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Compilation of Sky Magic's drone show formations, produced by Gravity Productions of New York. ©Edited by Laura Doucette

Honolulu's Manu O Kū Take Drone Shows in Stride

By Susan Scott with Rich Downs

Will nighttime drone shows injure or kill Honolulu's manu o Kū? The question arose when the drone show company, Sky Magic, announced plans for three 8 PM lightshows on August 15, 17, and 18, 2024, off Waikiki's Hilton Hawaiian Village. The shows were part of the 2024 Pokémon World Championship that hosted 14,000 Pokémon fans at the Hawai'i Convention Center, August 16-18.

No one knew how Honolulu's terns would react to the 428 drones in the show, but Hawai'i's manu o Kū researchers had reasons for concern. Observers have seen terns circle drones and model airplanes during the daytime, suggesting they either were curious about the machines or viewed them as potential predators. Researchers

have also witnessed Honolulu's manu o Kū flying to and from the ocean at night, as well as during the day. How the state and federally protected birds would react to hundreds of flashing drones in their path after dark was yet to be learned.

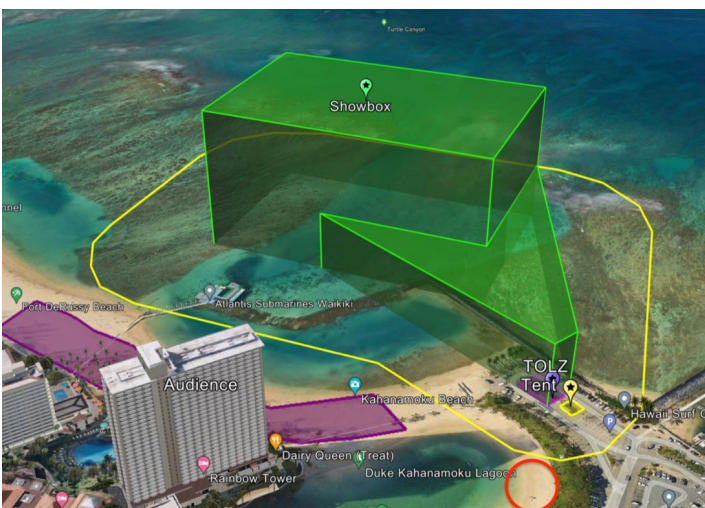
Rich Downs, White Tern researcher and Hui Manu o Kū manager, organized and led a 15-person observation team to watch for birds during nighttime drone flights. Sky Magic managers and employees cooperated fully during all tests and shows. Viewers included conservation enforcement officers from the Hawai'i Department of Land and Natural Resources and the U.S. Fish and Wildlife Service, as well as volunteers from Pacific Rim Conservation, Hawai'i Audubon Society, Kapi'olani Community



Rich Downs and Matt Barker watch the sky for manu o Kū during a drone show in Waikiki. ©Susan Scott

College, and Hawai'i Marine Animal Response.

Jet ski operators from Hawai'i's Division of Boating and Ocean Recreation (DOBOR) and Dolphin Excursions Hawai'i, Inc. patrolled waters below the drones to locate and retrieve any downed birds. A U.S. Coast Guard patrol boat patrolled waters off the entrance of the area. When a private drone violated the show space during the last show, Coast Guard crew members pursued and apprehended the rogue drone operator.



A drone show production map shows the layout of where the drones take off, create lighted images in the sky, and return. ©Sky Magic

Preparations for the monitoring and recovery involved weeks of planning. Test flights with various drone numbers required middle-of-the-night shifts with rehearsals in the wee hours. Below was Rich's observer schedule.

Drone Show Observer Schedule

DATE	TIME	# DRONES	ACTIVITY
08/13/24	10:30 PM	1	TEST
08/13/24	11:30 PM	16	TEST
08/14/24	12:30 PM	48	TEST
08/14/24	1:30 AM	108	TEST
08/14/24	2:30 AM	148	TEST
08/14/24	3:30 AM	148	TEST
08/14/24	10:30 PM	428	FULL TECHNICAL REHERSAL
08/14/24	11:30 PM	-	TBC/ CONTINGENCY
08/15/24	12:30 AM	428	DRESS REHERSAL
08/15/24	8:00 PM	428	SHOW 1 - 10 MIN.
08/17/24	8:00 PM	428	SHOW 2 - 10 MIN.
08/18/24	8:00 PM	428	SHOW 3 - 10 MIN.

Honolulu is breeding territory to over 3000 manu o Kū, most of which fly day and night from the city to the ocean in search of fish. Parent birds return with their catch to feed their chicks once or twice a day. These indigenous seabirds raise their young mostly in trees between Hawai'i Kai and Pearl Harbor.

Using night vision binoculars, observers watched for birds near airborne drones. Other volunteers stood by with pet carriers to collect any injured birds and deliver them to Kailua's Feather and Fur Animal Hospital, where veterinarians treat native birds for free.

The six-day monitoring effort ended on an



James Lee, Rich Downs, Kelly Furuya, Olivia Wang, and Matt Barker pause for a photo while scanning the night skies for manu o Kū. ©Susan Scott

encouraging note. Observers reported no manu o Kū collisions or injuries during any drone flights, either in test runs or during the three shows. Volunteers saw several terns flying from ocean to land, but the birds went either above or around the drones.

Judging by the roar of the crowd, the computerized shows thrilled the thousands of spectators gathered on the beach to watch. The birds seemed to accept the cheering crowds and colorful lights as another part of the loud, bright nights of Waikiki.

With the increasing worldwide popularity of



Dave Johnson and Tony Querubin standby to help rescue injured seabirds. ©Susan Scott

drone lightshows, it was only a matter of time before such an event came to Waikiki. But six days of monitoring with zero contact suggest that drone shows are safe for Honolulu’s manu o Kū.

New York City-based Gravity Productions produced the Sky Magic drone show, running all operations and logistics. The show’s drone pilots were Sky Magic employees.

Honolulu’s terns avoided the nighttime drones this time, but to confirm the safety of Honolulu’s official city bird, future drone shows will also need monitoring. Downs offered assistance to the company for any upcoming shows in Hawai’i.



After the last show, Rich texted the observation team this message: The terns “...steered clear of the drones when transiting the area where multiple drones are operating. We don’t deserve these birds!” ©James Lee

Waikiki Friday Night Fireworks

Drone show company, Sky Magic, skipped a show on August 16th due to the 7:45 PM fireworks off Duke Kahanamoku Beach. Courtesy of the Hilton Hawaiian Village Waikiki Beach Resort, the weekly fireworks, visible from Ala Moana Beach Park and Waikiki Beach, have been a Friday night event since 1988.

On May 12, 2023, members of Hawai’i’s Board of Land and Natural Resources questioned the environmental impact of the smoke, noise, and litter resulting from the weekly fireworks, produced by Hawaii Explosives & Pyrotechnics, Inc. (“Hipyro: Ignite to Excite Hawaiian Style.”) Various Land Board members stated that the company’s sustainability plan should consider using drone lights instead of fireworks.

As a result, the fireworks company’s operations manager introduced plans for collecting debris, monitoring weather conditions, and finding products that generate less rubble and fewer emissions. Agreeing with those efforts, the Land Board members voted unanimously to grant another year of Friday night fireworks. The current permit runs through April 25, 2025.

*** END ***

Yes, You Can Trim That Tree

By Rich Downs

The Hui Manu o Kū (HMoK) hotline frequently receives calls from concerned citizens asking if they can trim trees with breeding White Terns. The short answer is “Yes.”

The manu-o-Kū, or White Tern, is a legally protected seabird species. Rather than build nests, breeding manu o Kū most often lay their egg directly on a bare tree branch. The speckled gray-brown eggs and chicks are often difficult to spot.

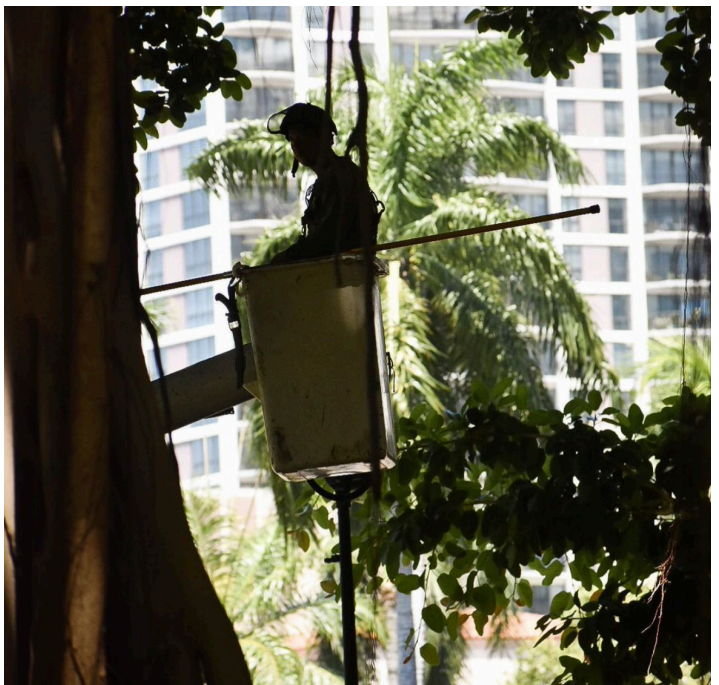


Blue ribbons encircle a row of known manu o Kū breeding trees near Kalakaua Avenue, O’ahu. ©Rich Downs

Former conventional wisdom said that breeding trees should remain undisturbed because the bird’s risk of injury was too great. We previously assumed that terns only bred during certain months of the year, therefore, tree trimmers could and should wait until the breeding season was complete to conduct trimming.

After years of studying O’ahu’s terns, however, we discovered that the birds breed 12 months of the year. This provides no time for arborists to trim trees without encountering eggs and chicks.

In learning more about the terns’ urban habits, we realized they are more tolerant of human activity in and around their breeding sites than we imagined.



Tree trimmer conducting maintenance. ©Tree Concepts Hawai’i



A manu o Kū sits on an egg perched between two tree branches. ©Laura Doucette

In 2017 Hui Manu o Kū began working with the Aloha Arborist Association, DLNR, and USFWS to write “Tree Care Guidelines and Best Practices for Manu-o-Kū Breeding Sites,” a guide for arborists and tree trimmers. The team also created a blue ribbon, or “tern tape,” to wrap around manu o Kū breeding trees as a visual cue. The ribbons list our hotline phone number, (808) 379-7555, a QR code for information on what to do with a downed bird, and the notice: Do Not Trim.



A manu o Kū attempts to land in a tree. ©Donald C. Poole

Years of monitoring the terns now suggest that lack of tree trimming is more hazardous and disruptive than regular trimming.

Overgrown trees are the leading cause of terns abandoning formerly used breeding sites. As twigs and leaves grow around nesting spots, young birds try to maneuver around the growth, become entangled in the clutter, and fall to the ground. Additionally, leaves and twigs prevent terns from finding landing places and the birds also end up falling to the ground.

For these reasons, we updated the message on the blue ribbons from “Do Not Trim” to “Trim with Caution.”



Student researcher James Lee marks white tern breeding trees with HMoK’s blue “Trim with Caution” ribbon. ©Emma Ho

Since the blue ribbon placements began, arborists have been, and continue to be, conscientious about following the guidelines. Laws continue to protect our manu o Kū. Thankfully, in recent years reports of injured terns caused by tree trimming are low. We hope the ribbon’s message, along with new research and community education, continues to protect our beloved city bird.



A lucky manu o Kū chick rescued on the Kapi’olani Community College campus is returned to its nesting spot. ©Wendy Kuntz

Volunteer Opportunities

To volunteer in marking nesting trees with “tern tape” or rescue efforts, contact Rich at the HMoK hotline, (808) 379-7555. You can also join the HMoK bird tours throughout Honolulu to view these urban marvels: <https://hiaudubon.org/events/>.

*** END ***



A kōlea at Ala Moana Beach Park with HAS mascot, Kōlea Nui, exploring in the background. ©Christiaan Phleger

Inaugural Welcome Home Kōlea Festival By Laura Doucette

Each autumn Hawai‘i residents anxiously await our beloved kōlea’s return. The 4.8-ounce birds fly a 3000-mile-long journey from Alaska in 4 days without stopping. The trip is so arduous, it deserves a warm reception. The bird’s arrival so overjoys some admirers, they talk to them saying, “Congratulations, you made it. Welcome home, kōlea.”

Because Hawai‘i Audubon Society (HAS) feels this joy too, we threw a homecoming party for the birds. Our new Outreach Manager, Elena Arinaga, created the festival in honor of the kōlea, and took the reins with gusto.

On Saturday, October 12th, World Migratory Bird Day, HAS hosted the first “Welcome Home Kōlea Festival” at Magic Island, in Honolulu’s Ala Moana Beach Park. Through games, stories, and art, visitors learned about the kōlea’s transpacific journey and unique lifestyle in Hawai‘i.

Elena made a scavenger hunt of bird species found in



Festival attendees search for birds in a poster image of kōlea hidden in a Hawaiian landscape. ©Laura Doucette

the park. With several kōlea surrounding our booth, the location was ideal for a mini birding safari. Elena also created a trivia dice game featuring kōlea facts. When guests answered questions correctly, they won prizes of stickers and tasty treats.

People strolling by stopped to look with binoculars at a poster image of hidden plovers, to count how many they found. Another game challenged players to match bird species to their habitat. Participants also learned to draw birds and color kōlea.

We teamed up with new friends, Kōlea Sparkling Hop Water, to share samples of their latest non-alcoholic beverage. The namesake drink comes from the kōlea’s migratory expeditions “hopping” from Hawai‘i to Alaska and back.

Yet, the party star was our new mascot, Kōlea Nui, created by Kailua costume designer Kathe James. Volunteers took turns in the costume dancing, posing for photos, and playing games



Susan Scott and Charlotte Bender help HAS Board Member, Yvonne Chan, get into costume as Kōlea Nui. ©Laura Doucette

with participants. It was a delight to witness the joy on people’s faces at meeting Kōlea Nui.

Approximately 100 people stopped by to help us honor the kōlea’s return. Bird lovers, families, HAS members, volunteers, HAS Board members, and passersby joined the oceanfront party. The homecoming celebration was the perfect way to share our joy in these birds’ return. Seeing kōlea foraging in the grass near our booth was the feather in the cap.

Mahalo to all who helped make this festival a success. We look forward to making this an annual event. See you next year.

* * * *END* * * *

Hawai'i Audubon Society Donations and Membership

Mahalo for helping us inspire people to love and protect birds.

Founded in 1939, Hawai'i Audubon Society is an independent nonprofit 501(c)(3) organization.

Make a donation in any amount at <https://hiaudubon.org/donate/>

Your membership expires one year after you join or renew.

Renew your membership by choosing your level on our website: <https://hiaudubon.org/membership>

If you have any questions or need assistance, please email office@hiaudubon.org

Please make checks payable to the Hawai'i Audubon Society.



Manu o Kū pair. ©Laura Doucette

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 - \$1,000 Lifetime Membership
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Announcements

Join us for our Annual Members Dinner and Meeting on November 17, 2024 at the Atherton Hālau at Bishop Museum. Catering by Da Spot, presentation by Dr. Eric VanderWerf, appearances by mascots Aloha Kea and Kōlea Nui, and more. For more information and tickets go to: <https://hiaudubon.org/annual-meeting/>. (membership not required to attend)



Events

November 2: Makahiki Event at Ho'omaluhia Botanical Garden, O'ahu

November 9, 2024 - January 4, 2025: Annual Christmas Bird Count. Find more information about event dates on each island listed on our website: <https://hiaudubon.org/christmas-bird-count/>

November 17: Annual Members Dinner and Meeting at the Atherton Hālau at Bernice Pauahi Bishop Museum, O'ahu

December 18: Hawai'i's Kōlea: The Amazing Transpacific Life of the Pacific Golden-Plover — Presentation by Susan Scott (Kaua'i) at Keoki's Paradise, Koloa, Kaua'i

For more details visit hiaudubon.org/events, or email events@hiaudubon.org

Stay up-to-date by visiting us online.

Our website: www.hiaudubon.org

Kōlea Count: www.koleacount.org

Hui Manu-o-Kū: www.whiteterns.org

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Help seabirds survive fallout!

What is fallout?

Every September to December, young seabirds take their first flight out to sea at night.

Man-made lights from buildings and street lamps confuse seabirds, causing them to collide with structures, or circle until they fall to the ground from exhaustion.

Once on the ground, they are vulnerable to predators or may be hit by cars.



Found a downed seabird?
Drop-off at:
Feather and Fur Animal Hospital (24 hrs)
25 Kaneohe Bay Dr #260, Kailua, HI

Unsure if the bird needs rescue?
Call Hawai'i Wildlife Center
9 am - 5 pm: (808) 884-5000
birdhelp.hawaiiwildlifecenter.org



QR code for more drop-off locations and rescue directions

Cut to keep in your wallet! ✂

Steps to take!



1 Find a ventilated carrier or a cardboard box (with air holes) with a towel at the bottom.



2 Using a towel, t-shirt, or gloves, gently pick the bird up and place in the carrier. Shh! No loud noises.

3 Do not give food or water.



4 Drop the bird off at Feather & Fur Animal Hospital in Kailua (24 hrs, 7 days/week).



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MJ Mazurek takes a photo of volunteers Taylor Kim, Charlotte Bender, Kōlea Nui, and Andres Jojoa at the Welcome Home Kōlea Festival. ©Christiaan Phleger