## Repatriated Malagasy Tortoises Contribute to their Survival

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ABSTRACT.—Illegal traffic of Malagasy tortoises is causing significant population declines. The Brigade Nature of Mayotte confiscated large groups of illegally collected Radiated and Spider Tortoises in Mayotte in 2007 and 2009. The Salamandra Nature Association returned these individuals to the Village des Tortues center (SOS Tortues) in Mangily-Ifaty, near Toliara in southwest Madagascar. In spite of the difficult administrative procedures, the operation was a success due to effective collaboration with other NGOs and the Malagasy and French authorities.

KEY WORDS. – Reptilia, Testudines, Testudinidae, Astrochelys radiata, Radiated Tortoise, Pyxis arachnoides, Spider Tortoise, illegal trade, confiscation, repatriation, Mayotte, Madagascar

One of the threats placing pressure on the endemic tortoises of Madagascar is the illicit collection of live tortoises for export. In spite of the existence of current laws at national and international levels, traffickers continue to illegally transport these animals by air and sea to international destinations, including Asia (especially Thailand, Hong Kong, and Malaysia) and the Indian Ocean islands, including Reunion and Mayotte.

Mayotte is a French Territory in the Comoros Archipelago, northwest of Madagascar. Between 2008 and 2010, the Salamandra Nature Association, in conjunction with SOPTOM, organized repatriation to Madagascar of Radiated and Spider Tortoises seized in Mayotte by the Brigade Nature de Mayotte and the Office National de la Chasse et de la Faune Sauvage (BNM/ONCFS) (Fig. 1).

Repatriating tortoises is administratively difficult and especially rigorous because the survival of a critically endangered species is at stake. A good example of this was the recent seizure of Ploughshare Tortoises (Astrochelys yniphora) in Mayotte and their subsequent repatriation to Madagascar in 2007. The method of transport had to be sufficient to maintain the well-being of the tortoises from Mayotte to the Village des Tortues (Station d'Observation et de Sauvegarde des Tortues – SOS Tortoises) at Mangily-Ifaty, southwest Madagascar near Toliara. The administrative procedures associated with this process lasted about six months and required frequent reporting through e-mail or by telephone.

Unfortunately, when tortoises are collected in nature they are piled up in dugout canoes or cars. It is the same situation when tortoises are put in sealed suitcases without air holes and transported by airplane. To minimize problems during transport, we make boxes with air holes to ensure proper ventilation (Fig. 2). Compartments within the boxes are of suitable dimensions that are proportional to the size of tortoises being transported. Dry herbs are placed in every compartment to prevent the tortoises

from coming into direct contact with the wood, and green leaves are provided for food. Air Madagascar is always used for air transport because they provide this service free of charge thanks to our sustainable partnership. In every tortoise repatriation project, the team of Air Madagascar facilitates the return of these animals once all of the administrative paperwork is complete (Fig. 3). When the tortoises arrive at the Village des Tortues, the local team opens the boxes and places the tortoises in basins filled with water containing Betadine, which cleans and also rehydrates them. Then every individual is closely examined and placed in quarantine to avoid passing on diseases to the other tortoises at the center (Fig. 4).

Thanks to the fruitful collaboration with BNM/ON-CFS, the repatriation of 19 Radiated Tortoises (*Astrochelys radiata*) and one Spider Tortoise (*Pyxis arachnoides*) was made in January 2008 (Razafindrakoto 2008). Subsequently, 11 Spider Tortoises were repatriated in February 2010 (Razafindrakoto 2010a). These tortoises will be returned to their natural habitat under care and supervision at a protected area in Tsimanampesotse National Park. In 2010, two students conducted a feasibility study of the release in Tsimanampesotse that was financed by the Turtle Survival Alliance (TSA).

The repatriation is also an initiative to share information and raise public awareness, especially for the Malagasy authorities that need to work together with NGOs to stop the illegal trafficking of tortoises (Fig. 5). Indeed, the authorities should strengthen the means of control at air and sea ports to eradicate or reduce this traffic significantly. In 2010, Salamandra Nature released a 15-minute documentary video to raise awareness about the tortoises and the Village des Tortues at Mangily-Ifaty. This documentary played on Air Madagascar flights during 2010 to celebrate the "International Year of Biodiversity". The magazine Orchid, also produced by Air Madagascar, provided travellers with an article on the



**Figure 1.** The repatriation of the confiscated tortoises was organized by Salamandra Nature, SOPTOM, and the Brigade Nature de Mayotte. Photo by Leon A. Razafindrakoto.

Village des Tortues at Mangily-Ifaty and the repatriation project (Razafindrakoto 2010b).

Thus far, the movie has proven to be the best option for communicating the message; therefore, Salamandra Nature will be seeking financial support to reproduce a version of the movie in dialects of the southwest region of Madagascar. It is recommended to have a seminar on the theme of cooperation among the Mascarene Islands to fight against the illicit export of the biodiversity of Madagascar. The target participants are the forest agents from Madagascar, the Brigade Nature from Mayotte and from Reunion, and the customs officers and gendarmes of the concerned countries. The seminar should be organized by NGOs working with the tortoises in Madagascar and the Ministry of the Environment and Forests.

Repatriation is an action that contributes to the survival of tortoises as long as the responsible authorities



**Figure 3.** Air Madagascar prepares the paperwork and facilitates the transport of the tortoises once they arrive at the airport. Photo by Leon A. Razafindrakoto.



**Figure 2.** Wooden boxes are used to transport confiscated tortoises. Photo by Leon A. Razafindrakoto.

implement solutions to eradicate illegal trafficking. It is time to act. Associations of local NGOs and communities should be in perfect synergy in the process of the preservation of tortoises. The preservation could become the motivation behind local socioeconomic development by integrating a socio-cultural approach. The purpose would be to give the responsibilities to the people of the valuation and preservation of their natural heritage, including the tortoises, which is the principle of transfer of management (Razafindrakoto 2010a). Finally, all NGOs working on tortoises should form a coalition to have a common strategy, which already exists as "an action plan for conservation". This plan now needs to become a reality in the field.

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**Figure 4.** When the tortoises arrive at the Village des Tortues center, the local team opens the boxes and examines every individual and places them in quarantine to avoid passing on diseases to the other tortoises at the center. Photo by Leon A. Razafindrakoto.



**Figure 5.** The repatriation program provides an opportunity to share information and raise public awareness in local communities. Photo by Leon A. Razafindrakoto.

team, who invited me to participate in their 8th annual symposium in Orlando in August, 2010. In the name of all the team of Salamandra Nature, I am, to all our partners, very grateful, without them these repatriations would not have taken place in time: SOPTOM, ASE, the botanical and zoological Garden of Mulhouse, the Zoo of the Pal, the Bioparc de Doué La Fontaine, the Zoo of Jurques, the Cerza Conservation, the association of Museum SECAS, the Brigitte Bardot Foundation, the Zoo of Champrépus, and the Spaycific' zoo. And I thank very sincerely, the company Air Madagascar that was kind enough to transport, free of charge, the tortoises. Finally, I express all my gratitude to BNM and all the services of the French State

between Mayotte and the Ministry of the Environment and Forests Malagasy for their efforts and their efficiencies in the administrative procedure for the repatriation of the tortoises. Thank you to all the team of SOS Tortoises of Mangily-Ifaty for their dedication in the service of the preservation of Malagasy tortoises.

## RÉSUMÉ

Le trafic illicite de tortues malgaches conduit au déclin de leurs populations. La Brigade Nature de Mayotte avait confisqué, en 2007 et 2009, de larges groupes de tortues radiées et de tortues araignées collectées illicitement. L'Association Salamandra Nature a rapatrié ces tortues vers le centre SOS Tortues de Mangily-Ifaty à Toliara. Malgré de lourdes procédures administratives, l'opération a été un succès, grâce notamment à la collaboration avec d'autres ONG et les autorités malgaches et françaises.

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