



The President's Tern

The Amigos de Bolsa Chica Adapts

By Charles Falzon

Thank you to all who have responded with generosity to our mid-year appeal for donations. Within a few short months much of our everyday lives and routines have been turned upside down. The Amigos has seen all of its traditional educational outreach programs come to a halt, and at this writing it is unclear if, or when schools will resume with field trips as in the past, or when conditions will be safe for our volunteers to interact with groups of people. While some things appear to be returning to normal, so much of what may be yet to come with the coronavirus pandemic is unknown. Like every other business and non-profit organization, the Amigos, with the generous support of our members and volunteers, are adapting.

It is with pleasure that I can talk about some of the things we're working on and some that are soon to come to fruition. One of our first responses to isolation and distance learning was to create Zoom webinars wherein our volunteers, both Citizen Scientists and Naturalists, could see and visit with one another as well as absorb some information on current science events. We learned about the bioluminescent algal bloom happening along the Orange Coast in April and May, and we had a speaker from South Africa talk about the unprecedented red tides she is studying in Algoa Bay. Former FLOW Program Manager Gwen Noda talked about her experiences diving off the Southern California coast.

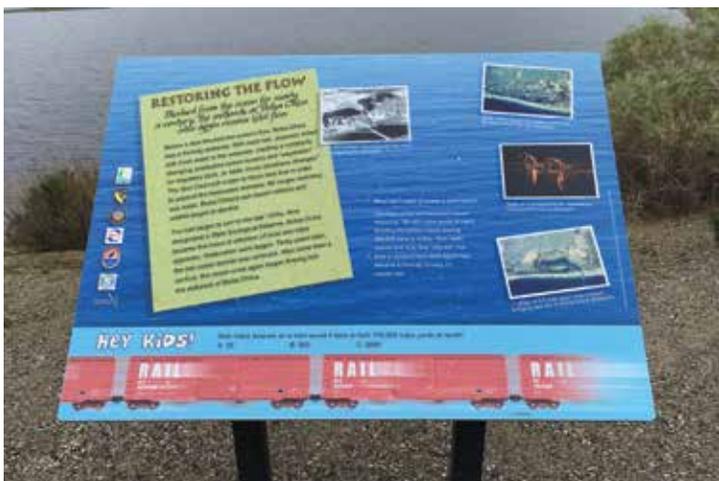
We learned about how anyone can collect local invasive grasses to participate in an air quality study (see page 3), and heard a lively discussion about intersectional environmentalism and environmental justice. BCER Manager Kelly O'Reilly spoke to volunteers about the hidden marine life of Bolsa Chica.

In order to support the teachers who have long been vital to the success of the Amigos de Bolsa Chica, we are excited to host a unique Summer Institute for Educators starting on July 13 (see page 4). Imagine suddenly being taken out of the traditional classroom setting and restricted to online learning! Trauma for both teachers and students. We are also creating more online content: our *Saving the Bolsa Chica Wetlands* documentary can now be used in the class room, and more Virtual Field Trips are coming soon.

The Amigos have been stressing for well over 40 years that science is everything. The need for a greater understanding of ecology and how the health of the environment affects the health of humankind has never been more important. While we do not know what the future will look like, when or if we'll return to anything resembling the past, we intend to do whatever it takes to remain dedicated to our mission to protect, preserve and restore the Bolsa Chica and provide education about the importance of wetlands.

New Interpretive Panels Installed at the Bolsa Chica Ecological Reserve

In case you have not taken a hike at the wetlands lately, you will now find a new way to educate yourself about what you're looking at. The result of a multi-year collaboration between the Amigos de Bolsa Chica, Bolsa Chica Conservancy, Bolsa Chica Land Trust, California Department of Fish & Wildlife, California State Lands Commission and California Resources Corporation, seven new colorful and informative interpretive panels were installed on the three overlooks along the loop trail at the Reserve in March. Photos by Thomas Anderson.



Citizen Science Opportunity: Collect Common Invasive Grasses for Air Quality Study

By Kim DiPasquale

Hello fellow Naturalists and Citizen Scientists. I would like to introduce you to a great opportunity to help with a research project that is being conducted by the University of California, Irvine (UCI) and the University of California, Riverside (UCR). The purpose of the study is to evaluate the effects of California's stay at home order on our air quality. I'm sure that you noticed a significant decrease in traffic during the first few months of the COVID-19 pandemic. Scientists at UCI and UCR will be measuring the isotopic composition of carbon in several species of invasive annual grasses in order to estimate fossil fuel consumption and its relationship to air quality during our stay at home period.

To participate in this study all you have to do is collect invasive grass specimens and mail them to Dr. Claudia Czimczik at UCI (see her address below). The plants being used in this study are known as Ripgut and Cheatgrass which are both in the *Bromus* genus, and Wild or Slender oats from the *Avena* genus. These weeds are truly everywhere but are most commonly found in open fields and along roadways; especially in disturbed soils. See photos at right.

Just find a specimen, cut it off at the base, roll the grass blades into a circle, place it in a paper envelope, and mail it to UCI. Please include a piece of paper with the name of the plant or your best guess, the date you collected the plant, and the location. Be as specific as possible about the location. Do not place the plant in a plastic bag because this will likely cause an issue with mold. Specimens will be collected throughout the state so this will be a solid piece of research.

The iNaturalist smart phone app is a useful resource for identifying both invasive and native grasses, using artificial intelligence to identify from a picture. For the best results, make sure the picture is clear and focused and the plant you are trying to identify contrasts with the background. <https://www.inaturalist.org/>



Cheatgrass (*Bromus tectorum*)



Japanese brome (*Bromus japonicus*)

Mail the envelope to:
KCCAMS/ESS c/o C. Czimczik, 2222B
Croul Hall, University of California, Irvine,
Irvine, CA 92697-3100.

If you have any questions about plant identification, you can email me at kimdipasquale@gmail.com.

The Tern Tide is published quarterly by
Amigos de Bolsa Chica
P. O. Box 1563
Huntington Beach, CA 92647

(714) 840-1575
www.amigosdebolsachica.org
info@amigosdebolsachica.org

Editor & Graphic Design:
Thomas Anderson

President: Charles Falzon
Vice President: Kim DiPasquale
Secretary: Shirley Dettloff
Treasurer: Brian Westcott

Directors:

Karen Belville	Mel Nutter
Jerry Donohue	Jennifer Robins
Craig Frampton	Jim Robins
Judith Huck	Bill Stern
Terry Jorris	Joana Tavares
Vic Leipzig	Administrative
Daryth Morrissey	Director: Thomas
Cat Navetta	Anderson

FLOW Fridays, the First Saturday of the Month Tour and the Last Saturday of the Month Bird Walk/Trash Cleanup are suspended until further notice so as to avoid exposing our volunteers and tour participants to COVID-19. Check our website, www.amigosdebolsachica.org for updates.

Educating for Sustainability in Times of Uncertainty

Amigos de Bolsa Chica/National Geographic

Summer Institute for Educators, July 13 - July 24, 2020

Program Overview

A free workshop series designed to help California Middle and High School Environmental Science/ Ecology/Sustainability teachers convert their existing in-person class plans to whatever COVID-19 response plan is to be implemented by their school districts for fall 2020 (e.g. distance learning, in-person, and/or hybrid formats).

In collaboration with teachers, workshop facilitators will identify areas of need, discuss topics of interest, and share/test/troubleshoot strategies to overcome expected challenges in adapting class plans for COVID-19 “new normal” (whatever that be for their districts).

This Summer Institute will also include Phase 1 training to become a National Geographic Certified Educator. Teachers who complete phase 1 training of the NG certification gain access to an online community of global educators who share your passion of teaching students about the world and how it works, empowering them to succeed and make it a better place.

The organizers of this institute believe that black lives matter. We are committed to help teachers in whatever ways we can to prepare for fall 2020 so that they can support their students and communities during this important time in history, as we strive to effectively address systemic racism and promote diversity, equity and inclusion in all segments of society, including in stem and environmental fields.

This Summer Institute is completely FREE of charge to participants. The organizers, facilitators, and guest speakers of this Summer Institute are all volunteers who have agreed to work on this project without pay or other direct financial rewards. Any clerical costs and operating expenses associated with the development and implementation of this project have been covered by Amigos de Bolsa Chica’s general funds. All organizers, facilitators, guest speakers and participants further agree to seek no future remuneration or financial reward for the time and effort they have invested in this project and confirm that there are no



financial conflicts of interest to disclose.

Facilitators:

Kimi Waite, M.Ed., 2019 EE 30 Under 30, North American Association for Environmental Education & US Forest Service Teacher Trainer & Education Blogger, National Geographic Education, Teacher Leader & Consultant, California Global Education Project. <https://naae.org/about-us/people/kimi-waite>

Gwen Noda B.S. in Marine Biology and M.A. in Biology (UCLA) Center for Dark Energy Biosphere Investigations Diversity Director at USC, Former Co-Director of the Center for Ocean Sciences Education Excellence COSEE-West. <https://naae.org/eeopro/people/gwen-noda>

Joana Tavares-Reager, B.S. in Oceanography, M.S. in Marine Science and Policy, PhD Candidate in Earth System Science, Former Community College Professor, Curricula Developer www.partsperthousand.com

The Training:

The Summer Institute for Educators will be co-created alongside participating teachers through a collaborative application process and program. We will consider the needs and offerings that you share in your application, and we draw upon your responses to shape the program.

Teachers continued on page 5

Poseidon Project Update

By Shirley Dettloff



A workshop was recently held by the Santa Ana Water Quality Regional Board on May 15, 2020. The meeting was done with Zoom and lasted from 9:00 a.m. until 9:00 p.m. – twelve hours! Since one of the major topics was the mitigation requirement that Poseidon will be required to do if the Regional Board and then the Coastal Commission approves the project, both Charles Falzon and I participated in the meeting. As you know the Amigos have taken a position of supporting the mitigation requirement that Poseidon do their mitigation at the Bolsa Chica, but remain neutral on the desalinization project itself.

If the project is approved at all levels, Poseidon would be required to maintain the Bolsa Chica's Ecological Reserve's tidal inlet as well as restore an additional 15 acres of degraded wetland. As the Amigos membership knows, funding that was set aside in a special account for maintenance of the inlet has run out, and now funding is dependent on the State. Originally when decisions were made to acquire the Bolsa Chica, a fund was created to assure that maintenance of the Bolsa Chica would be assured. However, the economic downturn of 2008 combined with the requirement for more frequent dredging of the inlet, this fund has been depleted.

There is now concern that with the COVID-19 crisis's effect on the state budget, State money will be difficult to obtain. Now many unexpected factors are at work and we will be closely following all the decisions that will be made in the coming months. The Regional Board will be making a final decision on July 31, 2020. We will continue to update you on what is happening with State agencies and with the decision by the Santa Ana Water Quality Regional Board.

Teachers continued from page 4

Possible topics include:

1. Science of Distance Learning: data-based strategies for distance learning education to engage, motivate and support students during these challenging times.
2. Differentiating in times of distance learning: how to adjust online instruction to meet the individual needs of students, particularly those dealing with extreme

hardships due to COVID-19.

3. Taking full advantage of existing online resources
 - a) Connecting the National Geographic Geo Inquiry Process to your teaching practice and how to become a National Geographic Certified Educator by completing Phase 1 of National Geographic Educator Certification Process.
 - b) Other resources compiled here <https://sites.google.com/view/edwhilephysicaldistancing/home>
4. Hands-on activities, experiments students can do at home, backyard explorations and self-guided tours
5. Fostering student civil engagement and environmental activism online and remotely: strategies include creating petitions and related media content, in addition to writing letters to public officials, institutions and agencies.
6. Diversity, Equity, and Inclusion in the classroom: tools to empower underrepresented minorities and promote the development of allyship by addressing racism, discrimination, and oppression through discussions about environmental justice and intersectional environmentalism.
7. Practical self-care suggestions for teachers, including strategies on how to improve work-life balance, personal wellbeing, and resources for teachers seeking emotional and mental health support.

Format:

Program will take place entirely on zoom and will consist of 6 meetings of 2 hours each for a total of 12 hours of "facilitated workshop time" plus optional work time for small teams of 3-4 teachers to collaborate in actually preparing their lesson plans for the semester. The program runs for 2 weeks (July 13-July 24) on Mondays, Wednesdays, and Fridays (time TBD).

Application and Selection Process:

Teachers must complete the online application form, <https://forms.gle/TU4hJEmFDHB1KLRg9>. All educators from the State of California are welcome to apply but enrollment is limited to 20, and preference will be given to middle and high school teachers that teach STEM and/or sustainability-related courses in Title 1 schools within Southern California. Participants will be announced on Monday, July 6.

Zoom Graduation For New Naturalists

By Thomas Anderson

With seven of eight classes completed, the 2020 Volunteer Naturalist Training class was abruptly halted without completion immediately following the Perimeter Tour on March 15. The Amigos' Education Committee was finally able to bring almost everyone together on June 12 for a Zoom meeting from the comfort of each individual's own home. Almost all of the new and dedicated Naturalists were able to attend the meeting that attempted to follow an agenda similar to the in-

person last class. The big difference was sharing what each of us had been up to over the three months of isolation. We also discussed what everyone liked about the class and what could be improved for the future. Everyone participated in answering the quiz, and we discussed what the near future might look like for Amigos volunteers. Everyone remains eager to share their love of the Bolsa Chica with others, and their new ideas that accomplish old goals are needed and welcomed!



Top row from left: David Lasky, Thomas Anderson, Susan Hardgrave. Second row: Kim diPasquale, Amber Davis, Jennifer Robins. Third row: Dan Dawes, Charlie Chavez, Vina Nguyen. Jared Sanchez was unable to attend.

Naturalists Unusual Respite in 2020

By Jennifer Robins

Amigos de Bolsa Chica has not been having our regular public and private tours since March. Not something we chose, so I asked our Naturalists to discuss their current activities. I was fascinated and encouraged by their replies. I am sharing many of their replies as I thought you also might be interested in their answers.

How about gardening? – start a vegetable garden or replace some of the old garden edging or plant new flowers or plants in the yard. Ever thought of learning to play a musical instrument or a new language? – several naturalists are learning to play the cello and piano and another who is already playing is making an album, while another is learning a new language. Some of the other activities were birding, sailing, doing

crossword puzzles which helps memory, painting and sketching outdoors, photography and baking. And one naturalist has started a new business – that's inspiring.

And, of course, reading and watching television. The books read ranged from "What It's Like to Be a Bird" to "Soul of America" to "The Best We Could Do" to "Educated" to "Where the Crawdads Sing" and books by Louise Penny and Nevada Barr. Television shows were comedies, dark dramas, documentaries and nature programs.

Life goes on even with a pandemic and protests going on around us. Amigos wants to start our tours as soon as possible, until then connect with us on our website and in our Zoom meetings. Be well!

Western Snowy Plover Nesting at Bolsa Chica 2019

By Peter Knapp and Rachel Woodfield

Editors note: the following is the Executive Summary of the highly detailed Western Snowy Plover Nesting at Bolsa Chica, Orange County, California 2019 by Peter Knapp and Rachel Woodfield that can be found on the Amigos de Bolsa Chica website at https://www.amigosdebolsachica.org/bolsa_chica_restoration/2019_Bolsa_Chica_WSP_Report.pdf

In 2019, California Department of Fish & Wildlife (CDFW) staff and volunteers continued the annual monitoring and management of western snowy plovers at Bolsa Chica Ecological Reserve (Reserve). Surveys were conducted daily from mid-February to mid-September. Observers documented the location of any new nests, installed welded-wire mini-exlosures (ME) over each nest to protect it from predators, monitored the nests each day, and later followed each brood until fledging. In addition, a range-wide Winter Window Survey and a range-wide Breeding Season Window Survey were conducted. Calculations were also made to estimate the minimum number of adults present at Bolsa Chica during the breeding season for the US Fish and Wildlife Service.

In 2019, the first snowy plover nest was established on March 30 and the last brood fledged on September 5. There was a total of 119 nests, producing 321 eggs, of which 283 hatched chicks, with 112 fledglings produced. There was an overall fledge rate (fledglings/male) of 1.70 for 2019. This continues the high fledge rates of recent years, indicating an increase in the plover population at Bolsa Chica. The continued use of MEs resulted in low rates of egg predation.

The most utilized regions of Bolsa Chica for snowy plover nesting were the Seasonal Ponds and the Muted Tidal Basin, with 41% and 27%, respectively, of all nests. The most successful individual cell was Cell 10 in the Seasonal Ponds, producing 16% of all fledglings. Cell 46 in the Muted Tidal Basin produced 7 nests, with 20 eggs, 20 chicks, and 12 fledglings.

The range-wide Winter Window Survey conducted in January to estimate the winter population size found 26 adults within the Reserve. The range-wide, Breeding Season Window Survey conducted on May 20 resulted in a count of 94 adult snowy plovers in the Reserve. The highest Estimated Minimum Number of Adults was

determined to be 109.

Each year, the date of initiation of the tenth nest is recorded. The tenth nest in 2019 was initiated on April 9. This is approximately one week earlier than 2018, which itself was two weeks later than the prior 5-year average of April 1. In addition, the time period that there were 70 or more breeding adults present was 80 days. This was an increase from 2018 (65 days).

There was a high rate of chick loss in 2019 (171 chicks), continuing the high rate of chick loss observed from 2017 through 2019. By comparison, the average chick loss from 2014 through 2016 was 100 chicks. More loss would be expected with the increase in the number of nests in 2017-2019, however the 2014-2016 time period had a higher fledge rate, with over 50% of chicks fledging. This was the sixth consecutive year that the management goal of 70 adults in the breeding season was surpassed at the Reserve, as specified in the U.S. Fish and Wildlife Recovery Plan for the Pacific Coast Population of the Western Snowy Plover.

A key recommendation for 2020 is to provide predator management. In 2019 there was no predator management because the CDFW employee charged with this task retired. Fledgling success can only be improved through reduction of predators, such as American kestrels, which are believed to be the primary predator of plover chicks. This is essential to improving reproductive success at Bolsa Chica, which provides the best nesting option for snowy plovers within a 60-mile radius. A second recommendation is to recognize that the Muted Tidal Basins now account for over 25% of plover nesting. Impacts to plovers should be carefully considered while developing remedies to the poor functionality of the Muted Tidal Basin.





NON. PROFIT ORG.
U.S. Postage
PAID
Huntington Beach, CA
Permit No. 486

THE TERN TIDE

Volume 44, Issue 2
www.amigosdebolsachica.org
info@amigosdebolsachica.org
(714) 840-1575

AMIGOS DE BOLSA CHICA MEMBERSHIP APPLICATION

I support the specific and primary purpose of Amigos de Bolsa Chica, which is to advocate the preservation, restoration and maintenance of the Bolsa Chica, to encourage the public acquisition of all the wetlands and sufficient surrounding open space to create a viable ecosystem, and to provide education about the importance of wetlands.

ANNUAL DUES

- \$ 10 Student
- \$ 25 Individual
- \$ 40 Family
- \$100 Sustaining
- \$1000 Life Member

Name: _____

Address: _____

City: _____ State: ____ Zip: _____

Email: _____

Phone: _____

Additional Contribution:

\$ _____ Fund operational expenses \$ _____ Fund education projects \$ _____ Total enclosed

Please check if you are interested in volunteering for:

FLOW Citizen Science Naturalist training/wetland tours Wetlands cleanups Fundraising Grantwriting

All contributions to Amigos de Bolsa Chica are tax-deductible as allowed by law under IRS Code Section 501(c)3.
No goods or services were provided in consideration of this gift.

Return application to: Amigos de Bolsa Chica, P.O. Box 1563, Huntington Beach, CA 92647