

ALASKA HERPETOLOGICAL SOCIETY



NORTHERN
HERP
CHRONICALS

7TH EDITION
APRIL 2018

LONG-TOED SALAMANDER *Ambystoma macrodactylum*
SEE PAGE 9 FOR MORE INFO

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GRANT ANNOUNCEMENT

IMPORTANT DATES

Application Deadline:
April 15th, 2018

Award Announcement:
April 27th, 2018

Award Distribution:
May 1st, 2018

Award must be used by:
May 1st, 2019

NOTE:

AHS alternates its award cycle for each offering. The last award was offered in 2016 and was available to K-12 educators for herpetological projects and curricula. In 2018 the grant will be awarded for herpetological research in higher education.

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akherpsociety.org



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FROM THE PRESIDENT

distributed than previously believed. Congratulations and thank you for all your hard work, Mark!

We also gave a grant to Melanie Hinzman and her extended learning program class at Joy Elementary in Fairbanks. She used the funds for lessons on wood frog ecology, reproduction, and anatomy. I had a blast helping Melanie and her class search for frogs in Creamer's Field. I cannot wait to see what cool project we fund this year.

We also had a semi-successful herping retreat at Byers' Lake last April. No frogs were heard or seen but we had fun even nonetheless.

We also co-held a meeting with The Wildlife Society in Fairbanks at the University of Alaska. The meeting was well attended and featured great talks from researchers around the state. The talk from Trey Simmons of the National Park Service was particularly interesting to me. He discussed the possibility of the presence of Siberian salamanders in western Alaska. Investigating this is a long term goal for me since Siberian salamanders may be even more cold hardy than wood frogs. Imagine having the one and two most freeze-tolerant amphibians in the same state. We would truly have the coolest amphibians of any herp organization.

Take care and good luck herping! Don Larson

A lot has happened since our last newsletter. We have a new secretary in Joseph Robertia who brings a wealth of writing and herping experience to our organization. He is taking over the position from Mark Spangler who successfully defended his Master's Thesis last May. He did amazing work on wood frog distributions in the state. Thanks to his work we know wood frogs are more widely



SECRETARY'S CORNER

As the new secretary for AHS, I'm very excited to contribute to this newsletter, and feel like a little introduction is probably in order. I've worked in numerous zoos and served as a former zoologist with the Wildlife Conservation Society studying myriad species in captivity and the wild including Grand Cayman blue iguana; Burmese star and black mountain tortoises; Madagascan radiated, flat-tailed and spider tortoises; American alligators; and

Aldabra tortoises. Most recently, I took part in the country-wide annual census of Morelet's crocodiles in Belize.

For the past 16 years I've also earned my keep as a professional outdoor writer/photographer, and it is the blend of zoological knowledge and my literary craft that I hope to share most with AHS members in the coming months. In this edition, I've contributed a travel piece to highlight the plight of Cuban crocodiles – a species struggling to survive. Will they go extinct in our lifetimes? I can't say for certain, but know from experience it is entirely possible. When I was in high school, I remember becoming aware of several critically-endangered species and being saddened, but not wholly worried for their survival because I believed someone would

take up their cause and lead the charge to save them. However, not enough people did, and now some of those species are gone... forever. Nowadays, I don't assume that these crocodiles – or any endangered species for that matter – can't or won't disappear.

I am not without hope though. I'm inspired to be a part of AHS, as groups like this are the roots to answering such calls for help from animals that often go unnoticed, but that ironically are the first indicators to the plight of our planet. I am hopeful that in reaching out to such a readership, one of you, reading this right now, could be the person to save a Cuban crocodile, or some other species near and dear to your heart. Saving any animal happens after people begin to care about that animal, and people begin to care about animals after learning about them. So read on fellow naturalists – learn, care, and be the change you want to see for so many species in the world.

- Joseph Robertia

2 CENTS FROM THE TREASURER



For more on Ream's herping check out his travelers corner (Page 7)

Getting this newsletter out has certainly been a task every year but it always results in a wonderful product. Our organization does so much and while you do not always hear about every aspect, I am confident that this work has been a valuable asset to Alaskan herpetology. Our amazing group of officers and volunteers are so very needed and appreciated. I want to personally thank Mark Spangler, our outgoing Secretary, for years of hard work and dedication to AHS. I wish him the best of luck in his future endeavors!

AHS hit the ground running last year with our combined AHS / TWS conference, a retreat at Byer's Lake, a plethora of outreach and education opportunities, and the continued development of partnerships with state and federal agencies. Our Alaska Worm Salamander T-shirts were a hit as were the AHS car decals. It was also a year of sorrow though as we lost one of Alaska's great herpetological advocates, Dave Tessler. Dave's contributions to herpetology will not be forgotten and will live on here in Alaska and elsewhere.

Our finances also improved substantially in 2017 too! Thanks to charitable donations, the incredible product sale efforts of the Perry family in Petersburg, memberships and conference registration, our treasury has grown to

\$1,467.62. In light of this, the Executive has approved the 2018 Research Grants Program Call for Proposals. While the grant is small, we are proud to be able to contribute to a student's efforts to study amphibians and reptiles in our great state.

I fully expect that 2018 will be just as successful as last year. I am committed to growing our treasury and to maintaining our excellent standing as a nonprofit organization. It is also exciting that AHS will be able to continue its citizen science programs on the Stikine thanks to a generous joint venture with the U.S. Forest Service. As always, please be sure to send any and all fundraising ideas my way!

Dr. Joshua T. Ream
AHS Treasurer



JOINT MEETING OF ALASKA CHAPTER OF THE WILDLIFE SOCIETY AND THE ALASKA HERPETOLOGICAL SOCIETY



AHS held its third biennial conference last spring at the University of Alaska Fairbanks. This was the first conference held in partnership with the Alaska chapter of The Wildlife Society. Special thanks go out to the TWS organizing committee, especially Nate Svoboda and Kerry Nicholson, for helping to make this partnership a success. AHS was able to reach a wide audience in partnering with TWS, and, in turn, our presenters and attendees were exposed to a broad range of wildlife research outside of herpetology. The theme of this year's TWS meeting was cross-cultural connections. It was a wonderful experience for all attendees to hear about wildlife-related issues in the context of Alaska Native culture and to engage in discussion with Alaska Natives from their perspective.

The AHS session of the joint-meeting highlighted presenters conducting new herp research in the state as well as updates from past presenters. While most talks focused on our state's beloved wood frog, one curiosity-inducing presenter conjectured whether relict populations of Siberian salamanders might exist in Alaska's unexplored wilderness. The audience was left to ponder the possibility, at least until a dedicated search can be mounted! The joint-meeting concluded with celebrations, awards, and dinner at Pioneer Park. AHS looks forward to the possibility of continuing our partnership with TWS in 2019!

PROPOSED BYLAW CHANGES

Dr. Joshua Ream, AHS Treasurer:

I am proposing a set of bylaw changes to be addressed at our next Annual Meeting; it has been a while since we inspected and updated these. The proposed changes are to 1) consider Honorary Members to be Full Members for the purpose of voting, holding office and making quorum 2) to specifically allow officer nominations at OR BEFORE the Annual Meeting 3) to allow voting to occur by verbal/written/electronic ballots as is deemed most appropriate in the circumstance 4) to acknowledge the necessity of filing a 990-N tax postcard annually now that we have 501(c)3 status and 5) to allow bylaw change voting electronically PRIOR to an annual or special meeting. These proposed changes are below.

ARTICLE III. MEMBERSHIP

Section 3. HONORARY MEMBER - The Society may elect individuals to Honorary Membership in recognition of their professional achievements or contributions to the Society. Honorary Members are elected by a majority vote of the Executive Board and can be nominated by any Full Member. An Honorary Member need not pay Society dues ~~for the specified duration of their honorary membership and may not vote or hold office.~~ An Honorary Member ~~can choose to also be a Full Member concurrently but will be required to pay annual dues to receive voting rights and to be~~ is considered a Full Member and may vote and is eligible to hold office.

ARTICLE IV. ELECTIONS, OFFICERS, AND EXECUTIVE BOARD

Section 1. NOMINATIONS - Full Members shall have the opportunity to nominate individuals at or before the Annual Meeting for each of the elective positions, namely: President, Vice-President, Secretary, and Treasurer.

CLAUSE A - Nominees must be Full Members (Article III, Section 1).

CLAUSE B - Nominees must consent to becoming candidates.

CLAUSE C - A member may be a nominee for more than one elective position at a time but may serve in only one elective position at a time.

Section 2. BALLOTING - Balloting shall occur at the Annual Meeting. ~~Written ballots shall be received from the members and counted by a Full Member that is not a nominee.~~ Ballots may be cast verbally or by written or electronic ballot and shall be counted by a Full Member that is not a nominee.

CLAUSE A - Members in arrears shall forfeit their rights to vote during the period of their delinquency.

CLAUSE B - Full Members may submit an absentee ballot to the Executive Board prior to the scheduled time for counting ballots.

CLAUSE C - The candidate receiving the largest number of votes ~~on the written and/or online ballot~~ shall be declared elected.

CLAUSE D - In the event of a tie, a coin toss shall decide the election.

CLAUSE E - In the event that a member is a nominee for more than one elective position at a time, he or she will receive the highest elected office that he or she wins and ballots for this member will not be considered for lower offices.

Section 3. OFFICERS - Officers of the Society shall consist of a President, Vice-President, Secretary, and Treasurer. Their duties are:

CLAUSE D - TREASURER - The Treasurer shall be responsible for maintaining the financial records and managing the funds of the Society, preparing an annual budget for the Society for approval by the Executive Board, and reporting on the financial status of the Society at each meeting of the membership and Executive Board. Duties shall include the receipt and disbursement of funds under the direction of the Executive Board. The Treasurer shall be responsible for submitting a biannual report to the Alaska Department of Commerce and an annual 990-N electronic postcard to the Internal Revenue Service.

ARTICLE VI. MANAGEMENT AND FINANCES

Section 3. REPORTS - The Society shall submit a biannual report to the Alaska Department of Commerce and an annual 990-N electronic postcard to the Internal Revenue Service.

ARTICLE IX. AMENDMENT TO BYLAWS

Section 1. PROCEDURE - These bylaws may be altered or amended by a majority vote of Full Members of the Society voting at any regular or special meeting provided due notice (Article V, Section 3, CLAUSE A) of the proposed changes has been given. A member who will be absent from the meeting may file an absentee ballot (Article IV, Section 2, CLAUSE B). Balloting may also be provided electronically prior to any regular or special meeting.

FROM FOLLOWING TO TRACKING FROM FROGS TO TORTOISES

Mark Spangler
Las Vegas, NV



As AHS secretary and UAF graduate student, I enjoyed participating in local herp education and outreach in Alaska for 4 years. I never tired of telling interested listeners about the famous freezing frogs of the north. But, alas, all good things must come to an end. These days you'll find me looking for desert tortoises in the Mojave Desert of the American Southwest. The climatic differences between the Arctic and the Mojave might seem dramatic, but these two herps cope with temperature extremes in a similar fashion. Both the wood frog and the desert tortoise spend extended periods of time buried underground. These cryptic species are particularly hard to detect because of their short periods of seasonal activity above the surface. The latest in DNA detection technology helped me find wood frogs in Alaska, but to search for tortoises I rely on a more tried-and-true method, radio telemetry. A warning to all the herps out there: you can run, but you can't hide!



In Memoriam
David Tessler
(1967 – 2017)



The world unexpectedly lost a great scientist, conservationist, and herpetologist in 2017. David Tessler was a longtime advocate for Alaska herpetology and a pioneer in the field for many years. He managed the Alaska Department of Fish and Game's Wood Frog Monitoring Program and was acting coordinator of the Wildlife Diversity Program from 2003-2015. Dave was also a founding member and chair of AHS' predecessor – the Alaska Amphibian Working Group.

Through citizen science and active sampling efforts Dave and his wife Tracey helped to expand the known northern distribution of the Wood Frog. He mentored and supported many students and offered his time and expertise to all who sought his guidance. From loaning call recording equipment and satellite phones to coaching and encouraging graduate students to advocating for the conservation and management of nongame species, his contributions to the people and resources of Alaska are vast. Dave will be dearly missed and his accomplishments will not be forgotten.

In memory of David Tessler, AHS has issued an honorary posthumous lifetime membership. We are proud to have worked alongside of this great human being.





TRAVELERS CORNER



Cane Toad

FROM DR. JOSHUA REAM:

I have had amazing opportunities to travel over the past year and have always committed to "herping," at least opportunistically on these adventures. In the spring of 2017 I traveled with our Newsletter Editor Dustin to his family's house in Kino Bay, Mexico. The Sonoran desert provided a much needed reprieve from Alaska's cold and the local reptiles appeared to enjoy the temperatures as much as I did. Running around the desert on foot and on a 4-wheeler we encountered Chuckwallas (*Sauromalus ater*), Tiburon Collared Lizards (*Crotaphytus dickersonae*), Regal Horned Lizards (*Phrynosoma solare*), and Zebra-tailed Lizards (*Callisaurus draconoides*) to name a few.

In a subsequent whirlwind trip to southern California, I was also able to enjoy some reptilian diversity. Joshua Tree National Park was a hotbed of lizard finds while our lone snake was encountered during a hike at Mount San Jacinto State Park. The fine specimen of the Pacific Rattlesnake (*Crotalis viridis*) was found at the highest point on our hike, literally the last summiting step on the mountain. He was curled up near the rocks, silent, and was almost stepped on. I decided that the last step wasn't worth the risk but that the photograph would be great for the newsletter...

Lastly I'll mention a recent trip to the island of Kauai where invasive exotic herps abound. Despite their classification as such I still enjoy looking for these often beautiful species in paradise. There were lots of Day Geckos (*Phelsuma spp.*) poking their heads around nooks and crannies in the buildings, Cane Toads (*Bufo marinus*), and Green Sea Turtles (*Chelonia mydas*). The turtles of course were native.

I feel very fortunate to have traveled as much as I did last year and can only hope to be able to do so again soon. This year I think I will focus on diversifying my search and perhaps on being more strategic in the process!



Tiburon Collared Lizard



Chuckwalla

S.L.A.M.P. UPDATE

SO.... WHAT IS S.L.A.M.P.?

The Stikine Long-term Amphibian Monitoring Program (SLAMP) has been adopted by AHS as a means for providing a depth of temporal data for an amphibian assemblage in Alaska. This is the first of its kind in the state, and we are proud to finally support the acquisition of population data over time.

SLAMP is an extension of the Ph.D. research conducted by Joshua Ream, a founding member of the organization, and his volunteer Seth Perry. Ream and Perry laid the foundational parameters of SLAMP and they provided the baseline population data necessary to develop this program. More on SLAMP research can be explored on the AHS website.

AHS' Stikine Long-term Amphibian Monitoring Program is still in existence and we have exciting updates for the 2018 season. No sampling occurred in 2017 but we always expected that there would be off years based on financial and logistical challenges. This year however, our friends at the U.S. Forest Service have secured funding to support a citizen science joint partnership with AHS. A huge thank you to Joni Johnson of the Wrangell Ranger District for making this possible.

This emerging citizen science opportunity will allow SLAMP principal investigators, forest service volunteers, teachers, and two students each from Kake, Petersburg, and Wrangell to come together once in the spring and once in the early fall. Programming will be similar to our past "Camp'phibian" and our team will travel for about a week to long-term monitoring sites on the Stikine River. Preliminary site selection includes Twin Lakes and Chief Shakes Hot Springs. Students will learn about amphibian ecology, diversity, and life history while actively surveying established transects. We are in the early planning stages for this work but look forward to sharing the outcomes of this program later this year!



LONG-TOED SALAMANDERS ON REVILLAGIGEDO ISLAND

(*Ambystoma macrodactylum*)

BY: DR. JOSHUA REAM / KRIS LARSON

One of AHS' newest members, Kris Larson of Ketchikan, recently submitted the cover photo of this newsletter with several other photos of both adults and larva in the same general area. The Long-toed Salamander (*Ambystoma macrodactylum*) was first formally documented on Revillagigedo Island by Joshua Ream in 2010, but there remains some question as to the origins of this population. Larson's observations represent the first verified breeding site on the island and this is approximately 1.5 miles from the site of Ream's observations, both occurring in the general Ward Lake Area.

Alaska's other known populations of this species occur exclusively, at least to our knowledge, in the vicinity of two of Southeast Alaska's major transmontane river corridors, the Stikine and the Taku drainages. Though the Unuk River near Revillagigedo also provides access from the warmer drier interior, it does not have the same flow as the other systems and would require a lengthy saltwater crossing to arrive at Revillagigedo. While the possibility of a relic population from the last ice age is possible, other scenarios for their arrival may be more likely.

The Stikine and Taku populations typically exhibit blotchy and broken yellow dorsal stripes, a characteristic of the species. Most specimens of *A. macrodactylum* observed on Revillagigedo Island exhibit a dorsal stripe with much more defined edges. This phenotypic variation between populations AND the fact that they've only been identified thus far in the vicinity of Ward Lake suggest that introduction by humans may be the answer to the mystery. Additionally, the individual that introduced Pacific Chorus Frogs (*Pseudacris regilla*) to the immediate area circa 1960 later informed researchers that there may have been at least one other species of eggs in the bucket that was dumped at Frog Pond. The introduced eggs were collected at Kirkland, King County, Washington. Genetic analysis could eventually elucidate the origins of *A. macrodactylum* at this site!



ABOVE: Ream Stikine Observation, 2012
Notice the blotchy undefined dorsal stripe

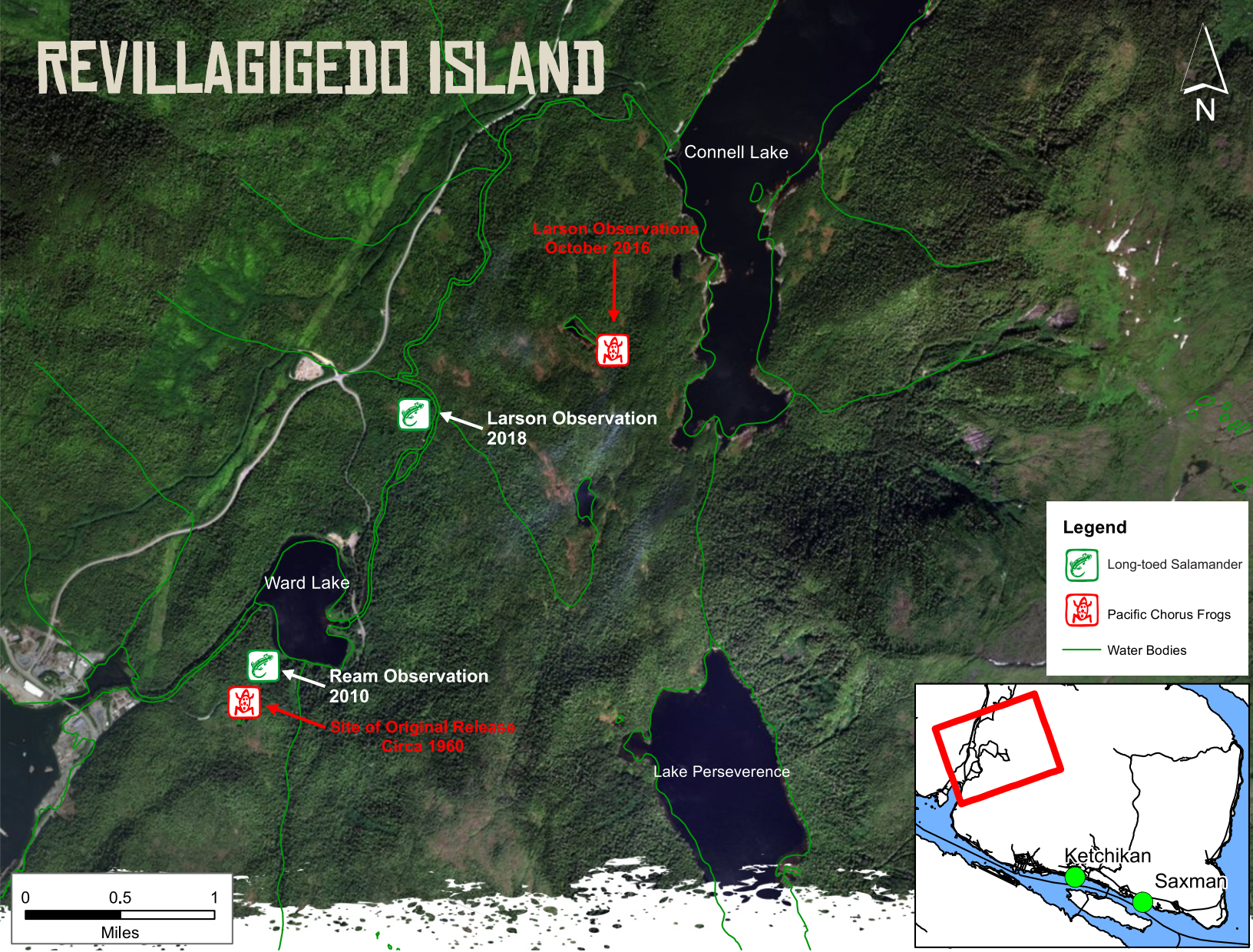


ABOVE: Larson Observation, 2017
Long-toed Salamander Larva

LEFT: Larson Observation, 2017
Notice the well defined dorsal stripe.

SEE MAP NEXT PAGE
FOR LOCATION

REVILLAGIGEDO ISLAND



LEFT & BELOW: Larson Observation, 2018
First observation of an *A. macrodactylum* breeding site on
Reviellagigedo Island

SEE MAP ABOVE FOR LOCATION





CHORUS FROGS (*Pseudacris regilla*) ON REVILLAGIGEDO ISLAND

BY: DR. JOSHUA REAM / KRIS LARSON

ABOVE & BELOW: Larson Observation, 2016
Chorus Frogs can be found in green & brown
color morphs.

[SEE MAP ON PREV. PAGE FOR LOCATION](#)

These photos of the Pacific Chorus Frogs (*Pseudacris regilla*) were also taken by Kris Larson in 2016 at a muskeg pond between Perseverance Trail and Connell Lake on Revillagigedo island. This species was introduced in the general area of Ward Cove (specifically at a site now referred to as Frog Pond) circa 1960. They were introduced as eggs in a 5-gallon bucket and were originally collected from Kirkland, King County, Washington. The origins of the population and additional monitoring were reported in a 1998 report by Waters, Hassler, and Norman titled "On the Establishment of the Pacific Chorus Frog, *Pseudacris regilla* (Amphibia, Anura, Hylidae), at Ketchikan, Alaska." The population was also described in the Ketchikan Daily News and in Alaska Magazine in 1992.



One of the goals of the 1998 report was to establish the viability and possible expansion of these frogs from the original site of release. The researchers surveyed 45 transects at 24 localities near the site in May of 1992 and found "no additional populations or individuals of the species" beyond the population observed at Frog Pond. No formal surveys have been reported since, though several observations of the frogs at Frog Pond have been published. For these reasons, Larson's 2016 observations are the first known reports of *P. regilla* at a Revillagigedo site other than Frog Pond. The photos were taken approximately 1.5-1.75 miles from Frog Pond though Larson reports that others have reported call observations up to 2.5 miles from the original release site. Larson also reports that it has only been 6-7 years since he has been hearing the frogs beyond Frog Pond proper.

One fear regarding the original population is the continued human-induced spread of the species. There have been several anecdotal reports over time of children collecting these frogs both for pets in their own home and for sale at the local pet store. Escapee and released pets may assist the species in establishing elsewhere on Revillagigedo Island. Larson contends that this scenario is unlikely for the population vouchered by his photos here since they are further from human activity and seem to be well distributed. No matter the reason for their spread, studies should be conducted to determine the extent of the populations spread on the island and the habitat suitability for this to occur.

ANSEP UPDATE

BY: DR. JOSHUA REAM

As part of my position at the U.S. Fish and Wildlife Service I am consistently provided the opportunity to do public education and outreach in Southcentral Alaska, especially as part of our program's ongoing partnership with the Alaska Native Science and Engineering Program's (ANSEP) Middle School Academy. Children from across the state participate in ANSEP and many know little about amphibians and reptiles; some have never seen these species in person. With a lack of pet stores in rural areas, kids eyes light up as soon as they learn of the topic.

It doesn't hurt to have live props when working with kids. Representing our native species I always bring with me AHS' Wood Frog, Molokai. Students are asked to use a key to identify her and are taught about Alaska Native stories, songs, dances, masks, totems and regalia depicting these species. I also bring along my Bearded Dragon (Aegon) and a borrowed Kenyan Sand Boa (Stripeback), ambassadors from Australia and Africa respectively. Less herpetological but nonetheless intriguing to the kids are the Dubia Beetles found in Aegon's terrarium...

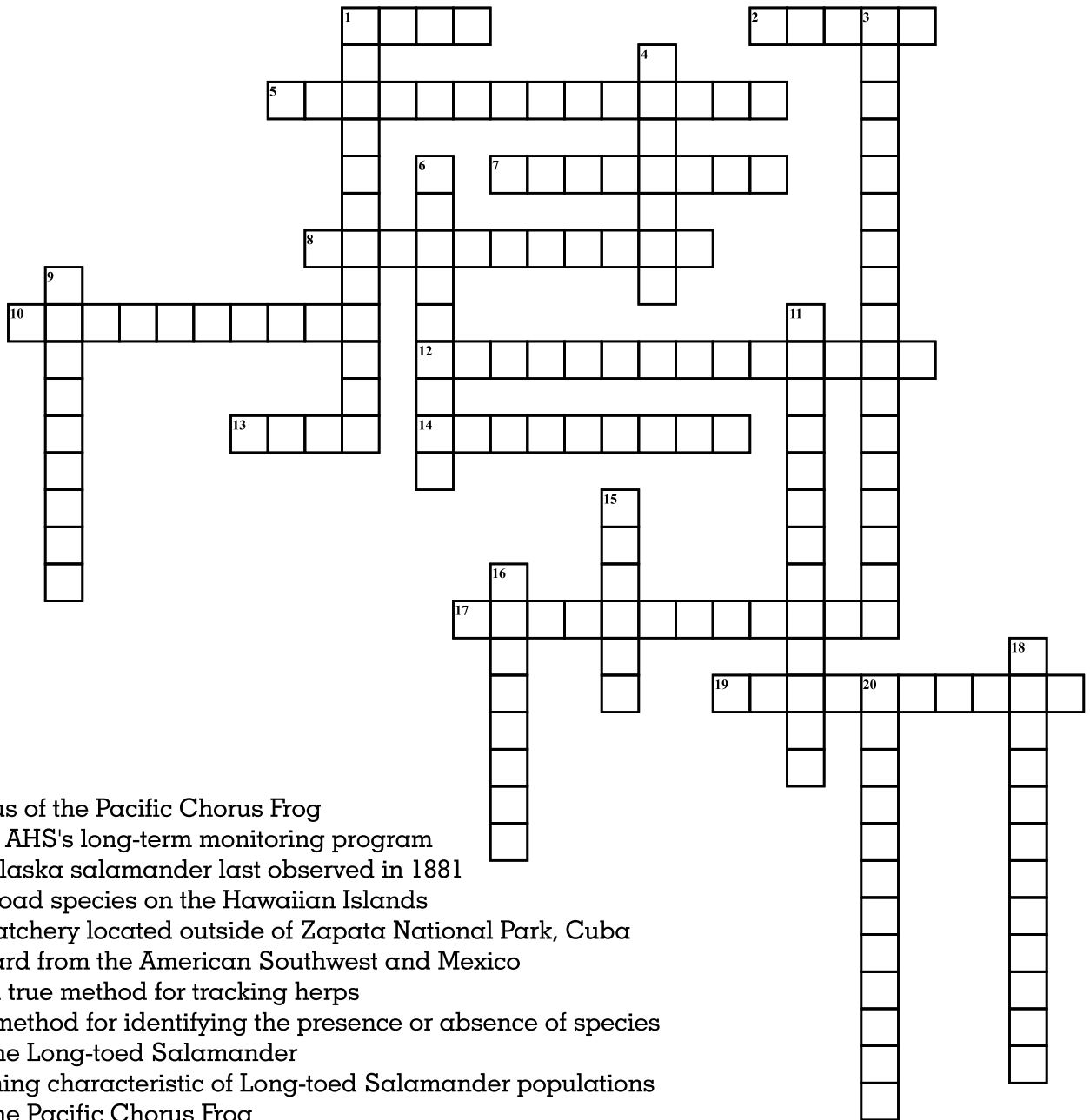
I am proud to be fostering a new relationship between ANSEP and AHS, and to have the opportunity to help educate Alaska's youth on herpetofauna and responsible pet ownership. Through our other programs such as SLAMP's Camp' phibian we are actively recruiting enrolled and prospective ANSEP students. With some luck and a bit of effort we can nurture the next generation of herp enthusiasts!



CROSSWORD

All answers can be found within this newsletter.

To check your answers visit: akherpsociety.org



ACROSS

- 1 - Former genus of the Pacific Chorus Frog
- 2 - Acronym for AHS's long-term monitoring program
- 5 - Enigmatic Alaska salamander last observed in 1881
- 7 - Introduced toad species on the Hawaiian Islands
- 8 - Crocodile hatchery located outside of Zapata National Park, Cuba
- 10 - A large lizard from the American Southwest and Mexico
- 12 - A tried and true method for tracking herps
- 13 - Emerging method for identifying the presence or absence of species
- 14 - Genus of the Long-toed Salamander
- 17 - Distinguishing characteristic of Long-toed Salamander populations
- 19 - Genus of the Pacific Chorus Frog

DOWN

- 1 - Faunal species including amphibians and reptiles
- 3 - *Crocodylus moreletii*
- 4 - The bodily structure of an organism as revealed by dissection
- 6 - A famous road in southern Illinois popular for viewing snakes
- 9 - Species epithet of the Cuban Crocodile
- 11 - Island on which Pacific Chorus Frogs were introduced in Alaska
- 15 - An American Southwest desert where tortoises can be found
- 16 - Common name of amphibian observed near Selawik, Alaska
- 18 - Type of River Cooter that can be found in western Tennessee
- 20 - AHS' first honorary posthumous lifetime membership was awarded to



STICKERS FOR SALE
ON WEBSITE

HERP SIGHTINGS

Want to submit your
herp related photos?

Email Us:
AKFrogDr@gmail.com

WOOD FROG OBSERVATION IN THE ARCTIC

We found it on July 29, 2014 on the upper Selawik River at N66.49946 W158.35735. Several of us were on a multi-day U.S. Fish & wildlife service float trip during a rainy stretch of weather when the river was running high and many gravel bars were flooded. We were looking for a place to camp and had stopped at one still exposed gravel bar. While walking among the scattered willows on the upland side of the bar, we spotted the frog.

-Submitted by Susan Georgette, Refuge Manager, Selawik National Wildlife Refuge



RECENT PUBLICATIONS



Spangler, M. A., Huettmann, F., Herriott, I. C., & López, J. A. (2017). Development, validation, and evaluation of an assay for the detection of wood frogs (*Rana sylvatica*) in environmental DNA. *Conservation Genetics Resources*, 1-3.

Spangler, M. A. Testing Environmental DNA Sampling and Predictive Modeling as Means to Investigate Wood Frog (*Rana sylvatica*) Distribution in Alaska and Northern Canada. University of Alaska Fairbanks, ProQuest Dissertations Publishing, 2017. 10643409.

Larson, D. J., & Barnes, B. M. (2016). Cryoprotectant production in freeze-tolerant wood frogs is augmented by multiple freeze-thaw cycles. *Physiological and Biochemical Zoology*, 89(4), 340-346.



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TENNESSEE ADVENTURES

Eastern Zigzag Salamander (*Plethodon dorsalis dorsalis*)



After the long Arctic winter I was ready for warmer locales and some herps to find. I found myself in West Tennessee as part of a larger trip. I had also hoped for a day trip to the "Snake Road" in Illinois. Warmer weather was what I was hoping for, but I did not find any anywhere. Great thing is salamanders don't mind it being a little chilly.

Before coming to Alaska in 2015, I worked for six years at Tennessee National Wildlife Refuge in West Tennessee. My host in Tennessee was a guy I use to work with Mike. Mike and I didn't waste any time getting in the woods. We moved logs and rocks and looked in streams proving successful. This outing produced five Mississippi Slimy Salamanders, two Ground Skinks and a half dozen Blanchard's Cricket Frogs that afternoon.

The infamous "Snake Road" in Southern Illinois was high on my list of places to visit this trip, so I made a day of it. Due to the cold and eventually rainy weather, I had the place to myself. This didn't stop me from finding a snake up in the bluffs. A juvenile Western Cottonmouth had ventured from underground to catch whatever warmth the day may hold and I was lucky enough to get a picture of that moment. I also found three Southern Redback Salamanders before the rains started.

Back in West Tennessee, I visited my old wildlife refuge and was able to flip another Western Cottonmouth. I searched and searched finding another MS Slimy Salamander, two Eastern Zigzag Salamanders and a Spotted Dusky Salamander. Turtles were plentiful as well with Southern Painted Turtles, Red Eared Sliders and Hieroglyphic River Cooters being spotted. I thought this trip would be snake centric, but due to colder than average weather it was mostly salamanders. It is now time to plan the next trip.

By
David
Zabriskie



MS Slimy Salamander
(*Plethodon mississippi*)



Southern Redback Salamander
(*Plethodon serratus*)



Western Cottonmouth
(*Agkistrodon piscivorus leucostoma*)



Spotted Dusk Salamander
(*Desmognathus fuscus conanti*)

SPECIAL THANKS TO THE PERRY FAMILY



Kayla, Adam, and Gabriel sold Dahlia flowers around Petersburg while simultaneously educating community residents on AHS and Alaska's amphibians!

THEY RAISED \$183!

Donation was deposited in the general fund.

In recognition of these efforts AHS has extended an honorary membership to their household.



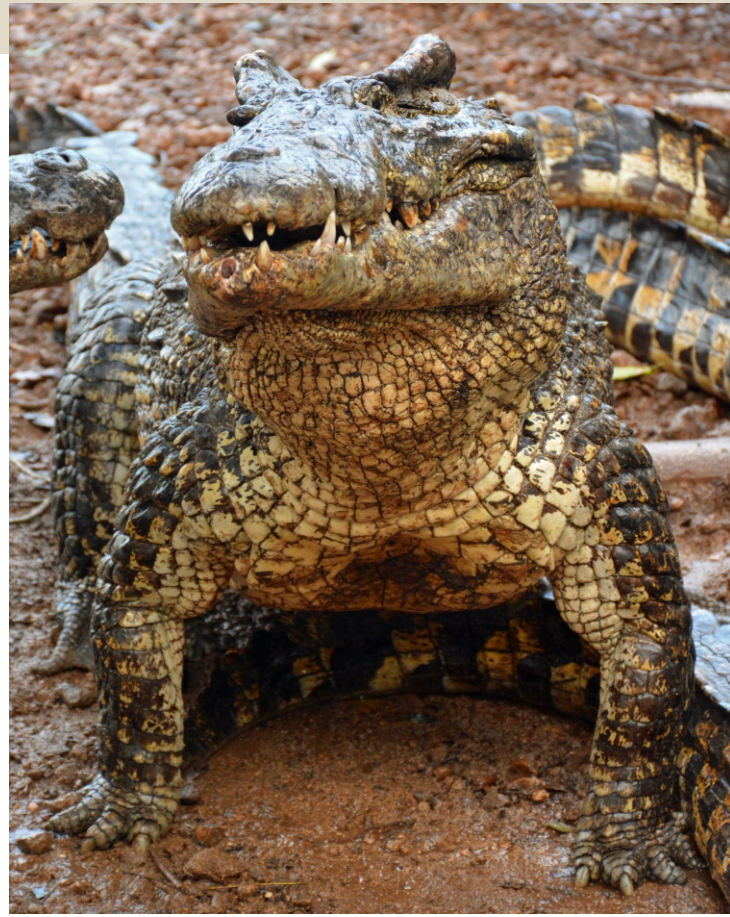
RENDEZVOUS WITH CROCODYLUS RHOMBIFER

By JOSEPH ROBERTIA

The air smelled of mud and reptile musk, the pitter-patter of a light rain was beginning to pass, and there was just enough light to detect the low-profile silhouettes of crocodile heads and backs on the water's surface. Staring across this communal display pool at the *Boca de Guama* crocodile hatchery, just outside of Zapata National Park in Cuba, I stood awestruck by what I was seeing firsthand – more Cuban crocodiles (*Crocodylus rhombifer*) in one place, and in one field of view, than there are in all of the U.S. zoos combined (a paltry 41 in 8 institutions).

The scene moved me for several reasons, the first of which is that Cuban crocodiles are a critically endangered species, known, sadly, for having the smallest distribution of any contemporary crocodile. *C. rhombifer* can be found in only two locations in the wild: in a roughly 186-sq-mile area in Zapata Swamp on Cuba's mainland, and in an even smaller and more remote 62-sq-mile area in Lanier Swamp on Isla de la Juventud, an island 31 miles off of Cuba's southern coast.

I was also looking at crocodiles that were older than I am, some by decades. Crocs that live to be 40, 50, some even 60 years old, are primitive-looking creatures, living dinosaurs in a way (although not taxonomically). They are completely impressive to behold, and not just due to the large size of these leviathans, but because their overall shape is so different than expected. One of the first things children learn about crocodiles is they exhibit a more slender snout than alligators or caimans, and on young crocs this feature is totally apparent. However, Cuban crocs have a muzzle that is already shorter and broader than most other crocodile species, and in old age their jaws grow even thicker, and more bumpy and gnarled. Behind their eyes they also have elevated bony ridges, which in animals this aged almost border as rudimentary horns, at least in appearance. And, perhaps most interestingly, the leathery bodies of crocs this long-lived tell the tales of the many battles they've won and lost over the years while fighting for food, females, and their own bit of terra firma. Some had eyes that were opaque, damaged, or absent from the socket all together. Others had scars from various traumas they had endured and survived, and a few were missing full limbs.



Still, these ancient animals felt the calling of the breeding season, which is the reason I had scheduled my visit not just at that time of year (January), but had pleaded with the *criadero's* (hatchery's) employees to allow me in at first light, before the park opened, when the crocs would still – hopefully – be engaged in courtship behavior. I was not disappointed.

I photographed one colossal croc, a bull easily nine feet in length, roar from on land. I could feel, as much as hear, his resonant rumble pass through me. As he was not in the water, it was impossible to detect Faraday waves (observed as ripples formed), proof of infrasonic calling, which has been poorly studied in *C. rhombifer*. A few minutes after this vocalization, another large male, nine-to-ten feet in length, and this one in the water, began to head-slap and then assumed a head oblique/tail arch (HOTA) posture.

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I did not notice any vocalization or Faraday waves emitted from this animal, but his signaling behavior was enough to cause several smaller crocodiles, most six to seven feet, in close proximity, to swim away as swiftly as if their lives depended on it. A few minutes later more splashing sounded from another area of the pond, and again I noticed smaller crocs fleeing, although this time there was an eight to nine foot croc undulating his tail in an s-shaped motion and waving one arm in the water while the rest of his body remained still. Since he emitted no sound and didn't move in any other way, this appeared to be some sort of scent-flagging behavior.

At least one American crocodile (*Crocodylus acutus*) could be identified amongst all the *C. rhombifer*, which struck me as odd, since hybridization with American crocodiles now threatens Cuban crocs with being bred out of existence – at least in terms of their unique genetic lineage. The extent of this intermingling became clear in 2015, when Yoamel Milián-García, a biologist at the University of Havana, published his findings in *Heridity*. After collecting samples (scales clipped from the tail) and analyzing the DNA, he found that half of the 227 wild *C. rhombifers* and 16% of the 137 captive animals he tested were hybrids, yet bore little to no outward appearance other than being pure Cuban.

I noticed the anomalous animal in the communal pool even before our guide – a bronze-skinned man, with a dark moustache and jovial disposition – pointed it out. He had been a bit of a jokester all morning and didn't miss an opportunity at this *C. acutus*'s expense.

"He very lonely," he said, with a thick accent.

"Really? Even with all these crocs in with him? Why would that be?" I replied, not realizing I had taken the bait.

"Because he American; he no speak Spanish."

At that, I continued to snap photos, but our guide treated my wife and three-year-old daughter to a more hands-on experience. They were allowed to hold a hatchling Cuban crocodile. I bring my little girl on all of my animal-related assignments, believing that the seeds of lifelong conservation get sowed when we are children, and I can think of no more meaningful a way to etch a memory into her mind than feeling the scales of this endangered species with her own tiny fingers and staring into its chartreuse-colored eyes from mere inches away.

While the communal pond of the educational/entertainment part of the facility was an extraordinary spectacle, across the street stood the true breeding farm. There were dozens of enclosures for hatchling and juvenile crocodiles, separated by age and size, with top-netting over the pens of the smallest crocs to avoid predation by native birds and other wildlife. All areas also had some form of shade structure so crocs didn't get too hot during the scorching days of summer. There were well more than 50 crocs in each of these enclosures, and I would guess, conservatively, that there were at least 3,500-4,000 animals total residing within the facility.

I was fortunate enough to observe a monthly census of crocs, conducted by employees using fence panels to corral all animals into one corner of their enclosure, and then slowly, in a controlled manner, letting them escape out an opening at one end where two separate observers counted.

Other interesting behavior I witnessed included a juvenile that clearly worked itself into position under running water (that was filling its moat) to "play," as it appeared to me, snapping and resting in the flow. Later in the morning at this point, in the section housing small groups of adults, I also still managed to observe at least one female face rubbing on a male, but witnessed no other overt courtship from the adults on this side of the road. This area also afforded a great opportunity to see *C. rhombifer*'s full body and ornate coloring, without mud covering them like in the communal pond.



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Their legs were long with short toes that lacked the typical webbing of other crocodile species. Their overall coloring – while peppered with black – contained much more yellow, rather than the typical mummy grays, shades of olive, or chocolate browns of most other species.

My tour of the facility ended with a grim, but informative stroll through the farm's taxidermy area, since this farm sells stuffed curios (which I did see in several locations around the country). Tooth jewelry was also sold in the gift shops, and crocodile meat in the restaurant at the farm. While this may seem morbid, it wasn't until my taxi ride to the airport that I got a glimpse of the true cold-blooded slaughter threatening this species.

"Oh you like crocodiles? Let me show you a video," said my driver excitedly. He was a millennial and like seemingly all in his age group, was surprisingly tech-savvy for a county sorely lacking in modern technology. He quickly downloaded a video to his phone of three young men pushing small skiffs loaded with illegally captured Cuban crocodiles. A fourth man is filming, but had his own boat of crocs too. In all, after watching the video several times, I counted at least 34 adult crocodiles that were poached. Who knows how many of them were females, capable of laying anywhere from 8 to 32 eggs annually, to aid in their species overall survival.

Instead, all were killed, as was told to me by my driver (he added the men were eventually caught and jailed because they posted the self-incriminating video), but based on their success at crocodile capturing this did not seem like their first illicit venture. I pressed my driver – and others during my trip who also referenced the video – as to the reason these men would risk their freedom to partake in such an illegal activity. Everyone I spoke with provided the same answer: "*por comida*," which translates to "for food." The Cubans I met all seemed proud of their crocodiles and the work done to save them, but clearly even proud men will kill crocodiles if poverty makes legally feeding their family too challenging.

Thankfully, Cuba's National Crocodile Program – under the support of the *Empresa Nacional para la Proteccion de la Flora y la Fauna* (ENPFF) – makes the country an undeniable powerhouse for captive breeding. There are no less than eight farms in the country, with six of those being devoted to, and cumulatively housing roughly 8,000 of, the more common American crocodile (*C. acutus*). The other two are devoted exclusively to *C. rhombifer* breeding. Having already visited the mainland facility, I headed for the far-flung *Cayo Potrero* crocodile farm, located in the middle of the Lanier Swamp on Isla de la Juventud – far from the cigars, vintage cars, and rum bars of Havana.

The southern half of the island – where Cuban crocodiles are farmed, and have been and still regularly are released into the nearby Lanier Swamp – is also still a military zone, so I had to procure an obligatory guide to accompany me. Yuri, was a tall man, lean and strong, with an almost mahogany complexion. He was somewhat coy about his Russian-rather-than-Hispanic-originating name, worked for \$10 U.S. per month, and knew where to find crocodiles. I liked him immediately. We spent days together, bumping down miles of dirt roads cratered with more pot-'canyons' than potholes, and enduring scorching heat that threatened to defeat me more than our quarries' naturally elusive tendencies.

Compared to the mainland facility, this farm was quite small and seemed to receive only a fraction of tourist traffic, but was much more aesthetically pleasing overall. There were only a half-dozen rearing pens for hatchlings, juveniles, and sub-adults (roughly a few dozen to not many more than 50 crocs per most enclosures), and an equal or slightly greater number of much larger pens for breeding pairs of adults, but in terms of these latter enclosures, the confines were quite spacious and natural: large ponds filled with lilies and other vegetation, on shore there were sunny grass banks for basking, and tall trees provided shade for when the sun got too hot.

Nests from the previous season could still be seen in some enclosures and a farm employee pointed out with pride that one of the largest breeders was a whopping 61 year old croc still producing. While reports indicate this farm (which began in 1988 with stock from the *Boca de Guama* facility) began releasing farm-bred individuals – 600 of varying age classes – back into the Lanier Swamp area in 1994, the employee I spoke with said the number was closer to 100 animals annually in recent years.



In aggressively researching this trip before departure, I scoured over Google Earth images of the Lanier Swamp area. The satellite imagery showed two large, open water-bodies in the remote center of the swamp, and based on vegetation growth patterns, a clearly obvious high-water mark where the swamp was capable of swelling during the height of the wet season. It's not hard to understand how during the rain-fed time of year, these main water-bodies would connect to the patchwork isolated pools and rivers in the area, as well as several of the human-made canals surrounding *Cayo Potrero* where I saw some of the released crocs still residing, allowing these animals to widely disperse.

Unfortunately, no one I spoke with seemed to know what the success rates were for these recent crocodile releases and publications of any studies conducted have been quite few and far between, at least outside of Cuba. Also, due to the distance of this breeding farm from the closest town where I could find accommodations, I was not able to witness any breeding activity as I had at the mainland farm.

On the plane ride home, I mulled over all that I had taken in, and my overall impression of the country was very positive. Cuba has made, and is continuing to make, great strides to conserve crocodiles, which says a lot about them, period, but especially when considering the destitute lives lived by many of the people working to save them. Cuba could benefit from better protection of wild and released animals, increasing opportunities for participation in conservation (or ecotourism) by local communities, developing better education materials for locals and tourists alike (the National Airport had no books or posters available on crocodiles or other endemic wildlife), and possibly pairing with external educational institutions to bring in more human and material resources for conducting ecological research. But of course, the ongoing embargo hampers many of these ideas from being achieved.

Cuba is a jewel of the Caribbean for sure, but with many modern amenities lacking, it is definitely not as polished a gem as many of its neighboring islands. As such, it may not be for everyone, but for croc-enthusiasts who meet one of the 12 categories for legal travel to Cuba, as outlined by the U.S. State Department, this should be a bucket-list location. Just be sure to pack your own toilet paper though, as rolls are even rarer in Cuba than these critically endangered crocodiles.

References:

- CITES 2004. Transfer of the population of *Crocodylus acutus* of Cuba from Appendix I to Appendix II, in accordance with Resolution Conf. 9.24 (Rev. CoP12) Annex 4, paragraph B. 2 e) and Resolution Conf. 11.16.
- Milián-García, Y. , R. Ramos-Targarona , E. Pérez-Fleitas , G. Sosa-Rodríguez , L. Guerra-Manchena , M. Alonso-Tabet , G. Espinosa-López , and M. A. Russello . 2015. Genetic evidence of hybridization between the critically endangered Cuban crocodile and the American crocodile: Implications for population history and in situ/ex situ conservation. *Heredity* 114: 272–280.
- Ramos R, de Buffrenil V, Ross J (2004). Current status of the Cuban crocodile, *Crocodylus rhombifer*, in the wild. In: *Crocodiles, Proceedings of the 12th Working Meeting of the Crocodile Specialist Group*. IUCN: Gland, Switzerland. pp 113–140.
- Rodríguez-Soberón, R., Ramos, R., McMahan, W. and Ross, J.P (1996). Reintroduction of the Cuban crocodile on the Isle of Pines. *Crocodile Specialist Group Newsletter* 15(3): 10-11.
- Targarona R, Soberón R, Cotayo L, Alonso Tabet M, Thorbjarnarson J. (2008). Red List of Threatened Species. IUCN.

GRANT AWARDEE UPDATE



This Alaska Herpetological Society Grant was presented to Melanie Hinzman at Joy Elementary School in Fairbanks. Her students are in grades 3-6th and she teaches the extended learning program. Students did a springtime walk to Creamer's Field to listen for Wood Frog mating calls and for observations. The Creamer's Field Sketches and info of Wood Frogs, by Mark D. Ross, was a helpful resource for this outdoor adventure.

Students' pre-lab included an introduction, external anatomy, and a web link to label the frog's internal organs with location and function. Also in the prelab, we studied the frog's animal phylum, differences between amphibians and reptiles, three adaptations that frogs have which makes them amphibians, and general questions for students to ponder and answer.

Don Larson, UAF Biology Dept., was our expert "frog person" and taught the proper protocol for a frog dissection. Larson led the students through the discovery of the frog internal anatomy.

The grant allowed the purchase of 4D Vision Frog Anatomy Models and 4"-5" frogs for dissection.

Our school is very appreciative of the Alaska Herpetological Society for this support. Our students were genuinely enthused to join these lessons and the foster the love for biology and science.

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