

Wetlands Working Group

The Wildlife Society



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Reflecting on 2020 and Moving Forward to 2021

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Wetlands in the News

Upcoming Conferences

Hello! I hope you and your family have been safe during these uncertain times. 2020 has been interesting to say the least, but I think we have all learned how to be adaptable. For me, this change forced me to pause and gave me the chance to process through our data backlog. I have also seen our work capacity expand beyond our “traditional” work (in person or in the field) and we have altered the way we conduct meetings and engage our neighbors. These changes will probably alter the way we conduct our work long-term, but those are changes that should be welcomed. I am excited to see how these times advance the natural resource field and the creativity it forces us to pursue. The Wildlife Society’s Annual Conference had its highest attendance ever and I think we can all admit that had to relate to the reduced budget requirements. That might seem trivial, but reducing the registration cost and its associated costs (travel, housing, etc.) reduced barriers to entry and participation. With that increase in attendance, the Wetlands Working Group (WWG) had record attendance for the WWG annual meeting. We had more than thirty attendees in our virtual room and we will probably pursue having our annual meetings projected virtually into the future to keep that involvement strong.

My path to becoming an officer was not a common one. My jobs have revolved around wetlands, so I naturally decided to become a member of the WWG. After not getting emails or information from the WWG as a member, I decided to run for an officer position. I did not feel I was getting what I wanted from my membership. I do not say this to call out previous officers, but to point out sometimes we have to create the change we want to see. With that in mind, it is my goal to increase our interaction with you all, but also with one another. Unlike state and student chapters, we are not all in the same place, which makes it harder to have those interpersonal relationships. The WWG board has come up with some fun and creative ways to keep us all engaged and we hope you feel more connected moving forward. We are the scientific community for wetland professionals and we want the knowledge we all possess to move us forward as a community of practitioners. Please reach out to me over the year as we try to get more involved in your life and work.

Cheers! Phillip Stephenson, WWG Chair
(phillipleestephenson@gmail.com)



Wetland Habitat Change in the Alaska Peninsula/Becharof National Wildlife Refuge

by Gerald "J.J." V. Frost, Senior Scientist, ABR Inc. - Environmental Research & Services, Fairbanks, AK
 Susan L. Ives, Senior Scientist, ABR Inc. - Environmental Research & Services, Anchorage, AK
 Wendy A. Davis, Senior Scientist, ABR Inc. - Environmental Research & Services, Anchorage, AK

The Alaska Peninsula/Becharof National Wildlife Refuge (APBNWR) encompasses extensive wetland habitats that support large breeding populations of migratory waterbirds and other wildlife. Recent studies in NWRs elsewhere in western and southcentral Alaska have documented wetland drying and other landscape changes associated with climatic warming and successional processes since the early 20th century. Yet, the Alaska Peninsula region is greatly understudied, and like other tundra regions with a relatively warm, maritime climate regime, it has often been excluded from circumpolar studies of vegetation and hydrologic change using remote sensing. Here we seek to address these knowledge gaps by interpreting wetland habitat conditions and change in the Bristol Bay lowlands ecoregion of APBNWR's Ugashik Unit (Fig. 1), using a collection

of coregistered, high-resolution aerial and satellite imagery acquired in circa 1951, 1983, and 2015. To support and validate the imagery interpretation, we collected field data for vegetation, soils, and surface hydrology in wetland environments and developed an ecotype classification for wetlands for the Bristol Bay side of the Ugashik Unit.

The ecotype classification included 13 wetland ecotypes, distinguished on the basis of the species composition and cover of vegetation, soils characteristics, and hydrologic regime (e.g., Lacustrine Aquatic Pondlily, Lacustrine Buckbean Marsh, Lowland Wet Bog Meadow; Fig. 2). Many of these ecotypes are closely associated with one another along successional sequences that were evident both in the field and in the imagery collection. For the imagery interpretation, we applied a simplified classification that combined similar classes into map ecotypes that could be consistently distinguished in the multi-temporal imagery collection.

Continued on page 3

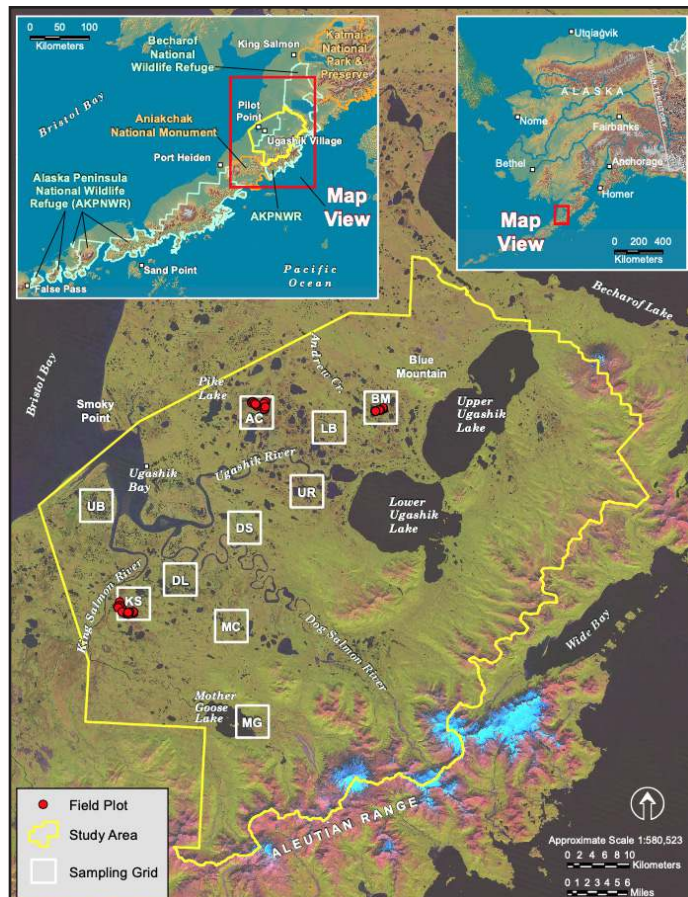


Fig. 1. Overview of the Ugashik Bay study area, in and near the Ugashik Unit of the Alaska Peninsula/Becharof National Wildlife Refuge, southwestern Alaska. The white boxes indicate the locations of the sampling grids, and the red markers indicate the locations of field plots.

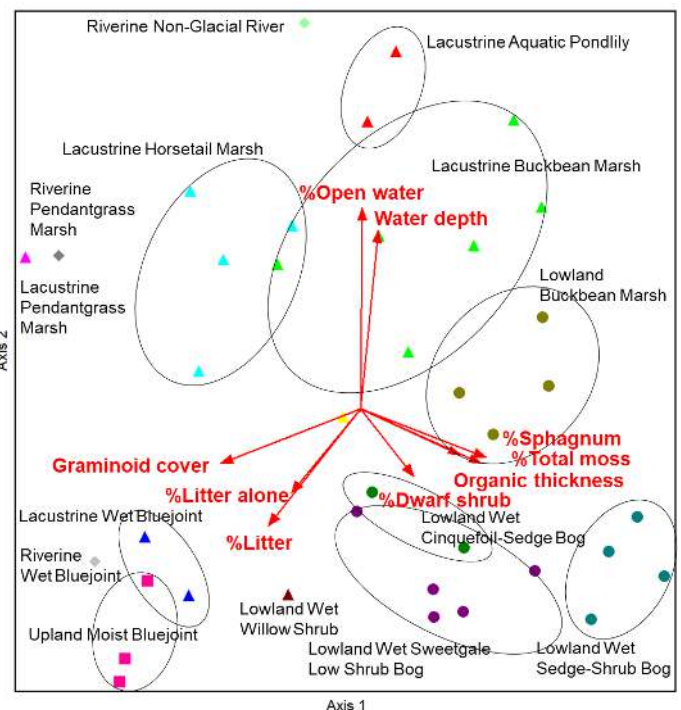


Fig. 2. Ordination of field plots using Non-metric Multidimensional Scaling (NMDS). Plot ecotypes are grouped within ellipses and are labeled in black. Bi-plot vectors (red arrows) indicate the direction and magnitude of positive correlation of environmental variables within the ordination space.

Wetland Habitat Change (continued from page 2)

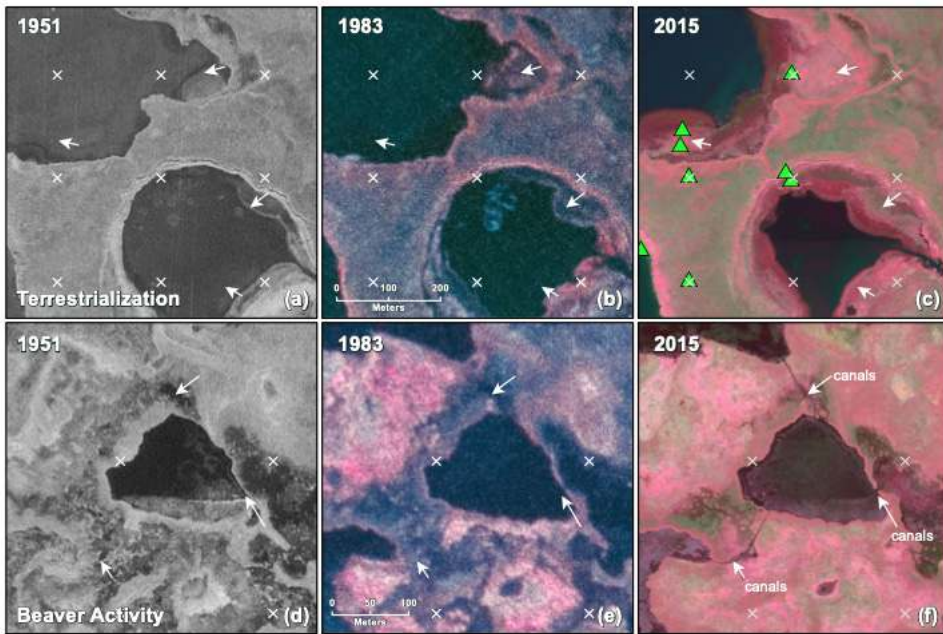


Fig. 3. Examples of wetland habitat changes arising from terrestrialization (top row, Andrew Creek sampling grid) and beaver activity (bottom row, King Salmon sampling grid) evident in high-resolution imagery from 1951, 1983, and 2015. The white markers indicate common points in all images, and the green markers indicate the locations of field plots.

We interpreted ecosystem conditions in 10 sampling areas distributed across the Ugashik study area. Each sampling area was a 23 km² square and contained a systematic sampling grid with 625 points spaced 200 meters apart. We interpreted the map ecotype present at each grid point for each time period, and when possible, we assigned a change mechanism at each point where 1 or more ecotype transition occurred during the study period (e.g., terrestrialization, beaver activity, sedimentation). We summarized the results of the imagery interpretation to characterize spatiotemporal patterns of change (or stability) for each map ecotype.

The results of the imagery interpretation corroborated anecdotal reports of wetland drying in northern APBNWR. Drying was most evident as a decrease in the extent of the Lowland Lake map ecotype and its replacement by vegetated, early successional ecotypes such as Lacustrine Marsh and Lacustrine Wet Meadow, typically along



Wetland habitats at Alaska Peninsula/Becharof National Wildlife Refuge.

the outer margins of lake and pond basins. As of circa 1951, Lowland Lake was the second most extensive map ecotype in the 10 sampling areas; however, its extent decreased by 8.2% and it was the third most extensive ecotype by circa 2015.

Other common transitions included the replacement of Lacustrine Marsh by Lacustrine Wet Meadow. We attribute the majority of drying to terrestrialization, the progressive development of a floating mat of vegetation, accumulation of organic material, and eventual infilling of the waterbody and a state-transition from aquatic to terrestrial conditions. We also interpreted other drying mechanisms that were localized to 1 or only a few sampling areas (e.g., tapping,

sedimentation), as well as mechanisms that promoted local expansion of waterbodies (e.g., shoreline recession). The imagery collection also provides strong evidence for the expansion of beaver populations on the northern Alaska Peninsula, in the form of local impacts to wetland habitats arising from the construction (and failure) of dams, and the excavation of peat from lakeshores and adjacent wetlands (Fig. 3).

The causes and consequences of wetland change in APBNWR are complex and our assessment of

wetland change is most reliable for ecotype transitions involving the loss (or gain) of surface water and its replacement by early successional, vegetated ecotypes. Based on our field observations and understanding of successional relationships in APBNWR, we suggest that additional, more subtle changes to vegetation are likely occurring within lowland and lacustrine ecotypes

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WWG has a YouTube Channel

As our Wetlands Working Group (WWG) board has been meeting virtually throughout the past year, one of things we've collectively realized is that during this pandemic there's been an increased need for connectedness. Fortunately, there's been a pulse of opportunities in technology to help us all stay connected and engaged with each other while we carry on our work.

WWG wants to be a part of providing those relevant connections and resources. And one of the ways we can start doing that is by introducing all of us to each other! There is a diverse group of students and professionals that make up the WWG, but chances are you may only personally know a handful of them. We hope that you can become better connected and engaged with the professionals in our field by learning something new about your neighbors! So here's what we're trying. Our media liaison (Casey Setash) created the Wetlands Working Group, wait for it...YouTube channel. It's really cool. This channel has both members only content as well as publicly available content. For members only access, we want to create a digital "rolodex" of all of you in the WWG.

How can you be a part?

Record a 3-minute video biography of yourself to tell the WWG who you are. Be as creative as you want but tell us: where you're from, how wetlands are a part of your work, some of the places you've worked in, and what resources you may be looking for, or what resources you can provide. Be creative.

Show us photos, record your video in a wetland, throw a few slides of data in, whatever you want your WWG members to know about you. These videos will only be made available to active members of the WWG.

Additionally, the YouTube channel has a section for publicly available content. The goal here is for members to post short "how to videos" related to wetland and wetland-wildlife field work. Show us the tricks you've learned to be successful in the field or behind the computer or describe some of the challenges a particular wetland you work with is facing. We hope these resources become a way to inform, teach, and connect the diverse group of wetland conservationists.

If you have a video you like to share, email it to wwgtws@gmail.com and we will get it posted!



Screen shots of videos from the Wetlands Working Group YouTube Channel.

Wetland Habitat Change (continued from page 3)

due to successional processes (e.g., paludification) and climate change (e.g., shrub expansion), which cannot be consistently detected in high-resolution imagery. The instrumental climate record from King Salmon Airport, about 130 km north of the study area, indicates a marked increase in mean annual and summer air temperatures during the study period, particularly since the early 1970s. There is no long-term trend in total precipitation, however, suggesting that the process of terrestrialization is being accelerated by changes in lake water balance caused by climate change. This study provides a means to characterize recent changes in wetland habitat conditions, predict the vulnerability (or resilience) of wetland habitats in the future, and establish priorities for monitoring and conserving wildlife and ecosystem services on the northern Alaska Peninsula.



Reprinted with permission from Frost, G.V., S.L. Ives, & W.A. Davis. 2020. Wetland habitat change since the mid 20th century in the Alaska Peninsula/Becharof National Wildlife Refuge. Prepared for U.S. Fish and Wildlife Service, King Salmon, Alaska; prepared by ABR, Inc.-Environmental Research & Services, Fairbanks, Alaska, USA. 44pp.

Changing Wetland Seasons
Photos by Casey Setash

Wetlands in the News

A Rare 2020 Bright Spot:
Chesapeake Bay had shorter,
less severe dead zone.

Florida
eliminates 5,000 Burmese
pythons.

**Global Methane Emissions are
Soaring:**
How much is due to wetlands?

Half of Wisconsin's Wetlands
to lose federal protection.

**Bipartisan Support in a Polarized
Legislature**
will provide billions to U.S.
National Parks.

Devastating Fires engulf
Brazilian wetlands...again.

Wetland Preserve
buffers Florida community.

Port Royal's Cypress Wetland
is now drained. Why?

Freshwater Policy in New Zealand
may require dozens of staff to
implement.

15-State Ohio River Basin Plan
to restore river ecosystems and
benefit the economy.

New Publication
Tidal wetland resilience to
increased rates of sea level
rise in the Chesapeake Bay:
Introduction to the special
feature.

[Click here for the feature table
of contents.](#)

Click on the [light blue](#) hyperlinked text
above for links to the original articles.

Meet our New Officers!

Jay VonBank, Vice-Chair

Hi Everyone! My name is Jay VonBank, and I am a research ecologist with the U.S. Geological Survey at Northern Prairie Wildlife Research Center in Jamestown, ND. I am very excited to have been selected as the incoming vice-chair with the Wetlands Working Group. My wetland experience comes in the form of researching invasive aquatic plants in river systems and wetland seed distribution vectors in the Midwest, aerial surveys and mapping of wetlands, seagrass distribution and use by waterbirds in the Laguna Madre, and understanding waterfowl-wetland interactions across North America. I received my BS in Aquatic Biology from Bemidji State University, my MS from Western Illinois University in cooperation with the Illinois Natural History Survey, and my Ph.D. in Wildlife Science from Texas A&M University – Kingsville and the Caesar Kleberg Wildlife Research Institute. I am very much looking forward to helping grow this working group and aid in disseminating all the wonderful wetland work and information you all provide as members, and to help further connect our membership with one another.



Jay VonBank

Adonia Henry, Treasurer/Secretary

Hi WWG Members! I am excited to be back on the WWG board in a different capacity as Secretary/Treasurer. I am a wetland ecologist and founder of Scaup & Willet LLC, a woman-owned small business that focuses on natural resource management and conservation.



Adonia Henry

I commute from Alaska to the lower 48 and Hawaii where I continue to work on wetland management projects and teach educational workshops (although it has been a much less frequent commute this year due to the pandemic). Prior to being self-employed, I worked for the Utah Natural Heritage Program, University of Montana, Ducks Unlimited, and U.S. Fish and Wildlife Service on a broad range of research, monitoring, and management projects for wetland-dependent wildlife and their habitats. My favorite wetland wildlife species is the greater sandhill crane and my favorite wetlands are high elevation herbaceous wetlands in the Intermountain West! I am also continuing as your volunteer newsletter editor for another year. With the growing membership of the WWG, we have members with diverse experiences and interests....**AND WE WANT TO HEAR FROM YOU! Contact me at adoniarhenry@gmail.com if you're interested in contributing** a feature article or short paragraph highlighting your wetland & wildlife related activities. It's a great way to share your work!!

CONGRATULATIONS TO OUR 2020 STUDENT AWARD WINNERS!!

Joe Drake



Joe Drake

Trey McClinton



T. McClinton

Look for our announcement of the 2021 Student Award application period in early 2021.

Member Highlight New Publication

Stephenson, P.L., A.P.G. Dowling, and D.G. Krementz. 2020. **Bee communities of emergent wetlands under restoration in the Lower Mississippi Alluvial Valley of Arkansas.** *Southeastern Naturalist* 19:472-490.



Training Opportunities & Upcoming Conferences

Association of State Wetland Managers
Calendar of events for webinars, trainings, & special events

2021

13th International Symposium on
Biogeochemistry of Wetlands
22-25 March 2021*, Virtual
*rescheduled from 2020 due to COVID-19

NEAFWA Annual Conference
25-28 April 2021, Virtual

Society of Wetland Scientists Annual Meeting
1-4 June 2021, Spokane, WA

7th International Seaduck Conference
Postponed, click here to check website for updates

MAFWA 87th Director's Annual Meeting
27-30 June 2021, Custer, SD

WAFWA Summer Meeting
18-23 July 2021, Santa Fe, NM

Ecological Society of America Annual Meeting
1-6 August 2021, Long Beach, CA

American Ornithological Society Annual Meeting
9-14 August 2021, Virtual

Canadian Herpetological Society Annual Conference
September 2021, Check website for updates

The Wildlife Society Annual Meeting
Check their website for updates, Virtual

SEAFWA 75th Annual Conference
17-20 October 2021, Roanoke, VA

Entomological Society of America Annual Meeting
31 Oct. - 3 Nov 2021, Denver, CO

The Waterbird Society Annual Meeting
Check their website for updates, Texas

Click on the light blue hyperlinked text above for conference information.



Photo courtesy of Jay VonBank.



Photo courtesy of Jay VonBank.

2021 Board Members

Phillip Stephenson, Chair

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Jay VonBank, Vice-Chair

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Drew Fowler, Past Chair

drew.fowler@wisconsin.gov

Adonia Henry, Treasurer/Secretary

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Casey Setash, Student & Social Media

At-Large Representative

csetash@rams.colostate.edu

How to Join WWG

When you renew your TWS membership, sign up for the Wetlands Working Group!

If you're already a member of TWS, you can add membership in the Wetlands Working Group at any time by logging into your account at

<http://wildlife.org/>.

Membership dues are only \$5 annually, which helps support activities at meetings, student travel awards, and outreach events.

Support the WWG

**Reusable Chico Bags
only \$10 each**

(free shipping)

Contact Adonia at
adoniarhenry@gmail.com
to get yours today!

