to gather base-line information on the calling period of selected threatened frogs that occur at high altitude in the Gondwana World Heritage Rainforests. As you know, there are clear predictions that even with low to moderate climate change scenarios that the climate at higher altitudes will be warmer and drier in the future, and the natural communities that occur in these places will disappear. Our objective is to gather evidence of how quickly that is occurring as a means to developing mitigation strategies. We selected field sampling sites and put in place remote recording devices. You will be pleased to know that the recorders have been working well and they have been downloaded monthly since we first set them up. Some technical problems have occurred with moisture and the odd hungry rat, but we have a wonderful record of 4 hours of sound recording per day for a whole year. That's a lot of recordings to listen to, but Dean, who was an assistant on both field trips, has been using some special sound analysis software to help with analysing all that data.

Once again thanks for all your efforts with collecting specimens and helping with the various tasks in the field, we enjoyed your good humour and camaraderie, especially when it was wet and cold! Each of your many hours of walking streams, collecting frogs, catching tadpoles, and sitting patiently waiting for frogs to call was very much appreciated.

Regards,

Michael Mahony