

INTRODUCTION TO TROPICAL BIODIVERSITY

September 23 - October 1, 2025



Workshop Participants, Canopy Guides and Guest Scientists

Sponsored by the Canopy Family and Naturalist Journeys

Participants: Ron, Sue, Ren, Libby, Charles, Shelly, Martha, Cynthia, Linda S, John, Linda M and Mike

Guest Scientists: Drs. Carol Simon and Howard Topoff

Canopy Guides: Igua Jimenez, Alex Sanchez and Tino Sanchez. With a special guest appearance by Canopy Biologist Dr. Rosannette Quesada

Prepared by Drs. Carol Simon and Howard Topoff



Our trip was wet, pouring at times, and we all got a very good picture of what a rainforest really is. Twelve participants, two scientists and two Canopy guides met at the Canopy Tower, all eager partners in our Tropical Biodiversity Workshop. It was a great group that liked looking at EVERYTHING, and that is what we did. Butterflies, other insects, birds, plants, mammals, reptiles and amphibians were all highlighted. Dedicated birders were happy with their experience due to the Tower's very talented Canopy guides, Igua and Alex. Mornings at the the Tower started with viewing from the platform high in the canopy where birds, iguanas, sloths and monkeys could be found. After breakfast we headed for the field while in the afternoons we were more likely to visit a cultural or scientific institution, like the Panama Canal or the Biomuseo. Evening dinners were always fun with special appearances outside the windows by Kinkajous, Geoffroy's Tamarins and more.



The wonderful mural as you enter
the Canopy Tower
Photo by Carol Simon

Moving to the Canopy Lodge was effortless and we enjoyed the cooler temperatures at the higher elevation. Here we continued our tradition of mornings in the field and afternoons looking at cultural and scientific locations. Igua remained with us, and we substituted Tino for Alex, who stayed at the Tower. Birds were lured into the garden with various feeders and much time was spent viewing them.

A highlight of the trip was the almost daily presentations by our scientists, including one by the Canopy scientist, Dr. Rosanette Quesada. We all enjoyed her spider presentation.



Canopy Scientist Dr. Rosanette Quesada talks about spiders.
Photo by Carol Simon

Itinerary

September 23: Arrival and Orientation at Canopy Tower, Tower Grounds, Semaphore Hill

September 24: Canopy Tower, Pipeline Road (Part 1), Summit Gardens

September 25: Pipeline Road (Part 2), Rainforest Discovery Center, Panama Canal, night walk to El Charco

September 26: Canal Boat Ride, Old Gamboa Resort



The boat ride on Gatun Lake typically yields White-faced Capuchin Monkeys and American Crocodiles. Note that gender in crocodiles is determined by the temperature of the incubating eggs.

Photos by Stan Smith

September 27: Summit Ponds, Old Gamboa Road, BioMuseo, transfer to Canopy Lodge, night walk on Lodge grounds



Biomuseo
Photo by Howard Topoff

September 28: Las Minas Road, Canopy Adventure, Mario Urriola's Serpentarium, night walk on Lodge grounds



At the Canopy Adventure, where most Canopy guides began their careers, we saw the most interesting lizard, a Water Anole. They form a bubble to remain underwater longer, perhaps to avoid predators or to find prey.

September 29, Cerro Gaital, Candelario, El Valle Amphibian Conservation Center, El Valle Artisan and Fruit & Vegetable Market

The El Valle Amphibian Conservation Center houses the Panamanian Golden Frog, which no longer exists in the field.

Photo by Carol Simon



September 30: Altos del Maria



The most beautiful hike of all at Altos del Maria
Photo by Carol Simon

October 1: Departures

Presentations by our Guest Scientists

Introduction to Tropical Rainforests
Tropical Botany
Social Insects of the Rainforest
100 Years of the Panama Canal
Poisonous Amphibians and Venomous Reptiles
Butterflies
Ten Things You Didn't Know About Spiders

BIRDS



We saw a Harpy Eagle, only in captivity, at the Summit Gardens.
Photo by Carol Simon

Tinamous - Tinamidae

Great Tinamou, *Tinamus major*

Curassows, Guans, Chachalacas - Cracidae

Gray-headed Chachalaca, *Ortalis cinereiceps*

Black Guan, *Chamaepetes unicolor*

Pigeons, Doves - Columbidae

Rock Pigeon, *Columba livia*

Pale-vented Pigeon, *Patagioenas cayennensis*

Scaled Pigeon, *Patagioenas speciosa*

Ruddy Ground-Dove, *Columbina talpacoti*

White-tipped Dove, *Leptotila verreauxi*

Gray-chested Dove, *Leptotila cassini*

Cuckoos - Cuculidae

Greater Ani, *Crotophaga major*

Smooth-billed Ani, *Crotophaga ani*

Squirrel Cuckoo, *Piaya cayana*

Nightjars - Caprimulgidae

Common Nighthawk, *Chordeiles minor*

Swifts - Apodidae

White-collared Swift, *Streptoprocne zonaris*

Band-rumped Swift, *Chaetura spinicaudus*

Hummingbirds - Trachilidae

White-necked Jacobin, *Florisuga mellivora*

White-tipped Sicklebill, *Eutoxeres aquila*

Long-billed Hermit, *Phaethornis longirostris*

Stripe-throated Hermit, *Phaethornis striigularis*

Bronze-tailed Plumeleteer, *Chalybura urochrysia*

White-vented Plumeleteer, *Chalybura buffonii*

Crowned Woodnymph, *Thalurania colombica*

Snowy-bellied Hummingbird, *Saucerottia edward*

Rufous-tailed Hummingbird, *Amazilia tzacatl*

Blue-chested Hummingbird, *Polyerata amabilis*

Violet-bellied Hummingbird, *Chlorestes julie*

Rails, Gallinules, Coots - Rallidae

Purple Gallinule, *Porphrio martinicus*

Limpkin - Aramididae

Limpkin, *Aramus guarauna*

Plovers, Lapwings - Charadriidae

Southern Lapwing, *Vanellus chilensis*

Jacanas - Jacanidae

Wattled Jacana, *Jacana jacana*

Sandpipers & Allies - Scolopacidae

Dunlin, *Calidris alpina*

Spotted Sandpiper, *Actitus macularius*

Gulls, Terns, Skimmers - Laridae

Laughing Gull, *Leucophaeus pipixcan*

Royal Tern, *Thalasseus maximus*

Frigatebirds - Fregatidae

Magnificent Frigatebird, *Fregata magnificens*

Darters - Anhingidae

Anhinga, *Anhinga anhinga*

Cormorants, Shags - Phalacrocoracidae

Neotropic Cormorant, *Nannopterum brasilianum*

Pelicans - Pelecanidae

Brown Pelican, *Pelecanus occidentalis*

Herons, Egrets- Ardeidae

Rufescent Tiger-Heron, *Tigrisoma lineatum*

Great Egret, *Ardea alba*

Cattle Egret, *Bubulcus ibis*

Green Heron, *Butorides virescens*

Striated Heron, *Butorides striata*

Boat-billed Heron, *Cochlearius cochlearius*

New World Vultures - Cathartidae

Black Vulture, *Coragyps atratus*

Turkey Vulture, *Cathartes aura*

Hawks, Eagles, Kites - Accipridae

Black Hawk-Eagle, *Spizaetus tyrannus*

Mississippi Kite, *Ictinia mississippiensis*

Crane Hawk, *Geranospiza caerulescens*

Snail Kite, *Rostrhamus sociabilis*

Great Black Hawk, *Buteogallus urubitinga*

Roadside Hawk, *Rupornis magnirostris*

Gray-lined Hawk, *Buteo nitidus*

Short-tailed Hawk, *Buteo brachyurus*

Typical Owls - Strigidea

Crested Owl, *Lophotrix cristata* (HO)

Mottled Owl, *Cicada virgata* (HO)

Black and White Owl, *Cicada nigrolineata*

Trogon - Trogonidae

Slaty-tailed Trogon, *Trogon massena*

Black-tailed Trogon, *Trogon melanurus*

Gartered Trogon, *Trogon caligatus* (HO)

Northern Black-throated Trogon, *Trogon rufus*

Collared Trogon, *Trogon collaris*

Motmots - Momotidae

Rufous Motmot, *Baryphthengus martii*

Broad-billed Motmot, *Electron platyrhynchum*

Kingfishers - Alcedinidae

Ringed Kingfisher, *Megaceryle torquata*

Amazon Kingfisher, *Chloroceryle amazona*

American Pygmy Kingfisher, *Chloroceryle aenea*

Puffbirds - Bucconidae

Black-breasted Puffbird, *Notharchus pectoralis*

Toucans - Ramphastidae

Collared Aracari, *Pteroglossus torquatus*

Keel-billed Toucan, *Ramphastos sulfuratus*

Woodpeckers - Picidae

Red-crowned Woodpecker, *Melanerpes rubricapillus*

Lineated Woodpecker, *Dryocopus lineatus*

Falcons, Caracaras - Falconidae

Crested Caracara, *Caracara plancus*

Yellow-headed Caracara, *Milvago chimachima*

Peregrine Falcon, *Falco peregrinus*

Parrots - Psittacidae

Orange-chinned Parakeet, *Brotogeris jugularis*

Brown-hooded Parrot, *Pyrilia haematotis*

Blue-headed Parrot, *Pionus menstruus*

Red-lored Amazon, *Amazona autumnalis*

Mealy Parrot, *Amazona farinosa*

Manakins - Pipridae

White-ruffed Manakin, *Corapipo altera*

Velvety Manakin, *Lepidothrix velutina*

Cotingas - Cotingidae

Purple-throated Fruit Crow, *Querula purpurata* (HO)

Royal Flycatchers - Tityridae

Ruddy-tailed Flycatcher, *Terenotriccus erythrurus*

Sulphur-rumped Myobius, *Myobius sulphureipygius*

Tyrant Flycatchers - Tyrannidae

Scale-crested Pygmy-Tyrant, *Lophotriccus pileatus* (HO)

Common Tody Flycatcher, *Todirostrum cinereum*

Black-headed Tody-Flycatcher, *Todirostrum nigriceps*

Brown-capped Tyrannulet, *Ornithion brunneicapillus*
Forest Elaenia, *Myiopagis gaimardii*
Yellow-bellied Elaenia, *Elaenia flavogaster*
Bright-rumped Attila, *Attilia spadiceus*
Rufous Mourner, *Rhytipterna holerythra*
Dusky Capped Flycatcher, *Myiarchus tuberculifer*
Lesser Kiskadee, *Pitangus lictor*
Great Kiskadee, *Pitangus sulpuratus*
Rusty-margined Flycatcher, *Myiozetetes cayanensis*
Social Flycatcher, *Myiozetetes similis*
Streaked Flycatcher, *Myiodynastes maculatus*
Piratic Flycatcher, *Legatus leucophaeus*
Tropical Kingbird, *Tyrannus melancholicus*
Eastern Kingbird, *Tyrannus tyrannus*
Tufted flycatcher, *Mitrephanes phaeocercus*
Olive-sided Flycatcher, *Contopus cooperi*
Eastern Wood Pewee, *Contopus virens*

Typical Antbirds - Thamnophilidae

Fasciated Antbird, *Cymbilaimus lineatus*
Barred Antshrike, *Thamnophilus doliatus*
Black-crowned Antshrike, *Thamnophilus atrinucha*
Plain Antvireo, *Dysithamnus mentalis*
Spot-crowned Antvireo, *Dysithamnus puncticeps* (HO)
White-flanked Antwren, *Myrmotherula axilaris*
Checker-throated Stipplethroat, *Epinecrophylla fulviventrif*
Dot-winged Antwren, *Microrhophias quixensis*
Dusty Antbird, *Cercomacroides tyrannina*
White-bellied Antbird, *Myrmeciza longipes*
Spotted Antbird, *Hylophylax naevioides*

Antthrushes - Formicariidae

Black-faced Antthrush, *Formicarius analis*

Ovenbirds, Woodcreepers - Furnariidae

Cocoa Woodcreeper, *Xiphorhynchus susurrans*
Spotted Woodcreeper, *Xiphorhynchus erythropygius*

Vireos - Vireonidae

Green Strike-Vireo, *Vireolanius pulchellus* (HO)
Lesser Greenlet, *Pachysylvia decurtata*
Yellow-throated Vireo, *Vireo flavifrons*
Red-eyed Vireo, *Vireo olivaceus*

Crows, Jays - Corvidae

Black-chested Jay, *Cyanocorax affinis*

Swallows - Hirundinidae

Mangrove Swallow, *Tachycineta albilinea*

Southern Rough-winged Swallow, *Stelgidopteryx ruficollis*

Purple Martin, *Progne tapera*

Gray-breasted Martin, *Progne chalybea*

Barn Swallow, *Hirundo rustica*

Cliff Swallow, *Petrochelidon pyrrhonota*

Gnatwrens, Gnatcatchers - Polioptilidae

Long-billed Gnatwren, *Ramphocaenus metanurus*

Tawny-faced Gnatwren, *Microbates cinereiventris*

White-browed Gnatcatcher, *Polioptila bilineata*

Wrens - Troglodytidae

House Wren, *Troglodytes aedon*

Rufous-breasted Wren, *Pheugopedius rutilus* (HO)

Isthmian Wren, *Cantorchilus elutus*

Bay Wren, *Cantorchilus nigricapillus*

White-breasted Wood-Wren, *Henicorhina leucosticta* (HO)

Mockingbirds & Allies - Mimidae

Tropical Mockingbird, *Mimus gilvus*

Thrushes - Turdidae

Pale-vented Thrush, *Catharus obsoletus*

Clay-colored Thrush, *Turdus grayi*

Goldfinches & Euphonias - Fringillidae

Yellow-crowned Euphonia, *Euphonia luteicapilla*

Thick-billed Euphonia, *Euphonia lanirostris*

Fulvous-vented Euphonia, *Euphonia fulvicrissa*

Tawny-capped Euphonia, *Euphonia anneae*

New World Sparrows - Passerellidae

Common Chlorospingus, *Chlorospingus flavopectus*

Orange-billed Sparrow, *Arremon aurantirostris*

New World Orioles & Blackbirds - Icteridae

Crested Oropendula, *Psarocolius decumanus*

Chestnut-headed Oropendula, *Psarocolius wagleri*

Scarlet-rumped Cacique, *Cacicus uropygialis*

Yellow-rumped Cacique, *Cacicus cela* 9HO0

Yellow-backed Oriole, *Icterus chrysater* (HO)

Great-tailed Grackle, *Quiscalus mexicanus*
Caribe Grackle, *Quiscalus lugubris*

Wood Warblers - Parulidae

Louisiana Waterthrush, *Parkesia motacilla*
Black-and-white Warbler, *Mniotilta varia*
Prothonotary Warbler, *Protonotaria citrea*
Kentucky Warbler, *Geothlypis formosa*
Common Yellowthroat, *Geothlypis trichas*
Blackburnian Warbler, *Setophaga fusca*
Yellow Warbler, *Setophaga fusca*
Buff-rumped Warbler, *Myiothlypis fulvicauda*
Chestnut-capped Warbler, *Basileuterus delatirii*
Canada Warbler, *Cardellina canadensis*

Grosbeaks, Buntings & Allies - Cardinalidae

Red-crowned Ant-Tanager, *Habia rubica*
Red-throated Ant-Tanager, *Habia fuscicauda*

Mitrospingid Tanagers - Mitrospingidae

Dusky-faced Tanager, *Mitrospingus cassinii*

Tanagers - Thraupidae

Blue-gray Tanager, *Thraupis episcopus*
Palm Tanager, *Thraupis palmarum*
Golden-hooded Tanager, *Stelpnia larvata*
Plain-colored Tanager, *Tangara inornata*
Gray-headed Tanager, *Eucometis penicillata*
White-shouldered Tanager, *Loriotus luctuosus*
Tawny-crested Tanager, *Tachyphonus delatirii*
Flame-rumped Tanager, *Ramphocelus flammigerus*
Crimson-backed Tanager, *Ramphocelus dimidiatus*
Blue Dacnis, *Dacnis cayana*
Bananaquit, *Coereba flaveola*
Yellow-faced Grassquit, *Tiaris olivaceous*
Thick-billed Seed Finch,
Variable Seedeater, *Sporophila corvina*
Buff-throated Saltator, *Saltator maximus*

MAMMALS



Nocturnal Proboscis Bats have the Unusual habit of Sleeping in a Line on Tree Trunks
Photo by Stan Smith

Opposums - Didelphidae

Central American Woolly Opossum, *Caluromys derbianus*

Anteaters - Myrmecophagidae

Northern Tamandua, *Tamandua mexicana*

Three-toed Sloths - Bradypodidae

Brown-throated Three-toed Sloth, *Bradypus variegatus*

Sac-winged Bats - Emballonuridae

Proboscis Bat, *Rhynchonycteris naso*

Greater White-lined Bat, *Saccopteryx bilineata*

Leaf-nosed Bats - Phyllostomidae

Seba's Short-tailed Bat - *Carollia perspicillata*

Common Tent-making Bat, *Uroderma bilobatum*

Tamarins, Capuchins, Squirrel Monkeys - Callitrichidae

Geoffroy's Tamarin, *Sanguinus geoffroyi*

White-faced Capuchin, *Cebus capucinus*

Howler Monkeys - Atelidae

Mantled Howler, *Alouatta palliata*

Squirrels - Sciuridae

Variegated Squirrel - *Sciurus variegatoides*

Red-tailed Squirrel, *Sciurus granatensis*

Agoutis - Dasyproctidae

Central American Agouti, *Dasyprocta punctata*

Rabbits and Hares - Leporidae

Forest Rabbit, *Sylvilagus gabbi*

Raccoons & Allies - Procyonidae

White-nosed Coati, *Nasua narica*

Kinkajou, *Potos flavus*

Weasels, Otters & Allies - Mustelidae

Neotropical River Otter, *Lontra longicaudis*

AMPHIBIANS AND REPTILES



Red-eyed Tree Frogs are a symbol of the rain forest. We saw this one at Altos del Maria
Photo by Carol Simon

Lungless Salamanders - Plethodontidae

Cocle Mushroomtongue Salamander, *Bolitoglo schizodactyla*

True Toads - Bufonidae

Forest Toad, *Rhinella alata*

Cane Toad, *Rhinella marina*

Glass Frogs - Centrolenidae

Fleischmann's Glass Frog, *Hyalinobatrachium fleischmanni* (HO)

Robber Frogs - Craugastoridae

Slim-fingered Rain Frog, *Craugastor crassidigitus*

Dart Poison Frogs - Dendrobatidae

Rainforest (Striped) Rocket Frog, *Silverstoneia flotator*

Green-and-black Poison Frog, *Dendrobates auratus* (CO)

Talamanca (Striped) Rocket Frog, *Allobates talamancae*

New World Rain Frogs - Eleutherodactylidae

Yellow Dyer Rainfrog, *Diasporus citinobapheus*

Common Dink Frog, *Diasporus diastema* (HO)

No Common Name (NCN), *Diasporus quidditus*

Treefrogs - Hylidae

Red-eyed Treefrog, *Agalychnis callidryas*

Rosenberg's Gladiator Treefrog, *Hypsiboas rosenbergi*

Red-webbed Treefrog, *Hypsiboas rufitelus*

Hourglass Treefrog, *Dendropsophus ebbraactus*

Yellow (Small-headed) Treefrog, *Dendropsophus microcephalus*

Tropical Grass (Foam) Frogs - Leptodactylidae

Tungara Frog, *Engystomops pustulosus*

Savage's Thin-toed (Foam) Frog, *Leptodactylus savagei*

Pond Turtles - Emydidae

Meso-American Slider, *Trachemys venusta*

Casque-headed Lizards - Corytophanidae

Common Basilisk, *Basiliscus basiliscus*

Anoles - Dactyloidae

Water Anole, *Anolis aquaticus*

Green Tree Anole, *Anolis biporcatus*

Humble (Ground) Anole, *Anolis humilis*

Slender Anole, *Anolis limifrons*

Hoplocercidae - Clubtails, Wood Lizards
Dunn's Spiny-tailed Lizard, *Morunasaurus groi*



We routinely find Dunn's Spiny-tailed Lizard on a dark wet hillside at Cerro Gaital, a most unlikely habitat for a lizard.

Iguanas - Iguanidae
Black Spiny-tailed Iguana, *Ctenosaura similis*
Common Green Iguana, *Iguana iguana*

Spectacled Geckos - Gekkonidae
Common House Gecko, *Hemidactylus frenatus*

Leaf-Toed Geckos - Phyllodactylidae
Turnip-tailed Gecko, *Thecadactylus rapicauda*

Dwarf Geckos - Sphaerodactylidae
Yellow-headed Geckos, *Gonatodes albogularis*

Whiptails, Tegus - Teiidae
Giant Ameiva, *Ameiva praesignis*
Central American Ameiva, *Holcosus festivus*

Crocodylians - Crocodylidae
Spectacled Caiman, *Caiman crocodilus*
American Crocodile, *Crocodylus acutus*



Photo by Carlos Benthancourt



Photo by Igua Jimenez



Photo by Carol Simon



Canopy Founder Raul Arias de Para
Photo by Carol Simon