



David Denning photo

# Oystercatcher

Salt Spring Trail and Nature Club  
 Newsletter  
 Summer 2016



While hiking Mount Maxwell on Easter Sunday, Gary Quiring discovered an unusual mushroom. The violet star cup (*Sarcosphaera crassa*) is usually only found when opened and violet in colour, making this one emerging specimen difficult to identify at first. It is not recommended for eating. Photo by Gary Quiring.

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Hiking on Mount Sullivan. Photo by Linda Quiring.

## The Salt Spring Trail

*Charles Kahn*

All over the world people love walking off-road pathways to get places or just for pleasure. Many established trails follow historical routes that people have walked for centuries. Think of the Camino in France and Spain, all the Grandes Randonnées in France, and the network of public footpaths throughout Britain. Even BC has a few, like the Sunshine Coast Trail and the Kluhdak Trail on the San Juan Ridge. Many of these routes combine to produce the Trans-Canada Trail, still a work-in-progress.

Gulf Islanders are no different than anyone else. On every island walkers dream of having a trail from one end of their island to the other. For Salt Springers it's the desire to get from Fulford to Vesuvius, or even farther, without having to walk on roads. Of course, that's what islanders did for years before we had roads. Even today, many of these traditional routes still exist, albeit on private property.

In the early 1990's, then-planner Linda Adams put together a map of our existing trails and identified the gaps we needed to fill to complete the through-island trail network. For some years, our local parks and recre-

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For information on the Board of Directors and weekly outings, please see our website: [www.saltspringtnc.ca](http://www.saltspringtnc.ca)

## Calendar of Events

### **Saturday, June 11, 2016** **SSI Conservancy Members**

Annual General Meeting is being held at 1pm at 265 Blackburn Road. Members of the Conservancy will conduct business, followed by a guided walk of Blackburn Lake Nature Reserve.

### **Tuesday, June 14th, 2016** **PREVOST ISLAND.**

The de Burghs and family are looking forward to hosting us. Assemble at the seaplane dock at 9:45, lunch and water in hand, for a 10:00 am departure and return about 2:00 pm. Cost \$30 if there are at least 40. Cheques to be made out to the Salt Spring Trail and Nature Club and deposited in the designated envelope at the Information Centre. First come, first served. No refund after June 8th unless your place can be filled or the boat is full.

### **Tuesday Jun 21, 2016** **Strawberry Festival**

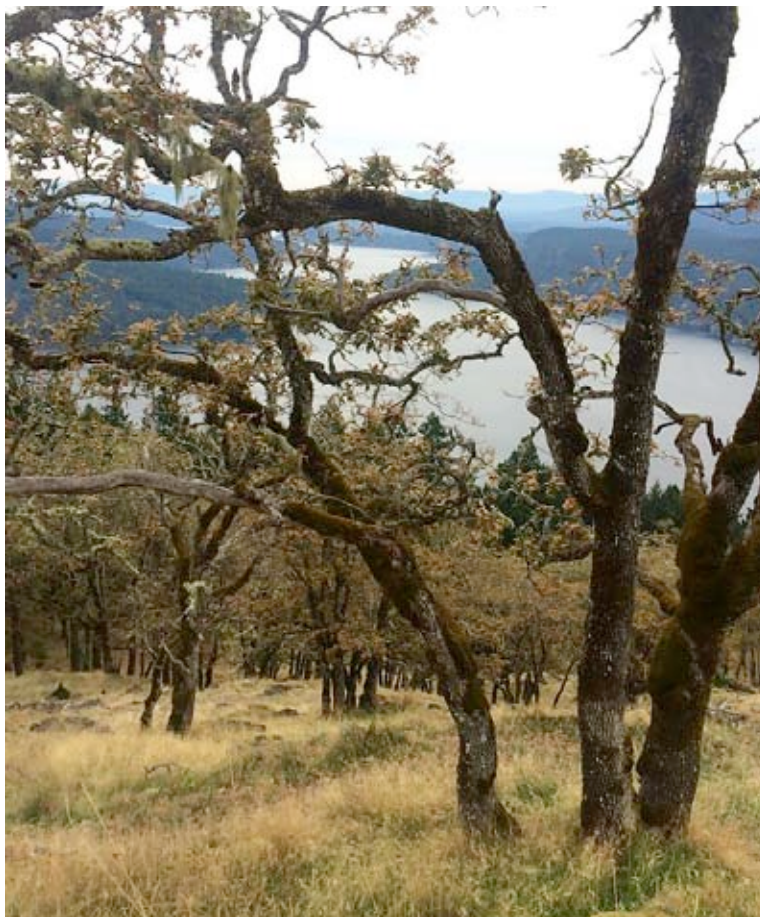
The 2015-2016 hiking season ends with the Strawberry Festival at Ruckle Park. Meet at noon in the lower picnic area to enjoy a scrumptious dish of strawberries and ice cream. Don't forget your bowl and spoon.

### **Sunday, June 26, 2016** **Classical Concert at Blackburn**

Enjoy cellist Paula Kiffner, violinist Joan Blackman and violist Larry Blackman playing the music of Bach, Beethoven, Dohanyi and Schubert. Relish a 2pm concert with the beautiful backdrop of the Blackburn Lake Nature Reserve (265 Blackburn Road). Taste special treats and fine beverages. Limited tickets for this fundraiser are \$50, with a tax receipt for \$25. To reserve, call Kathryn at 250/538-0318 or email [office@saltspringconservancy.ca](mailto:office@saltspringconservancy.ca)

### **Tuesday Sept 13, 2016** **Blackberry Festival**

The 2016-2017 hiking season begins with the Blackberry Festival at Ruckle Park. Meet at noon in the Group Campground. Bring your lunch and a favourite blackberry goodie to share. Don't forget a bowl and a spoon. Short walks will be scheduled before lunch.



*Garry Oak Forest on Salt Spring. Photo by Gary Quiring.*

ation agency (PARC) has had a Trails Advisory Committee which attempts to do exactly what Linda Adams conceived of over 20 years ago. Working from its "Gap Map," this committee looks at each new development with the hope that the landowner will donate a piece of land - perhaps just a linear strip - that will fill one of the gaps.

Recently, the committee also worked to establish statutory rights-of-way over private property to fill gaps along the desired cross island trail. Increasingly, Salt Spring landowners have agreed to allow walkers to cross their land. These landowners will also benefit from having the Salt Spring Trail in their backyard. As the Bruce Trail experience in Ontario proved, having a major recreational facility like a trail near your property actually increases its value.

This trail corridor passes through both our local and provincial parks and through private land with the agreement of landowners. While providing a local amenity for individual neighbourhoods, where trail systems like the one in Channel Ridge give local residents a place to walk off-road and enjoy the flora and fauna, it also yields a route from the north part of the island almost as far as the central island.

Some of us are now trying to be more proactive about completing this trail corridor, which will be an asset both to



*Foxgloves on Mount Sullivan. Photo by Charles Kahn.*

residents and Salt Spring visitors. It will combine world-class hiking trails like those on Mt. Maxwell with linear trails through private property, like the one from Baker Road to Harrison Road through property owned by the Gospel Church. With the support of our landowners we hope to achieve this goal in our lifetime. After all, that's how Salt Springers got around before we had all those cars, and these traditional routes are still there for us to use.

## To Cap or Not To Cap

*Gary Adams*

Each call for newsletter articles results in one about birds with all of the species capitalized and I diligently go through it, replacing unnecessary caps with lower case. About once a year, my confidence begins to waver so I peruse the style guides for guidance and they advise me that my editing is correct. However, recent curiosity led to some follow-up research.

To start at the beginning, a noun is a part of speech that identifies a person, place, or thing. A proper noun is a noun that identifies a specific "unique" person, place or thing and that uniqueness is marked with capitals. Usually this is self-evident. In English, no one capitalizes man, lamp, or swamp. They also realize that Gary, or Ganges should be capitalized. The problems come when decoding the uniqueness of less obvious instances. The Bible is a unique entity, even though there are many versions of it. While north is not unique, only one "The North" exists. While mountain is not capitalized, Mount Maxwell is.

In nature, the unique name of a species is defined in binominal nomenclature as refined by Linneus in his *Species Plantarum* in 1757. This system was welcomed simply because prior naming conventions did not work. The scientific name was based on species descriptions so each new species needed longer and longer names. For instance, "*Plantago foliis ovato-lanceolatus pubescentibus, spica cylindrica, scapo tereti* (Plantain with pubescent ovate-lanceolate leaves, a cylindrical spike and a terete scape), we know today as *Plantago media*" (Wikipedia: Binomial Nomenclature). Vernacular systems were even worse. A European robin and a North American robin are two different species. A dark-eyed junco, Oregon junco, and slate-coloured junco are all the same bird. Furthermore, different languages adopted entirely different names for the same thing.

Consequently, the unique name for each species is a two word identification (Genus + species) which

## Forming a Butterfly Rescue Centre

Robin Fitzgerald who published an article for the Driftwood "Will Moss's Elfin go the way of Island Blue?" actually managed to find some on Salt Spring. He has recently produced a book highlighting butterfly problems and some projects to ameliorate them. *BC's Butterflies of Concern* is a 140-page paperback, self-published and available at [Lulu.com](http://Lulu.com). You can also get a preview of significant portions of the book at [Google Books](http://Google Books).

Robin and his friends at the Butterfly Enthusiasts Club are troubled by the various species of butterflies in parts of British Columbia, including the Gulf Islands. Their projects often require partnerships with local interests to manage them. His interest in the moss elfin species may be of interest to Salt Spring Trail and Nature Club because Mt. Maxwell is the closest trail near to the last known sighting of Moss's elfin.

His interest in butterfly rescue continues unabated. In a recent article his successful project to complete a rearing station on Denman Island that raises a single species, Taylor's checkerspot, he wrote:

"Recent contact from the Wildlife Preservation Fund, based in Ontario, has provided much optimism for our Island flyers. Scientists from eastern Universities are now seeing the value of rearing multiple species all at one time. Even our missing Island Marble is a possibility for recovery in the future. "

He has joined with the Vancouver Zoo to form a butterfly rescue centre that has grand plans to establish a rearing station for Taylor's checkerspot and the Moss's elfin around Burgoyne Bay. I expect we will be hearing from him in the future. Gary Adams.



*Moss's Elfin (Callophrys mossii mossii). Victoria, BC. J.B. Tatum for Canadian Biodiversity Information Facility.*

## Hope Hill Trail Issue

### Jean Attorp and Sue Lehmann

Hope Hill has long been a trail that hikers enjoy. For some time now, hikers have noticed evidence of dirt bikers, but recently the damage has become much more apparent. So far, it's trail damage. No garbage yet, except for the plastic chairs used to watch the activities.

Hikers don't share the same values as bikers - especially the motorized kind. They chew up our trails, are noisy, often aggressive, and have a huge impact on the environment. It's very disappointing when they move into an otherwise natural area as can be seen in the accompanying photo essay.

If you are concerned about trail damage on any crown land, and if you see violators in action and can take photos and record licence information. Please report your observations by telephone (1-844-676-8477) or by completing a Natural Resource Violation Report Form found online at [www.for.gov.bc.ca/hen/nrv/report.htm](http://www.for.gov.bc.ca/hen/nrv/report.htm). SSTNC members could also make reports of damage to wildlife habitat to RAPP (Report Poachers & Polluters) at 1-877-952-RAPP (7277) or from a cell phone at \*7277.



Trail showing the tree dirt bikers cut for a jump across the trail.



Trail at a rock bluff. We found a Camas Lily, so would expect other wild flowers. Unfortunately, they're creating lots of trails on it and destroying whatever fragile habitat there is.



A new trail is being carved into a steep slope.



Left. Bikers tried to cut this tree but it got hung up and didn't fall. Beside it is a third tree which fell the wrong way, away from the trail. a tree they tried to cut, which got hung up on another tree and didn't fall.



Right. This side trail leads into a mud pit.



Right. This muddy section shows how they really chew things up.

## Trans Canada Trail News

The recent Trans Canada Trail Newsletter contained a couple of items of local interest. First, they recently awarded one of their "Trail Champion" awards to the 94-year-old White Rock resident, Nina McLachlan who constructed a three-dimensional map of the trail with paper mache images of provincial flowers and birds.

The Trail is also working with the Malahat First Nation to complete the connecting piece of trail between the Galloping Goose Trail around Victoria and the Cowichan Valley Regional Trail. They expect it to be connected in 2017 to create a complete network from Victoria to Nanaimo.

Finally, TCT has recently launched an interactive map developed over five years as a collaborative effort between the TCT's geographic information systems (GIS) team, local partners and, Esri Canada: a GIS solutions enterprise. The TCT's interactive map is a continually evolving tool to incorporate updated Trail locations, descriptions, photos, paper maps and accurate practical information detailing access points, amenities, parking, rest areas. The map highlights six preferred recreational activities: walking / hiking, cycling, horseback riding, crosscountry skiing, snowshoeing, snowmobiling and paddling. Check it out at <http://tctrail.ca/tct/wab/?locale=en>.

always has the first word capitalized. The common rationale is that when people write about a great blue heron, it is not an identifiable, unique, individual, merely an example of a species.

This is where the story gets interesting. For most of nature, this distinction has been a non-issue. No one considers capitalizing cougar, zebra mussel, house cat, or alder. Scientists and articles written by them are consistent with the rules until you get to the realm of birds. Birders feel a necessity to have their special interest capitalized. As a result, most bird field guides use caps while articles about birds in scientific literature do not. A long explanation (rationalization) written by Penelope Hillemann for her blog, along with the comments, is a thoughtful piece making very interesting reading. <http://penelopedia.blogspot.ca/2010/12/bird-names-to-capitalize-or-not.html>. I found other examples of raging debate over the issue online, some of them a lot less polite. Some bird enthusiasts think that to not capitalize is equivalent to bird harassment while some editors think that birders are illiterate.

Does this mean anything to us? Not much. I approach the newsletter as an editor and will continue to use lower case because it has rules of grammar that are consistent. Your next editor might take a different stance based upon a different bias since no style manual exists for the Oystercatcher. Despite grammarian tendencies, that are always conservative, I do think momentum is towards capitalization. COSEWIC wants writers to use them and the large bird organizations like the Audubon Society endorse them. The seventh edition of the Common and Scientific Names of Fishes from the United States, Canada, and Mexico (American Fisheries Society; 2013) changed to caps for the first time. Lots of examples of lower case style manuals for major publications and organizations persist but more exceptions have emerged in the past decade or two.

## Purple Martins, Waterfront Residents

*Nieke Visser*

Last year in May while waiting for the ferry from Hornby to Denman Island, I was intrigued by the circling swallows checking out nest boxes on pilings, about 50 to 100 m from the ferry terminal. Getting closer to the action, I noticed these swallows were purple martins. I had seen inactive nest boxes at Newcastle island, but this was what was supposed to happen: at least 10 pairs were actively checking out the nest boxes.

Why did we not have these on our own island? I asked a few birders and I was pointed in the direction of Hamilton Beach on Fulford Harbour where one of the residents had mounted three boxes on a single piling. I contacted that person and I learned that more boxes were mounted on pilings just north of Hamilton Beach and that these boxes have been active for a while. He also pointed me towards Long Harbour where a number of boxes were mounted north of Maracaibo. In the meantime I also learned that Pender, Mayne and Galiano have numerous sites where martins are now regular breeders.

Purple martins are the largest of the swallow family in North America. The western species is threatened in British Columbia. In the past, western purple martins used to nest in woodpecker holes in old trees or snags in woodlands, near fresh water and may have used fire-killed



*Purple martins in Long Harbour. Photo by Nieke Visser.*

stands. Due to logging, fire prevention, snag removal, burned timber salvage, and agricultural and urban development throughout their original breeding range around Salish Sea, this habitat has been lost. Resident populations of introduced species such as European starling and house sparrow provided extra competition for the remaining nesting cavities.

Why do martins now prefer nesting above water such as sea inlets, large lakes and boggy areas? As habitats were lost, martins found alternate nesting opportunities in the abundance of old and decaying untreated pilings left over from the early industrial development, especially around the Georgia Strait, Puget Sound, and the Columbia River. As these old pilings decayed or were replaced with creosote-treated, concrete or steel pilings in which woodpeckers could not build a nest, this alternate habitat was lost as well for the martins. By the early 1980's the BC breeding population was reduced to 10 pairs.

A volunteer based, nest box program helped rebound the population of purple martins to 200 pairs in 2002 and about 650 pairs by 2007. A similar program was started a decade earlier in Washington State.

Between 2003 and 2006, swallow populations increased exponentially due to favourable weather conditions providing ample flying insects, their main food supply<sup>1</sup>. The purple martin population increase stalled between 2006 and 2010 due to long cool wet periods that limited the food supply of flying insects. However with weather improving and insect population on the rise, the number of breeding pairs increased to 950 pairs in 2013 and over 1000 in 2014.

The Georgia Basin Ecological Assessment and Restoration Society (GBEARS)<sup>2</sup> has been instrumental to this success. This Nanaimo based organization has been extremely helpful to the many volunteers who constructed and put up nest boxes all around the Salish Sea. They provide guidance for nest box construction, what material to use, measurements, and locations where nest boxes already exist. They also collect data on the success rate of the re-introduction program.

At the SSTNC AGM in January, I introduced the purple martin program with a few slides taken at the ferry terminal on Hornby Island. A budget for the program was approved at that meeting and a group of people got together to lift off this project. Our group scouted potential sites to place nest boxes. Next we asked permission to have boxes installed when we were considering privately owned docks. We placed the first 5 boxes at a dock on Walter Bay in late April and 3 pairs of martins were quick to move in even though we thought it was too late for occupancy this spring.

When you read this we will have installed 5 more boxes on pilings near Drummond Park and 5 more at the Maracaibo marina. We can certainly use more volunteers to help out with building boxes and placing them. If you like to be part of this project and can handle a screwdriver, please contact Nieke at 2050 537 5443. We certainly will appreciate your help.

<sup>1</sup> *BirdWatch Canada 2005 Issue #30 (pp 21-22).*

<sup>2</sup> [www.georgiabasin.ca/](http://www.georgiabasin.ca/)

## **SSTNC Notables: Bob & Betty Ball**

### ***Linda Quiring***

Among the most intrepid members of our hiking club, Betty is now 91 and just completed a Ramble through Duck Creek. Bob Ball, at 95, had a fall recently during a walk, injured his pelvis and is currently in rehab in Victoria. How amazing to see these two stalwarts of the Club soldiering on at an age when most of us will be eating pablum and watching TV.

Betty Bell was a regular officer in the Canadian Air Force from 1952 until 1973, and graduated from the University of Saskatchewan in 1946 with a Home Economics degree. "I did hospital work and then was a



*Putting up the boxes at Walter Bay, Ganges Harbour: three generations of McAllisters, Callum, Ian and Peter installing the boxes. Photo by Peter McAllister.*

dietician in the service.” Bob Ball, originally from Essex, 25 miles east of London, volunteered for the service in 1939 and was recruited into the Royal Air Force to serve until 1945. Bob spent time in Canada, Britain and India, but “really liked Canada so when friends invited me back to B.C. I booked passage on the Empress of Canada and never looked back!”

In July 1975 Betty was with a group that came over on the ferry to hike Salt Spring and she and Bob just happened to be in the same car. With similar backgrounds in the service they had a lot to talk about. The rest is history! “Bob and I were married in 1976” says Betty, “and moved to Salt Spring when it was just a small community of 3,500 people.”

Bob acquired numerous skills in the trades in England, building cottages, then painting, brick laying and glass work. These skills led him to take on the age-old tradition of building canvas/wood canoes. Bob’s records indicate he built around 25 canoes, and says there is nothing quite like the smooth glide of a canvas covered canoe through the water.

We know him better, of course, as one of the most adventurous hikers in our Club. I well remember long hikes up the back of Mt. Sullivan, where even Bob would get us lost and we’d cheerfully wander around for hours hoping to make it back to Ganges by 4:00 pm. His hikes were always something out-of-the ordinary, and he became famous for bushwhacking. I naively asked once if we were lost. “No,” Bob replied. “We just don’t know where we are!”

Betty and Bob moved to Meadowbrook a few years ago, and while Bob became a fixture on the road walking two or three times daily, Betty has been active playing bridge, walking, going to AquaFit and belongs to a Caregiver’s group. After 40 years of walking and hiking with the Club, and regaling us all with their wisdom and wit, we salute these two old-timers. They added immeasurably to the fun, success, and Club history.

## The Travelling Birder - Costa Rica

*Murray Coates (Photos by Murray Coates)*

Birding in Central America provides the opportunity to spend time with familiar birds escaping from our Canadian winters (along with lots of people). There are also lots of resident species that can only be seen in this habitat. In Costa Rica, close to 900 observed species exceeds the number of species in both the USA and Canada combined. Given the relatively small size of the country, this amazing diversity offers excellent viewing opportunities.

In 2014, we rented an apartment in Ajuluela, a small city in the central valley near San Jose. Then we rented a car and experienced the world of driving in Costa Rica. There are few visible street signs, the maps are out of date, the drivers are all in training for Formula One, and the roads have lots of giant unmarked hazards. Apparently people there collect manhole covers, and storm drain grates are highly prized. The major (and only) route to the east coast is known as the highway of death....

We made a downtown tour to change money and buy a sim card. Ajuluela is pretty easy to get around in once you get the streets figured out. Groceries, depending on what you buy, are about the same price as Canada. The back of our condo overlooked the pool and a well-landscaped hillside. Without leaving our deck we could watch both black and turkey vultures, as well as lots of doves, pigeons and some wrens. A great kiskadee family was nesting beside our deck and entertained us with kamikaze like dives into the pool. The bird entertaining us at night led to spirited debates as to what was making the sounds. We settled the argument with an iPhone app by identifying the common paraque.

The next day we drove 30 km to the Poas Waterfall Garden, which



Kiskadee



*Rufous-naped wren*

was a pretty easy trip for our first rural driving experience. A trip highlight was the roadside vendors selling fresas (strawberries). Our first thought was Jimmy Buffet so we bought some tequila.

Poas is a large nature park which includes an enclosed butterfly garden, apiary, reptile enclosure, big cat house and, hummingbird garden. We sort of ended up in the place for free as the ticket selling place wasn't marked (you had to be there to understand). We had a long visit and put

money in all the donation boxes. Seven kinds of hummingbirds visited the feeders.

We then advanced to more complex trips, most of which involved getting lost. Our next rural trip was to Sarchi and it was another challenging navigation experience. After these two warm-up trips, it was off to the west coast to visit Manuel Antonio, Carara and Puntarenas. For those planning future trips, you could probably leave Puntarenas off the itinerary.

After escaping Puntarenas, we drove to the Tarcoles River area where our excellent bed and breakfast was located. It was called Rancho Capulin and it turned out to be one of the best places we have ever stayed. We had our own private cabana and pool and were greeted by a flock of Scarlet Macaws. Dinner was at the nearby Mirador Restaurant (to prevent confusion most restaurants in Costa Rica are named Mirador).



*Tarcoles crocodile and friends*

The next morning it was off to Jaco, a very tourist oriented location with lots of opportunities to buy beach accessories. Before Jaco is the Tarcoles River which has a very impressive resident population of crocodiles beside the bridge. They co-exist with a large flock of black vultures.

From Jaco we took an uneventful drive to Manuel Antonio, to meet Bernie Sanchez, our birding guide. After checking into the Lacolina, it was off to the park for a true wilderness experience with Bernie. There couldn't have been more than 400 or 500 people on the short trail, but we did see lots of birds and other wildlife. We did an ocean dip and then it was back to the hotel for dinner (the waitress was from Regina).

After a very short night it was up at 0430 for our Carara National Park guided walk. Led by two excellent guides, the first stop was for toucans and an endless number of other birds. By lunchtime we had seen a total of 70 species including such weirdo's as the bare throated tiger heron and the Montezuma oropendola. I also learned about digiscoping with an iPhone.

The next adventure was finding our way back to Alajuela via highway 27 which appeared to be so new it wasn't on the map. There are lots of toll plazas but it is a really good highway. As the toll money accumulates they will probably buy signs. We ended up in a part of Alajuela that was new to the mapmakers and us. Finally at about 1730 we made it to the complex. I think it took about 5 hours to travel 150 kilometres.

After a few more relaxing days at the compound and various social events with the neighbours, we booked the one-day bus/boat tour to the east coast. A major highlight was the 0520 pickup at the local Denny's... Our guide, Tomas turned out to be a true philosopher and we were able to get new insights on a variety of important issues. The journey out of SJ took us up the pass (highway of death) through the longest and shortest tunnel in Costa Rica. The road is a thrill and we sat on one part of it



*Blue Morph*



*Bare-throated tiger heron*



for 90 minutes while a couple of trucks were pulled from the ditch. We arrived unscathed at the boat place and started off pretty much on time. The boat ride was described as a chance to see all kinds of wildlife including crocodiles, jaguars, and toucans but after 30 minutes we only had seen 6 Brahma cattle and some common shorebirds. Waterski speed does not make for good bird identification. One interesting note was that the 150 HP Johnson outboard was propane powered.

We stopped in Tortuguero for lunch and did see a medium sized caiman in the creek near the buffet. We also saw a few more birds, monkeys, big iguanas and a sloth. The birding highlights included a laughing falcon, some boat billed herons, anhinga's and a flock of orange chinned parakeets. Then it was back down the canal and river to the dock and home to Alajuela on the highway of death. We did the mountain pass in the dark, in a light fog and heavy truck traffic. To make it more of a challenge, the bus headlights were defective - pretty exciting.

Our final excursion took us back to the east coast by car for a 2-night stay at Piscina Natural in Cuihuita. We did another trip over the mountain but it was relatively uneventful. We also passed through Limon (as quickly as we could) as it made Puntarenas look pretty good. The east coast is pretty laid back and not very crowded but it is very hot and humid.

That night a sloth joined us for dinner in a tree above our table. The next day we did a long walk to town and along the ocean in the National Park - lots of spider monkeys, raccoons etc. I saw a semi-palmated plover which are known to spend their summers in Saskatchewan .

We also visited Puerto Viejo, which is a bit more tourist oriented than Cuihuita. On the way back we stopped on a side road and heard and saw some very loud howler monkeys.

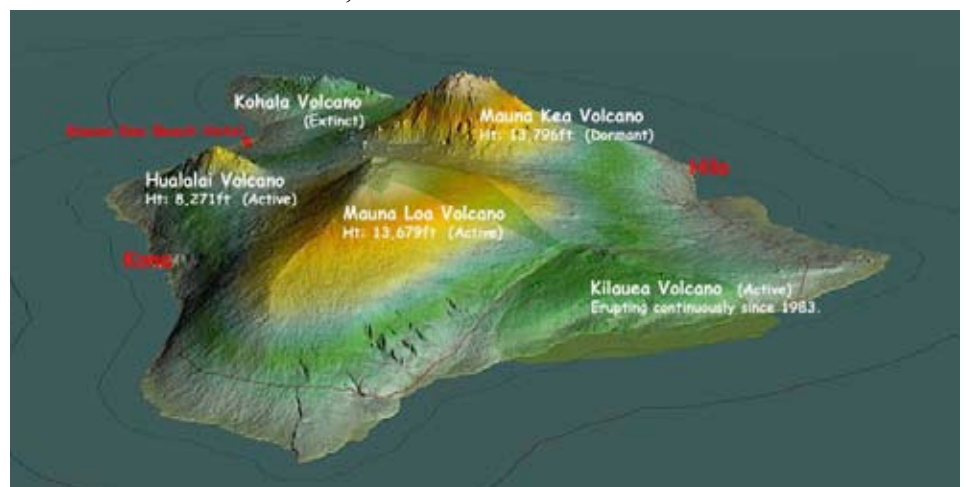
The final tally for the trip was 116 bird species. Using a local guide is highly recommended as they have a wealth of knowledge about mammals, reptiles, insects and plant life as well as birds. It also helps the local economy. Costa Rica is an excellent place for wildlife and well worth a visit.

## Hawaii, the Big Island: Birds, Botany, and Geology: Part 5

*Nieke Visser*

### Geology

In this last episode on Hawaii, the Big Island, I will try to describe the geology of this fascinating island and where to find the best evidence of the geological forces that have and still form its landscape. The Hawaiian Islands were formed by plate tectonics in the Pacific Ocean. The Pacific Ocean floor is built up of many plates that move about colliding into each other, sliding against each other, or creating fissures when they go in the opposite direction. Here, on the west coast of North America, we are all too familiar with the movements of plates causing earthquakes and volcanic activity from time to time. The Hawaiian Islands result from plates moving away from each other. As a result, hot basaltic magma (mantle material) pushes up through the cracks creating underwater "volcanoes". Eventually these volcanoes reach the water surface and form islands in the middle of the ocean. The Galapagos Archipelago is formed in a similar way, as is Iceland.



The Hawaiian Islands orient more or less in a northwest-southeast direction. The islands are all formed by volcanic activity; Kauai first and the others subsequently. Volcanic activity on all but the most southerly island of Hawaii, the Big Island, has long stopped; their volcanoes are extinct. The most active of Hawaii's four volcanoes is Kilauea in the southeast, erupting continuously since 1983, but Mauna Loa and Hualalai are still active as well, while Mauna Kea is considered dormant. A new volcano in the making is situated on the ocean floor southwest of Mauna Loa. One day that one will surface as well, adding a new island to the state of Hawaii.

We spent considerable time in Hawaiian Volcanoes National Park on three consecutive visits to the Big Island from 2012 to 2014. The park offers extensive hiking trails with spectacular views leading through the different habitats from desert like stretches (where some plants try to re-establish themselves after a more recent eruption), to kīpukas (vegetation islands spared by a lava flow) where birds that do not exist anywhere else in the world inhabit equally rare plants and trees.

### **Hiking on the Big Island**

First, I like to explain what kind of footing you can expect when hiking on recent lava flows. Lava emitted from the Hawaiian volcanoes is basaltic and comes in two forms: Pāhoehoe or rope lava and a'ā or block lava. These Hawaiian words are subsequently introduced as technical terms in geology and accepted worldwide. The first is a smooth lava that advances as series of lobes and toes. The end result looks like a rope. The second is formed by clinkers that are carried down slope on top of the main outflow<sup>1</sup>. Its consistency is a hiker's nightmare: loose, sharp and spiny; difficult to walk on and causing painful skin abrasions if you make tumble.

I think you get the most out of your visit to Hawaii when you visit the Hawaiian Volcanoes National Park and hike through this overwhelming volcanic landscape. However be aware that you are hiking in an area where volcanic activity is very present. The Kilauea crater produces a substantial plume but most of the time the wind blows the toxic gas plume away from the main tourist areas. However, sometimes trails are temporarily closed due to a change in wind direction when toxic gases blow in the opposite direction. We had one such an episode when Kees and our daughter wanted to hike a certain trail and had to go back because the wind changed.

A very popular hiking trail starts from the Lava Tube parking lot and follows the Iki Crater rim about halfway around before descending into the crater. The hike is a loop of about 6 km. In the crater itself you pass several steam vents: cracks in the crust where rainwater has accumulated and evaporates. Another enjoyable hike is the Byron Ledge trail going from the Devastation trail parking lot towards the Iki crater rim and on to Halema'uma'u trail which eventually leads back to visitors centre. At one point this trail descends into the big Kilauea crater and then skirts its rim for a while until it climbs out of the crater again. This hike requires a car at each end, or if you like more of the same, you can return from the visitors centre via the crater rim trail which hooks up with the Iki trail (at this point you can add the Iki loop as well if you are very ambitious) which gets you to the Devastation trailhead and to your car. This hike requires a lot of up and down as well as some trail finding skills, especially on the less travelled Byron Ledge trail.



Another hike to recommend is the 5 km Mauna Ulu trail leading along a fissure that originated during the 1969 eruption of Mauna Ulu and is a treasure cove of all kinds of rare plants. This fissure does not "steam" anymore. Explore lava tree molds, cinder cones, lava rampart, native pioneer plants, and trees on this trail and at the end climb 65 m to the top of a forested cinder cone, Pu'u Huluhulu (hairy hill). From there you can see Mauna Ulu's steaming shield, which is similar to the now active Pu'u Ō'ō cone in the distance. On a clear day you can see Mauna Loa, Mauna Kea and the Pacific Ocean. It is possible to continue on another trail to the Napau crater about 8 km onwards, but you have to keep in mind that you are going farther and farther away from civilization and the only way back is on the same trail.

One recommendable long distance hike goes all the way to the top of Mauna Loa (4000+ m!). This multi day trip can be very cold for most people. The trail head is at the end of the Mauna Loa road and you start

at about 2000 m. Registration is required for this hike just as it is here when you do a backpacking trip. Our daughter attempted this hike in 2012 but had to turn back when she and her partner ended up in snow for which they were unprepared. Other long distance hikes also require camping overnight. These are at a much lower altitude. However, hiking in 28-30 degrees on a black surface did not really appeal to us so I cannot comment on those adventures.



One of the more daring excursions is a hike to Pu'u O'o'; the active crater destroyed the seaside town of Kalapana in 1990. Some homes still stand, spared by the lava that just skirted around them and people still living there. One couple took it upon themselves to make a good thing out of a bad one and started a business taking people towards Pu'u O'o' over the lava field. Their house was spared as well and they live actually at the fringe of the 1990 flow, but most of their property was covered with lava. Their tour starts out of their home and takes you over "public" land as close as they feel safe to Pu'u O'o. Their outfit is called Poke-a-stick

and they claim you will be able to light a stick in the lava flow. Their logo includes one warning: this is not for wimps! Kees, not qualifying as a wimp by his own standards, did not need to think twice about this adventure. As a geologist, he had to see this real-life volcanic activity. He booked himself on one of their guided tours with two other non-wimps, a guy from Brazil and a guy from the UK. He had an experience of a lifetime in spite of a tumble on the sharp lava (his bandages are quite visible on picture). The guides re-assess the route day by day as the lava changes its course. The hike was long (starting at 8 am and returning past six o'clock just before dark) and difficult as there are no trails and the surface is very uneven.

There are a lot more hiking trails on the big island, mostly outside the park and less advertised. We did quite a few over the years we were there, but we found most not as rewarding as the ones described above.

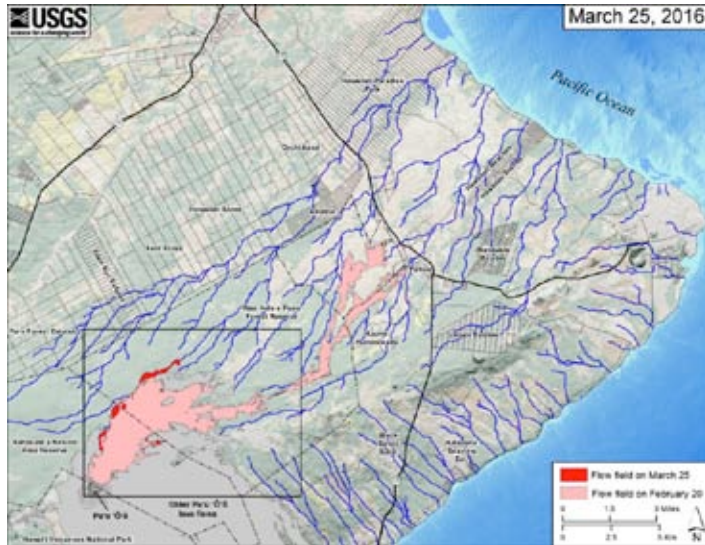
### **The 2014 Eruption**

To understand the way indigenous Hawaiians cope with the constant danger of eruptions, consider the following. Living on volcanically active islands, they have coped with their environment by adapting rituals and beliefs that ask permission and give thanks in their lives. Some native Hawaiian families trace their lineage to Pelehonuamea (Pele for short), a woman deified because of her power over volcanic eruptions and lava flows. Today, Pele resides in Halema'uma'u (the active crater of Kilauea). Respect for her presence is essential in a land where evidence of her work is abundant and where landscapes can be transformed with the blink of eye. How deeply this respect is rooted became evident when we visited the most recent lava flow in Pahoia.

In 2014, we rented a house in the Puna district for December where we had stayed two years before. It was not going to happen this time. In June 2014, Pu'u O'o decided to change its eruption intensity and the direction of its lava flow. It had been going south for many years, at one point discharging in the ocean and drawing large crowds to watch this spectacle. Over time, though, the flow subsided substantially. However, in June 2014, Pu'u O'o fired up again. The lava first sped eastwards in the direction of Hilo, then changed course skirting a settlement by hair and headed for Pahoia, the town close to where we had rented the house. We decided to find another location to stay and ended up in Woodland near Pahala in Ka'u District. Meantime we followed the lava flow's progress as it neared Pahoia, then it hit the transfer station of that town, crossed the road and went by the cemetery, sparing most of graves but destroying one house. It came to an abrupt halt. The flow decided then to take aim at the shopping centre of Pahoia, more to the east. It all happened when we in Hawaii, safely on the other side, but curiosity made us go to Pahoia where on a Sunday we were allowed to have look at the transfer station (partially covered in lava –picture). Pahoia is mainly an indigenous Hawaiian village and many of the Hawaiians had laid flowers on the lava flow (picture) to thank Pele, the



goddess of the volcanoes, for sparing their village. It was a very moving sight. Later I spoke to the lady at the check out at the grocery store in the shopping centre. She told me they were preparing to close the stores; the gas station would be prepared as well by emptying the tanks and filling them with flame retarding foam. They actually shut down the shopping centre completely when the flow was mere 200 m uphill from it. Then it stopped! The shopping plaza was spared and the some of the shops, the grocery store included, have since reopened. Still, a lot of businesses have left Pahoa leaving it more or less like a ghost town. Pu'u O'o is still erupting and things can go either way. Only Pele



knows what is hidden in the future.

On the USGS map of March 15, 2016 (left), you can see that the flow stopped dead short of Pahoa (see arrow) and changed course again (marked red). In late 2014 the Corps of Engineers hastily constructed a dirt road from Kapala to the Holei Sea Arch over Pu'u O'o's old lava field to provide an escape route for those who would have been trapped had the lava flow cut off the Puna district south of the Pahoa. It would have been a very long (3+ hours) drive to go shopping in the nearest town though as you had to navigate through the national park and out to Volcano town (no shops of any substance) all the way to Kea'āu or Hilo<sup>2</sup>.

Hawaii keeps on fascinating us and we for sure will go back there one day. I hope I have showed you a

different Hawaii than the standard tropical paradise that the incidental tourist experiences.

1. <https://en.wikipedia.org/wiki/Lava>
2. <http://hvo.wr.usgs.gov/maps/>



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