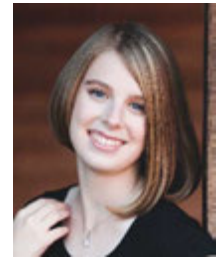


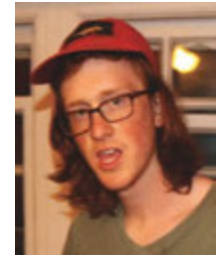
# ABOUT THE CONTRIBUTORS

**Kylee Wiseman's** love of birds is surpassed only by her love of painting. These two passions have culminated in her desire to create vibrant art that's also sensitive to realistic bird anatomy and field marks. A recent high school graduate, Kylee will pursue an art degree at George Fox University near her home in Lake Oswego, Oregon. ➤



◀ Award-winning actress **Lili Taylor** serves on the boards of the ABA and the National Audubon Society. A broadly engaged birder, she reaches out through writing and other media, at bird festivals, and in schools. Taylor loves birding anywhere on Earth—especially around her home in New York City.

**Luke Maillefer** is based in Milwaukee, Wisconsin, where he is pursuing undergraduate degrees in Zoology and Digital Studies at the University of Wisconsin. In his free time, Maillefer likes making videos and spending time in the community. He has plans to go to Antarctica one day. ➤



◀ **Diego Blanco**, 17, lives in Altadena, California. He is active in Western Field Ornithologists (WFO), the Pasadena Audubon Society, and the ABA. He volunteers at the Moore Lab of Zoology at Occidental College in Los Angeles, and enjoys illustrating birds and other dinosaurs; he was a youth scholarship recipient at the August 2017 WFO convention in Colorado.

**Madelyne Ray** is a 16-year-old birder who lives just outside Philadelphia. When she is not busy with school or competing in track meets, she is out enjoying nature. Although she has been birding for only three years, she has traveled to many places across the ABA Area to do so. Ray is an aspiring veterinarian or ornithologist. ➤



◀ **Trysten Loeffke** grew up with and lives surrounded by endangered species in the San Diego area of California. He is an avid ornithologist and frequent lecturer at local Audubon chapters. Loeffke's passion and expertise are the birds and wildlife of Great Britain. He is a recent high school graduate and plans to study conservation biology at university.

**Peter Pyle** is an ornithologist and marine biologist who has studied the ecology of the birds, pinnipeds, and sharks of California, of Hawaii, and throughout the Pacific. He specializes in bird molt and its use in aging birds. Pyle currently works for the Institute for Bird Populations in Point Reyes Station, California. ➤



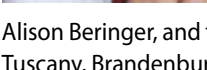
◀ **Mia McPherson** enjoyed film photography, but when digital cameras were invented, her love for bird photography deepened because of the instant results she could obtain. McPherson got seriously passionate about bird photography while living in Florida, and, after her move to the West in 2009, she has spent much of her time photographing birds in Utah and Montana.

**Johanna Beam** is a sophomore at St. Olaf College in Minnesota, double-majoring in Biology and Studio Art. She is interested in population genetics and scientific illustration, and has had artwork commissioned by Colorado Field Ornithologists. Beam is the ABA–Leica 2017 Young Birder of the Year. ➤



◀ **Charles Hagner** is the former editor of *BirdWatching* magazine, a contributor to the book *Good Birders Still Don't Wear White*, and a writer and editor specializing in climate change, the environment, and wildlife conservation. He is a board member of the Wisconsin-based Western Great Lakes Bird and Bat Observatory.

**Rick Wright**, Book Review Editor at *Birding*, writes and reads obsessively about birds, birding, and birders—not necessarily in that order. Wright lives in northern New Jersey with his wife, Alison Beringer, and their lab, Gellert. His upcoming VENT tours include birds-and-art excursions to Venice, Provence, Tuscany, Brandenburg, and Salzburg. ➤



## Page Six

Let's Be Honest About Something, or, The Best Thing In Birding Magazine

New York City is my guilty pleasure. For starters, the birding there is ridiculous: warblers in Central Park, sandpipers at Jamaica Bay, skimmers and oystercatchers out the back window of a busy bayside diner. I love the trains and taxis and tall buildings. I love the crowds, the anonymity, and retreating to the bowels of Penn Station with its unlimited offerings of junk food and newspapers—regarding which, I confess a special fondness for Nathan's Famous hot dogs and the *New York Post*, respectively. Sure, it's easy to diss the *Post* as silly and sensationalistic. But, actually, a great deal of the content is well written; and the sports section is the *ne plus ultra* of that genre. I once saw a guy enter a stall in the men's room at Lincoln Center, the *New York Post* tucked under his arm. That's about as authentically New York as you can get.

One of the most popular and notorious features in the *Post* is the gossip column, "Page Six," so named because it used to appear on—wait for it—p. 6. Did you know that *Birding* magazine also has its own Page Six? I'm serious. Flip to p. 6 of this issue, "About the Contributors." Flip to p. 6 (sometimes p. 8) in any recent issue of *Birding*, a sort of field guide plate to the folks whose contributions fill the magazine.

Producing "About the Contributors" is one of the high points—call it a guilty pleasure—of my work with *Birding* and the ABA. We've run the column for 14 full years now, and I've personally solicited the bios of well over 500 contributors. Many of them require a fair bit of effort. ("What part of '50 words' wasn't clear?" "No, we *don't* want a photo of the back of your head.") No matter. I love this column, not only because it's so much fun, but also because it so credibly captures

the experience of being a birder.

I've said it before, and I'll say it again: *Birding* magazine is fundamentally about people. People who are crazy, inspiringly devoted to and obsessed with the study, understanding, and appreciation of wild birds. Articles in *Birding* can, and often do, get pretty deep into the arcana of ornithology. Check out Peter Pyle and Mia McPherson's article, beginning on p. 58, to see what I mean. Nevertheless, something bewitchingly humanistic shines through their writing. I know Peter and Mia, and I can tell you that their easygoing personalities permeate their ponderings about aberrant Eared Grebes. Those two love birds and science and nature, and they want to share that passion with you.

Don't get me wrong: I make no apologies for the serious and sometimes scholarly presentation of content in *Birding*. I mean, what do you expect with contributions from such heavyweights as Peter Pyle, Rick Wright (p. 70), and Charles Hagner (p. 68)? And it will be a matter of just a few years before teen birders Johanna Beam (p. 66), Diego Blanco (p. 36), and others are producing original scientific literature. Oh. Wait. *They already have.*

Johanna and Diego—and all the authors and artists in this issue—have contributed in one way or another to my technical understanding of ornithology, but they've also affected me in another, deeper way: In their personal interactions with me, they've affirmed and strengthened my sense that we are all fellow travelers in this birding life. Get to know them. Their stories appear on Page Six.

*Ted Floyd*

Ted Floyd,  
Birding Editor

### ABOUT THE CONTRIBUTORS

**Maia Reed** grew up in England, began wildlife photography in East Africa, and now lives near Mesa, New York. Her images and articles are featured in magazines, books, and calendars worldwide. While pursuing photography part-time, Maia worked at the Cornell Lab of Ornithology as a photoillustrator, selected training to lead one-on-one photography and writing in 2005. >

**Bradley J. Stubbins** is a Ornithological Research Professor and Graduate Program Director at York University, where her lab has pioneered the use of pesticides for elucidating songbird migration. Stubbins is the author of numerous scientific articles and several books, including the acclaimed *Science of the Sparrows* (Oxford Books, 2017). >

**Lauryn Bennett** is Assistant Professor of Biological Sciences at the University of Northern Colorado. She studies the vocalizations and behavior of wild birds, and she teaches courses on ornithology and animal diversity. You can often find her observing and audio-recording vireos on the public lands of northern Colorado. >

**Karen O'Brien** is a Postdoctoral Researcher with the Cornell Lab of Ornithology and Leiden University in the Netherlands. O'Brien studies the function and evolution of female and male birdsong, combining comparative approaches and fieldwork. She enjoys observing and audio-recording birds in Puerto Rico and many other locations for her research. >

**Ellie Yong** is a 10-year-old birder and aspiring ornithologist living in Southern California. She enjoys anything involving birds and biology. In her free time, Ellie works on writing, photography, art, and projects for the California Young Birders Club (californiayoungbirders.com). She looks forward to being a writer for birding and ornithology publications. >

**Dianna Doyle** has headed up the magazine's "Backs of the Birds" column since 2011, dispatching from her desk on a low-budget creating bird backphotography. Doyle has written on conservation and bird behavior articles for *BirdWatching*, *Bird Watcher's Digest*, and the ornithological societies of Minnesota and Florida. >

**Carrie Lohren** grew up in western New York and earned a master of fine arts degree and the musician of Missouri. She now lives in Queens, where she spends her time searching for songbirds in the city and out in any public park. Her work has appeared in such venues as *Minnesota Naturalist*, *Cornellwood*, and *Cornell Lab of Ornithology*. >

**Marilyn Madsen** is an ornithologist with expertise in field calls, taxonomy, and conservation. Madsen has been the recipient of various birding and ornithology awards, and she was the 2015 ABA Young Birder of the Year. Her work has appeared in art galleries, with the Missouri Department of Conservation, and in several magazines. >

Contributors to the April 2017 issue hailed from L.A. and NYC, from Missouri, Ontario, and The Netherlands, and even a houseboat in the ocean. They were young and old, students and professionals, essayists and photographers, scientists and storytellers, and more. Despite all this diversity, they were united in their fascination with birds and ornithology.

### ABOUT THE CONTRIBUTORS

**Kyle Weissenborn** lives in a converted office in the town of Garrison, New Jersey. His passion has led him to devote to waterfowl on Dutch also continues to include bird anatomy and field marks. A recent high school graduate, Kyle will pursue an art degree at George Washington University next fall in Lake Oswego, Oregon. >

**Lisa Taylor** is a retired birder and avid birdwatcher. She has been a member of the ABA and the National Audubon Society. A lifelong birder, she has written for *Birding* and other birding magazines, and she has been a frequent contributor to the *Birding* magazine. >

**Diego Blanco** is a 17-year-old birder who lives in southern California. He is an active member of the ABA and the National Audubon Society. He has been a frequent contributor to the *Birding* magazine. >

**Trysten Lohren** grew up with and from surrounded by endangered species in the San Diego area of California. He is an avid birdwatcher and frequent contributor to local birding chapters. Lohren's passion and expertise are the birds and wildlife of Central and South America. He has a recent high school graduate and plans to study ornithology at university. >

**Peter Pyle** is an ornithologist and nature biologist who has studied the ecology of the birds, pronghorns, and shrubs of California. Pyle currently works for the Institute for Bird Populations in Point Reyes Station, California. >

**Mia McPherson** is a birder and photographer who has been a frequent contributor to the *Birding* magazine. She has been a frequent contributor to the *Birding* magazine. >

**Johanna Beam** is a sophomore at St. Olaf College in Minnesota. She is majoring in Biology and Studies in the Environment. She has been a frequent contributor to the *Birding* magazine. >

**Charles Hagner** is a former editor of *Birding* magazine, a contributor to the *Birding* magazine, and a frequent contributor to the *Birding* magazine. >

**Rick Wright** is a birder and photographer who has been a frequent contributor to the *Birding* magazine. >

The greatest thing about birding—and *Birding*—is birders. Flip to Page Six for more.

# Why So Many White Eared Grebes?

## *Possible interactions among leucism, molt, and pollutants*

Peter Pyle • Bolinas, California • ppyle@birdpop.org

Mia McPherson • Salt Lake City, Utah • mm@onthewingphotography.com

On July 21, 2017, McPherson was photographing birds at the west end of the causeway at Antelope Island State Park, Great Salt Lake, Utah, when she noticed an abnormally white-plumaged Eared Grebe (*Podiceps nigricollis*), and then another, and then another... By the time McPherson had traveled a couple of kilometers along the causeway, she had photographed at least 10 different white or mostly white individuals (Figs. 1a–j), and had probably seen a few more. She estimated the proportion of white-plumaged to normal-plumaged birds around one in 500, far more than is

typically found in any wild bird population. Why so many white Eared Grebes at one location?

### White Feathers

#### Leucism

Several mechanisms appear to produce abnormal white feathers. In some cases, intense exposure to the sun can result in feathers so severely bleached as to appear essentially white, but this isn't what we are talking about. Completely white birds may be albinos, although "pure" (or "clinical") albinism, as expressed in mammals, appears to be very rare in wild birds observed in the field—perhaps because birds are less able to survive the weak eyesight that typically afflicts albino mammals. The terms "dilute," "ino," "hypomelanism," and "progressive graying" have been applied to such feather conditions (van Grouw 2006, 2012; Davis 2007). The most common disorder involves one, a few, or many—but not all—feathers that are partially or completely white. Here we use the popular term "leucism" (Buckley 1982) for such birds while recognizing that this word may apply to several different conditions resulting from varying mechanisms (Davis 2007, van Grouw 2012). As birders are well aware, avian leucism appears to occur at low levels across a wide taxonomic spectrum.

It has largely been assumed that leucism has a genetic basis (Gross 1965; van Grouw 2006, 2012). Nonhereditary causes have also been proposed, however, and have been invoked in birds that replace white with normally pigmented feathers, or vice versa, during molt. For example, a Steller's Jay photographed in Colorado was observed to molt from "normal" plumage into a leucistic plumage (Shawkey and Hill 2006, Davis 2007; see Figs. 2a–c), and a leucistic male Northern Harrier in Florida (Wilson 2017) appeared to be replacing white with normally pigmented, brownish-gray inner primaries and black-tipped secondaries. Environmental—as opposed to genetic—factors that might affect feather pigmentation in birds include nutritional stress, injury, and metabolic dysfunction. Toxins and pollutants have also been implicated as causative agents for disrupting normal



**Featured Photo—leucistic Eared Grebe.** This leucistic individual can be identified as an Eared Grebe rather than a Horned Grebe by its peaked head, long neck, and upturned bill; see Blumin (2007) for more on identifying leucistic grebes. *Antelope Island Causeway, Great Salt Lake, Davis County, Utah; July 21, 2017. Photo by © Mia McPherson.*



pigment-deposition processes in feathers; however, ecotoxicological studies have focused almost exclusively on effects related to carotenoids in red feathers (Hill 2006, Møller et al. 2007, Eeva et al. 2008), rather than on the various melanins that result in most feather pigmentation.

### Leucistic Eared Grebes

None of the Eared Grebes photographed by McPherson on July 21 were pure white, with all showing at least a few grayish or partly gray or black feathers (Figs. 1a–j). Eye color in these birds was redder (less pinkish) than appears in albinos—normal for adult Eared Grebes—and these birds' bills were typically dark, suggesting that clinical albinism was not part of the equation. Thus, these birds can be regarded as leucistic. Seemingly high proportions of leucistic Eared Grebes have also been noted in Spain (Konter 2015) and at Mono Lake, California, where Jehl (1985, 2007) has recorded up to 24 leucistic individuals in a day. At the Great Salt Lake, leucistic Eared Grebes have been noted anecdotally at least since 2003 (M. Moody, personal communication), but we are not aware of any published studies of the phenomenon at the site.

Jehl (1985) documented higher proportions of leucistic grebes in summer than in other months, and, based on examination of collected individuals, found that most were older pre-breeding individuals as opposed to first-year birds or breeding adults. Both Jehl (1985, 2007) and Konter (2015) posited a hereditary mechanism for leucism in Eared Grebes, and discussed possible reasons for the genetic expression of anomalous and presumably maladaptive white plumages.

A few Eared Grebes breed at the Great Salt Lake, but the majority ar-

rive there after the breeding season to undergo their complete prebasic molt (Behle 1985). Most depart to winter farther south, but some remain at the lake through winter and spring, undergoing their partial prealternate molt at the site. If the grebes observed by McPherson at Antelope Island State Park were not drawn from a relatively small and geographically restricted breeding population there, then the high concentration of leucistic birds is unlikely to have a genetic explanation. The same reasoning applies at Mono Lake where, similarly, few grebes breed but millions molt (Jehl 1985).

Could non-hereditary factors be involved? It seems reasonable to speculate that something in the grebe's diet (such as brine flies and brine shrimp, their favored food at these molting locations) or toxins in the water might account for the increased incidence of white feathering. Eared Grebes at the Great Salt Lake have been found with high levels of selenium and mercury in their tissues, and the concentration of these pollutants appears to increase with a bird's age (Conover and Vest 2009). Could these or other toxins in the water have resulted in leucism? Recent investigations, suggesting that pollutants can impede the expression of both carotenoids and melanins in birds and fish (see Lifshitz and St. Clair 2016), indicate this as a possi-

bility in Eared Grebe physiology.

## Molts and Plumages of the Eared Grebe

### A bit of terminology

Adult Eared Grebes undergo their complete, annual, **prebasic** molt in July–October, largely at staging areas such as Great Salt and Mono lakes, and they undergo a second, partial, **prealternate** molt in February–May, primarily on the wintering grounds (Pyle 2008). Note that the prealternate molt includes body feathers and some, but not all, upper-wing secondary coverts. First-year birds have a partial, **preformative** molt in late summer and fall, and a more limited, **first-prealternate** molt in early spring before undergoing the prebasic molt in May–September.

### A role for pollutants?

Close examination of the plumage patterns among the leucistic grebes in Fig. 1 indicates repeated themes to the white and dark coloration. Note, for example, the dark remaining in the larger scapulars (covering the wing) and certain nape feathers on several individuals (Figs. 1a, b, c, d, f, g, h, j). If the condition producing the white feathers is ephemeral, these patterns could result from “molt–plumage interactions” (Pyle 2013), whereby dark coloration appears in some of the later

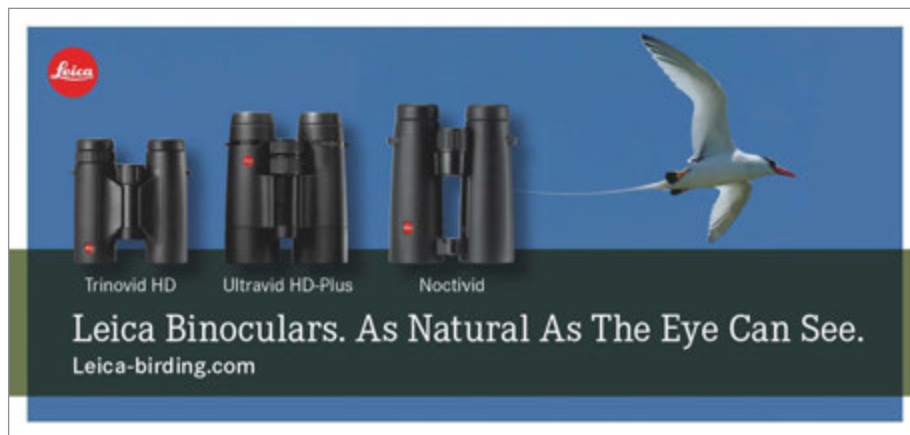




Fig. 1a

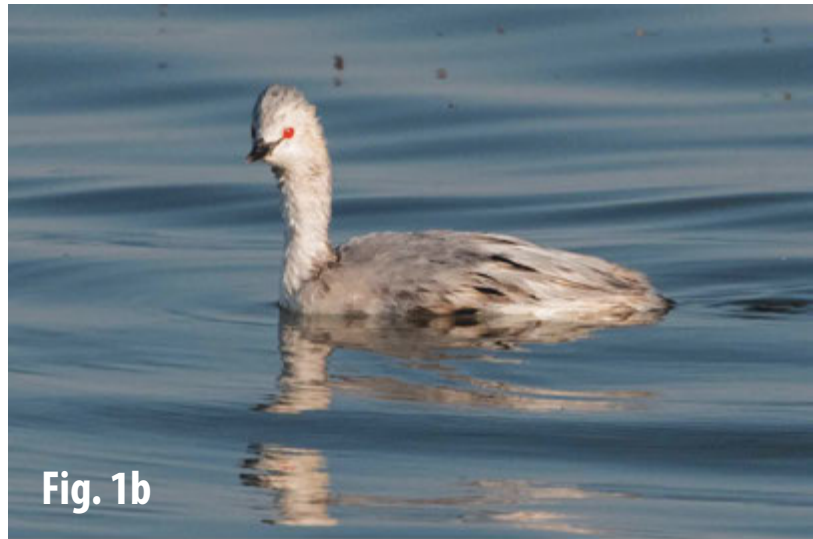


Fig. 1b



Fig. 1c

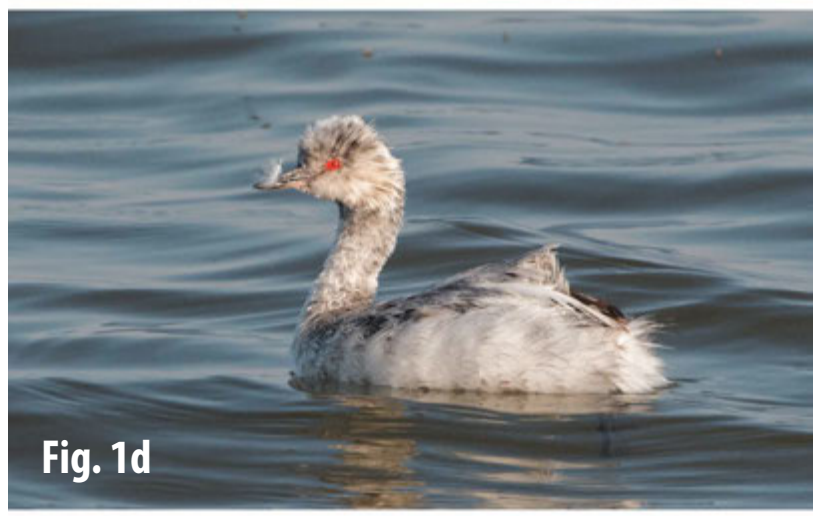


Fig. 1d

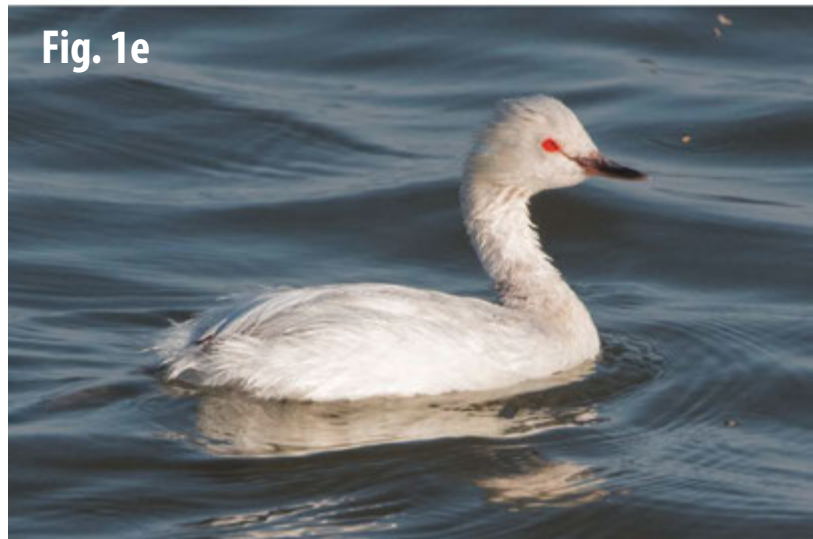


Fig. 1e



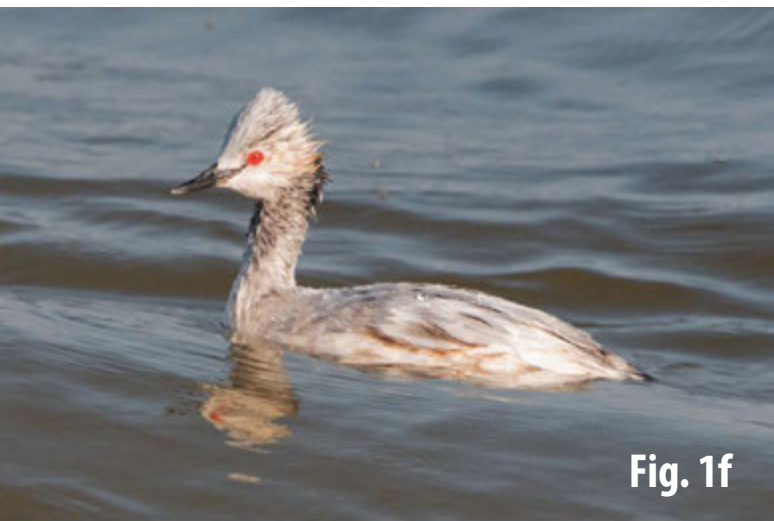


Fig. 1f



Fig. 1g

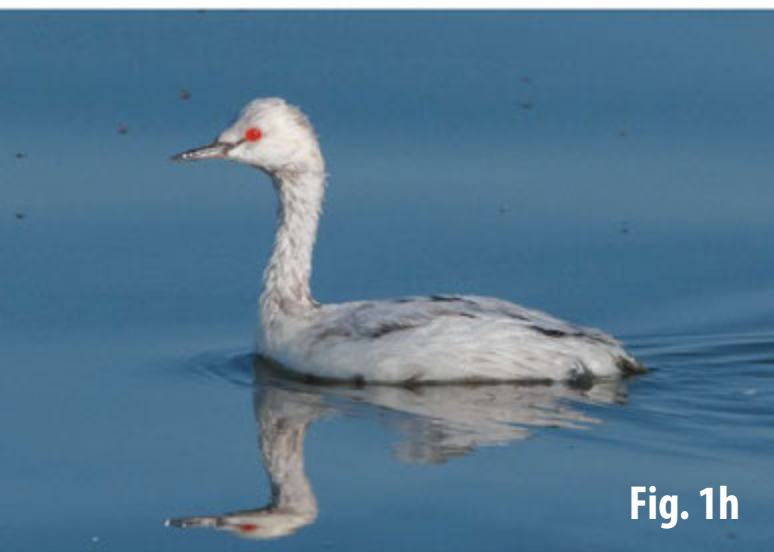


Fig. 1h



Fig. 1i

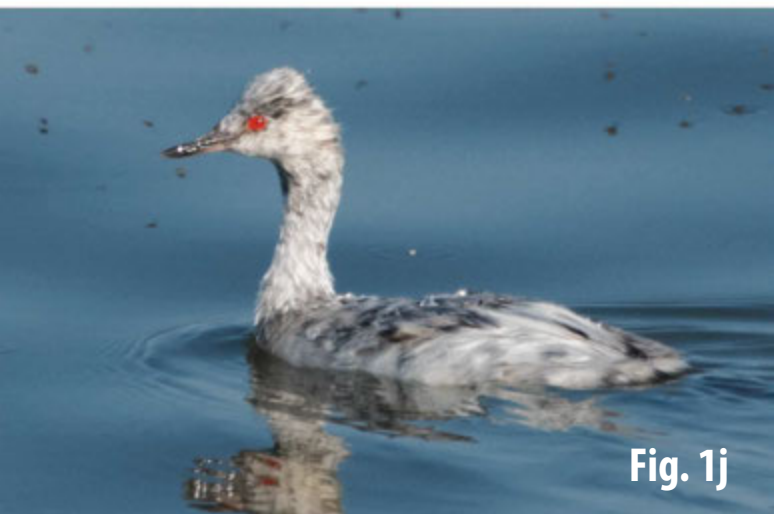


Fig. 1j

**Fig. 1.** These 10 leucistic **Eared Grebes** occurred within a two-kilometer stretch of the Great Salt Lake. Close examination indicates that all of them, including the particularly white bird in Fig. 1e, show at least some dark or partially dark feathers; they also have red (not pink) eyes and black bills. Thus, they are not “albinos,” but, rather, “leucistic” individuals. Note that many of them are largely white but show black on the scapulars and the feathers of the nape (Figs. 1b, c, d, f, g, h, and j).

This could result from “molt-plumage interactions,” wherein normal melanin pigmentation returns toward the end of a body feather molt. If so, leucism may result from an environmental, not a purely hereditary, cause—perhaps related to pollutants. The wing feathers are largely invisible on these resting birds, making it unfeasible to assess the plumage (basic vs. alternate) of the white body feathers (see also Fig. 3). *Antelope Island Causeway, Great Salt Lake, Davis County, Utah; July 21, 2017. Photos by © Mia McPherson.*

body feathers to be replaced—often including those of the nape and the scapulars. We conjecture that potential disruptive effects of toxins on pigment-deposition processes could subside by the time the last feathers were being replaced, resulting in relatively normal pigment deposition to these feathers.

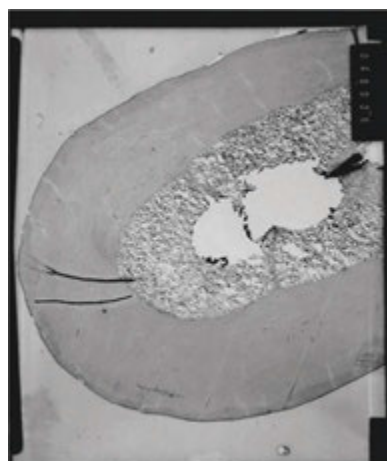
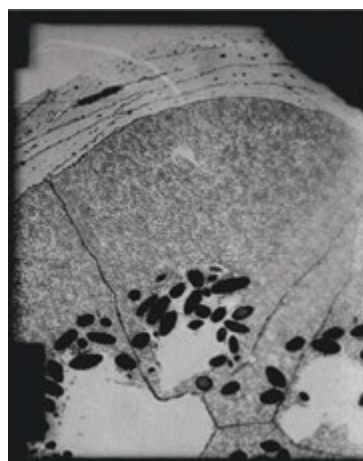
**Factoring in age**

The bright red eyes of the Antelope Island State Park birds (Figs. 1a–j) indicate that they are not year-old birds (in their second calendar year), which should have duller orange eyes at that age (Pyle 2008). The white feathers thus appear to be definitive (after-second-year). If they are primarily pre-breeding birds, as Jehl’s (1985) data from Mono Lake suggest, one possibility is that they are two-year-old (third-calendar-year) birds that had over-summered or over-wintered at the Great Salt Lake the previous year, and thus had accumulated relatively high levels of toxins by the time they underwent their prebasic (fall) or prealternate (spring) molts, respectively.

Alternatively, if the toxins bioaccumulate in grebes more persistently with age, perhaps the leucistic individuals are even older birds that have returned annually to undergo the prebasic molt in polluted waters. In this case, the effects of pollutants might be cumulative, resulting



**Fig. 2a.** On first glance, this striking **Steller’s Jay** might appear to be an albino. The dark eye is inconsistent with albinism, however. Furthermore, this individual, monitored over the course of over a year, started out as a “normal” black, blue, and brown Steller’s Jay, and then acquired this white plumage through molt—indicating a possible non-hereditary explanation for the white feathers. *Photo by © Bill Schmoker.*



**Figs. 2b, c.** Micro-structures in the feather of a blue Steller’s Jay (Fig. 2b) and a white Steller’s Jay (Fig. 2c) have been shown experimentally to result in striking plumage color differences. Both genetic and environmental factors are likely at play in the cellular physiology of the feathers, which in turn affects a bird’s appearance. *Electron micrograms by © Matthew D. Shawkey.*

in “progressive graying” (see van Grauw 2012). Notably, of eight collected grebes shown in Jehl (1985) and reproduced here as Fig. 3, five show normally pigmented remiges (the primaries and secondaries), and patterns of white body feathers and upper-wing secondary coverts matching the typical extent of the prealternate molt; three others show white remiges, with two of them showing dark upper-wing coverts that may be alternate; and only one shows partially white remiges. This suggests that the white feathering may largely have been produced by either the prealternate molt or the prebasic molt, but not always both. We believe that this provides support for ephemeral and non-hereditary causation for the white feathers in these Eared Grebes.

**Other systems and suggestions for further work**

There is additional evidence for elevated levels of leucism in polluted areas. For example, Enders and Post (1971) found high proportions of leucism in adult (but not juvenile) marsh sparrows (genus *Ammodramus*) near Jones Beach, Long Island, an area known for pollution at the time. Other studies (cited in

*Continued on page 64*



Continued from page 62

Davis 2007, van Grouw 2012) have shown that birds in urban areas can express more leucism than those of the same species in nearby rural areas.

We propose more investigation into the possibility that the higher concentrations of leucistic Eared Grebes at Great Salt and Mono lakes are related to toxins in the water, and that the abundance or proportions of such birds could potentially be used to monitor the environmental health of these locations. Determining whether or not white feathers in Eared Grebes change through molts and, if so, which molts produce them, would represent a good start.



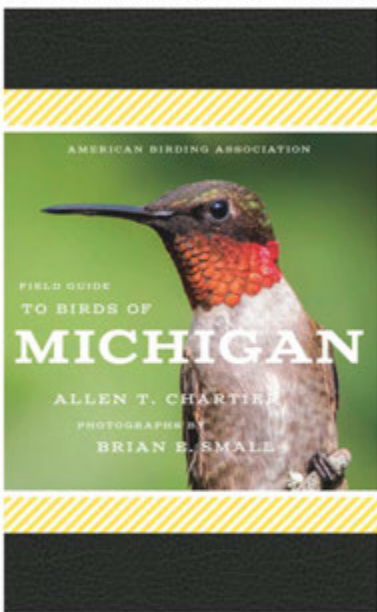
**Fig. 3.** Shown here are eight leucistic Eared Grebes collected at Mono Lake, California; numbers refer to phenotypes defined by Jehl (1985). Note that some birds have completely or nearly completely white remiges (primaries and secondaries), whereas others exhibit normally pigmented remiges; one bird (bottom, center) shows partially white remiges.

It may be the case that those showing white remiges produced white body feathering during prebasic molts, but those showing normally pigmented remiges produced white feathering during prealternate molts. The dark rump feathers on many of these birds (see Jehl 1985) might have resulted from “molt–plumage interactions,” with the rump feathers being among the last replaced during body-feather molts (see Fig. 1). *Photo by © Joseph R. Jehl, reproduced from Jehl (1985) with permission of the American Ornithological Society.*

**Acknowledgments**

We thank Joseph Jehl for permission to use the image in Fig. 3 and Kathleen Erickson (on behalf of the American Ornithological Society) for permission to reproduce this image. We also thank Matt Shawkey for permission to reproduce his electron micrograms (Figs. 2b, c), and we are grateful to Bill Schmoker and Nick Minor

AVAILABLE SPRING 2018



Allen T. Chartier & Brian E. Small  
ISBN 978-1-935622-67-3

PUBLISHED BY  
Scott & Nix, Inc. American Birding Association  
SCOTTANDNIX.COM ABA.ORG

# Gift Planning

*Leave an enduring legacy that supports the well-being of birds and the future of birding.*

Planned gifts allow you to remain in control of your assets throughout your life, while giving you the ability to modify your gift based on life's changing circumstances.

For more information on how we can assist you in planning a gift that meets your interests and the long-term goals of the ABA, please visit

[aba.org/gift-planning](http://aba.org/gift-planning)

or call Jeffrey Gordon at  
**800.850.2473**



American Birding Association



for help with obtaining the technical images for this article.

## Literature Cited

Behle, W. H. 1985. Utah birds: Geographic distribution and systematics. *Utah Museum of Natural History Occasional Paper* 5: 1–147.

Blumin, L. 2007. Leucistic grebe at Mono Lake: An identification challenge. *Western Birds* 38: 64–68.

Buckley, P. A. 1982. Avian genetics, pp. 21–110 in: M. Petrak, ed. *Diseases of Cage and Aviary Birds*, 2nd ed. Lea and Febiger, Philadelphia.

Conover, M. R. and J. L. Vest. 2009. Concentrations of selenium and mercury in Eared Grebes (*Podiceps nigricollis*) from Utah's Great Salt Lake, USA. *Environmental Toxicology* 28: 1319–1323.

Davis, J. N. 2007. Color abnormalities in birds: A proposed nomenclature for birders. *Birding* 39: 36–46.

Eeva, T., S. Sillanpää, J.-P. Salminen, L. Nikkinen, A. Tuominen, E. Toivonen, K. Pihlaja, and E. Lehtikoinen. 2008. Environmental pollution affects the plumage color of Great Tit nestlings through carotenoid availability. *EcoHealth* 5: 328–337.

Enders, F. and W. Post. 1971. White-spotting in the genus *Ammospiza* and other grassland sparrows. *Bird-Banding* 42: 210–219.

Gross, A. O. 1965. The incidence of albinism in North American birds. *Bird-Banding* 36: 67–71.

Jehl, J. R. 1985. Leucism in Eared Grebes in western North America. *Condor* 87: 439–441.

Jehl, J. R. 2007. Additional notes on leucistic Eared Grebes at Mono Lake. *Western Birds* 38: 289–292.

Konter, A. 2015. Aberrant plumages in grebes, Podicipedidae. *Ferrantia* 72: 1–201.

Lifshitz, N. and C. C. St. Clair. 2016. Colored ornamental traits could be effective and non-invasive indicators of pollution exposure for wildlife. *Conservation Physiology* 4: cow028 ([tinyurl.com/Lifshitz-St-Clair](http://tinyurl.com/Lifshitz-St-Clair)).

Møller, A. P., T. A. Mousseau, F. de Lope, and N. Saino. 2007. Elevated frequency of abnormalities in Barn Swallows from Chernobyl. *Biology Letters of the Royal Society* 3: 414–417.

Pyle, P. 2008. *Identification Guide to North American Birds*, part II. Slate Creek Press, Point Reyes Station, California.

Pyle, P. 2013. Dark-faced Common Murres off California in fall and winter. *Western Birds* 44: 250–261.

Shawkey, M. D. and G. E. Hill. 2006. Significance of a basal melanin layer to production of non-iridescent structural plumage color: Evidence from an amelanotic Steller's Jay (*Cyanocitta stelleri*). *Journal of Experimental Biology* 209: 1245–1250.

van Grouw, H. 2006. Not every white bird is an albino: Sense and nonsense about color aberrations in birds. *Dutch Birding* 28: 79–89.

van Grouw, H. 2012. What color is that sparrow? A case study: Color aberrations in the House Sparrow, *Passer domesticus*. *International Studies on Sparrows* 36: 30–55.

Wilson, S. 2017. The first documented occurrence of a leucistic Northern Harrier. *Birding* 49: 44–48.



**BIRDER'S DIARY** v4.1 Now Available!

The World's Premier Listing Software!

Download free 30 day, fully functional product online!

Celebrating 20 Years in Business!

Visit our professional web site for all the details and much more... <http://www.BirdersDiary.com>

- ✓Enter sightings rapidly! No one else compares to the speed of Birder's Diary.
- ✓Purchase and download online. Get upgrades and add-ons immediately.
- ✓More than just Birds. Butterflies, dragonflies, flowers, trees, mammals, etc.
- ✓Supports all Mobile Apps that export data.
- ✓Complete conversion support for AviSys, BirdBase, and others.
- ✓All the birds (all subspecies) of the World! Most up-to-date data in the World.
- ✓The best customer support in the industry. Read testimonials online.
- ✓Complete Integration with eBird and BirdLog!

Use Promo Code ABA41 for 10% Discount on new v4.1 User License!



**SAN JORGE ECO-LODGES | ECUADOR** Since 1987

[SANJORGEECOLOGES.COM](http://SANJORGEECOLOGES.COM) • [MAGICBIRDINGCIRCUIT61@GMAIL.COM](mailto:MAGICBIRDINGCIRCUIT61@GMAIL.COM)

- Small Groups
- 4 Beautiful & Comfortable Lodges
- 6 Pristine Reserves • Delicious Ecuadorian food
- Top Local Bilingual Guides • Flexible Itineraries, Short drives
- 11 Mega Diverse Ecosystems • Up to 1700 BIRD SPECIES!

Birding, Natural History, Wild Photography & Painting Workshops

Plate-billed Mountain Toucan - Luis Alcher



Find over 150 areas for birdwatching in Utah

**BIRDING UTAH App** Now Available

Only \$2.99

Available on the iOS App Store or Google Play

# FEATURED PHOTO

SPONSORED BY

The  
brilliant  
answer is  
always...



One sees a bird like this, and two questions leap to mind: What is it? Why does it look this way? You might wonder what structural cues on this strongly “leucistic” (whitish) bird enable us to place it to family, genus, and even species. And what genetic and environmental factors have conspired to create its remarkable appearance.

• Read Peter Pyle and Mia McPherson’s analysis of the Featured Photo, beginning on p. 58 of this issue.

This bird isn’t a one-off. Such birds, although rare, are regularly detected in the wild. Should this plumage aspect be regarded as a “white morph”? These questions of definition delight and vex birders. Pyle and McPherson provide their own thoughts, but the conversation is ongoing. Please join the discussion online: [publications.aba.org](http://publications.aba.org)

