

For Chirp July 2022

JUNE 21, 2022

By Jane A. Lyons

Well, nothing is ever dull at Reserva Las Gralarias (RLG). On April 1, 2022 a tornado skipped through the Mindo area, bringing quarter-size hail to the area for the first time ever reported. The damage was not too severe insofar as human infrastructure as the tornado was very fast, coming from the southern zone of Quito towards Mindo valley and north past RLG. It hit us at about 5.30pm and uprooted large trees and knocked others over, a number of which are still lying across various trails. Electric lines and posts were uprooted and blown over completely. Fortunately there was no damage to any of our structures nor even to our 35 glass and plastic hummingbird feeders that were sitting and hanging in various parts of the lodge patios at the time. In 30 minutes the place looked very much like a tornado had hit, with leaves and branches strewn everywhere, some smaller trees knocked over onto our buildings, some large trees broken in half. My main concern was about the birds. What had happened to them? I thought, fortunately at 5.30pm, it is still light enough for diurnal species to see and manage to find a good night roost, plus close enough to nighttime for nocturnal species to be able to adjust their normal behavior, find a new roost site and/or food over the course of a full night. So I was hopeful that the actual birds managed to survive.

Photos of the day after the tornado.



The 'road' at the entry to our buildings



Miraculously, the electric company came out the next day to remove the dangerous fallen cables throughout the area. All the roads were blocked but they recruited enough help to clear a passage for their vehicles and the new electric posts. They had a group of 12 workers just at our site and managed to get us electricity again within 2 days.



The electric company extracting and replacing fallen posts from our property.



Previous photos by Segundo Imba



Photo by Jane A. Lyons



Fallen trees and branches everywhere

Photos by Jane A. Lyons



One tree uprooted and turned upside down. This is the root system of a 20-year old *Croton floccosus* tree of the family Euphorbiaceae.

Photo by Jane A. Lyons



Unbelievably, our hummer feeders survived it all, 100% intact.

Photo by Jane A. Lyons

Over the following weeks we cleaned up everything, moved/cut the trees off the buildings and surveyed the damage throughout the reserve. As with tornadoes, some areas had zero impact and others were in shambles. I was sad to see trees that I had planted 20 years ago snapped in half. However, I was also thankful to note that our forest had absorbed most of the force of the tornado and left surprisingly little serious damage.



It dawned on me that, other than clean our road and walkways and buildings, I really wanted to know what would happen naturally after the storm. There was plenty of vegetation left with no damage and most parts of the reserve were in fact not obviously damaged at all. Some large trees were, unfortunately, blown down across a number of our trails. So, what to do?? As I normally do, I voted for nature instead of a chain saw. In fact, I became quite excited about being able to document what happens to a cloud forest after being hit by a tornado and thought this was a once-in-a-lifetime (I hope!) chance to see the good and bad of that recovery process. Photo by Jane A. Lyons

So, we have cleared the actual paths as much as possible to be able to walk them but have left most of the vegetation as it landed. I want to see what will die and what will survive, what changes will come from such a vicious, but perfectly natural, storm: how will nature respond if left alone?



Photo by Jane A. Lyons

Our forest is an evergreen broadleaf forest where the trees have large leaves year-round, mostly dropping them and replacing them continuously. There are some exceptions, primarily our hardwood trees, some of which drop not only their leaves but also their branches and others that have very tough coriaceous (=leathery, from the Spanish word 'cuero' for leather) leaves that never seem to just drop off, although some may become damaged, eaten, wilted and then will eventually fall. To some extent I guess it was amazing that any leaves stayed on the trees since most were battered by hail and became hole-ridden leaves but did not immediately fall off. In fact, most of these battered leaves are still hanging on the tree limbs and only dropping to the ground when is their normal time. We are still finding (and sweeping) hundreds of hail-battered leaves on our patios every day now at the end of July,

some 90 days after the storm hit. This tells me that the normal pattern of life for these trees continues, sort of like a mammal continuing to walk even after a broken leg.



Photo by Jane A. Lyons



Hail-damaged leaves, some fallen and some still on their branches

Photos by Jane A. Lyons



The leaves of many species of trees took a severe battering in the hailstorm, and they now look like lacey skeletons of their former selves. What the loss of these leaves will mean is unclear but so far it doesn't seem to have had a huge effect on much. I imagine, with so many holes, the leaves will not be able to absorb the humidity of our cloud forest and so during the upcoming drier months this may cause a tree or some of its branches to dry out, which will of course affect their fruit production.

Photo by Jane A. Lyons



Photo by Jane A. Lyons



This cloud forest mahogany tree planted as a seedling in 2010 was snapped in half. The upper half contained the nest of a clan of Sepia-brown Wren which was destroyed. But upon inspection of the nest itself, I found no eggshells nor any feather in it, so it appears it was not being used as an active nest.

Photo by Jane A. Lyons



Photo by Jane A. Lyons

Much of the winter crop of fruits, that most of our frugivores depend on, was damaged or even destroyed and blown away, such as these Melastomataceae fruits. As a result we had large and constant concentrations of many species of frugivorous birds at our feeders for months after the storm.

The birds in our immediate area seemed somewhat shocked by the storm. Those normally aggressive and possessive birds became interested only in eating and not fighting. We kept constant food at all the feeders and included not only bananas but also papaya, watermelon, sweet corn, avocado and put extra food on the ground for the agoutis. Within a few days after the storm, I did see or hear all the species of birds we normally have, including our resident pair of Powerful Woodpecker, our normal Yellow-breasted and Moustached Antpitta, our resident pair of Lyre-tailed Nightjar and most other species, including all of our hummer species although with only one individual of Brown Violet-ear. I heard our jays and wrens and even White-faced Nunbird but did not hear our quetzals for some time. However, now there are three male quetzals calling behind the guest houses. We also received photos and proof of our monkeys and a bear in the weeks after the tornado. Agoutis and tayra as well as a possible olinguito and squirrels were also seen near the guest houses during the weeks after the tornado.

No doubt we lost many nests of the late winter nesting species, which means probably also many females of those species. But we actually found only one destroyed nest and no dead birds or other animals at all.



Large numbers of tanagers and other frugivores stayed at our banana feeders.
Photo by Jane A. Lyons

Amazingly I also saw my number one sought-after lifer at RLG soon after the tornado: a Rufous-brown Solitaire (now split into 4 species, ours being called Chestnut-throated Solitaire). It seemed somewhat confused as it was foraging in a brush pile below the guest houses at 1950 m elevation, near the road at eye level, and not at all afraid of us. Several of us saw it for a few days in the same area. This is a new species for RLG and is considered an endangered species by Birdlife International.



Trimmed video photo by Milton Delgado

So why is this article titled “June 21, 2022”?? Because June 21 is the summer solstice, the longest day of the year, and is celebrated here by the festivities of Inti Raymi. This large two-week celebration by the Inca indigenous population of the Andes includes the ceremony of extinguishing the old fires which are then re-ignited to indicate the renewal of the sun-season. This is their way to honor the sun which on June 21 is directly overhead here on the equator and where RLG is located at 00°00’03”S. June 21 marks the beginning of summer and the end of winter cold and storms.

So how had our April Fool’s Day tornado-damaged property managed to cope by Inti Raymi on June 21??

Even though we did lose trees and vegetation to the storm, fortunately the size of our cloud forest helped to provide much cover and continued habitat with a wide corridor of resources for the birds and other animals living on our 1500 acres.

And, somewhat astoundingly, by June 21, some 2.5 months after the tornado hit, many of the fallen trees were re-sprouting leaves and new branches. Plus, millions of new seeds were falling from the damaged Crotons even still with shredded leaves. One long tree trunk we had to cut in half and remove because it was leaning on the guest house. We had machete-cut that trunk and then painted it a fluorescent yellow. My thought was to place it along the edge of the road so cars would not drive into the muddy ditches, which is what we did. It looked quite dapper as a road signal. However, by June 21 it was re-sprouting large leaves and branches, and the bright yellow paint was somehow disappearing – so now we need to remove it from the road and plant it somewhere!



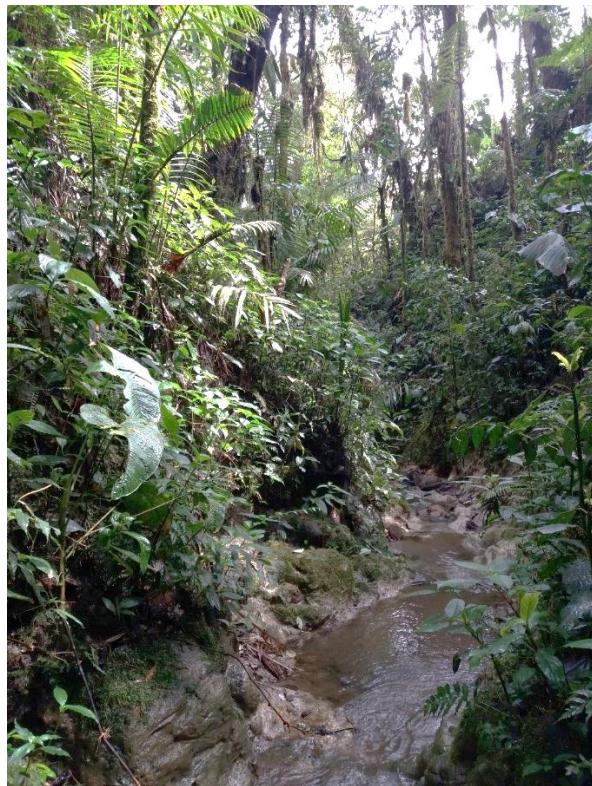
Photo by Jane A. Lyons

The wettest forest zone along Canyon's Trail and Kathy's Creek suffered minimal damage from the tornado and by June 21 was already regenerating, fallen trunks with new branches growing and with clear flowing water in the creek. A long-lived palmito tree there, which is the favorite territory of one intrepid Las Galarias Glassfrog known as 'Romeo', sported three clusters of eggs dangling from the leaf tips, with a total of 58 healthy eggs and almost-tadpoles soon to eclose and leap into the creek below.

See the following photos by Segundo Imba taken on June 21, 2022.



Canyon's Trail regenerating vegetation on a fallen tree trunk



Minimal damage and plenty of clear water along Kathy's Creek



Three healthy frog egg masses hanging on a palmito leaf above the creek on June 21, 2022



Las Gralarias Glass Frog egg masses with healthy tadpoles visible inside on June 21, 2022.





Some of our most fragile plants were not at all damaged by the tornado, including this flowering *Podandrogynne brevipedunculata* in the family Capparaceae. It is an endangered species endemic to Ecuador and is pollinated by clearwing butterflies.

Photo by Jane A. Lyons

Initially after the storm many birds, especially the frugivores, had a hard time replacing, from one minute to the next, their regular food sources. We offered them all the food possible, all of which they consumed in minutes. We even had mixed flocks of parrots and parakeets feeding on the fruits, flowers, seeds still extant on the trees. Finally, by mid-June most of the birds had begun to find new sources of their wild fruits as well insects that became more abundant in the warmer summer weather. We have kept all our supplemental food out for them regardless. Many of the birds now know if they call, we will run and put out more food for them!



New fruits ripening in a Melastomataceae tree.

Photo by Jane A. Lyons

By June 21 we also had the regular summer clouds of migrating honeybees heard buzzing overhead, as well as bumblebees, various reptiles, butterflies, moths, crickets, some flowering orchids and continued large numbers of birds at our feeders although they were also feeding in the trees and vegetation farther out from the feeding stations as new fruits began appearing.

We also had a very large live giant earthworm on the patio.



Photo by Jane A. Lyons

In addition, I found our monkey pot tree with at least 20 small pots hanging from its branches. We have only found 1-3 pots in a few seasons previously, so I was delighted to find so many small pots. I assume the long, wet winter helped promote the new growth, and we will of course follow this new development. This amazingly sturdy tree appeared to be untouched by the tornado which hit and uprooted a tree just fifty feet away from it.



The astounding monkey pot tree (family: Lecythidaceae), unscathed by the tornado that passed nearby.
Photo by Jane A. Lyons



Pint-size new monkey pots, some 20+ found in our monkey pot tree.

Photo by Jane A. Lyons



Many monkey pots!

Photo by Jane A. Lyons

We will continue to document what happens to our damaged vegetation, but for now it appears life is pretty much back to normal in our forest just 2.5 months after a tornado hit us. Oh, and great news also is that the clan of Sepia-brown Wren has now constructed a totally new nest in a tree some six feet away from the snapped-off mahogany tree where they had built their previous nest.

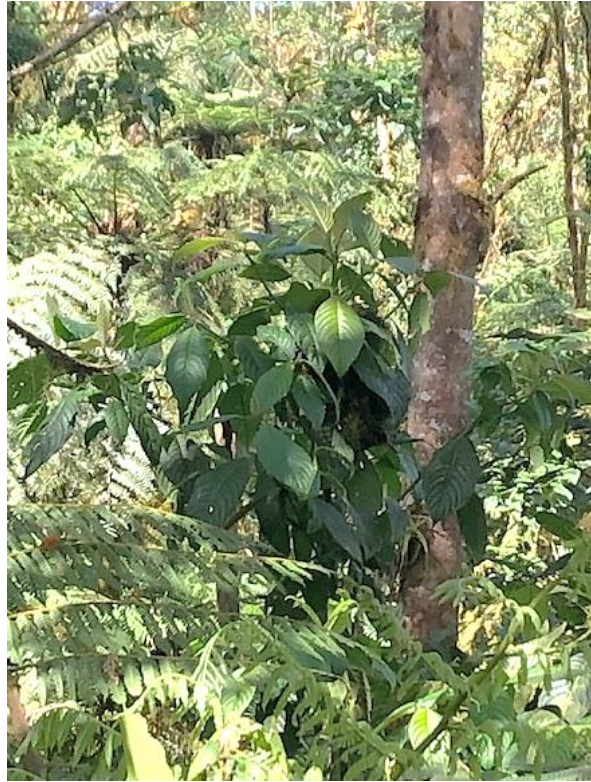


Photo by Jane A. Lyons



The new nest (the large dark blob of moss in the center of the photos).

Photo by Milton Delgado

And the snapped-off mahogany trunk is now sprouting new purple-colored branches!

Photo by Milton Delgado





Tranquil summer sunset at RLG, on June 25, 2022

Photo by Jane A. Lyons