

WESTERN BIRDS



Vol. 49, No. 1, 2018

Western Specialty:

Gray Thrasher



Photo by © Tom Benson of San Bernadino, California:

Gray Thrasher (*Toxostoma cinereum*)

Famosa Slough, San Diego County, California, 2 August 2015.

Endemic to the peninsula of Baja California, the Gray Thrasher was unreported from the United States before the discovery of this individual at San Diego. The stain on the tail, loss of a toe claw, and damage to the bill led the California Bird Records Committee (see report in this issue) to conclude the bird was more likely an escapee from captivity than a vagrant that wandered 180 km north of the northern tip of the species' range along the Pacific coast (31.275° N, 116.367° W). But multiple photos from Valle de Trinidad (~31.4° N, 115.7° W) posted at www.ebird.org since 2010 attest to a range expansion into an area where repeated surveys from 1927 to 1936 did not find the species. The Gray Thrasher consists of two subspecies, nominate *Toxostoma cinereum cinereum* over most of the peninsula, and *T. c. mearnsi* in the northwestern corner of the range. The former has grayish brown upperparts, but in *mearnsi* the upperparts are a rather rich brown, far from gray, as seen in this individual.

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Front cover photo by © Phoo Chan of Fremont, California: Great Gray Owl (*Strix nebulosa*) at Prairie Creek Redwoods State Park, Humboldt County, California, 6 February 2016. The many high-resolution photos taken in two successive years confirmed the bird returned the following winter to a site 50 km farther south and provide evidence that the Great Gray Owl's molt is among the slowest of any North American bird's, some feathers being retained for several years.

Back cover "Featured Photos" by © Malcolm Clark of Mammoth Lakes, California: White-headed Woodpecker (*Picoides albolarvatus*) at Mammoth Lakes, Mono County, California, 20 September and 12 October 2015. The mandibles have grown rapidly far beyond their normal length, as seen in birds afflicted with avian keratin disorder, now frequent among some species in Alaska.

Western Birds solicits papers that are both useful to and understandable by amateur field ornithologists and also contribute significantly to scientific literature. Send manuscripts to Daniel D. Gibson, P. O. Box 155, Ester, AK 99725; avesalaska@gmail.com. For matters of style consult the Suggestions to Contributors to *Western Birds* (at www.westernfieldornithologists.org/docs/journal_guidelines.doc).

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FIRST REPORT OF THE HAWAII BIRD RECORDS COMMITTEE

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ABSTRACT: The Hawaii Bird Records Committee (HBRC) was formed in 2014 to provide a formal venue for reviewing bird reports in the Hawaiian Islands and to maintain and periodically update the checklist of birds of the Hawaiian Islands. This is the first report of the HBRC. From 2014 to 2016, the HBRC reviewed 46 reports involving 33 species, including 20 species not recorded previously in the Hawaiian Islands, nine species reported previously that were based only on visual documentation at the time, one re-evaluation of a species pair reported previously, two introduced species whose establishment was questioned, and one species previously regarded as hypothetical. The HBRC accepted 17 new species, did not accept three new species, and did not accept five species that previously had been accepted on other checklists of Hawaiian Island birds. The Hawaiian Islands bird checklist includes 338 species accepted through 2016.

The Hawaii Bird Records Committee (HBRC) was formed in 2014 to provide a formal venue and standard protocol for reviewing bird reports in the Hawaiian Islands and to maintain and periodically update the checklist of birds of the Hawaiian Islands. The HBRC consists of seven members and is an official committee of the Western Field Ornithologists (WFO). Reports of the HBRC's activities will be published periodically in *Western Birds*. Prior to formation of the HBRC, Robert Pyle and Peter Pyle served as the de-facto records committee and maintained the Hawaiian Islands bird checklist, which culminated in electronic publication of *The Birds of the Hawaiian Islands*:

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Occurrence, History, Distribution, and Status (Pyle and Pyle 2009), and which was recently updated (Pyle and Pyle 2017).

The HBRC established a set of bylaws, including a definition of its area of coverage, criteria for including species in the checklist, standards for judging establishment of introduced species, and protocols for review. The HBRC considered all species in Pyle and Pyle (2009), including those regarded as hypothetical in occurrence, and completed more thorough reviews of any species requested by any HBRC member. The HBRC also reviewed records of 20 additional species representing potential additions to the checklist that had been reported from 2010 to 2016 and were thus not included in Pyle and Pyle (2009).

According to the bylaws of the HBRC, the “Hawaiian Islands” are considered to include all islands that are part of the state of Hawaii plus Midway Atoll (which is part of the Hawaiian Archipelago but is an unincorporated territory of the United States and not part of the state) and all waters within 370.4 km (200 nautical miles) of the coast of the Hawaiian Islands (Figure 1). The Hawaiian Islands bird checklist includes all bird species known to have occurred naturally in this area and species introduced by humans that have established viable breeding populations in the wild with stable or increasing populations for at least 15 years. It includes endemic species that have become extinct since the arrival of Europeans in 1778 and introduced species that once had established breeding populations but are now extirpated, but it does not include species that are known only from fossil or subfossil remains.

Following the HBRC’s bylaws, we accepted a submitted record on the basis of identification or establishment of a viable population if all or all but one HBRC member (7/0 or 6/1) accepted the record. A record was not

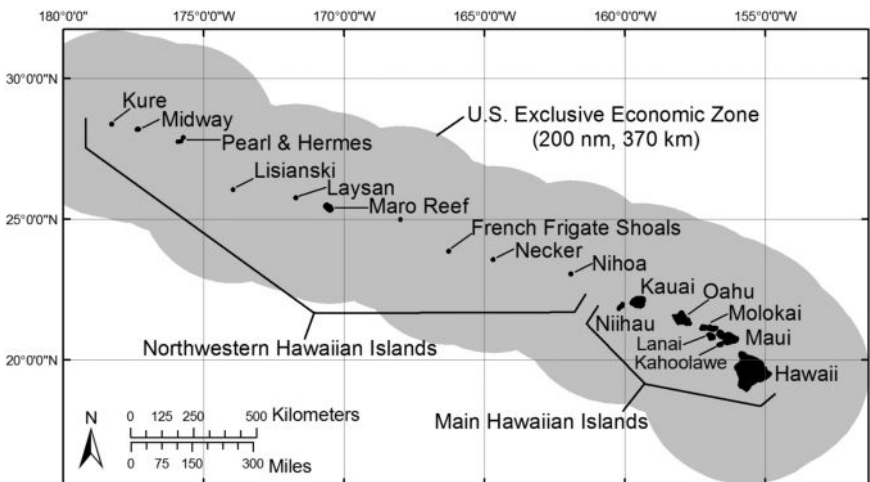


Figure 1. Map of the Hawaiian Islands, with the U.S. exclusive economic zone, defining the Hawaii Bird Records Committee’s area of coverage, in gray. All islands shown are part of the state of Hawaii except Midway, which is an unincorporated territory of the United States.

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accepted if it received four or more votes against acceptance (3/4 to 0/7). Records that received two or three votes against the identification or viable population establishment (5/2 or 4/3) were recirculated for up to three additional rounds of voting until a final decision was reached. In evaluations of natural occurrence, records that received five or more votes for acceptance resulted in acceptance, whereas those that received three or four votes to accept (4/3 or 3/4) were recirculated until a final decision was reached.

The HBRC reviewed 46 reports involving 33 species, including 20 species potentially new to the Hawaiian Islands reported from 2010 to 2016, nine species that were accepted by Pyle and Pyle (2009) but for which there was no specimen or photographic documentation at the time, one re-evaluation of a species pair that had been accepted by Pyle and Pyle (2009), two introduced species for which establishment was questioned, and one species previously regarded as hypothetical by Pyle and Pyle (2009). Of the 20 prospective new species, the HBRC accepted 17 and rejected three. The accepted species were the Surfbird (*Calidris virgata*), Terek Sandpiper (*Xenus cinereus*), Common Sandpiper (*Actitis hypoleucos*), Spotted Redshank (*Tringa erythropus*), Lesser Black-backed Gull (*Larus fuscus*), Bridled Tern (*Onychoprion anaethetus*), White-winged Tern (*Chlidonias leucopterus*), Whiskered Tern (*Chlidonias hybrida*), Elegant Tern (*Thalasseus elegans*), Rhinoceros Auklet (*Cerorhinca monocerata*), Bryan's Shearwater (*Puffinus bryani*), American Bittern (*Botaurus lentiginosus*), Gray Heron (*Ardea cinerea*), Intermediate Egret (*Ardea intermedia*), Snowy Owl (*Bubo scandiacus*), Common Raven (*Corvus corax*), and Brambling (*Fringilla montifringilla*). The species not accepted were the Western Grebe (*Aechmophorus occidentalis*), Black Turnstone (*Arenaria melanocephala*), and Wedge-rumped Storm-Petrel (*Oceanodroma tethys*).

Of the 17 additions to the Hawaii list, only three (the Surfbird, Elegant Tern, and American Bittern) originated in the New World, whereas nine (the Terek and Common sandpipers, Spotted Redshank, White-winged and Whiskered terns, Bryan's Shearwater, Gray Heron, Intermediate Egret, and Brambling) are primarily Old World species. With the exception of the shearwater, however, all these Old World species are known to have occurred in North America previously in varying frequency, and all except the shearwater and Whiskered Tern have strayed east from normal migration routes in Asia to reach Alaska. Of these seven, five (the Terek and Common sandpipers, Spotted Redshank, White-winged Tern, and Brambling) have also reached other parts of western North America. Four species (the Lesser Black-backed Gull, Rhinoceros Auklet, Snowy Owl, and Common Raven) occur on both the northwest and northeast sides of the Pacific Ocean, but in the case of the gull and raven some evidence suggests an origin in Asia is more likely. The Bridled Tern is a tropical species that could reach Hawaii from either the southwest or the east. Specimens identifiable to subspecies, still lacking, would answer the question of direction of origin in the case of the gull, raven, and Bridled Tern.

Of the nine species that had been on the Hawaii list of Pyle and Pyle (2009) on the basis sight records only, the HBRC accepted six. For two of these species, the Tahiti Petrel (*Pterodroma rostrata*) and Great Egret (*Ardea alba*), we reviewed photographs supporting additional reports from 2010 to 2016, and for two more of these species, the Pink-footed

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Shearwater (*Ardenna creatopus*) and Wilson's Storm-Petrel (*Oceanites oceanicus*), photographs taken in 2017 will be reviewed by the HBRC in future reports. The other two species accepted to the checklist without a photograph or specimen are the Ruddy Duck (*Oxyura jamaicensis*) and Merlin (*Falco columbarius*).

Five species accepted by Pyle and Pyle (2009) were not accepted by the HBRC: Barrow's Goldeneye (*Bucephala islandica*), Pycroft's Petrel (*Pterodroma pycrofti*), Buffy (Gray-sided) Laughingthrush (*Garrulax caerulatus*), Red-cheeked Cordonbleu (*Uraeginthus bengalus*), and Black-rumped Waxbill (*Estrilda troglodytes*). Barrow's Goldeneye and Pycroft's Petrel were not accepted because their identifications, based on sight records only, are questionable, the Red-cheeked Cordonbleu and Black-rumped Waxbill were not accepted because establishment of a viable breeding population is questionable, and the Buffy Laughingthrush was not accepted because both the identification and the establishment are questionable. The HBRC also reviewed the status of the American Coot (*Fulica americana*), which Pyle and Pyle (2009) considered hypothetical, and voted not to change its status. Pyle and Pyle (2017) provided a complete list of hypothetical species in the Hawaiian Islands, including those not accepted by the HBRC.

In addition to these changes to the Hawaiian Islands checklist, nine endemic species resulting from taxonomic splits since 2009 were added: the Kauai Elepaio (*Chasiempis sclateri*), Oahu Elepaio (*Chasiempis ibidis*), Laysan Honeycreeper (*Himatione fraithii*), Oahu Nukupuu (*Hemignathus lucidus*), Maui Nukupuu (*Hemignathus affinis*), Oahu Akialoa (*Akialoa ellisiana*), Maui-nui Akialoa (*Akialoa lanaiensis*), Oahu Akepa (*Loxops wolstenholmei*), and Maui Akepa (*Loxops ochraceus*), the last seven of which are presumed extinct.

The Hawaiian Islands bird checklist includes 338 species through 2016, an increase of 21 species over the 317 species listed by Pyle and Pyle (2009). As summarized above, this increase resulted from the addition of 26 species (17 newly accepted species and nine species resulting from taxonomic splits) and the removal of five species now considered hypothetical. An updated version of the complete Hawaiian Islands bird checklist was published recently (VanderWerf et al. 2017), and the same list of accepted species is included in the primary checklist of Pyle and Pyle (2017).

SPECIES ACCOUNTS

The accounts below cover all species reviewed by the HBRC from 2014 through 2016. All reports involved single birds unless stated otherwise. The decision about each species is given immediately after the species name, followed by the votes for/against and the HBRC's review number during each round in parentheses.

BARROW'S GOLDENEYE *Bucephala islandica*. Sight record not accepted, identification questionable (3/4; HI1989-001). A single female Barrow's Goldeneye was first reported by Tom Telfer on 27 January 1989 on Pia Mill Reservoir, west of Puhi, Kauai. It was subsequently seen on several occasions by multiple experienced observers on Pia Mill Reservoir and Mauka Reservoir through 19 February 1989 (Engilis et al. 2004). No photographs were taken of the bird, and in the committee's opinion the

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field notes provided were insufficient to rule out the Common Goldeneye (*B. clangula*). Descriptions of the head shape matched Barrow's, but the bill color was described by some observers as dark, which better fits a female Common Goldeneye in mid-winter.

RUDDY DUCK *Oxyura jamaicensis*. Sight record accepted (7/0; HI1984-001). Two male Ruddy Ducks in formative or basic plumage were reported on 16 December 1984 at Heeia Marsh, Kaneohe, Oahu by Fern Duvall, Marie Morin, and Joel Simasko. No photographs were taken, but Duvall sketched one of the birds, and the original notes and sketch were available to the HBRC for review. The HBRC believed the identification to be correct, but expressed some concern that the birds could have been escapees, although whether this species was kept in captivity in Hawaii at the time is not known. Three Ruddy Ducks reported from the Waipio Peninsula, Oahu, on 22 January 1985 likely included the two reported from Heeia Marsh, but this and several other reports of this species in Hawaii did not include supporting documentation (Pyle and Pyle 2017) and have not been reviewed by the HBRC.

WESTERN GREBE *Aechmophorus occidentalis*. Not accepted, identification questionable (3/4; HI2011-003). An *Aechmophorus* grebe was observed briefly and photographed at a great distance in the Kawaihae Harbor, Hawaii Island, on 14 December 2011, by an observer experienced with this species in North America. The observer submitted a detailed written description that indicated the bird was likely a Western Grebe, but that the similar Clark's Grebe (*A. clarkii*) could not be completely ruled out. The committee considered the options of voting to accept the identification, or not, as a Western Grebe or a Western/Clark's Grebe. One member voted to accept it as a Western Grebe, two voted to accept it as a Western/Clark's grebe, and four voted not to accept the record. Those members voting against the identification acknowledged that it may well have been correct, at least as the genus *Aechmophorus*, but that the brevity and distance of observation argued against accepting this report as the first record of the genus in the Hawaiian Islands. Some also expressed concern that a Great Crested Grebe (*Podiceps cristatus*) in winter aspect was not considered by the observer or entirely ruled out.

COMMON CUCKOO *Cuculus canorus*. Sight record accepted (5/2, 6/1; HI1997-001). An adult cuckoo of this Old World genus was observed and photographed on Sand Island, Midway Atoll, on 23 May 1997 (Pyle and Nestler 1998). The observers thought it was a Common Cuckoo on the basis of paler upperparts, indistinct underpart barring, and entirely white undertail coverts. However, information published at the time was not sufficient to fully eliminate the similar Oriental Cuckoo (*C. optatus*). The record was thus accepted by Pyle and Pyle (2009) as the species pair Common/Oriental cuckoo. Subsequently, Committee members Pyle and Pratt examined specimens at the U.S. National Museum, and Erritzøe (2012) published new information on the identification of the Common and Oriental cuckoos. This additional information confirms that the Oriental Cuckoo seldom or never shows underparts as described for the bird at Midway, and the HBRC accepted the record as a Common Cuckoo (to the exclusion of the Oriental Cuckoo) in the second round of voting.

AMERICAN COOT *Fulica americana*. Not accepted, identification questionable (2/5 for HI1919-001; 2/5 for HI1977-001; 2/5 for HI1986-001). Species considered hypothetical by Pyle and Pyle (2009). The Hawaiian Coot (*Fulica alai*) was split from the American Coot on the basis of a recommendation by Pratt (1987), who also summarized reports of American Coots in the Hawaiian Islands. At the request of a committee member, the HBRC reviewed three reports of the American Coot, including photographs of birds at Hanalei, Kauai, in 1977 and at James Campbell National Wildlife Refuge, Oahu, in November 1986, and a specimen taken on 4 November 1919 at Kaalualu, Hawaii Island, and now at the B. P. Bishop Museum (BPBM 4545). The specimen was identified as an American Coot by Pratt and S. L.

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Olson, but Pyle and Pyle (2009) were not confident that the Hawaiian Coot was fully eliminated. The identifications hinged on the size and color of the upper portion of the frontal shield, which varies in the Hawaiian Coot from small and dark brownish red to large, bulbous, and white or yellow. The shield enlarges gradually with age (Pratt and Brisbin 2002). Committee members that voted against acceptance believed that the specimen and photographs could represent young Hawaiian Coots, which have shields and bills that can resemble those of American Coots, and commented that we currently lack information about variation in the appearance of the frontal shield of Hawaiian and American coots by season and age sufficient to distinguish birds with a brownish upper shield with confidence (see Pyle and Pyle 2017 for more information). We believe that the specimen is not identifiable from current knowledge of morphology, but perhaps future genetic analysis will help confirm its identity.

BLACK TURNSTONE *Arenaria melanocephala*. Not accepted, identification questionable (6/1, 0/7 for HI2014-007a; 6/1, 0/7 for HI2014-007b). Our review involved two reports of single birds, one seen and photographed from a boat 37 km west of Kailua-Kona, Hawaii, by cetacean researchers with the Cascadia Research Collective (see Baird et al. 2013; HI2014-007a) on 24 November 2014 (Figure 2), and another seen near Halona Point on the southeastern coast of Oahu on 10 February 2015 (HI2014-007b). The first set of photos the HBRC received was underexposed and caused the bird to appear darker than it really was (Figure 2A), but a second set showed a ruddy tinge to the upper wing coverts and a vested appearance to the underparts (Figure 2B), features found in the Ruddy (*A. interpres*) but not the Black Turnstone. The report from Oahu, for which there was no photographic documentation, was withdrawn from review in light of the photographic evidence against the report from west of Kailua-Kona.

SURFBIRD *Calidris virgata*. New species accepted (7/0; HI2012-002). A single bird was first reported by VanderWerf on 9 April 2012 near Halona Point on the southeastern coast of Oahu and seen sporadically in the same area on at least 12 different dates until 5 March 2013 (see this issue's inside back cover). Most information about the Surfbird was reported by VanderWerf (2013), but it was seen twice in February and March 2013, after that paper was published. Although the bird was not reported between 10 July 2012 and 19 February 2013, the HBRC considered all observations to pertain to the same individual, one that likely spent the fall and winter months on the island but was not detected. When first observed in 2012 it was in its first spring, retaining some juvenile feathers (VanderWerf 2013); by 5 March 2013 it was largely in definitive alternate plumage.

TEREK SANDPIPER *Xenus cinereus*. New species accepted (7/0; HI2014-001). A single bird was first reported by Kurt Pohlman at James Campbell National Wildlife Refuge in Kahuku, Oahu (Figure 3), on 9 January 2014 and seen by multiple observers through 6 March 2014. Most information about the Terek Sandpiper was reported by Pohlman and VanderWerf (2014). Photographs taken by VanderWerf on 10 January, 16 January, and 12 February 2014 revealed that it was a first-winter bird because it retained some juvenile feathers, and that it was undergoing an eccentric molt of the outer primaries (Figure 3B). The upturned bill with an orange base and orange legs of this species are distinctive.

COMMON SANDPIPER *Actitis hypoleucos*. New species accepted (7/0; HI2010-003). One first reported by Thane Pratt at Whittington State Park southeast of Naalehu, Hawaii Island, on 30 October 2010 was seen regularly until October 2011 (Pratt et al. 2016). It was in juvenile plumage when first observed, though by March it had molted into formative plumage, and by late April it had molted into a first alternate plumage that lacked spots on the underparts. This species can be problematic to distinguish from its New World congener, the Spotted Sandpiper (*A. macularius*), but the detailed field notes and photographs documented the long tail

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extension beyond the wing tips diagnostic of the Common Sandpiper. Following acceptance of this record, Pyle and Pyle (2017) accepted as a Common Sandpiper another example of *Actitis* that lacked spots on the underparts, seen by VanderWerf at Kure Atoll on 15 May 2000, but the HBRC has not yet reviewed that report.

SPOTTED REDSHANK *Tringa erythropus*. New species accepted (7/0; HI2014-006). A first-year bird was seen at Kealakehe Wastewater Treatment Plant, Kailua-Kona, Hawaii Island, by Jeremy Gatten on 3 November 2014, and was observed and photographed on numerous occasions by many others through 28 March 2015 (Figure 4). When it was first observed, it was identified by its long, bright orange legs and base of the lower mandible, gray barred breast, dark barred tail, white wedge on the back and lack of white trailing edge to the wings. The brownish tone and color pattern of retained juvenile feathers indicated it was a first-year bird. By 9 February 2015, the last date it was observed, a few first alternate feathers were growing in.

LESSER BLACK-BACKED GULL *Larus fuscus*. New species accepted (6/1; HI2010-002). An alternate-plumaged adult (no head streaking, molt of inner primaries just commencing) was photographed by Michael Force, Sophie Webb, Chris Cutler, and Richard Rowlett 128 km west-northwest of Gardner Pinnacles, French Frigate Shoals, on 9 October 2010, during cetacean and seabird surveys for the Southwestern Fisheries Science Center (SWFSC) (Figure 5). The observers noted a medium-sized, dark-backed, adult gull with bright yellow legs, reddish orbital ring, and slender yellow bill with prominent red gonydeal spot. The medium gray mantle contrasted sharply with black primary tips, and white “mirrors” showed on primaries 9 and 10. These characters identified the bird as of the Lesser Black-backed Gull complex as recognized by Clements et al. (2016) and Gill and Donsker (2017) and discussed by Collinson et al. (2008). The HBRC consulted outside experts Bruce MacTavish, Nial Moores, Martin Reid, and Norman Deans van Swelm, whose consensus was that the bird could be either *L. f. heuglini* or *L. f. taimyrensis*, both of which breed in northern Asia, by its mantle paler than in the European subspecies *L. f. fuscus* and *L. f. graellsii*, the mirror on primary 9, and the bird’s retaining alternate plumage into October (Moores 2011, Burger et al. 2017). In this case it could have represented a migratory overshoot, inasmuch as subspecies *heuglini* and *taimyrensis* apparently migrate to coastal east Asia in some numbers (van Dijk et al. 2011, Moores 2011). The HBRC does not specifically vote on or endorse subspecies.

BRIDLED TERN *Onychoprion anaethetus*. New species accepted (7/0; HI2012-004). An adult in definitive alternate plumage was photographed 8 km northwest of the north tip of Niihau on 12 June 2012 (Figure 6) by Daniel Webster and others during cetacean surveys by the Cascadia Research Collective. The mantle was too pale for a Sooty Tern (*O. fuscatus*) and too dark and brown for a Gray-backed Tern (*O. lunatus*), the underwing showed too little white for the latter (Rauzon 2006), and the presence of a white collar and narrow shape of the white forehead patch identified it as a Bridled Tern. Some HBRC members also thought it represented the relatively dark-backed nominate subspecies *O. a. anaethetus* of the southwestern Pacific Basin. Another Bridled Tern was photographed by Cascadia Research Collective personnel 7 km west of Kona, Hawaii Island, 24 April 2015, a paler-backed bird that may have represented the eastern Pacific *O. a. nelsoni* (Pyle and Pyle 2017), but this report has not yet been reviewed by the HBRC. Reports of Bridled Terns in the Hawaiian Islands during the 19th century were based on nomenclatural confusion or dubious identifications (Pyle and Pyle 2017).

WHITE-WINGED TERN *Chlidonias leucopterus*. New species accepted (7/0; HI2012-003). An adult was first reported by Arleone Dibben-Young on 25 May 2012 at the Kaunakakai Wastewater Treatment Plant, Molokai, and subsequently seen and photographed by several observers through 7 June 2012 (Figure 7). This bird was

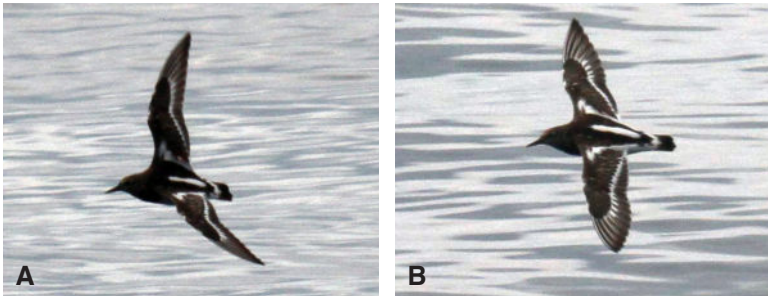


Figure 2. Ruddy Turnstone, 23 miles west of Kona, Hawaii, 24 November 2014. The bird was initially reported as a Black Turnstone and accepted as such by the HBRC on the basis of photo A. Photo B, obtained later, shows the same bird with better exposure, revealing the ruddy color on the wing coverts and a vested appearance to the underparts, features of the Ruddy but not the Black Turnstone.

Photos by Robin W. Baird (A) and Brenda Rone (B)

in full definitive alternate plumage, which is unmistakable. The timing of this occurrence coincides well with the species' northbound migration in the western Pacific.

WHISKERED TERN *Chlidonias hybrida*. New species accepted (7/0; HI2013-003). A first-fall *Chlidonias* tern was observed and photographed on Midway Atoll on 29 October 2013 by Hoku Cody (Figure 8A). On 9 November 2013, presumably the same bird appeared on Kure Atoll, where it remained until 7 December 2013 and was observed by Cynthia Vanderlip, Matthew Saunter, Scott Freeman, and Nicole Cody, and photographed by Naomi Worcester (Figure 8B and C). It had retained some juvenile feathers in the scapulars showing a three-toned pattern of bands characteristic of juvenile Whiskered Terns and unlike those of White-winged or Black (*C. niger*) terns



Figure 3. First-year Terek Sandpiper, James Campbell National Wildlife Refuge, Oahu, 10 January 2014. The pale fringes and dark subterminal bands on some upperpart feathers indicate a first-year bird. Photo B shows that it was undergoing an eccentric molt, with the fifth primary new, the sixth primary growing, the seventh primary growing or missing, and the inner four and outer three primaries old and juvenal.

Photos by Eric VanderWerf

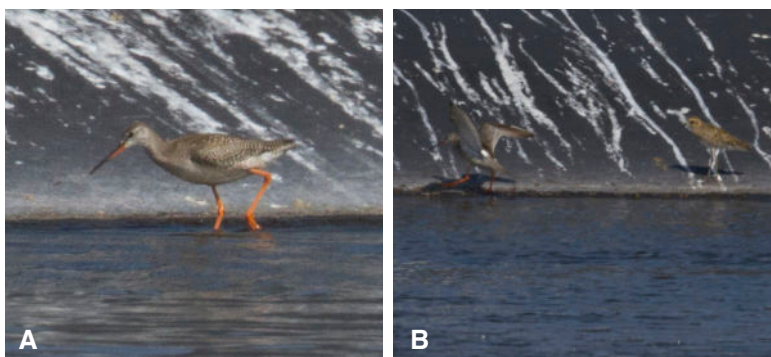


Figure 4. First-year Spotted Redshank, Kealakehe Wastewater Treatment Plant, Kailua-Kona, Hawaii Island, 10 November 2014 (B, with Pacific Golden-Plover, *Pluvialis fulva*).

Photos by Eric VanderWerf

of similar age. Other features of the bird, such as the head pattern and presence of a dark mark at the side of the breast, were less conclusive but consistent with a juvenile Whiskered Tern. Some committee members thought that two different birds were represented in the photos, but by a vote of 5/2 the committee accepted this record as of a single individual. At least two earlier sight reports from Hawaii Island were considered hypothetical by Pyle and Pyle (2017) and have not been reviewed by the HBRC.

ELEGANT TERN *Thalasseus elegans*. New species accepted (7/0; HI2012-001). An adult in definitive alternate plumage was first reported by David Gibson at Aimakapa Pond, Kaloko-Honokohau National Historical Park, Hawaii Island, on 23 March 2012, and was subsequently seen and photographed by several observers until at least 27 April 2012 (Figure 9). The identification was confirmed by several characters, including the long, thin orange bill with a yellow tip and black in the primaries less than in the Royal Tern (*T. maximus*) and Lesser Crested Tern (*T. bengalensis*). Photographs showed that the bird had replaced the inner four primaries during the prealternate molt. The timing of the bird's arrival in Hawaii coincides with the species' northward migration along the Pacific coast from South America to North America,



Figure 5. Adult Lesser Black-backed Gull in alternate plumage, 128 km west-northwest of Gardner Pinnacles, 9 October 2010. Note that the inner two primaries are growing, indicating the start of a prebasic molt; this late timing along with the medium-dark back is consistent with Asian subspecies of the Lesser Black-backed Gull.

Photos by Sophie Webb



Figure 6. Adult Bridled Tern in alternate plumage, 8 km northwest of Niihau, 12 June 2012.

Photo by Daniel Webster

suggesting it strayed west of the usual route. Although this is the first record for the Hawaiian Islands, one Elegant Tern was collected on Johnston Atoll, 1390 km southwest of the island of Hawaii, on 19 April 1969 (Pyle and Pyle 2017).

RHINOCEROS AUKLET *Cerorhinca monocerata*. New species accepted (7/0; HI2014-003). The fresh carcass of a Rhinoceros Auklet was found on the northeast beach of Kure Atoll on 26 March 2014 by Scott Freeman (Figure 10) and later deposited in the B. P. Bishop Museum (BPBM 186011). The thick orange bill and broad outer primaries of the definitive plumage specify that it was in at least its second spring (Pyle 2008). The committee considered whether the bird might have died



Figure 7. Adult White-winged Tern in alternate plumage, Kaunakakai Wastewater Treatment Plant, Molokai, 27 May 2012.

Photo by Eric VanderWerf



Figure 8. First-fall Whiskered Tern: (A) Midway Atoll, 29 October 2013; (B and C) Kure Atoll, 11 November 2013. Retained brownish juvenile feathers are visible in the scapulars.

Photos by Hoku Cody (A) and Naomi Worcester (B and C).

outside the 370-km limit of state waters but decided that it could not have floated so far and remained as fresh as it was, especially under tropical conditions. This is the first record for this species in the tropical Pacific.

PYCROFT'S PETREL *Pterodroma pycrofti*. Sight reports not accepted, identification questionable (2/5 for HI1989-002; 2/5 for HI2002-002). Pyle and Pyle (2009) accepted Pycroft's Petrel on their primary Hawaiian Island checklist on the basis of sight reports of 10–15 individuals in Hawaiian waters by experienced seabird observers during June 1986, 1988, and 1989 and during cetacean and marine bird surveys by SWFSC in August and September 2002 (Spear et al. 1999, Pyle and Pyle 2017). Specimens of Pycroft's Petrel have been collected as close as 750 km southeast of Hawaiian waters (Spear et al. 1999). The HBRC considered two reports, of a single bird seen 230 km from South Point, Hawaii Island on 27 June 1989 (Spear et al. 1999), and seven birds observed from 24 August to 11 September 2001 during the SWFSC's cetacean and seabird surveys. In both reports, documentation was provided by observers experienced with the identification of Pycroft's Petrel at sea, and included detailed criteria on how to distinguish this species from Cook's (*P. cookii*) and Stejneger's (*P. longirostris*) petrels, such as smaller body and bill size, quicker flight behavior, darker upperparts, medium-gray crown, and white face plumage extending into the cap behind the eye. However, there were no specific descriptions of the birds observed within Hawaiian waters and considered by the HBRC, and no information about which specific features were used to identify them. Some HBRC members noted that more recent references, such as Onley and Scofield (2007) and Howell (2012), have suggested that some of the distinguishing characteristics proposed by Howell et al. (1996) and Spear et al. (1999) may be more variable than previously realized. Addition of this species to the Hawaiian Islands list may require a photograph or specimen. The AOS does not include Pycroft's Petrel in its *Check-list of North American Birds*.

TAHITI PETREL *Pterodroma rostrata*. Three reports accepted (6/1 for HI1999-001; 7/0 for HI2012-005; 7/0 for HI2014-008). Pyle and Pyle (2009) accepted one record of this species in the Hawaiian Islands, of a single bird seen (but not photographed) by HBRC members David and VanderWerf 5 km west of Midway Atoll on 23 May 1999.



Figure 9. Adult Elegant Tern in alternate plumage, Aimakapa Pond, Kona, Hawaii Island, 11 April 2012.

Photos by Eric VanderWerf

Our review reconsidered that previous record and also two more recent reports, of a bird that landed on a cruise ship 2 km west of Nawiliwili Harbor, Kauai, on 26 January 2012 and was photographed in the hand (Morin et al. 2018), and another seen and photographed 24.6 km southwest of Kailua-Kona, Hawaii Island, on 14 November 2014 during cetacean research by the Cascadia Research Collective (Figure 11). The Kauai bird had the very long narrow wings and massive bill typical of this species, and it lacked the pale patagial bar and white chin patch of the similar Phoenix Petrel (*P. alba*). The photographs of the Kona bird showed the long, heavy bill, long tapered tail, long narrow wings, a crisp demarcation between the dark of the throat and the white belly, and the lack of a pale panel on the underwings. The lone committee member dissenting from acceptance of the Midway record commented that this species is difficult to distinguish from the Phoenix Petrel and that the white chin patch of that species is rarely observed at sea and thus could have been missed.

PINK-FOOTED SHEARWATER *Ardenna creatopus*. Sight report accepted (6/1; HI2006-001). Force and Ballance (2009) reported one 296 km southeast of South Point, Hawaii Island, on 24 August 2006. The HBRC accepted this report because a detailed description of the bird was available and because others of this species have been recorded close to Hawaiian waters (Force and Ballance 2009, Pyle and Pyle 2017). The lone member dissenting from acceptance believed the description of the plumage did not include enough detail for other Pacific shearwater species to

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Figure 10. Adult or second-spring Rhinoceros Auklet, Kure Atoll, 26 March 2014.

Photos by Naomi Worcester

be ruled out. Subsequently, in September 2017, at least two additional Pink-footed Shearwaters were photographed by SWFSC observers in Hawaiian waters, though those reports have not yet been reviewed by the HBRC.

BRYAN'S SHEARWATER *Puffinus bryani*. New species accepted (7/0; HI1963-001). Pyle et al. (2011) described Bryan's Shearwater as a new species on the basis of an adult collected by Binion Amerson on Sand Island, Midway Atoll, on 18 February 1963. A second individual was photographed and videotaped on Sand Island by Bruce Eilerts and R. E. David in December 1990 and January 1991 and again from 17 December 1991 to January 1992 (Pyle et al. 2014). This species has been confirmed breeding in the Ogasawara (Bonin) Islands off Japan (Kawakami et al. 2012, K. Kawakami, in litt.) and should be looked for in winter on rocky Northwestern Hawaiian Islands such as Nihoa and Necker (Pyle et al. 2014). The HBRC followed the AOU (Chesser et al. 2012) in accepting Bryan's Shearwater as a new species,



Figure 11. Tahiti Petrel 24.6 km southwest of Kailua-Kona, Hawaii Island, 14 November 2014.

Photo by Daniel Webster

and added it to the Hawaiian Islands list. The Midway records had previously been considered, incorrectly, to be of Little Shearwaters (*P. assimilis*) (Pyle et al. 2011).

WILSON'S STORM-PETREL *Oceanites oceanicus*. Sight reports accepted (7/0; HI1984-001). At least 18 sightings of Wilson's Storm-Petrel have been reported from waters around the Northwestern Hawaiian Islands, three on 3 November 1984 (Pyle and Eilerts 1986) and 15 between 21 September and 21 October of 2002 and 2010 by experienced observers during cetacean and marine bird surveys by the SWFSC; two additional reports by such observers come from waters off Hawaii Island in Oct 2010 (Pyle and Pyle 2017). On the basis of a detailed description of the three birds in Pyle and Eilerts (1986), the HBRC accepted Wilson's Storm-Petrel to the Hawaiian Islands list. The reports in 2002 were not accepted (2/5; HI2002-001) because they lacked descriptions of the birds. Those in 2010 have not yet been considered by the HBRC but also lacked descriptions. The committee believes that the 2002 and 2010 reports were almost assuredly correct, but, as with Pycroft's Petrel (see above), most HBRC members were not willing to accept them without descriptions of the birds and characters used in the identifications. Subsequently, in September 2017, at least one additional Wilson's Storm-Petrel was photographed by SWFSC observers in Hawaiian waters, though this report has not yet been reviewed by the HBRC.

WEDGE-RUMPED STORM-PETREL *Oceanodroma tethys*. Sight report not accepted, identification questionable (3/4; HI2010-001). Wedge-rumped Storm-Petrels breed in the Galapagos Islands and along the South American coast and forage widely at sea in the eastern Pacific Ocean, as close as 600 km south-southeast of Hawaii Island (Spear and Ainley 2007). One was reported by an experienced observer during surveys for cetaceans and marine birds by the SWFSC, 325 km southeast of Hawaii Island, on 9 Oct 2010. Although a detailed description was submitted and the committee believes that the identification was likely correct, the observation was made in low light and high winds. Committee members were concerned that Townsend's Storm-Petrel (*O. townsendi*), at the time considered a subspecies of Leach's Storm-Petrel (*O. leucorhoa*), was not adequately eliminated, given that the record was based on a sighting only and the identification of storm-petrels at sea is so challenging (see



Figure 12. First-year American Bittern, Pearl Harbor, Oahu, 21 January 2013.

Photo by Eric VanderWerf

Pyle et al. 2016). This and other sight records for Hawaii could be accepted once a specimen or photograph has been obtained.

AMERICAN BITTERN *Botaurus lentiginosus*. New species accepted (7/0; HI2013-001). A first-year bird retaining juvenile wing coverts was at a watercress farm in Pearl City near the shoreline of Pearl Harbor on Oahu from at least 16 January through 29 March 2013. The owner of the farm reported seeing there an unusual heron-like bird, presumably the bittern, since around November 2012. Donaldson and May first identified the bird as an American Bittern on the biennial Hawaii waterbird survey on 16 January 2013. The only photos of the bird were obtained on 21 January 2013 by VanderWerf (Figure 12).

GRAY HERON *Ardea cinerea*. New species accepted (7/0; HI2011-001). Two adults in definitive basic plumage were seen on Kure Atoll from 13 April to 25 May 2011 (Figure 13). They were distinguished from the similar Great Blue Heron (*A. herodias*) by their white rather than chestnut thighs and white rather than mauve-gray sides of the neck.

GREAT EGRET *Ardea alba*. Species with only sight records accepted (7/0; HI2010-004). Pyle and Pyle (2009) had accepted this species on the basis of four pre-



Figure 13. Adult Gray Heron, Kure Atoll, 25 May 2011.

Photo by Ilana Nimz



Figure 14. Great Egret, Hanalei National Wildlife Refuge, Kauai, 13 November 2010.

Photo by Chris Malachowski

vious records, none of which was documented with photographs. Our review involved a single bird of unknown age seen from 2 November to at least 15 December 2010 at Hanalei and Huleia National Wildlife Refuges, Kauai, and photographed by Chris Malachowski on 13 November 2010 (Figure 14). In the photograph, note the bird's large size in comparison to the Hawaiian Stilt (*Himantopus knudseni*), long neck, and dark line extending back from the corner of the gape. Because of the extensive yellow on the bill (Pyle 2008), this individual was likely of the American subspecies *egretta*, rather than of a subspecies from Asia or Australasia (*modesta* or *alba*).

INTERMEDIATE EGRET *Ardea intermedia*. New species accepted (7/0; HI2013-002). One in its first fall was seen on Midway Atoll from 24 October to 7 November 2013 by Pete Leary (Figure 15). Photos of it were sent to 18 experts prior to the formation of the HBRC, and among them there was some debate whether it might be a Great Egret, possibly of the Asian subspecies *modesta*. In accepting the bird as an Intermediate Egret and distinguishing it from the Great Egret, outside experts and HBRC members noted that the bill was too short for a Great Egret, that the gape did not extend behind the eye, that the proportionally shorter neck and legs better fit the Intermediate, the neck was less kinked than in the Great, and the bird was reported by the observer as too small to be that species. A supposed Intermediate Egret reported on Midway in June and July 1997 (Richardson 1999) was actually a Cattle Egret of the Asian subspecies *Bubulcus ibis coromandus* (Pyle and Pyle 2017).

MERLIN *Falco columbarius*. Five sight reports accepted: Midway Atoll, November 1991 to 12 March 1992, by Don Williamson, Bruce Eilerts, C. Kirkpatrick, J. Pretare, HBRC member David, Scott Richardson, and S. Marston (6/1, HI1991-001); Kilauea Point, Kauai, 4 March 1993, by David Stirling (6/1, HI1993-001); Puu Anahulu, Hawaii Island, 30 October 1995, by William P. Smith and Susan A. Smith (7/0, HI1995-001); Nuupia Ponds, Marine Corps Base Hawaii, Oahu, 22 December 2001, by HBRC member VanderWerf (6/1, HI2001-002); and Honouliuli Unit of Pearl Harbor National Wildlife Refuge, Oahu, 15 November 2009, by HBRC



Figure 15. Intermediate Egret, Midway Atoll, 24 October 2013.

Photo by Pete Leary

members Donaldson and Pyle (7/0, HI2009-001). Another report from Midway Atoll on 28 October 2016 (1/6, HI2001-001) was not accepted because there was no description of the bird. Some members voted against certain reports, and two rounds of voting were required before five of the records were accepted, but overall the committee was generally satisfied that the descriptions confirmed identification as the Merlin, and that cumulatively they indicate a history of vagrancy to Hawaii by this species, despite the lack of a photograph or specimen.

SNOWY OWL *Bubo scandiacus*. New species accepted (7/0; HI2011-002). A single bird was shot and killed by personnel of the U.S. Department of Agriculture's Wildlife Services at Honolulu International Airport, Oahu, on 24 November 2011. The bird was photographed on a runway (Figure 16) before it was collected for the sake of aircraft safety and deposited as a specimen at the Bernice P. Bishop Museum (BPBM 185577). The specimen was a first-year male by gonadal examination, the extent of black markings to the body feathers, and the retention of juvenile wing feathers. The occurrence coincided with an irruption of Snowy Owls in North America during the winter of 2011–2012; one even reached Bermuda (Brinkley 2012). Therefore the committee agreed the owl on Oahu was likely a naturally occurring vagrant.

COMMON RAVEN *Corvus corax*. New species accepted (6/1; HI2014-002). A single bird was observed on Kure Atoll by Naomi Worcester and Matthew Saunter from 12 February to 13 March 2014. The bird was wary and did not allow people to get close, allowing only distant photos (Figure 17). Committee member Pyle and outside expert Daniel D. Gibson (*in litt.*) believed the bill was too large for any of the



Figure 16. First-year male Snowy Owl, Honolulu International Airport, Oahu, 24 November 2011.

Photo by Erik Rutka/USDA Wildlife Services

North American subspecies of raven, of which *principalis* is the largest, and thought it more likely to be the Asian subspecies *kamtschaticus*, which also occurs in the Aleutians. But other HBRC members concluded the photographs were not clear enough to identify the subspecies. The lone committee member dissenting from acceptance did not question the identification but thought the bird could not have made such a lengthy journey over ocean without the assistance of a ship.

BUFFY (GRAY-SIDED) LAUGHINGTHRUSH *Ianthocincla* (*Garrulax*) *berthemyi*. Sight records not accepted, identification and establishment of population questionable (1/6, HI2016-001). Unidentified laughingthrushes were reported sporadically in the vicinity of Poamoho Trail on Oahu from 1928 to 1978 (Pyle and Pyle 2017). Descriptions of the birds suggest they were what is now called the Buffy Laughingthrush of southern China, split from the Gray-sided Laughingthrush (*I. caerulatus*) by Collar (2006), under which name the Oahu birds were formerly listed. The birds were last reported by Taylor and Collins (1979), who also provided a history of observations on Oahu. No specimens, photographs, or sound recordings of the Oahu birds exist, and, because of some inconsistencies in published descriptions, the committee concluded that certain identification was impossible and that more than one release and/or species could have been involved in the reports. Therefore, the HBRC also questioned whether a population, now presumed extirpated, was ever truly established.



Figure 17. Common Raven, Kure Atoll, 14 February 2014, being mobbed by White Terns (*Gygis alba*).

Photo by Naomi Worcester



Figure 18. First-year male Brambling, Kure Atoll, 17 October 2014. One of 13–15 birds present from 1 October 2014 to 2 March 2015.

Photo by Adam Fox

BRAMBLING *Fringilla montifringilla*. New species accepted (7/0, HI2014-005). Groups of up to 13–15 Bramblings were seen on Kure Atoll by Adam Fox and Naomi Worcester from 1 October 2014 to 2 March 2015 (Figure 18), though not all birds in the largest flocks were photographed. The observers reported males and females and also noted the buzzy “zweet, zweet” call and the undulating flight. This report is especially interesting because it probably parallels the colonization that led to the evolution of Hawaiian honeycreepers, which are descended from a single species of cardueline finch (Pratt 2005). Another Brambling was observed at Midway Atoll on 30 Oct 2015 (Pyle and Pyle 2017), but this report has yet to be reviewed by the HBRC.

RED-CHEEKED CORDONBLEU *Uraeginthus bengalus*. Establishment of viable population not accepted (4/3, 4/3, 3/4; HI2017-002). Our review consisted of two parts, whether the species is currently established, and whether it ever was established. The committee voted unanimously that the species currently is not established, and, on the third round, voted 3/4 that it never was established. This escaped cagebird formerly bred on Oahu and Hawaii Island, especially the latter, where a small population, probably originating in 1972 with the release of birds from a local aviary (Giffin 2003), built up around Puu Waa Waa into the late 1980s. The number of birds declined rapidly after the turn of the 21st century, with the last sighting in 2006. The possibility that these populations may have been supplemented by continued releases of captive birds cannot be discounted, especially on Oahu, where the species still can be found in pet shops.

BLACK-RUMPED WAXBILL *Estrilda troglodytes*. Establishment of viable population not accepted (4/3, 4/3, 3/4; HI2017-001). As with the Red-cheeked Cordonbleu (see above), our review consisted of two parts, with the committee voting unanimously that the species is not currently established, and 3/4 on the third

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round that it never was established. Black-rumped Waxbills were among a variety of small estrilids released on the slope of Diamond Head above Kapiolani Park, Oahu, in the mid-1960s. They built up a local population there into the 1970s, but subsequently died out (Pratt et al. 1987, Pyle and Pyle 2017). Subsequent reports of this species on Oahu probably resulted from confusion with the Common Waxbill (*E. astrild*; Ord 1982). On Hawaii Island, a small population built up around Puu Waa Waa (Giffin 2003), along with the Red-cheeked Cordonbleu, and remained steady until about 2006, then precipitously declined, the last report being in 2009 (Pyle and Pyle 2017). The crash coincided with the invasion of Hawaii Island by the Common Waxbill, but whether that caused the disappearance of the Black-rumped is not known. The latter was never reported far from Puu Waa Waa, the number of birds reported always was small, and the committee found insufficient evidence that it was ever totally self-sustaining.

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ABSTRACT: The California Bird Records Committee reached decisions on 185 records involving 192 individuals of 80 species and three species groups (Singer et al. 2016), endorsing 151 records of 157 individuals. The first accepted state records of the Common Scoter (*Melanitta nigra*) and Kelp Gull (*Larus dominicanus*) are outlined in this report, bringing California's total list of accepted species to 663, of which 11 are established introductions. Other notable records detailed in this report include the state's second of Tristram's Storm-Petrel (*Oceanodroma tristrami*) and Couch's Kingbird (*Tyrannus couchii*), third and fourth of the Nazca Booby (*Sula granti*), fourth of the White-chinned Petrel (*Procellaria aequinoctialis*) and Bridled Tern (*Onychoprion anaethetus*), and sixth and seventh of the Varied Bunting (*Passerina versicolor*).

This 41st report of the California Bird Records Committee (CBRC), a committee of Western Field Ornithologists, summarizes evaluations of 185 records involving 192 individuals of 80 species and three species groups. The committee accepted 151 of the 185 records for an acceptance rate of 81.6% involving 157 individuals of 68 species and three species groups. We consider 20 records of 16 individuals to represent returning or continuing birds that were accepted previously. Twenty-eight records, involving 30 individuals of 22 species, were not accepted because the identification was not considered to be substantiated; four records, involving three individuals of three species, were not accepted because natural occurrence was questionable; and two records of two species were not accepted because the date and/or location could not be established. Reports of multiple individuals together are given the same record number for purposes of review; we report the total number of accepted individuals, which may be greater than the number of accepted records. Although the majority of the records in this report pertain to birds documented in 2015, the period covered spans the years 1855 to 2016.

The committee has recently accepted first California records of the Purple Sandpiper (*Calidris maritima*) and the Buff-breasted Flycatcher (*Empidonax fulvifrons*) from 2016, the details of which will be published in the next report. However, the recent lumping of the Thayer's Gull (previously *Larus thayeri*) with the Iceland Gull (*L. glaucoides*) by the American Ornithological Society (Chesser et al. 2017) resulted in the loss of one species from the state list. These changes bring the total number of accepted species on California's

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state list as of July 2017 to 665. Potential additions to the state list currently being considered by the committee are of Jouanin's Petrel (*Bulweria fallax*) and the Kermadec Petrel (*Pterodroma neglecta*).

Species account headings are organized with English and scientific names first, followed in parentheses by the total number of individuals accepted in California (as of this report) and the number of new individuals accepted in this report. Following the heading are accounts for records accepted (as applicable), followed by records not accepted because the identification was not established, the date and/or location was uncertain, or natural occurrence was questionable (as applicable). A double asterisk (**) following the number of accepted state records indicates that the species has been reviewed for a restricted time span, so the number of accepted records does not represent the total number of California records. Date ranges for each record are those accepted by the CBRC. When the observer(s) who originally discovered the bird provided documentation, their initials are listed first, in italics, followed by the initials of subsequent observers supplying documentation. A dagger (†) following an observer's initials indicates submission of a photograph, (S) indicates submission of a sketch, (S) indicates submission of audio recordings, (V) indicates submission of a video, and (#) precedes a specimen number. The absence of a symbol following the observer's initials indicates the submission of a written report without other documentation. Additional details regarding minutiae of formatting and abbreviations may be found in previous CBRC reports, available at www.californiabirds.org, and in CBRC (2007). Also available at the website is the California bird list, the review list, an online form for submitting documentation for review species, committee news, recent photos of rare birds, the CBRC's bylaws, a form for querying the CBRC database, and all annual reports from 1996 through 2014. Age terminology follows that used by CBRC (2007).

Observers are encouraged to submit documentation for all species on the CBRC's review list to the CBRC's secretary (e-mail: secretary@californiabirds.org); an online reporting form is available on the CBRC website (www.californiabirds.org). Documentation of all CBRC records is archived at the Western Foundation of Vertebrate Zoology (www.wfvz.org) and is available for public review by appointment.

BLACK-BELLIED WHISTLING-DUCK *Dendrocygna autumnalis* (33, 1). An adult was at Frank G. Bonelli Regional Park, LA, 2 Jul 2015 (RH†, TAB†, JSF†, AEK†, TGM†, JOL†; 2015-058). Some committee members expressed concern about the natural occurrence of this species on the coastal slope, but photos clearly show that the legs were unbanded and toes unclipped, and that the feet and flight feathers were undamaged, arguing against an origin from captivity. In addition, the occurrence of this individual in July fits the seasonal pattern of previous California records from the Salton Sink, and this sighting followed several sightings in Arizona west of the species' normal range, including a few in the Colorado R. valley. **NATURAL OCCURRENCE QUESTIONABLE:** One at Howarth Park in Santa Rosa, SON, 2–9 Aug 2015 (VM†, RoSt†, ST†, RAR; 2015-076) was refound just 14.5 km away at Roberts Lake, SON, 21 Sep–3 Nov 2015 (AW†, ESH, LB; 2015-121). A majority of CBRC members agreed that the bird's tameness, occurrence at an urban lake far north of any previous records in California, and lengthy duration of its stay suggested it may have been an escapee.

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FULVOUS WHISTLING-DUCK *Dendrocygna bicolor* (6**, 6). Once a fairly common breeder in the San Joaquin and Imperial valleys and along the southern coastal slope, this species was essentially extirpated from California by 2010, probably because of conversion of wetlands to agriculture, overhunting, and exposure to toxins (Hamilton 2008). Since it was added to the CBRC review list in 2011, six individuals at the San Jacinto Wildlife Area, RIV, 3–7 Jan 2015 (RMat; 2015-006) were the first to be documented. At least five of the six were shot by hunters. The question of natural occurrence was raised because when the species was still common in California in summer, winter occurrence was rare (Hamilton 2008). This record, however, coincided with the appearance of several at unusual locations in Arizona and so may have represented part of a wider northward movement.

EMPEROR GOOSE *Anser canagicus* (94, 1). A juvenile near the lower Smith R., DN, 5–9 Oct 2015 (DBet, LBr†, RFow†, DK-B†, PSet; 2015-110) was feeding in a pasture with two Greater White-fronted Geese (*A. albifrons*). IDENTIFICATION NOT ESTABLISHED: A goose observed flying north over County Line Rd., ~8 km east of Hershey, COL/YOL, 1 Feb 2015 (2015-073) with a skein of 60 Greater White-fronted Geese may well have been an Emperor but was not described sufficiently to convince enough members that a hybrid or possibly a blue Snow Goose (*A. caerulescens*) was not seen.

TRUMPETER SWAN *Cygnus buccinator* (147, 0). IDENTIFICATION NOT ESTABLISHED: A swan specimen at the University Museum of Zoology, Cambridge, England (UMZC #12/Anat/25/b/l) was collected at the Sutter Buttes, SUT, 5 Feb 1855 (1855-801) and identified by the collector as a Trumpeter Swan. A committee member recently discovered the existence of this specimen and requested that the curator verify the bird's identity. While measurements of the bill nail fit the Trumpeter, the bill length and wing chord fit the Tundra Swan (*C. columbianus*), and plumage and facial features were inconclusive.

COMMON SCOTER *Melanitta nigra* (1, 1). The breeding distribution of the Common Scoter extends along the northern shore of Eurasia from Iceland to the mouths of the Olenek and Lena rivers in northern Russia, and the species winters primarily along the west coast of Europe, with no records along the east coast of Asia (Reeber 2015). The only previous North American records come from Greenland (Boertmann 1994). This led to the expectation that the first Common Scoter for the North American mainland would show up along the eastern seaboard. Thus it came as a surprise when an adult male visited the harbor at Crescent City, DN, 25 Jan–13 Feb 2015 (BBo†, RFow†, TFH†, RHol†, DK-B, CAM†, BMat, GMcC, DSS†, BS†, SLS; 2015-013; Figure 1). Even more surprising was that the second also showed up in the western United States, when another male, probably in its second winter, was discovered at Siletz Bay along the Oregon coast 13 Nov–5 Dec 2016 (Oregon Birds Records Committee 163.1-16-01).

WHITE-TIPPED DOVE *Leptotila verreauxi* (0, 0). NATURAL OCCURRENCE QUESTIONABLE: One on a cruise ship from the San Pedro Channel, LA, to at least the Oregon border, 26–27 Apr 2015 (NH†; 2015-031), presumably came aboard during one of the ship's known stops at west Mexican ports of call days before entering U.S. waters. The committee unanimously considered this bird ship-assisted.

GROOVE-BILLED ANI *Crotophaga sulcirostris* (12, 1). One at Coso Junction, INY, 27-28 Oct 2015 (SB†, TAB†, JHe†, THe†, CHo†, RHo; 2015-123; Figure 2) constituted a first for Inyo County, the northernmost California record, and one of few records west of the continental divide that are north of 36° N latitude (Mlodinow and Karlson 1999, Meyers 2008).

BROAD-BILLED HUMMINGBIRD *Cynanthus latirostris* (90, 3). Females at

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Figure 1. Mainland North America's first Common Scoter was a male in the harbor at Crescent City, Del Norte Co., 25 Jan–13 Feb 2015 (2015-013). In the male Black Scoter (*Melanitta americana*), the bill protuberance is knob-shaped and entirely yellowish, whereas in the Common Scoter the bill profile is concave, with the protuberance mostly black and a yellow patch limited to the culmen.

Photo by Gary Woods

Chiriaco Summit, RIV, 9 Sep 2015 (JCSi†, JSz†, JLD; 2015-092) and in Goleta, SBA, 31 Oct–4 Nov 2015 (PK, JH†; 2015-155) followed a well-established pattern of fall vagrancy to southern California. A female at the Smith R. National Recreation Area, DN, 27 Jun 2015 (CRy†, ADB; 2015-071) was unexpected as there were only two previous records from northwestern California (both in Humboldt County), and



Figure 2. This Groove-billed Ani at Coso Junction, Inyo Co., 27–28 Oct 2015 (2015-123) provided a first county record. The mix of brown and black flight feathers indicates a hatch-year bird (Pyle 1997).

Photo by Thomas A. Benson

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only two previous June records for the state: for Sonoma, SON (2004-105; Cole et al. 2006), and Borrego Springs, SD (2009-102; Pyle et al. 2011).

YELLOW RAIL *Coturnicops noveboracensis* (86**, 1). A Yellow Rail nest found near Bridgeport, MNO, on 15 Jun 1948 was collected on 22 Jun (JED; 1948-801; SBCM #9433). The bird itself was not seen, though it was heard calling nearby, and the identification was confirmed through comparison of the collected eggs with egg specimens of this species held at the WFVZ (WFVZ #139804). The committee ceased review of new occurrences of this species in 2003.

WILSON'S PLOVER *Charadrius wilsonia* (25, 1). A female was on the shore of San Diego Bay, SD, 12 May 2015 (RTP†; 2015-035). Fourteen of California's 25 records are from southern coastal San Diego County.

UPLAND SANDPIPER *Bartramia longicauda* (31, 1). One on Southeast Farallon I., SF, 21–24 Aug 2015 (AJSt†, JRT†; 2015-086) furnished the seventh record for this location.

BAR-TAILED GODWIT *Limosa lapponica* (44, 1). An adult male was at the south spit of Humboldt Bay, HUM, 12 Aug 2015 (MLat†; 2015-080). The rump and underwings were not seen, so the subspecies could not be determined.

HUDSONIAN GODWIT *Limosa haemastica* (53, 2). An alternate-plumaged male was at Clam Beach, HUM, 25–26 May 2015 (RFow†; 2015-065). One in basic plumage, also presumably a male given its small size in comparison with nearby shorebirds, was at Struve Slough and lower Harkins Slough, SCZ, 11–26 Oct 2015 (ARi†, DVP, LBH, GK†, NLv†; 2015-117).

CURLEW SANDPIPER *Calidris ferruginea* (49, 3). Three individuals were at New Chicago Marsh in Don Edwards NWR, SCL, in 2015. A well-described basic-plumaged bird on 5 Jul (MJM; 2015-060) was followed by another in basic plumage on 13 Sep (BPot†, JMu†; 2015-100). Though the committee agreed that these two sightings could have been of the same first-summer individual, the regularity with which this location is covered and the nearly two-month gap between sightings suggests that the birds were different. The third, a juvenile, was present 11–13 Sep 2015 (WB†, BAM†; 2015-093). **IDENTIFICATION NOT ESTABLISHED:** The record of one in nonbreeding plumage along the Eel R., HUM, 17 Oct 2013 (2013-286) was not accepted after three rounds of voting. The committee decided that the documentation did not adequately eliminate the possibility of a Stilt Sandpiper (*C. himantopus*).

LITTLE STINT *Calidris minuta* (24, 1). One in alternate plumage was at Tulare Lake Drainage District ponds ~13 km northwest of Corcoran, KIN, on 11 July 2015 (MEST†; 2015-064). It may have been seen again in the same location on 19 July, but adequate documentation was lacking and the committee did not accept its occurrence on the later date.

LONG-BILLED MURRELET *Brachyramphus perdix* (31, 1). One was at sea just outside of the Humboldt Bay inlet, HUM, 20 Jul 2015 (CSS†; 2015-075). This date coincides with the species' predominant window of occurrence (mid-July through August) in California.

BLACK-HEADED GULL *Chroicocephalus ridibundus* (28, 2). A winter adult first found at the Modesto Regional Water Treatment Plant ponds, STA, 13 Dec 2015, was refound on 26 Dec 2015 at the nearby Ceres Water Treatment Plant, STA, where it remained until 4 Jan 2016 (TAB†, JGa†, CL†, CAM†, MJR†, JCS†, SBT†, JLD; 2015-149). This individual represents only the sixth record away from California's immediate coast. Another winter adult was in the harbor at Crescent City, DN, 23–26 Nov 2015 (RCo; 2015-160).

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LITTLE GULL *Hydrocoloeus minutus* (118, 2). A winter-plumaged adult was at sea with a flock of Bonaparte's Gulls ~11.8 km southwest of the Santa Ana R. mouth, ORA, 10 Jan 2015 (JLD, TAB†, AKH†; 2015-003). A first-summer bird was at an evaporation pond near Stratford, KIN, 22 Jun–12 Jul 2015 (MES†, PB†, BJG†, JR, GW†; 2015-056). IDENTIFICATION NOT ESTABLISHED: One in juvenal plumage was reported 4.8 km off Dana Pt., ORA, 20 Dec 2014 (2014-170). Because the retention of the dark back feathers of juvenal plumage into December (when a first-winter Little Gull should have a pale gray back) is atypical, the committee decided that the observation was too brief for certain identification. A record of a first-winter Little Gull from Red Hill, along the south shore of the Salton Sea, IMP, 15 Jan 2015 (2015-007), lacked detail sufficient to eliminate Bonaparte's Gull (*Chroicocephalus philadelphia*) conclusively.

ICELAND GULL *Larus glaucooides* (23, 1). An adult with white primary tips was seen on the American R., SAC, 2 Jan 2015 (CG†; 2015-001). IDENTIFICATION NOT ESTABLISHED: Reports of two first-cycle individuals at the Teapot Dome Landfill 9 km southwest of Porterville, TUL, 9–10 Jan 2015 (2015-008) and another at the Ogier Ponds, 6 km northwest of Morgan Hill, SCL, 18–21 Feb 2015 (2015-072) typified the problems the CBRC has experienced with reports of first-cycle birds. Traditionally, the committee has conservatively accepted only the palest first-cycle individuals (Hampton 2013). First-cycle birds near Fernbridge, HUM, 12 Dec 2013 (2013-291) and Richardson Bay, MRN, 31 Jan 2015 (2015-023), though pale, were too poorly photographed to allow their subtleties to be adequately assessed. A very white immature bird at the Ogier Ponds, SCL, 22 Feb 2015 (2015-018), may have been a leucistic gull of another species. Also, in late winter, feather wear and bleaching can give a false impression of a gull's initial paleness. In light of concerns regarding the data that supported recognizing the Iceland and Thayer's (formerly *L. thayeri*) gulls as separate species in the first place, and reflecting the probability that *L. glaucooides kumlieni* represents a highly variable group of intergrades between nominate Iceland and Thayer's, the American Ornithological Society has lumped the Thayer's Gull into the Iceland Gull (Chesser et al. 2017). As a result, the CBRC will not review reports of the Iceland Gull after 2016.

SLATY-BACKED GULL *Larus schistisagus* (58, 1). An adult was with other gulls at Vasona Lake County Park, SCL, 28 Jan–2 Feb 2015 (GZ†, WGB, MJM†; 2015-014). This was the only record of a Slaty-backed Gull submitted from California in 2015, a reduction from the preceding eight years in which at least three individuals had been accepted each winter.

KELP GULL *Larus dominicanus* (1, 1). Representing the first record of this Southern Hemisphere gull for the Pacific coast of North America north of Manzanillo, Colima (Gomez de Silva et al. 2013), three sightings of an adult (or near adult) in the spring of 2015 were considered by the committee to represent the same individual. First reported at Año Nuevo SB, SM, 27 Apr 2015 (BoSt†; 2015-033), it was refound at the mouth of Pilarcitos Cr. in Half Moon Bay, SM, 20 May 2015 (AJ†; 2015-034), then again on Southeast Farallon I., SF, 24–29 May 2015 (EdJ†, PWa; 2015-037; Figure 3). There are several previous Kelp Gull records for North America, with breeding (and hybridization with the Herring Gull [*L. argentatus*]) recorded along the coast of the Gulf of Mexico (Dittman and Cardiff 2005). The California bird had worn flight feathers and was missing a white mirror on primary 10 (as in only a small percentage of Kelp Gulls), but otherwise it appeared typical for a Kelp Gull. Characters that distinguish the Kelp Gull from similar dark-backed species, namely, the Lesser Black-backed Gull (*L. fuscus*), Yellow-footed Gull (*L. livens*), and Great Black-backed Gull (*L. marinus*), include yellowish to greenish legs and a slaty blackish mantle that does not contrast strongly with the black wingtips (Howell



Figure 3. California's first Kelp Gull, seen at three widely spread locations, is shown here on Southeast Farallon I., San Francisco Co., 24–29 May 2015 (2015-037). Photographs from all three locations showed worn flight feathers and a missing white mirror on primary 10.

Photo by Edward J. Jenkins

and Dunn 2007). IDENTIFICATION NOT ESTABLISHED: Positive identification of a dark-backed adult gull at Humboldt Bay, HUM, 5–10 Aug 2015 (2015-170) was not possible because of the great distance at which it was photographed.

BRIDLED TERN *Onychoprion anaethetus* (4, 1). One was at Bolsa Chica Ecological Reserve, ORA, 23 Jun 2015 (TF-H††, JeB†, TAB†, RSct; 2015-054).

ARCTIC LOON *Gavia arctica* (13, 1). One was seen on the ocean off Big Lagoon, HUM, on five occasions 29 Sep–28 Nov 2015, (TMcK†; 2015-142). Several members expressed concern about the distance to the bird and blurriness of some photos, but images clearly show the distinct white flank patches that are critical for distinguishing this species from the Pacific Loon (*G. pacifica*). IDENTIFICATION NOT ESTABLISHED: A loon in Upper Newport Bay, ORA, 14 Dec 2015 (2015-005) was thought to be a Pacific Loon by most members. The white from the belly extended relatively high on the bird's sides, but little to no white was visible on the flanks.

YELLOW-BILLED LOON *Gavia adamsii* (100, 1). An adult in alternate plumage migrated south past Ocean Beach, SF, on 24 Oct 2015 (PSa; 2015-168). IDENTIFICATION NOT ESTABLISHED: A supposed Yellow-billed Loon in Mendocino Bay, MEN, on 26 Dec 2014 (2014-182) was thought by most members to be a Common Loon (*G. immer*).

CHATHAM ALBATROSS *Thalassarche eremita* (1, 0). IDENTIFICATION NOT ESTABLISHED: A first-cycle bird seen over Bodega Canyon, MRN, 29 Jul and again on 10 Sep 2000 (2000-165) had been accepted as a Shy Albatross (McKee and



Figure 4. This White-chinned Petrel off Moss Beach, San Mateo Co., 15 Sep 2015 (2015-144) had a more extensive white chin patch than those previously recorded in California.

Photo by Mary Gustafson

Erickson 2002) at a time when the Chatham (*T. eremita*), Salvin's (*T. salvini*), and White-capped (*T. cauta sensu stricto*) albatrosses were considered conspecific under this name. After these taxa were split, this record was re-evaluated as a Chatham Albatross, not accepted as such, then evaluated as a Salvin's/Chatham Albatross; see the following account for a detailed discussion of the record.

SALVIN'S/CHATHAM ALBATROSS *Thalassarche salvini/eremita* (1, 1). In light of updated identification criteria for immature Chatham, Salvin's, and White-capped albatrosses, particularly differences in bill coloration (Howell 2009, 2012), the committee reassessed documentation of the first-cycle bird seen over Bodega



Figure 5. During netting for Ashy Storm-Petrels (*Oceanodroma homochroa*), two Wedge-rumped Storm-Petrels of the Peruvian subspecies *kelsalli* were captured on Southeast Farallon Island, San Francisco Co., in 2015: the first on 19 April (2015-041), the second, shown here, on 20 May (2015-042).

Photo by Daniel Johnston

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Canyon, MRN, on 29 Jul and 10 Sep 2000 (2000-165). However, in the descriptions and photographs, variation in bill coloration is too great for the committee to identify the bird as either a Chatham (bill of immature yellow or orange) or a Salvin's (bill of immature gray). Therefore, the committee voted to accept it as representing the species pair Salvin's/Chatham Albatross (CJC, MWE†, AME, LH, JL†, MSM†, TMcG, EPr†, DEQ†, RMS†, DLS, SBT†; 2000-165A) and not necessarily the same individual now accepted as a Chatham Albatross (Singer et al. 2016) in the same area a year later on 27 Jul 2001. This record may be reconsidered yet again as field identification criteria evolve.

WHITE-NECKED PETREL *Pterodroma cervicalis* (0, 0). IDENTIFICATION NOT ESTABLISHED: Distant, blurry photos of a seabird flying past Pt. Pinos, MTY, 24 Aug 2015 (2015-084) are inadequate to identify it. The observer was unable to identify the bird at the time, but his description and sketch suggest that he saw a petrel of the genus *Pterodroma*, either a White-necked or a Juan Fernandez (*P. externa*), neither of which is yet recorded in California, although the remnants of hurricane Newton did bring one to Tucson, Arizona, on 7 Sep 2016 (http://www.azfo.net/gallery/2016/html08/Juan_Fernandez_Petrel_PimaCounty_Gibbons_07_September_2016_636092926978544681.html). Distinguishing these two similar species can be difficult when the plumage of a Juan Fernandez Petrel becomes worn or the bird is in molt, exposing the white bases to the nape feathers and giving the appearance of a white collar as in the White-necked Petrel (Spear et al. 1992, Howell 2012). The two most reliable features for identifying the White-necked Petrel are the more extensive black lesser primary coverts on the underwing creating a broader black leading edge to the outer wing and the black cap contrasting more sharply against the white nape (Spear et al. 1992, Howell 2012). Although these features were sketched by the observer, the committee prefers diagnostic photos or a specimen to confirm a first state record.

WHITE-CHINNED PETREL *Procellaria aequinoctialis* (4, 1). One was well photographed 30 km west-southwest of Moss Beach, SM, 15 Sep 2015 (MGut, VLe†, PSv†; 2015-144; Figure 4). California's three previous White-chinned Petrels had small, inconspicuous white chin patches; in contrast, the one in 2015 had the chin extensively white, suggesting that it was from an Atlantic or Indian Ocean population (Howell 2012).

WEDGE-TAILED SHEARWATER *Ardenna pacifica* (9, 1). One at Pt. La Jolla, SD, 17 Jul 2015 was well described and compared to nearby Sooty Shearwaters (*A. grisea*) and Black-vented Shearwaters (*Puffinus opisthomelas*) (PEL; 2015-063). This largely tropical species can be fairly common along the west coast of southern Mexico, so it is not too surprising that one ventured north during 2015 when the sea-surface temperatures off the California coast were unusually warm.

GREAT SHEARWATER *Ardenna gravis* (16, 2). One was seen on an organized whale-watching trip ~4.8 km west of Moss Landing, MTY, 7 Aug 2015 (KSpt†; 2015-079). Another was found on an organized pelagic trip 22 km west-northwest of Ft. Bragg, MEN, 18 Oct 2015 (RFow†, EAE†, KAH, RJK†; 2015-119).

WEDGE-RUMPED STORM-PETREL *Oceanodroma tethys* (12, 4). Two were captured on Southeast Farallon I., SF: the first on 19 Apr 2015 (PWa†, EGrt; 2015-041) was banded, while the second on 20 May 2015 (PWa, DJo†, EGrt; 2015-042; Figure 5) was too small for the bands available. The relatively short measurements of both birds indicate that they were the smaller Peruvian subspecies *kelsalli* (Howell 2012). Another Wedge-rumped Storm-Petrel was with a large mixed-species flock of storm-petrels at Cordell Bank, MRN, 22-23 Aug 2015 (SNGH†; 2015-090). On the first day it was noticed in photos of the flock only after the photographer was back on shore. Prior to 2015, Monterey Bay was the farthest north that this spe-

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cies had been encountered. A strengthening El Niño–Southern Oscillation and the extremely warm waters off California associated with “the Blob” (Kintisch 2015) may have contributed to this species pushing so far north. One of two storm-petrels with white rumps seen on 16 Sep 2015 at Santa Lucia Bank, ~48 km west-southwest of Morro Bay, SLO (BLSt, PWF; 2015-096), was accepted as a Wedge-rumped. IDENTIFICATION NOT ESTABLISHED: Although the other storm-petrel at Santa Lucia Bank on 16 Sep 2015 (2015-096A) was thought to be a Wedge-rumped by the initial observer, the photos of this bird were distant and a majority of the committee decided they were inconclusive.

TRISTRAM’S STORM-PETREL *Oceanodroma tristrami* (2, 1). One was found dead during routine surveys of predation on storm-petrels on Southeast Farallon I., SF, 18 Mar 2015 (RBr†; 2015-025). The carcass has been transferred to the California Academy of Sciences, San Francisco (CAS ACC7136), but as of December 2017 the specimen had not yet been prepared (M. Flannery pers. comm.). The only other accepted record for North America and the eastern Pacific is of a live bird captured on this same island on 22 Apr 2006 (2007-162; Warzybok et al. 2008). The wing on that bird was a full centimeter longer than the bird found in 2015, attesting to their being different individuals.

MAGNIFICENT FRIGATEBIRD *Fregata magnificens* (51**, 10). Warm ocean temperatures brought an influx of juveniles to California in the summer of 2015. The first was at Batiquitos Lagoon, SD, 15 Jun 2015 (TRy†; 2015-045). One at Ramer Lake, IMP, 20 Jun 2015 (GMcC; 2015-047) was considered a different individual from one at the same location 28 Jun 2015 (EHo†; 2015-057). On 21 Jun 2015, single individuals were at Ventura Harbor, VEN (JBa†; 2015-048), 5.1 km northwest of Rocky (or Palos Verdes) Pt., LA (ECo†; 2015-049), and Lake Murray, SD (APo†; 2015-050). Boat passengers saw another over the Nine Mile Bank, ~18 km west of Pt. Loma, SD, 17 Jul 2015 (TAB†, DPo, BRi†; 2015-067). One was flying over Goleta Beach, SBA, 29 Jul 2015 (TTu†; 2015-070). One was perched on a snag at Salton Sea SRA, RIV, 6 Aug 2015 (RMcK†, CMcG†; 2015-077) before flying east over the Indio Hills. The last was feeding on discarded bait fish over the Pt. Loma kelp beds, ~2.5 km southwest of the mouth of the San Diego R., SD, 25 Aug 2015 (JJa†; 2015-083). IDENTIFICATION NOT ESTABLISHED: Records of one bird in La Jolla, SD, 16 Jun 2015 (2015-046) and two in Goleta, SBA, 22 Jun 2015 (2015-052) were not accepted as Magnificent Frigatebirds and were re-evaluated as Magnificent/Great/Lesser Frigatebird (2015-046A and 2015-052A, respectively); see below.

MAGNIFICENT/GREAT/LESSER FRIGATEBIRD *Fregata magnificens/minor/ariel* (9, 3). A frigatebird was observed in silhouette flying south over the cliffs near the Scripps Institution of Oceanography, La Jolla, SD, 16 Jun 2015 (JMi; 2015-046A). Two frigatebirds photographed with a phone while flying over Goleta, SBA, 22 Jun 2015 (DMcC†; 2015-052A) were not identifiable to species. The time of year suggests that all three of these were Magnificent Frigatebirds, but the committee is taking a conservative approach to accepting frigatebird records to species unless there is substantive evidence to support species identification.

MASKED BOOBY *Sula dactylatra* (22, 1). A moribund subadult was found at Doheny State Beach at Dana Pt., ORA, 27 Jan 2015 (TLe†, KLG†, DGo†, JWet; 2015-012). The bird died the following day and became California’s first Masked Booby specimen (LACM #120096). Dissection revealed the bird was male and had died from starvation. California records likely pertain to the subspecies *personata*, which has breeding colonies as close to California as the Alijos Rocks off Baja California Sur (Howell and Webb 1995). Measurements of the Dana Pt. specimen are consistent with *personata* and too large for nominate *dactylatra*, which breeds in the Caribbean and Atlantic (K. Garrett pers. comm.).



Figure 6. This immature Red-footed Booby was found near Platform Eureka, 15 km southwest of the Huntington Beach Pier, Orange Co., 19 Sep 2015 (2015-098). Like many boobies found along the California coast, it had swallowed a fishhook.

Photo by Thomas A. Benson

NAZCA BOOBY *Sula granti* (3, 1). One adult on Anacapa I., VEN, 20–21 May 2015 (THa†, JBa†; 2015-036) was initially thought to be a Masked Booby, but photos taken the second day showed it to have an orange bill typical of the Nazca Booby.

MASKED/NAZCA BOOBY *Sula dactylatra/granti* (20, 2). A badly decomposed first-year bird was found at McGrath State Beach, VEN, 21 Jun 2015 (JHo, CDu†, KLG; 2015-125). We have been unable to get information from the California Department of Fish and Wildlife, which last had custody, on this specimen's disposition. An adult was observed from a whale-watching boat over Carlsbad Canyon, SD, 17 Jul 2015 (JMcM; 2015-089). The bird was ~1 km away and so too distant to be identified to species.

RED-FOOTED BOOBY *Sula sula* (26, 7). Seven records in 2015, the most the committee has accepted in a single year, were most likely a result of the strengthening El Niño–Southern Oscillation. All were immatures and six of the seven died. One at Shelter I. in San Diego Bay, SD, 5–6 Jul 2015 (JMcD†, LMD†, TF-H, AEK†, GMcC, JMcM†, GNu†, KRo†, JTS†; 2015-059) appeared weak and possibly sick, so it was captured and taken to a rehabilitation center where it eventually died (SDNHM #54598). A few members raised the question of ship assistance, but the majority of the committee agreed that even if the bird rode a boat into the marina, it is at least as likely the bird got on the boat in California waters as not. One on the pier at Newport Beach, ORA, 23 Jul 2015 (SEb†, KLG†, SKa†; 2015-069) was taken to a rehabilitation center, where it died three days later (LACM #120211). One found moribund at Newport Beach, ORA, 2 Sep 2015 (KLG†, SKa†; 2015-087) was taken to a rehabilitation center, where it died later that day (LACM #120265). One found emaciated at Redondo Beach, LA, 13 Sep 2015 (KCl†, KLG, SKa†, BSk†; 2015-094) was taken to a rehabilitation center, where it was eventually euthanized on 27 Dec 2015 (LACM #120307). One landed on a boat at the 277 Bank ~25 km southeast of Santa Catalina I., LA, 13 Sep 2015 (AKB†; 2015-097). It rode the boat into the harbor at Dana Pt., ORA, and remained there until it died on 15 Sep 2015. The carcass was not salvaged. One was found near Platform Eureka, 15 km southwest



Figure 7. California's second Couch's Kingbird was at Sunset Park in Visalia, Tulare Co., 12 Nov 2015–18 Jan 2016 (2015-137).

Photo by Martin Meyers

of the Huntington Beach Pier, ORA, 19 Sep 2015 (TAB†, ABL†, JLD; 2015-098; Figure 6). It had evidently swallowed a fishhook, having 10 m of fishing line dangling from its mouth. One found at Mission Bay, SD, 24 Sep 2015 (ASa†, PUn; 2015-172) was taken to a rehabilitation center, where it later died (SDNHM #54756).

YELLOW-CROWNED NIGHT-HERON *Nyctanassa violacea* (68**, 3). The committee reviewed four reports corresponding to at least three individuals at Pt. Mugu Naval Air Station, VEN. The first report from 16 Sep 2010 was of two juveniles (DPe†, AJS; 2010-194), and on the basis of plumage progression a one-year old seen 20 Jul 2011 (DPe†, AJS; 2011-282) was considered to be one of those birds. Adults seen on 20 Jul 2011 (DPe†, AJS; 2011-094) and 16 Mar 2012 (DPe†, AJS; 2012-256) may have been the same individual that was found there on 13 Nov 2009 (2009-229). The Yellow-crowned Night-Heron was first detected at this location in 2007 (2007-131), with breeding confirmed in all subsequent years. The committee ceased reviewing new occurrences of this species in 2013.

GLOSSY IBIS *Plegadis falcinellus* (34, 2). An adult was with a flock of White-faced Ibises in a flooded field near the headquarters of the Sonny Bono Salton Sea NWR, IMP, 20 Jun 2015 (GMcC, MGr†; 2015-051). The flooded agricultural fields of the Imperial Valley have hosted the majority of California's recorded Glossy Ibises. A well-photographed adult in basic plumage at the Yolo Bypass, YOL, 18 Sep 2015 (JCS†, TE†; 2015-104) provided the first accepted record outside of the typical May-to-August window for occurrence and the first of a bird not in alternate plumage.

ROSEATE SPOONBILL *Platalea ajaja* (144, 7). An immature along the southeastern shore of the Salton Sea, IMP, 10 Jan–21 Mar 2015 (JFG†, BED†, TAB†, EGK†, GMcC; 2015-004) was the first reported in California since the winter of 2007–2008. The committee also accepted an older record of six immatures near Bluewater, ~16 km south of Parker Dam along the Colorado R., SBE, on 24 Jun 1973 (RAE; 1973-801). These six were part of the largest recorded invasion of the spoonbill into the Salton Sink and southwestern U.S., which occurred in the summer and fall of 1973 and, at the time, more than tripled the number of accepted records for California (Patten et al. 2003).

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BLACK VULTURE *Coragyps atratus* (10, 0). The CBRC inferred that one around Bolinas, MRN, 29 Jan–25 Apr 2015 (DSSt, PP†, MD†, RL†, GMcC, SBT†, MW†, JM†, SR†; 2015-015) and at Pt. Reyes, MRN, 10 May 2015 (AMe†; 2015-053) and 18 Jul 2015 (CAr†, PP; 2015-066) was the same bird seen the previous year in Sonoma County (2014-027, 2014-034, and 2014-061). Likewise, a Black Vulture seen ~1.5 km north of Plaskett, MTY, 14 May 2015 (GS; 2015-038) was thought to be the same one seen in Solvang, SBA, 30–31 Aug 2015 (WvD†; 2015-091) and around Morro Bay and San Luis Obispo, SLO, between 14 Dec 2015 and 28 Mar 2016 (JAN, HE†, TME†; 2015-171); this bird was considered to be the same individual first reported in Goleta, SBA, on 10 Sep 2009 (2009-156) and observed periodically every year since then between Ventura and Monterey counties.

MISSISSIPPI KITE *Ictinia mississippiensis* (50, 2). An immature was at the ponds along Dairy Mart Road, Tijuana R. valley, SD, 4–7 Apr 2015 (GMcC, PEL†, CAM†, TAB†, KR†, JTS†, TF-H†, MMT†; 2015-026). It represents California's earliest spring record by 6 weeks as well as the first spring occurrence of a bird in juvenal plumage. A second immature was at the South Coast Botanic Garden, LA, 10–13 Jul 2015 (SWo†, DMax†, CAM†, JLD; 2015-061).

COMMON BLACK HAWK *Buteogallus anthracinus* (10, 3). An adult was flying with Turkey Vultures (*Cathartes aura*) at Dos Palmas Preserve, RIV, 15 Mar 2015 (PS†; 2015-022). Remarkably, two adults were at the Palo Verde Ecological Reserve, RIV, 14 Apr–26 May 2015 with possible prospecting for a nest site documented in a video (MTo, CVO†, TAB†, CAM†, EH††§, JOZ, LS†; 2015-027).

ELF OWL *Micrathene whitneyi* (7**, 0). A nesting pair and third adult, 4–25 Apr 2015 (MGr†, EAE† ARA†; 2015-029) were at the location in Riverside County where the species has nested since 2010 (Johnson et al. 2012).

CRESTED CARACARA *Caracara cheriway* (19, 2). A juvenile at the Alamo R. Wetlands east of Brawley, IMP, 19 Jan–28 Feb 2015 (HW, JC, MW†, LS†, GMcC, JPS†, JLD; 2015-009) was only the fourth recorded in the Salton Sink and Imperial Valley. A subadult was well studied at L. Henshaw, SD, 18 Mar 2015 (GNu†; 2015-024). Most members considered the Crested Caracara at the Buena Vista Landfill, Watsonville, SCZ, 6 Jan 2015 (JF†; 2015-010) and at Half Moon Bay, SM, 10–28 Feb 2015 (AR, JoGa†, MdF†, SBT†, CL†, JM†; 2015-017) to represent the same individual first found in 2014 along California's central coast at Pescadero, SM (2014-030; see Singer et al. 2016). At its 2015 annual meeting the committee concluded that a Crested Caracara at Estero Bluffs SP and Los Osos, SLO, 29 Jun–20 Jul 2013 (MBu†, JWh†, TS†; 2013-109), was the same bird first reported at Pt. Mugu Naval Air Station, VEN, 19 Dec 2011 (2011-239; Pike et al. 2014) and widely seen on the coast from the Ballona Wetlands, LA, 13 Jan 2012 (2012-005) to Mace Blvd., south of Putah Cr., YOL/SOL, 16–17 Apr 2012 (2012-052; Pike et al. 2014). The committee considers the Crested Caracara at the Chula Vista Marina, SD, 7 Jan 2014 (FB; 2014-004), to be the same as one first documented in the Tijuana R. valley, SD, 9 Sep 2006 (2006-127; Heindel and Garrett 2008) and reported sporadically in the same general area through at least 10 Oct 2013 (2013-157; Rottenborn et al. 2016). **DATE AND/OR LOCATION UNCERTAIN:** An injured Crested Caracara left at the Acacia Animal Hospital in Escondido, SD, 31 Dec 2014 (2014-181) did not survive. The specimen was provided to the San Diego Natural History Museum, where Philip Unitt prepared it as a skin and skeleton (SDNHM #54585), but questioning of the hospital's staff revealed no data regarding the bird's location of origin, date of finding, or identity of the finder. Moreover, the specimen showed abnormalities beyond the injuries to one wing, such as malformed claws on one foot and an asymmetrical tail molt, that to some members of the committee suggested prior captivity.

EASTERN WOOD-PEWEE *Contopus virens* (14, 1). One calling bird captured

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and banded at Southeast Farallon I., SF, 4 Oct 2015 (KNN†, KMS, DMax§; 2015-112) constituted California's third record of a fall vagrant; the majority of California's Eastern Wood-Pewee records are from late spring and summer, when the species is more vocal and thus easier to identify.

YELLOW-BELLIED FLYCATCHER *Empidonax flaviventris* (29, 0). IDENTIFICATION NOT ESTABLISHED: The committee unanimously agreed not to accept a report from Ulistac Natural Area, SCL, 28 Sep 2015 (2015-114) despite an eye-ring shape suggestive of this species. The two photographs were inconclusive, and no descriptive information was provided, so all field marks necessary for identification of this species could not be evaluated.

DUSKY-CAPPED FLYCATCHER *Myiarchus tuberculifer* (103, 2). Wintering individuals were at the University of California, Santa Barbara, in Goleta, SBA, 3 Jan–19 Feb 2015 (LRB†, JLD, JMC†, DMC, PAGa†, HPR†, WvD§, WTF†, TAB; 2015-002) and at Gilman Park in Fullerton, ORA, 16 Mar–15 May 2015 (MH†, TF-H†, MMT†, RSc†, TAB†; 2015-021). IDENTIFICATION NOT ESTABLISHED: A *Myiarchus* was briefly observed and photographed at Moss Landing, MTY, 21 May 2015 (2015-039) before it flew off. Some committee members were concerned by the brevity of observation, the lack of information on vocalizations, and the late date. There is precedent, however, for a wintering Dusky-capped Flycatcher lingering this late into the spring (see Rottenborn et al. 2016).

SOCIAL FLYCATCHER *Myiozetetes similis* (0, 0). DATE AND/OR LOCATION UNCERTAIN: A photograph of a *Myiozetetes* flycatcher shared on iNaturalist.org was reportedly taken through a window of a residence in South El Monte, LA, 28 Oct 2015 (2015-132). Subsequent searches of the neighborhood by the birding community revealed clear differences between existing utility poles and those shown in the background of the photograph. Not only did the committee unanimously vote not to accept this record because of uncertainty regarding the reported location, but some members also commented that the similar Rusty-margined Flycatcher (*M. cayanensis*) could not be ruled out from the photograph.

COUCH'S KINGBIRD *Tyrannus couchii* (2, 1). One at Sunset Park in Visalia, TUL, 12 Nov 2015–18 Jan 2016 (SDS†§, JCS†, LST†, MAS†§, TAB†§, SLSt, EAE†, JTS†, KCK, MM†, THe†, JLD; 2015-137; Figure 7) established a first record for northern California and the second for the state as a whole. In its year of hatching, by the lack of notches on the outer primaries (Pyle 1997), the bird gave sharp “kip” call notes, as well as rolling “breer” calls, which are quite unlike the twittering vocalizations of the similar Tropical Kingbird (*T. melancholicus*).

THICK-BILLED KINGBIRD *Tyrannus crassirostris* (23, 0). One returned for its sixth winter at the mouth of Poggi Canyon in Otay Valley, Chula Vista, SD, 21 Nov 2015–31 Mar 2016 (PM†, MSe†, GMcC, EAE†; 2015-139), and another returned for its third winter in San Dimas, LA, 2 Nov 2015–8 Jan 2016 (AW†; 2015-165). Seventeen of the 23 accepted records of this species are of wintering birds, of which eight have returned for multiple winters.

BROWN SHRIKE *Lanius cristatus* (4, 0). IDENTIFICATION NOT ESTABLISHED: A shrike at Manchester SP, MEN, 5 Mar–22 Apr 2015 (2015-019) was initially reported as a Brown Shrike for the first three weeks of its stay and submitted to the CBRC as such. Initial photographs showed a relatively small shrike with a solid black mask, a gray crown contrasting with reddish-brown back, and no ventral barring, which suggested a male of *L. c. lucionensis* rather than the expected nominate subspecies, if the bird was indeed a Brown Shrike. Although not all Brown Shrikes recorded in North America, 16 as of 2015, have been identified to subspecies, all that have were *L. c. cristatus* (Pyle et al. 2015). However, a few birders suggested the bird may have been a Red-backed



Figure 8. This Dusky Warbler along Redwood Creek, Marin Co., 15–20 Oct 2015 (2015-116) was the 14th recorded in California.

Photo by Hannah Conley

Shrike (*L. collurio*, a species unrecorded at that time in North America), or a hybrid having Red-backed as a parent, and they sent photographs to experts experienced with Asian shrikes. Critical to an identification as a male Red-backed Shrike would be the appearance of the diagnostic black and white outer rectrices. The Mendocino shrike's prealternate molt was not yet completed before it presumably migrated; however, tail molt had progressed enough to show that this shrike lacked extensive white on the base of the outer rectrices, confirming that it was not a pure Red-backed Shrike.

The committee evaluated the Mendocino shrike as a Brown Shrike and unanimously voted not to accept it as that species, relying in large part on the exhaustive



Figure 9. This Gray-cheeked Thrush at Galileo Hill, Kern Co., 29 Sep–1 Oct 2015 (2015-105) was only the fourth recorded inland in California, three of which have come from this desert oasis.

Photo by Alex Abela



Figure 10. California's 14th Field Sparrow wintered in Ojai, Ventura Co., 19 Nov 2015–23 Apr 2016 (2015-140).

Photo by Thomas A. Benson



Figure 11. This Mourning Warbler at Ferry Park, San Francisco Co., 6–8 Oct 2015 (2015-106), represented the county's first mainland record—San Francisco's previous 66 Mourning Warblers occurred on Southeast Farallon Island.

Photo by Michael Park

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analysis by Pyle et al. (2015). Features most telling for eliminating the Brown Shrike consisted of the sharp contrast between the grayish head/nape and the reddish brown back and the blackish formative rectrices with pure white edges. Pyle et al. (2015) concluded that the most likely identification of this bird was a Red-backed Shrike × Turkestan (*L. phoenicuroides*) Shrike, a most unexpected occurrence because neither species, as of 2015, had been recorded in North America.

WHITE-EYED VIREO *Vireo griseus* (76, 1). A singing male at Bodega Bay, SON, 7–8 Jun 2015 (DWN†, ESH§, RAR; 2015-044) established the first record for Sonoma County. The majority of California's White-eyed Vireos have been singing males in late May or early June.

BLUE-HEADED VIREO *Vireo solitarius* (79, 3). Fall migrants were along Pine Gulch Cr., MRN, 1–3 Oct 2015 (MD, RDiG†; 2015-109) and at Bella Vista Park in Goleta, SBA, 13–14 Oct 2015 (PSc†, WFT†, DL†, AO†; 2015-113). A Blue-headed Vireo was observed in Bonsall, SD, 6 Nov 2014 (PT†; 2014-183) and again 27 Dec 2015 (PAGi, MS†; 2015-162). IDENTIFICATION NOT ESTABLISHED: The report of one at Monte Verde Park in Lakewood, LA, 12 Oct 2015 (2015-148) did not adequately eliminate a bright Cassin's Vireo (*V. cassinii*). The Blue-headed Vireo remains difficult for the committee to evaluate, so observers are encouraged to provide especially thorough documentation. See Heindel (1996) and Nelson et al. (2013) for identification criteria.

PHILADELPHIA VIREO *Vireo philadelphicus* (117, 1). A sight record from Fairhaven, HUM, 17–19 Sep 1994 (BDe; 1994-209) was accepted during its fourth and final circulation at the committee's 2016 annual meeting.

BLUE JAY *Cyanocitta cristata* (18, 1). One in Quincy, PLU, 18 Nov 2015–23 Apr 2016 (JCS†, SBT†, JLD; 2015-169) represented the tenth time this species has been acceptably documented wintering in California.

CAVE SWALLOW *Petrochelidon fulva* (11, 2). One was at the southeast end of the Salton Sea, IMP, 25 Jan 2015 (GMcC; 2015-011), and another was at El Dorado Regional Park, LA, 28 Nov 2015 (AKL†; 2015-143). The latter was the first for California away from the south end of the Salton Sea.

WINTER WREN *Troglodytes hiemalis* (21, 4). A fall migrant was at Horse Thief Spring, SBE, 11–12 Nov 2015 (MW, TAB†§; 2015-134). Wintering birds were at Clear Lake SP, LAK, 7 Nov 2015–10 Feb 2016 (BMc†§, JRW, BBa†; 2015-145) and San Luis Obispo Cr., SLO, 8 Dec 2015–10 Mar 2016 (TK§, CRy, BKS†, SBT, TAB†, WBK§, HE†; 2015-147). One at Carneros Cr. in Napa, NAP, 30 Dec 2015 (WS§, AG; 2015-161) may have been a late migrant. IDENTIFICATION NOT ESTABLISHED: The documentation for a report of one at the San Luis Reservoir SRA, MER, 1–10 Dec 2015 (2015-146) included two photos but no audio recordings, and several committee members expressed reservations about accepting this species on the basis of photos alone, especially as a well-documented Pacific Wren was at the same location at the same time.

DUSKY WARBLER *Phylloscopus fuscatus* (14, 1). One at Redwood Cr., MRN, 15–20 Oct 2015 was captured by mist net (HC†, DWNe†, SBT, AM†, PB†, MD†, JA†, GZ†; 2015-116; Figure 8). California's 14 records extend seasonally from 27 September to 3 November.

GRAY-CHEEKED THRUSH *Catharus minimus* (25, 1). One at Galileo Hill, KER, 29 Sep–1 Oct 2015 (JCS†, SLS, KH-L†, ARA†, KRo†; 2015-105; Figure 9) was the third for this well-birded desert oasis. California's records for this species are concentrated at a few well-covered locations where there is little or no understory vegetation and skulking birds are often detectable.

WOOD THRUSH *Hylocichla mustelina* (31, 1). One in Arcata, HUM, 28–31

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Oct 2015 (EBC, EAE†, RFow†, TMcK; 2015-124) established the first record for Humboldt County and northwestern California. Only about one-third of the state's records come from northern California.

CURVE-BILLED THRASHER *Toxostoma curvirostre* (34, 3). Up to two were along the Colorado R. at Black Meadow Landing, SBE, 3 Nov–21 Dec 2015 (CK†, TAB†; 2015-128), and another was at Bard, IMP, 21 Dec 2015–3 Jan 2016 (PEL, JTS†; 2015-158). **IDENTIFICATION NOT ESTABLISHED:** A sight record from Rancho Mirage, RIV, 2 Apr 2015 (2015-030) did not adequately exclude the similar Bendire's Thrasher (*T. bendirei*).

GRAY THRASHER *Toxostoma cinereum* (1, 0). **NATURAL OCCURRENCE QUESTIONABLE:** A Gray Thrasher was at Famosa Slough, SD, 2 Aug 2015 (JBr†, TH, LR†, TF-H†, MW†, CAD†, GMcC, TAB†; 2015-074; see this issue's inside front cover). This species is endemic to Baja California and is a fairly common resident from approximately 31° N to the peninsula's southern terminus (Howell and Webb 1995). Its northernmost limit along the Pacific coast is Ejido Eréndira (Unitt et al. 1995), ~180 km south of Famosa Slough. There are no previous records of vagrants. But eight reports to www.eBird.org, some supported by photographs, show the Gray Thrasher occurring since at least 2010 in Valle de Trinidad, ~45 km from the nearest edge of the previously known range. From 1926 to 1936 this valley received considerable attention from early 20th century collectors Chester Lamb, Griffing Bancroft, Laurence M. Huey, May Canfield, and Sam Harter, none of whom detected the species. So apparently the recent reports represent a genuine range expansion since the 1930s (P. Unitt pers. comm.). Valle de Trinidad is still ~200 km from Famosa Slough (and 140 km from the nearest border with California), but evidence of a range expansion suggests that wayward Gray Thrashers might be capable of crossing the border under their own power. As with other prospective vagrants from Mexico, however, the possibility of human assistance was a major factor in the decision not to accept this record. Photos of the Famosa Slough thrasher show stained tail feathers, a damaged bill, and a missing claw on one toe, all of which may betray previous captivity. The species is kept, albeit rarely, in cages and for sale in Baja California (K. Garrett and K. Rademaker pers. comm.).

EASTERN YELLOW WAGTAIL *Motacilla tschutschensis* (18, 0). **IDENTIFICATION NOT ESTABLISHED:** One reported from San Pablo Bay, SON, 27 Nov 2015 (2015-156) was not described well enough to rule out similar species. Additionally, the date falls well outside the Eastern Yellow Wagtail's established season of occurrence in California, as the 18 accepted records fall in a well-defined window from 27 August to 25 September (CBRC 2007, Tietz and McCaskie 2017).

WHITE WAGTAIL *Motacilla alba* (30, 1). An adult of the subspecies *ocularis* was at Rodeo Lagoon, MRN, 20–23 Oct 2015 (WL†, JM†, JA†, GZ†, KRS†, RL†, EC†, JLD; 2015-118).

BLACK ROSY-FINCH *Leucosticte atrata* (16, 0). **IDENTIFICATION NOT ESTABLISHED:** The report of one from High Lake above Cottonwood Basin, INY, 23 Jun 2015 (2015-055) was not accepted because of the brevity of the sighting and description, possibility of confusion with the Gray-crowned Rosy-Finch (*L. tephrocotis*), and unprecedented midsummer date. California's 16 accepted records fall between 11 November and 5 April (CBRC 2007).

COMMON REDPOLL *Acanthis flammea* (176, 2). One on Southeast Farallon I., SF, 12–13 Dec 2015 (RJ†; 2015-150) was the second recorded on the island. Another was at Chester, PLU, 18 Dec 2015–18 Jan 2016 (TAB†, ARA†, CD†, JLD; 2015-159).

SNOW BUNTING *Plectrophenax nivalis* (136, 5). Individuals were at Little R.

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State Beach, HUM, 3 Nov 2015 (GSL†, EAE†, TMcK, RFow†; 2015-130); Bear River Ridge, HUM, 4-7 Nov 2015 (KO†, CAM†, EF†; 2015-153); Charleston Slough, SCL, 5 Nov 2015 (GZ†, CL†, SCR, RWR†; 2015-133); Gold Bluffs Beach, HUM, 16 Nov 2015 (MMo†; 2015-135); and MacKerricher SP, MEN, 25 Nov–3 Dec 2015 (CV, SST†, KAH, RA†, GG†, DBe†, JCS†, RJK†, DF†, BeB, JLD; 2015-141).

CASSIN'S SPARROW *Peucaea cassinii* (54, 2). One was at Castaic, LA, (JOH†, ABL†, MW†, MM†, LS†, KLG†; 2015-040), 26–31 May 2015; another was at Bolinas Lagoon, MRN, 19 Sep 2015 (PP†; 2015-099).

FIELD SPARROW *Spizella pusilla* (15, 2). One at the Krotona Institute of Theosophy, Ojai, VEN, 19 Nov 2015–23 Apr 2016 (BSH, JGr, LY†, RMcM†, BOC†, JCS†, TAB†, SLS, SBT†, RSTe, DK-B†, JTS†, DPe†, KLG†, JeB†, JLD; 2015-140; Figure 10) was the first recorded in Ventura County. Inyo County's third wintered at Aspendell, INY, 27 Dec 2015–18 Mar 2016 (SLS, BS†, TAB†, DJH†, KNN†, NJO†, CGL†, GmC, CHo†, RHo†, JHe, CAM†, JLD; 2015-164).

LECONTE'S SPARROW *Ammodramus leconteii* (37, 1). One returned for its second winter at Abbott's Lagoon, MRN, 4 Oct 2015–26 Jan 2016 (TEG†, MDA†; 2015-129), and another was at Castaic Lagoon, LA, 22 Nov–17 Dec 2015 (DAB†, TAB†, DK-B†, SLS, JCS†, KLG†, JSF, JTS†, JLD; 2015-138).

RUSTY BLACKBIRD *Euphagus carolinus* (47**, 3). The CBRC reviewed reports of the Rusty Blackbird from 1972 through 1974, then ceased review because of the species' regularity of occurrence in California. In 2006, it resumed review of this species in response to a population decline and a resultant decline in California reports (Niven et al. 2004, CBRC 2007). One during the earlier period of review was at Orick, HUM, 3 Dec 1972 (RAE; 1972-801). More recently, one was at Glenshire Pond, Union Valley, NEV, 25 Jan–3 Feb 2015 (GH†, WC†, BMA†, JCS†; 2015-016); another was in Camarillo, VEN, 23 Nov 2015 (DVE†, DBu; 2015-175).

COMMON GRACKLE *Quiscalus quiscula* (97, 3). Individuals were at New Pine Creek, MOD, 21 Oct 2015 (DJ†; 2013-290), at Big Pine, INY, 24–27 Apr 2015 (THE†, JHe†, KH-L†, CHo†, RHo†, JLD; 2015-032), and at Baker, SBE, 8 Oct 2015 (BS†; 2015-111).

WORM-EATING WARBLER *Helmitheros vermivorum* (129, 3). Individuals were at Mojave Narrows Regional Park, SBE, 1–2 Oct 2015 (BD†, MW†; 2015-101); Primm Valley Golf Club, SBE, 10 Oct 2015 (TAB†, AEK†; 2015-108); and Cooper Gulch Park, Eureka, HUM, 20–30 Oct 2015 (TMcK, EAE†, SBT, RFow†; 2015-120).

LOUISIANA WATERTHRUSH *Parkesia motacilla* (19, 0). IDENTIFICATION NOT ESTABLISHED: The date of one reported at Pacific Beach, SD, on 22 Aug 2015 (2015-085) was within the range of accepted records, and the submitted photograph, while poor, clearly showed a waterthrush. However, most committee members were not satisfied that the written description adequately distinguished the bird from the Northern Waterthrush (*P. noveboracensis*).

BLUE-WINGED WARBLER *Vermivora cyanoptera* (50, 2). One landed on a boat on Monterey Bay, MTY, 24 May 2015 (KSp†; 2015-078), and another was found singing along the South Bank Trail in Carmel Valley, MTY, 10 Jun 2015 (RC†; 2015-068).

MOURNING WARBLER *Geothlypis philadelphia* (151, 3). One was at Montaña de Oro SP, SLO, 5 Jun 2015 (JSR†, JCC†; 2015-043); another was in Encinitas, SD, 14–16 Sep 2015 (JMcM†, TAB†, JTS†, ND†, ARA†, MB†; 2015-095). One at Ferry Park, SF, 6–8 Oct 2015 (MJR†, MSP†, GZ†, LP†, JA†, DWNe†, PSa†, RL; 2015-106; Figure 11) was the 67th recorded in San Francisco County but the first in the city itself.

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CAPE MAY WARBLER *Setophaga tigrina* (40**, 5). A singing male put in a brief appearance at Marina del Rey, LA, on the early date of 21 Apr 2015 (DSC§, MAS, SG; 2015-028). Other Cape May Warblers were on Santa Barbara I., SBA, 16 Jun 2015 (CDr†; 2015-082), at Redwood Shores, SM, 17 Sep 2015 (RSTh; 2015-152), on Pt. Reyes, MRN, 26 Sep 2015 (CC, ID†; 2015-102), and on Southeast Farallon I., SF, 15–26 Oct 2015 (first-year male banded; RJR†, JRT, KM†; 2015-166).

CERULEAN WARBLER *Setophaga cerulea* (19, 1). One well-documented immature male was at Samoa Park, HUM, 10–12 Oct 2015 (TMcK, EAE†, LP†, EHa†, DWNe†, RFow†; 2015-107), only the fourth Cerulean Warbler recorded in California in the 21st century.

GRACE'S WARBLER *Setophaga graciae* (70, 0). One at Greenwood Cemetery, SD, 15–18 Mar 2015 (NC†; 2015-020) and another at North Campus Open Space (formerly Ocean Meadows Golf Course) in Goleta, SBA, 18–30 Nov 2015 (PSct, MT†, DT†, GKi†, BMi, WBK†; 2015-154) returned for their fourth and third winters, respectively.

RED-FACED WARBLER *Cardellina rubrifrons* (25, 0). IDENTIFICATION NOT ESTABLISHED: The report of one from Thousand Oaks, VEN, 15 Jun 2015 (2015-062) was insufficient for a single-observer sight record.

VARIED BUNTING *Passerina versicolor* (7, 2). Less than a year after an adult male was found in Los Angeles County (2014-028; Singer et al. 2016), one in female-like plumage showed up at Fiesta I., Mission Bay, SD, 13 Oct 2015 (MSa†; 2015-131). Amazingly, a second individual in similar plumage came to a feeder on Pt. Loma, SD, 1–2 Nov 2015 (SBM†, KMa†, GMcC, TAB†, GNu†; 2015-127). Plumage differences, including the latter's fresher-appearing greater coverts, confirmed the two as different individuals. The acceptance of these three recent records from the coastal slope is notable, as California's first four records came from the interior deserts (CBRC 2007).

MISCELLANEOUS

The long-staying Northern Gannet (*Morus bassanus*; 2012-058) first seen at Southeast Farallon I., SF, 25 Apr 2012, the female Common Black Hawk (2008-053) resident near Santa Rosa, SON, since 14 Apr 2008, and the Curve-billed Thrasher (2012-091) found at Starlite Estates near Bishop, INY, on 11 Jun 2012 were all still present through 31 Dec 2015.

CORRIGENDA

In the CBRC's 40th report (Singer et al. 2016), the date for the Dusky-capped Flycatcher (2014-075) published as 20 Aug 2016 should have been 20 Aug 2014. The dates of the LeConte's Sparrow (2014-157) published as 30 Dec 2014–24 Jan 2015 should have been 20 Dec 2014–24 Jan 2015.

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MITOCHONDRIAL DNA SUGGESTS RECENT ORIGINS OF SUBSPECIES OF THE SHARP-SHINNED HAWK AND GREAT BLUE HERON ENDEMIC TO COASTAL BRITISH COLUMBIA AND SOUTHEAST ALASKA

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ABSTRACT: Genetic studies of subspecies endemic to Haida Gwaii (Queen Charlotte Islands) in British Columbia and the Alexander Archipelago of southeast Alaska have frequently found patterns of genetic differentiation corresponding to these phenotypically based taxa. Divergence and speciation are common among island populations of birds, and evidence suggests this region has fostered such divergence during previous glacial maxima. We examined divergence in the mitochondrial gene for NADH dehydrogenase subunit 2 (ND2, a marker used in other studies of regional endemism) in two additional coastal subspecies endemic to this region, of the Sharp-shinned Hawk (*Accipiter striatus perobscurus*) and Great Blue Heron (*Ardea herodias fannini*). In both the hawk and heron genetic diversity in ND2 was remarkably low in contrast to that in mitochondrial genes in other species with regional endemics. In both *Accipiter striatus perobscurus* and *Ardea herodias fannini* we found only the haplotype most common in continental populations. We found low but significant divergence in frequencies of haplotypes of ND2 between *A. s. perobscurus* and continental populations of the Sharp-shinned Hawk and no significant population divergence in the Great Blue Heron. In contrast with other regional endemics that do show signals of having persisted through at least one past Ice Age in an unglaciated refugium, these subspecies may have arisen relatively recently, with their adaptation to the local environment leading to darker coloration paralleling that of the region's older endemics. Alternatively, species-wide selective sweeps of mitochondrial DNA prior to divergence of these taxa may have rendered this genetic marker less useful for tracking divergence arising in a refugium.

The Pleistocene epoch that began about 2.6 million years ago was characterized by dramatic fluctuations in Earth's climate (Berger 1984). Global cooling on a 100,000-year cycle caused a series of glaciations that had a profound effect on the distribution of species (Avise and Walker 1998). Genetic evidence has suggested that isolation during Pleistocene glacial cycles promoted divergence and speciation in habitats fragmented by the advance and retreat of continental ice sheets (Weir and Schluter 2004). Many phylogenetic and population genetic studies have focused on Haida Gwaii (Queen Charlotte Islands), British Columbia, and the surrounding region because of the number of endemic taxa from this region that have been described for many classes of organisms, including birds (Topp and Winker 2008), plants (Ogilvie 1989), insects (Kavanaugh 1989), and mammals (Fleming and Cook 2002). Many of these studies have supported the



Figure 1. Ventral and dorsal views of adult males of the darker *Accipiter striatus perobscurus* (A, UAM 28334) and the paler *A. s. striatus* (B, UAM 34176). For scale, the museum labels are 19 mm wide.

hypothesis of an unglaciated refugium in the Haida Gwaii area for mammals, insects, plants, reptiles, gastropods, fish, and birds (Schafer et al. 2010, table 2; Pruett et al. 2013, table 4; Klicka et al. 2011, Graham and Burg 2012, Lait et al. 2012, Burg et al. 2014, Withrow et al. 2014). Although Haida Gwaii has been a focal area for many of these studies, the evidence for the refugium is regional, as the ranges of some of the taxa centered on Haida Gwaii extend beyond these islands (possibly as a result of post-glacial expansion). It is also not possible at present to determine exactly where the putative refugium was located.

Past shifts in spatial distribution and population size can leave distinct patterns in the genetic makeup of populations and species. Populations that became isolated in ice-free refugia during glacial cycles and remain reproductively segregated from immigrants should be genetically distinct via complete or nearly complete lineage sorting (Nei 1975, Pruett 2013). Rapid range expansion following glacial retreat is expected to reduce genetic diversity as alleles are lost and homogeneity increases (Ibrahim et al. 1996, Hewitt 1996, 2000), as seen in populations that occurred on the northern



Figure 2. Ventral and dorsal views of the darker *Ardea herodias fannini* (A, UAM 7767) and the paler *A. h. herodias* (B, UWBM 30074). For scale, the museum labels are 19 mm wide.

edges of refugia (Hewitt 2001). Higher genetic diversity is expected in those refugial populations that acted as the source of expansion for the founding populations (Hewitt 1996).

For this study, we asked two questions: In the context of other avian species studied in this region, do genetic data reflect observed patterns of phenotypic divergence in two subspecies of birds endemic to the coast of northwestern North America? And do these two populations share a pattern of genetic divergence consistent with the Haida Gwaii region's serving as a refugium during the Pleistocene, as many other regional endemics do? Specifically, we examined the northwestern coastal subspecies of the Sharp-shinned Hawk (*Accipiter striatus perobscurus*) and Great Blue Heron (*Ardea herodias fannini*). Both of these are examples of regional endemic populations that have undergone phenotypic differentiation from the widespread continental populations sufficient to be recognized as subspecies (Snyder 1938, Chapman 1901, Dickerman 2004a, b, c). *Accipiter striatus perobscurus* occurs in the breeding season from southeastern Alaska along the adjacent coast of British Columbia to Vancouver Island and

winters from Haida Gwaii south to Santa Barbara, California (Dickerman 2004c). In comparison to the continental *A. s. velox*, *Accipiter striatus perobscurus* is darker (Figure 1), with shorter wings and tail and longer but thin tarsi (Dickerman 2004c). *Ardea herodias fannini* is a taxon of special concern in Canada (COSEWIC 2008) and a year-round resident in southeastern Alaska and south through Haida Gwaii, with nesting recorded northwest to Prince William Sound (Dickerman 2004b). This is the range as restricted in the most recent critical revision (Dickerman 2004b). It is not the range currently considered by wildlife managers for this subspecies (Environment Canada 2016), but their decision (COSEWIC 2008) was based on AOU (1983) and Payne (1979), neither of which represents the critical revision of the topic that Dickerman (2004b) presented (and the American Ornithologists' Union has not critically evaluated subspecies since 1957). *Ardea herodias fannini* has plumage distinctively darker gray than that of the mainland subspecies (Figure 2), as well as significantly shorter exposed culmen and tarsi (Dickerman 2004a, b). Both *Accipiter striatus perobscurus* and *Ardea herodias fannini* parallel other subspecies of birds endemic to this region of temperate rainforest and cloudy skies in being darker than other populations of their species.

METHODS

To evaluate the genetic distinctiveness of *Accipiter striatus perobscurus* and *Ardea herodias fannini*, we sequenced the mitochondrial gene for NADH dehydrogenase subunit 2 (ND2) and compared the sequences with those of *Accipiter striatus velox* and *Ardea herodias herodias* and *A. h. wardi*, widespread in mainland North America. We chose this marker to enable comparisons among similar studies of other birds endemic to the region (e.g., Pruett et al. 2013, Withrow et al. 2014). ND2 is a mitochondrial marker commonly used in genetic studies of birds and has proven widely informative. Zink et al. (2005) suggested that it is evolving approximately neutrally, neither favored nor disfavored by natural selection, and on the basis of this assumption we can estimate population parameters such as genetic diversity and demographic history with reasonable confidence (Lovette 2004). Although variation in the sequence of mitochondrial genes is not expected to be coupled with genetic differentiation resulting from selection of the external phenotype (e.g., plumage), it can provide a deeper understanding of the evolutionary history of intraspecific variation (e.g., Topp and Winker 2008).

From the University of Alaska Museum (UAM), the University of Washington Burke Museum (UWBM), and the Museum of Southwestern Biology (MSB:Bird.; Appendix), we obtained tissue samples from 25 specimens of *Accipiter striatus*, 14 of *A. s. perobscurus*, and 11 of *A. s. velox*. We obtained samples from 36 specimens of *Ardea herodias*, 22 of *A. h. fannini*, 5 of *A. h. herodias*, and 9 of *A. h. wardi*. We selected specimens' collection localities to maximize geographic coverage of both species' ranges (Figure 3). Following the manufacturer's protocol (Qiagen, Valencia, CA), we extracted DNA from frozen tissues and nine heron eggshells by using a DNeasy Tissue Kit.

By the polymerase chain reaction, we amplified 1024 and 987 base pairs

of ND2 from *Accipiter striatus* and *Ardea herodias*, respectively, using ND2 primers L5215 (Hackett 1996) and H6313 (Johnson and Sorenson 1998). For the reaction, we used 0.8 μ L of each primer at 10-mM concentration, 0.5 μ L of a 10 mM solution of deoxynucleotide triphosphate (dNTP), 0.13 μ L of Taq DNA polymerase, 1.6 μ L of 25 mM $MgCl_2$, 5 μ L of 5X Taq Buffer (Promega, Madison, WI), 14.5 μ L water, and 2 μ L of extracted DNA template for a total reaction volume of 25 μ L. The thermal regime started with 2 min at 94° C, followed by 39 cycles of 94° C for 30 seconds, 52° C for 1 min, 72° C for 2 min, and a final elongation step at 72° C for 5 min. The cleanup and sequencing were done at the High-Throughput Genomics Unit (University of Washington, Seattle), by means of an ExoSAP cleaning process and cycle sequencing with BigDye chemistry on an ABI 3730XL high-throughput capillary sequencer (Applied Biosystems, Foster City, CA). Cycle-sequencing amplifications were done with the primers for sequencing. Sequences were aligned and edited with Sequencher version 4.7 (Gene Codes, Ann Arbor, MI).

To generate median-joining networks illustrating the frequencies of ND2 haplotypes from each species we used Network version 4.6.1.3 (Bandelt et al. 1999). To test the neutrality of mutations in the gene and change in population size we calculated Fu and Li's D^* and F^* statistics (Fu and Li 1993), Tajima's D (Tajima 1989), and R_2 values (Ramos-Onsins and Rozas 2002) with DnaSP version 5 (Librado and Rozas 2009). Following post-glacial expansion, the sizes of many populations in this region may be expected to have increased. To determine whether the increases in population sizes we estimated were significant, we ran simulations of coalescence with 50,000 replicates and calculated 95% confidence intervals on the basis of a model of population size being constant (Librado and Rozas 2009). We ran each simulation three times for confirmation. We used Arlequin version 3.5.1.2 (Excoffier et al. 1992) to calculate pairwise F_{ST} values for ND2 sequences of the two pairs of subspecies with 10,100 permutations and to determine whether these estimates differed from zero.

RESULTS

Accipiter striatus

We obtained 1024 base pairs of ND2 data from the 25 specimens of *Accipiter striatus* sampled at eight locations ranging from the interior of Alaska to New York (Figure 3). We found variation in four of these 1024 sites, representing five unique haplotypes (Figure 4). These haplotypes differed by one or two base pairs, and all specimens of *A. s. perobscurus* sampled shared the most common haplotype found in *A. s. velox* (Figure 3). Two haplotypes represent transitions from adenine to guanine in the third codon position, and two represent transitions from adenine to guanine in the second codon position.

We estimated the degree of population expansion and genetic structure for all samples pooled (i.e., at the species level). Past population expansion was indicated by strongly significant values for R_2 ($P < 0.0001$; Table 1). Fu and Li's F^* and D^* differed significantly from zero ($P < 0.001$). Tajima's



Figure 3. Locations of samples used in this study. Numbers specify number of individuals sampled within each circle. Patterns represent different subspecies.

D was negative but was not significant ($P = 0.54$; Table 1). Despite low genetic diversity, we found a low but significantly different level of population structure between the two subspecies (average pairwise difference; $P = 0.024$; Table 1).



Figure 3 (continued)

Ardea herodias

We obtained 987 base pairs of ND2 data from the 36 specimens of *Ardea herodias* sampled from nine locations ranging from Kodiak Island to the Texas coast (Figure 3). We found variation at two of the 987 sites, corresponding to three unique haplotypes differing by one to two base pairs. The haplotype network illustrates low divergence among haplotypes and

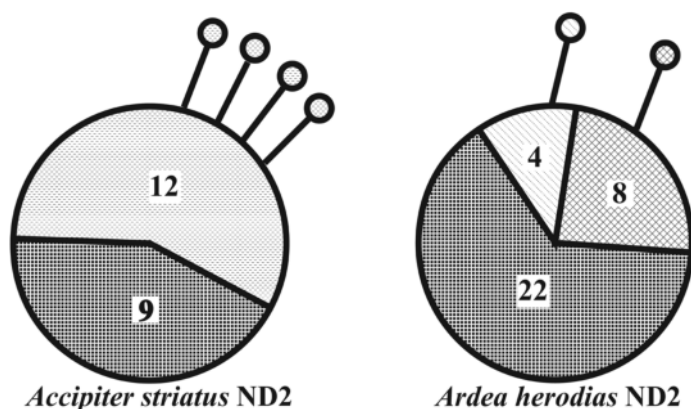


Figure 4. Networks representing the haplotypes of ND2 in 25 specimens of *Accipiter striatus* and 36 of *Ardea herodias*. Black, subspecies *Accipiter s. perobscurus* and *Ardea h. fannini*, subspecies endemic to coastal British Columbia and southeast Alaska; shading, other populations, *Accipiter s. velox* (dashed lines), *Ardea h. herodias* (diagonal shading), and *A. h. wardi* (cross hatching). Numbers correspond to number of individuals of each haplotype; each small circle represents one individual.

no difference in structure between *A. h. fannini* and *A. h. herodias* or *A. h. wardi* (Figure 4). The two alternative continental haplotypes represent transitions between cytosine and thymine in the third codon position.

Again, we estimated the degree of population expansion and genetic structure of all samples pooled (i.e., at the species level). Past population expansion was indicated by strongly significant values for R_2 ($P < 0.0001$; Table 1). Fu and Li's F^* and D^* differed significantly from zero (F^* , $P = 0.005$; D^* , $P = 0.003$). Tajima's D was positive but not significant ($P = 0.83$; Table 1). Samples of *A. h. fannini* did not differ significantly from samples of other subspecies of the Great Blue Heron, as indicated by a low and not significant value of F_{ST} ($P = 0.071$; Table 1). As before, to obtain the best comparisons

Table 1 Statistics Summarizing Patterns of Variation in the Mitochondrial Gene ND2 in *Accipiter striatus* and *Ardea herodias*

Statistic ^a	<i>Accipiter striatus</i>	<i>Ardea herodias</i>
n	25	36
Nucleotide diversity (π)	0.0003	0.0001
Haplotype diversity (H)	0.300	0.110
Tajima's D (D_T)	-0.0189	0.0001
Fu and Li's F^*	-0.0024***	-0.0007**
Fu and Li's D^*	-0.0157***	-0.0015**
R_2 (Ramos-Onsins and Rozas 2002)	0.1622****	0.1480****
F_{ST}^b	0.0228*	0.0031

^aLevels of significance: * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$; **** $P < 0.0001$.

^bAverage pairwise divergence between subspecies endemic to coastal northwestern North America and populations elsewhere across the North American continent.

possible among lineages, given heterogeneity in sampling, we compared the regional endemic to all continental populations combined. Exploring further within *Ardea herodias* also showed no significant differences in values of F_{ST} between any pair of subspecies in our samples.

DISCUSSION

Genetic Diversity

Our results revealed remarkably low genetic diversity in both *Accipiter striatus* and *Ardea herodias*, in contrast to other birds with regional endemic subspecies (Table 2). Furthermore, no individual of either of our focal regional endemic subspecies had a unique haplotype. This result is consistent with neither of these subspecies' having persisted in a refugium in the Haida Gwaii region during the last glacial maximum, but rather having colonized post-glacially (Hewitt 1996, Pruett et al. 2013). Similarly, Pruett et al. (2013) observed similar patterns of low genetic diversity and a lack of unique haplotypes in some other birds of Haida Gwaii such as the Red-breasted Sapsucker (*Sphyrapicus ruber*), and Swainson's Thrush (*Catharus ustulatus*); in each case, they attributed the low diversity to post-glacial colonization approximately 13,000–19,000 years before present. In contrast, Withrow and Winker (2014) found that the island subspecies of the Northern Saw-whet Owl (*Aegolius acadicus brooksi*) diverged significantly from the subspecies of the mainland (*A. a. acadicus*) in both the nuclear and mitochondrial genomes (amplified fragment length polymorphisms and ND2). In a similar study analyzing the mitochondrial gene for cytochrome *b* in the Hairy Woodpecker (*Picoides villosus*), Steller's Jay (*Cyanocitta stelleri*), and Pine Grosbeak (*Pinicola enucleator*), Topp and Winker (2008) also found distinct differentiation in the genes they tested between Haida Gwaii populations and those of the mainland. These contrasting results reflect how species' different life-history strategies and histories of colonization may provide conflicting evidence for an unglaciated refugium on Haida Gwaii.

In both species we studied we found genetic diversity to be greater in continental populations, which is consistent with expectations of greater genetic diversity in larger populations (Hartl and Clark 1989). Pearlstine (2004) found low genetic diversity in *Accipiter striatus* across North America in the mitochondrial genes ND2 and COI. A comparable study of mitochondrial genetic diversity of *Ardea herodias* has yet to be undertaken.

Population Expansion

Fu and Li's F^* and D^* differed significantly from zero in both *Accipiter striatus* and *Ardea herodias*, suggesting either a departure from selective neutrality or population expansion. This pattern is highlighted by strongly significant values of R_2 , suggesting a population expansion in both species. Tajima's D , which is less sensitive to population expansion than Fu and Li's F^* and D^* (Ramos-Onsins and Rozas 2002), was not significant in either species, but negative for the Sharp-shinned Hawk and positive for the Great Blue Heron. This suggests a stronger signal for expansion in the hawk, an expansion possibly more recent than that of the heron. These results are

Table 2 Diversity of Haplotypes in Mitochondrial DNA in Birds with Subspecies Endemic to Haida Gwaii or the Perhumid Rainforest Zone of North America

Species	Gene	Haida Gwaii/Perhumid Zone			Mainland			H ^c	Reference
		Number of haplotypes	Number of haplotypes/ number of samples	Number of haplotypes	Number of haplotypes/ number of samples	r ^d	θ ^b		
Northern Saw-whet Owl	ND2 cyt b	1 ^d	0.10	2	0.10	0.00055	1.943	0.499	Topp and Winker 2008
Northern Saw-whet Owl	cyt b	3 ^d	0.13	6	0.30	0.00043	4.886	0.333	Withrow et al. 2014
Hairy Woodpecker	cyt b	3 ^d	1.00	9	0.60	0.00492	10.389	0.922	Topp and Winker 2008
Hairy Woodpecker	cyt b	3 ^d	0.75	13	0.59	0.00508	6.111	0.916	Pruett et al. 2013
Swainson's Thrush	cyt b	4	0.40	20	0.74	0.00941	17.514	0.878	Pruett et al. 2013
Sooty Grouse	cyt b	2	0.22	4	0.25	0.00023	2.880	0.230	Pruett et al. 2013
Steller's Jay	cyt b	2 ^d	0.18	15	0.93	0.00241	18.296	0.869	Topp and Winker 2008
Steller's Jay		2 ^d	0.18	21	0.72	0.00278	19.512	0.926	Pruett et al. 2013
Pine Grosbeak	cyt b	7 ^d	0.50	15	0.93	0.00697	12.519	0.917	Topp and Winker 2008
Great Blue Heron	ND2	1	0.04	3	0.21	0.0001	1.944	0.110	This study
Sharp-shinned Hawk	ND2	1	0.11	5	0.31	0.0003	3.840	0.300	This study

^aNucleotide diversity.^bWaterson's theta.^cHaplotype diversity.^dSignal of a past refugium.

consistent with those of Hull and Girman (2004), who found a signature of rapid expansion in western populations of the Sharp-shinned Hawk in response to the retreat of the ice sheet at the end of the last glacial maximum.

Genetic Divergence

Despite low genetic diversity in the sequence of ND2, *Accipiter striatus perobscurus* did differ significantly from *A. s. velox* in the distribution of haplotypes of this gene. Additional sampling of continental populations of *Ardea herodias*, if it yields more haplotypes, might also reveal significant differentiation between these populations.

It is likely that Haida Gwaii was one of several ice-free areas that persisted along the northwest coast of North America during the last glacial maximum about 26,500 to 19,000 years before present (Hetherington et al. 2003). This type of biogeographic history suggests two possible explanations for our results. One scenario is that *Accipiter striatus perobscurus* and *Ardea herodias fannini* split from continental populations more recently than have other regional endemics, then expanded rapidly. This would account for the lack of divergence of these taxa in ND2 despite their morphological distinctiveness. In this case, their dark coloration arose as adaptation to the humid, cloudy environment, paralleling darker plumage colors found among the older avian regional endemic subspecies, but possibly during colonization after the glaciers last retreated. Another possibility is that the common haplotypes observed are positively selected (or that such selection has occurred elsewhere in the linked mitochondrial genome or on the W chromosome; Smeds et al. 2015), reducing the genetic variation in the two species as the result of a strong selective sweep prior to divergence. In such a case differentiation in the mitochondrial genome would be difficult to identify.

In both the Sharp-shinned Hawk and Great Blue Heron, the subspecies endemic to the northwest coast show an apparent mismatch in divergence between phenotypic variation, governed by nuclear genes, and variation in mitochondrial DNA. Additional sampling and sequence data on both subspecies are warranted for further study of their population structure and diversity.

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APPENDIX

Specimens used in this study, with identifiers (UAM, University of Alaska Museum; UWBM, University of Washington Burke Museum; MSB, Museum of Southwestern Biology, University of New Mexico), voucher numbers, and GenBank accession numbers.

Species	Voucher number	Locality	GenBank accession number
<i>Ardea herodias fannini</i>			
British Columbia			
	UAM22572	Queen Charlotte Island	KX083585
	UAM34646	Queen Charlotte Island	KX083587
	UAM34655	Queen Charlotte Island	KX083599
	UAM34656	Queen Charlotte Island	KX083589
	UAM34659	Queen Charlotte Island	KX083590
	UAM34647	Queen Charlotte Island	KX083591
	UAM34648	Queen Charlotte Island	KX083592
	UAM34649	Queen Charlotte Island	KX083593
	UAM34652	Queen Charlotte Island	KX083594
	UAM34653	Queen Charlotte Island	KX083595
	UAM22573	Moresby Island	KX083600
	UAM22600	Graham Island	KX083598
	UAM24728	Vancouver Island	KX083611
	UAM24726	Vancouver Island	KX083612
	UAM24727	Vancouver Island	KX083613
Alaska			
	UAM7767	Juneau	KX083610
	UAM25904	Juneau	KX083597
	UAM25905	Juneau	KX083596
	UAM13500	Ketchikan	KX083614

(Continued)

SUBSPECIES OF THE SHARP-SHINNED HAWK AND GREAT BLUE HERON

APPENDIX (continued)

	UAM18947	Ketchikan	KX083617
	UAM18137	Ketchikan	KX083599
	UAM20826	Kodiak Island	KX083616
<i>Ardea herodias herodias</i>			
	UAM14169	Minnesota	KX083615
	UWBM66270	Everett, Washington	KX083618
	UWBM74070	Bow, Washington	KX083619
	UWBM77579	Kingston, Washington	KX083620
	UWBM80456	Hoquiam, Washington	KX083586
<i>Ardea herodias wardi</i>			
New Mexico			
	MSB:Bird:20590	Guadalupe County	KX083606
	MSB:Bird:20432	Sandoval County	KX083607
	MSB:Bird:22800	Bernalillo County	KX083601
	MSB:Bird:44245	Bernalillo County	KX083603
	MSB:Bird:23064	San Miguel County	KX083602
	MSB:Bird:22225	Sierra County	KX083608
	MSB:Bird:22224	Sierra County	KX083609
Texas			
	MSB:Bird:18304	Matagorda County	KX083604
	MSB:Bird:18344	Refugio County	KX083605
<i>Accipiter striatus perobscurus</i>			
British Columbia			
	UAM8083	Queen Charlotte Island	KX083635
	UAM27278	Queen Charlotte Island	KX083629
	UAM28334	Queen Charlotte Island	KX083630
	UAM28335	Queen Charlotte Island	KX083621
	UAM28336	Queen Charlotte Island	KX083622
	UAM28337	Queen Charlotte Island	KX083624
	UAM28338	Queen Charlotte Island	KX083625
	UAM28339	Queen Charlotte Island	KX083623
	UAM8998	Graham Island	KX083631
Alaska			
	UAM28340	Juneau	KX083626
	UAM29602	Juneau	KX083639
	UAM25662	Juneau	KX083640
	UAM23815	Juneau	KX083641
	UAM27052	Ketchikan	KX083642
<i>Accipiter striatus velox</i>			
Alaska			
	UAM13481	Ketchikan	KX083633
	UAM26110	White Pass	KX083627
	UAM29603	Dyea	KX083628
	UAM11257	Kodiak	KX083632
	UAM18494	Fairbanks	KX083634
	UAM22264	Fairbanks	KX083636
	UAM22474	Fairbanks	KX083637
	UAM22165	Fairbanks	KX083638
	UAM9372	Fairbanks	KX083643
Other regions			
	UAM29639	New York	KX083645
	UAM15081	Montana	KX083644

MOLT SEQUENCES IN AN EXTRALIMITAL GREAT GRAY OWL DETECTED OVER TWO WINTERS IN NORTHWESTERN CALIFORNIA

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ABSTRACT: In California, the Great Gray Owl (*Strix nebulosa*) has a very small population and is considered endangered. The Coast Range of northwestern California is not considered part of the species' regular range, and prior to January 2016 there were only three records for the region. During the winters of 2015–2016 and 2016–2017, however, a Great Gray Owl occurred in Humboldt County at locations separated by about 50 km. We evaluated photographs from both winters to assess whether they were of the same individual owl. Patterns of retained juvenile wing feathers and replaced feathers of the definitive basic plumage were consistent with the owl photographed in winter 2016–2017 (likely in its fourth cycle) being one year older than the one photographed in winter 2015–2016 (likely in its third cycle). Furthermore, during both years, the same primary feather on the right wing showed an irregularity along the inner web near the tip, including a notch and additional damage to the barbs, evidence that the observations in both years were of the same individual. Feather-replacement patterns in this individual during these two winters, along with those of another specimen from Humboldt County from 2007, imply that the sequences of molt of the remiges in the Great Gray Owl parallel those of other *Strix* but that the rate of molt may be slower than previously reported.

The Great Gray Owl (*Strix nebulosa*), listed as endangered in California by the California Department of Fish and Wildlife since 1980 (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405&inline>), is one of the rarer breeding bird species in the state. Wu et al. (2016) collated and assessed all records of confirmed nests or detections of fledglings in California between 1973 and 2015 and estimated a current population of approximately 79 pairs. The core of the California population occurs on the western slope of the Sierra Nevada from Mariposa County north to El Dorado County (Beck and Winter 2000, van Riper and van Wagtendonk 2006, Hull et al. 2014, Wu et al. 2015, Polasik et al. 2016). Isolated breeding and occurrence records extend south in the Sierra Nevada to Tulare County and north in the Sierra Nevada, southern Cascades, and Modoc Plateau to Modoc County, just south of the Oregon border (Wu et al. 2015, 2016). While in other portions of the species' range Great Gray Owls are known to migrate or disperse hundreds of kilometers during irruptions (Nero and Copland 1997), those in Oregon and California have never been documented to undertake large-scale movements, beyond facultative downslope migration in winter over observed distances up to 25 km (Winter 1986, Bull et al. 1988, Bull and Duncan 1993, Skiff 1995, van Riper and van Wagtendonk 2006, Jepsen et al. 2011).

The Coast Range of northwestern California is not known as part of the regular range of the Great Gray Owl, with no evidence of nesting documented for the region (Bull and Duncan 1993, Hull et al. 2014, Wu et al. 2015, 2016). In rare instances, however, individual birds have been reported in the region during winter, including three from coastal north-

western California prior to January 2016. The most recent such report was from Humboldt County in December 2007, when an emaciated owl was discovered in the Freshwater area of Eureka. This individual survived only a few hours after discovery, and the specimen, recovered by M. Mitchell, is preserved at Humboldt State University (HSU 8960). In January 1982, a Great Gray Owl was observed foraging over a period of a week at Prairie Creek Redwoods State Park. On 22 January it was struck and killed by a vehicle; the specimen, recovered by R. Adams, is also preserved at Humboldt State University (HSU 5029). Prior to these two records, a Great Gray Owl was observed near Endert's Beach just south of Crescent City, Del Norte County, in March or April of 1974 (Winter 1980). The nearest area where Great Gray Owls are detected somewhat more consistently lies >100 km to the east, in Siskiyou County, a region with multiple winter and summer records since the 1970s (Fetz et al. 2003). Slightly farther to the north, there are multiple breeding records from southern Oregon, in southeastern Jackson County and southwestern Klamath County (Bull and Henjum 1990).

On 16 January 2016, Emily Christian and Danielle Westberg discovered a Great Gray Owl in Prairie Creek Redwoods State Park (Figure 1), foraging along roadways and forest edges surrounding a large meadow. The owl was observed and photographed by many birders for a period of about 7 weeks (last reported on 29 February 2016; www.eBird.org; detailed data accessed by permission May 2017). The following winter, on 24 December 2016, O. and S. Peterson (pers. comm.) discovered a Great Gray Owl near Alder Grove Road on the outskirts of Arcata, approximately 50 km south of the previous winter's observation at Prairie Creek Redwoods State Park (Figure 1). The Alder Grove owl, which was identified as female by its vocalizations (O. and S. Peterson pers. comm.), used meadows and pasture on private land within a forested matrix <1 km from a largely urban area. Birders reported seeing the owl through 30 March 2017 (O. and S. Peterson pers. comm.).

The rarity of detections in Humboldt County and more generally in the Coast Range of northwestern California suggest that detections in two consecutive winters could have been of the same individual. On the other hand, the substantial distance between the two locations suggests the contrary. If there were two individuals, their discovery might signal a recent range expansion or a previously undiscovered population of wintering or even permanently resident owls. While it may seem unlikely that a population of such a charismatic species, sought after by birders, could have gone heretofore undiscovered, the Great Gray Owl's nocturnal and cryptic habits make the species surprisingly hard to detect. Indeed, in 2006 a previously unknown cluster of nesting Great Gray Owls was discovered in uncharacteristic habitat in the lower montane zone of the central Sierra Nevada (Polasik et al. 2016).

The most reliable way to determine if multiple detections of a bird represent the same individual is with extrinsic markers, such as leg bands. For unmarked individuals, however, it may be possible to glean substantial information from intrinsic markers. Although the term "intrinsic marker" usually denotes genetic (e.g., Ruegg et al. 2014) or isotopic features (e.g., Coiffait et al. 2009) that carry information about an individual or its source population, certain plumage characteristics may also be thought of as intrinsic markers. At a minimum, patterns of molted and retained feathers may indicate the

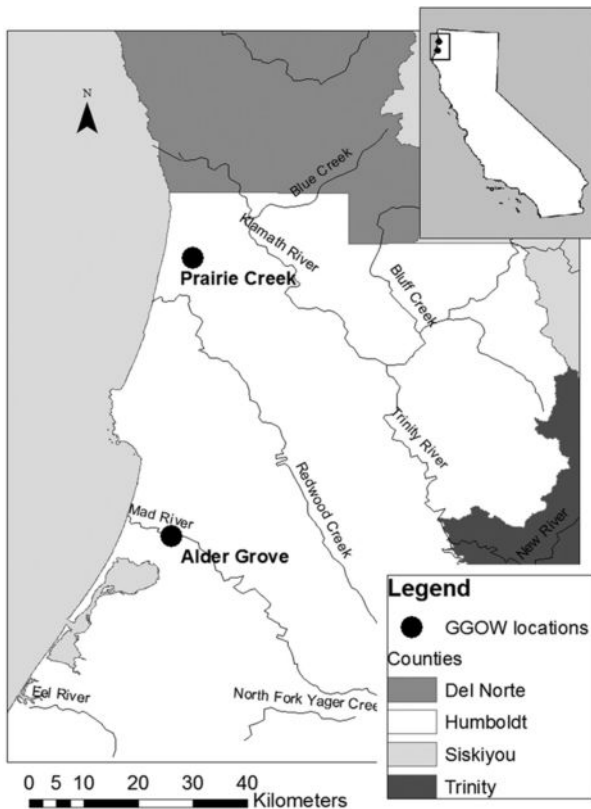


Figure 1. Locations of Great Gray Owl detections in Humboldt County, California, between 16 January and 29 February 2016 at Prairie Creek Redwoods State Park and between 28 December 2016 and 18 February 2017 near Alder Grove Road on the outskirts of Arcata.

plumage cycle and age class of a bird (Pyle 1997a, b). We examined such patterns in considering whether the sightings in 2016 and 2017 pertained to the same individual owl. For example, molt patterns indicating that the bird in 2017 was one year older than the one in 2016 would be consistent with its being the same bird. If the owl in 2017 was younger than, the same age as, or more than one year older than the one in 2016, the detections would represent distinct individuals. In some cases, individual birds may also have unique or unusual plumage characteristics (e.g., distinctive notches on particular feathers) that can differentiate them from other individuals of the same age class. Along with consistent molt patterns and age, such notches or irregularities on specific feathers can confirm that two or more observations pertain to the same bird (Pyle and Sullivan 2010, Nelson and Pyle 2013).

In owls, sequences of molt of the remiges are complex. In some species, molt commences from a node among the middle primaries and proceeds

both inward and outward (Pyle 1997a, b). Additional study by Pyle suggests that these nodes may be consistent within a genus. For example, molt of the primaries begins with p7 among species of *Bubo* and *Tyto*, p5 among species of *Strix* (see also Suopajärvi and Suopajärvi 1994), and p3 among species of *Athene* (e.g., Trefry and Holroyd 2012). In *Aegolius*, molt appears to proceed distally from a node among the medial primaries, while in other North American genera it may proceed in typical sequence from p1 outward, but confirmation of these molt sequences and their consistency within all owl genera is needed. In all owls, replacement of the secondaries appears to proceed as is typical of diastataxic species (those having evolutionarily lost a secondary between what we now call s5 and s6; Bostwick and Brady 2002), bilaterally from the second tertial, proximally from s5, and proximally from s1 (Pyle 2008, 2013). In the Spotted (*Strix occidentalis*) and Barred (*S. varia*) owls, as well as other *Strix* species in Europe (Pietiäinen et al. 1984, Cramp 1985, Suopajärvi and Suopajärvi 1994), the sequence of molt of the remiges has been reported as irregular (Pyle 1997a, b), but recent study by Pyle indicates that replacement proceeds consistently bilaterally from a node at p5 (or possibly p6 in some cases) and that secondaries are replaced as indicated above, at least in the Barred Owl. The sequence of molt of the remiges in the Great Gray Owl is not well known but may be similar to that of other species of *Strix* (Cramp 1985, Pyle 1997a, b), whereas rectrix molt has been observed to be synchronous (Gura et al. 2017). In larger owls (e.g., *Bubo*, *Strix*, and *Tyto*) molt can proceed very slowly relative to other species of birds, in some individuals replacement of all remiges taking up to six years or more. Understanding these patterns and distinguishing juvenile feathers from those of the basic plumage following each molt can allow the age of owls to be determined up to at least their fourth plumage cycle (Pyle 1997a, b).

Our objective was to assess whether plumage characteristics could provide evidence that the 2016 and 2017 detections in Humboldt County represented the same individual Great Gray Owl and, if the owl was the same, to assess its age and trace its molt patterns during the intervening summer.

METHODS

We examined >230 photographs of the owls, taken during both winters (over 70 from each winter), which were accessible in Cornell University's Macaulay Library or were provided directly to us by the photographers (see Figures 2–4). In reviewing the photographs, we focused particularly on feather generation, molt patterns, and notches on individual feathers. By the standard convention, the Great Gray Owl's ten primaries are numbered distally from the innermost (p1) to the outermost (p10), the 14 secondaries are numbered proximally from the outermost (s1) to the innermost (s14, s12–s14 representing the tertials), and the 12 rectrices are numbered from the innermost (r1) to the outermost (r6) on each side of the tail (Pyle 1997b).

RESULTS

Molt patterns in the Great Gray Owl photographed at Prairie Creek Redwoods State Park in 2016 are shown in Figure 2. Among the primaries

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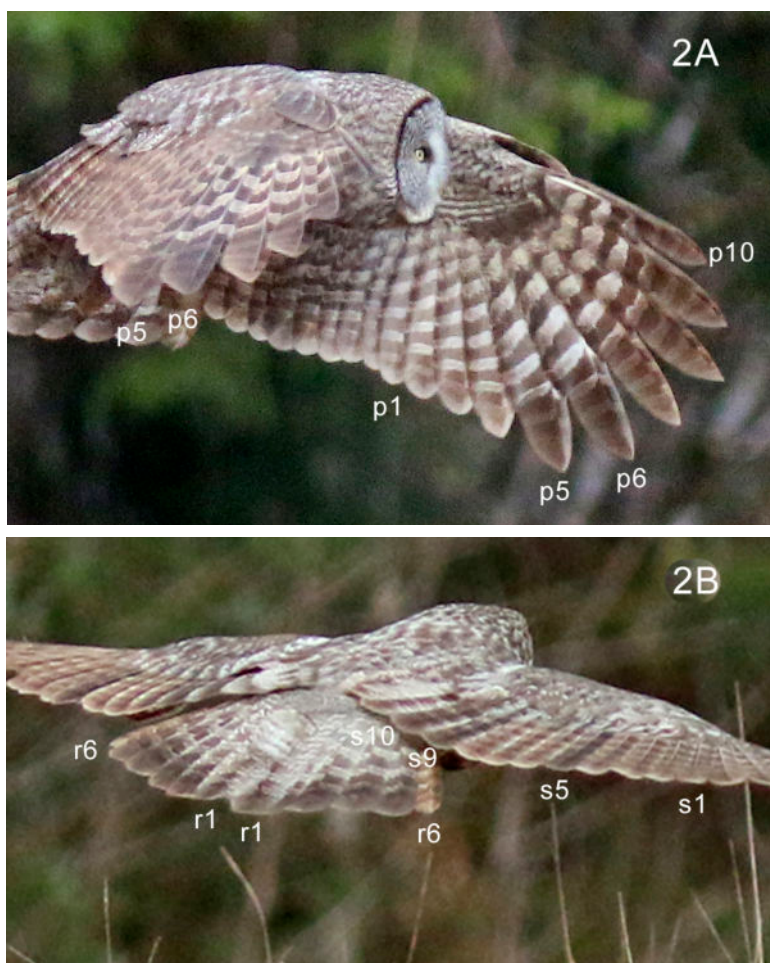


Figure 2. Great Gray Owl, photographed in Prairie Creek Redwoods State Park, California, on 21 January 2016. Note that the all primaries appear to be juvenile except for p5 and p6 in both wings, with p6 appearing a year newer than p5 (A). On both wings, s1–s4 and s6–s8 appear to be juvenile, the tertials and innermost secondaries (s11–s14) appear to have been replaced at the same time as p5, and s5, s9, and s10 appear to have been replaced at the same time as p6. Among the rectrices, the outermost (r6) appears to be juvenile, while those in the middle of the tail (among r1–r5) represent two later generations matching p5 and p6 in freshness.

Photos by Sean McAllister

MOLT SEQUENCES IN AN EXTRALIMITAL GREAT GRAY OWL



Figure 3. Great Gray Owl, photographed near Alder Grove Road on the outskirts of Arcata, California, during winter 2016–2017. Patterns of feather replacement parallel those of the bird in 2015–2016 (Figure 2), except for the replacement of several additional feathers. These include the primary coverts corresponding to p7 on both wings, the left s2 (growing), s6, s8, s13, and perhaps additional tertials on both wings, the left r2, and r6 on both sides of the tail. The pattern of juvenile and older feathers is consistent with the bird of 2015–2016 having replaced these feathers, in sequence, during the intervening summer.

*Photos by Michael Lang (A, 16 January 2017)
and Rob Fowler (B, 6 January 2017)*

(Figure 2A), all feathers appear to be of the same generation except for the newer p5 and p6 on both wings. Primary 5 appears more worn and faded than p6, consistent with its being replaced a year before p6. The remaining eight primaries on each wing are older still, thinner, more pointed at the tips, and show consistent bar patterns across all feathers, indicating that they are of the juvenile plumage (Pyle 1997a, b). The primary coverts corresponding to each primary show the same patterns of replacement (Figure 2A). Among the secondaries (Figure 2B), s5, s9, and s10 on both wings are newer and appear to have been replaced at the same time as p6. The inner secondaries (s11–s14, including the tertials) appear to be a year older and of the same generation as p5, and the remaining seven secondaries on each wing (s1–s4 and s6–s8) appear to be older still and with wear and bar patterns consistent with juvenile feathers. In comparison with what is known about molt in *Strix* (Pyle 1997a, b), this evidence suggests that p5 and s11–s14 were replaced during the summer and fall of 2014, and that p6, s5, and s9–s10 were subsequently replaced during the summer and fall of 2015. The rectrices are not fully analyzable in the photos from 2016 (Fig. 2B), but the outermost rectrices (r6 on each side) are old, narrow, and juvenile, while the remaining rectrices are newer, potentially with r1, the right r3, and r4 and r5 being a year newer than r2 and the left r3.

Molt patterns in the Great Gray Owl photographed in 2017 at Alder Grove (Figure 3) are similar to those of the one in 2016 except that a few more feathers are new. As in 2016, p5 and p6 are the only replaced primaries on both wings, p5 is older looking than p6, and the remaining primaries appear juvenile. Notably, the primary coverts corresponding to p7 on both wings are new (Figure 3A), a difference from 2016. In 2017 the secondaries also show the same patterns as in 2016, except that the left s2 is new and appears to be growing (being shorter than both s1 and s3), s6 and s8 are new on both wings, and s13 is newer than a very worn s12 on the left wing, at least (as seen in Figure 3B). Among the rectrices (Figure 3B), r6 on both sides and the left r2 appear new; r1, r5, and r4 on both sides and the right r3 appear to have been replaced the year before this, and the right r2 and left r3 appear to be browner and of yet an older generation. Thus in 2017 the bird was very similar in molt-sequence pattern to that of 2016, but with s6, s8, s13, r6, and the primary covert corresponding to p7 replaced on both wings, s2 replaced on the left wing, s13 replaced on at least the left wing, and r2 replaced on the left side of the tail. Wear patterns are consistent with these feathers being replaced during the summer and fall of 2016, following those feathers replaced in 2014 and 2015 as described above.

In general, the primaries, secondaries, and rectrices do not show distinctive notches at the tips during either year. This is not surprising, as the softness of owl plumage minimizes this kind of imperfection. However, during both years, the right p7 shows an irregularity along its inner web near the tip, including a notch and additional damage to the barbs, suggesting impact with a branch or other object (Figure 4). These notches are similar enough to confirm, along with the similarity in molt patterns, that the 2016 and 2017 birds were the same individual.

Pyle's examination of photos of the 2007 specimen from Humboldt County (HSU 8960), right wing, revealed molt patterns similar to those of the

owl of 2016–2017. All primaries and secondaries appear juvenile except s5 and s10–s14, with s5 and s10–s11 appearing one year newer than s12–s14. The primary covert corresponding to p5 has also been replaced. Among the rectrices, the left r5–r6 and right r6 appear juvenile and the central two rectrices appear one year newer than the other replaced rectrices. Thus the tertials and most rectrices were apparently replaced during the summer of 2006, and s5, s10–s11, the primary covert corresponding to p5, and the central rectrices were replaced during the summer of 2007.

DISCUSSION

Analysis of molt patterns and notching in the primaries indicates that the Great Gray Owl detections in Humboldt County during the winters of 2015–2016 and 2016–2017 were of the same bird. In addition, new information on the species' molt patterns and age-determination criteria can be inferred from this individual and the 2007 specimen from Humboldt County. The pattern of replacement of the primaries of both wings of the owl in 2016–2017 indicates that the molt began a node at p5 in this individual, after which it proceeded distally to p6, consistent with the pattern previously recorded in the Barred Owl and possibly prevailing in all other *Strix* species (Pyle 1997a, b; unpubl. data). The replacement of the primary coverts corresponding to p7 on both wings during the summer of 2016, without concurrent replacement of p7 on either wing, is of interest, as few birds are known to molt primary coverts without molting their corresponding primaries, the woodpeckers being the only broad exception of which we are aware (Pyle 1997b, Siegel et al. 2016). The replacement of the primary covert corresponding to p5 in the 2007 specimen is another example of this, and may further support a node at p5, provided that the replacement of this primary covert portends the subsequent replacement of its corresponding primary.

Our observations of replacement of the secondaries on both the bird photographed in 2016–2017 and the specimen picked up in 2007 also support a conclusion that the Great Gray Owl follows the pattern typical for diastataxic species, with molt proceeding distally from the tertials and proximally from s5 (Pyle 2008, 2013). We were unable to ascertain the sequence of replacement of the inner secondaries, on either bird, whether or not it proceeded bilaterally from a node at the second tertial (s12), but the replacement of this feather during the summer of 2016 on that individual is at least consistent with there being a node at s12. Both this bird and the 2007 specimen also establish that several secondaries between s5 and s14 can be replaced before replacement inward from s1 commences. We infer that the replacement of the left s2 during the fall or winter of 2016–2017 was adventitious, as no node is known here in any other large bird (Pyle 2008, 2013) and the feather appeared still to be growing in January 2017. Finally, in both individuals, replacement of the rectrices appeared to proceed from r1 to r6 on each side of the tail, with some asymmetry between the two sides. Such asymmetry is also known in raptors and other birds in which the flight feathers are not completely replaced each year (Pyle 2008). The patterns we observed differ from the synchronous molt of all rectrices recorded by

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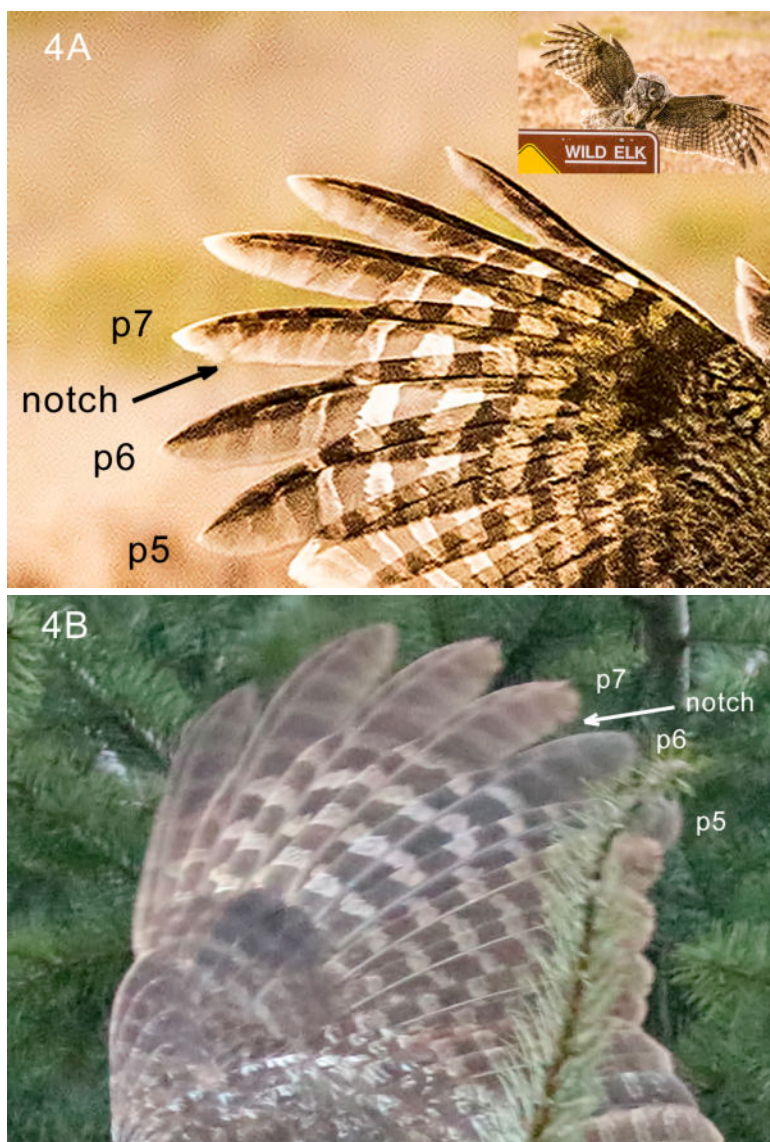


Figure 4. Great Gray Owl, photographed in Prairie Creek Redwoods State Park on 27 January 2016 (A) and near Alder Grove Road on the outskirts of Arcata on 5 January 2017 (B). Note the notch to the inner web of p7 in both images, suggesting damage from impact with a branch or other object. We believe that this, along with the consistent molt patterns (Figures 2–3), confirms that these two images are of the same individual.

Photos by Mark Larson (A) and Elias Elias (B)

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Gura et al. (2017) on the basis of 20 Great Gray Owls in western Wyoming, during which 34 of 34 molts of rectrices were recorded as synchronous.

On the basis of Pyle (1997a, b) and because the older outer primaries and other flight feathers of the 2016–2017 Humboldt County Great Gray Owl appeared to be juvenile, we might infer that p5, s11–s14, and r1–r2 or r1–r3 were replaced during the second prebasic molt in the summer and fall of 2014; that p6, s5, s9–s10, r1, and r3–r4 or r4–r5 were replaced during the third prebasic molt in the summer and fall of 2015; and that s6, s8, s13, r6, and at least one of r2 or r3 were replaced during the fourth prebasic molt in the summer and fall of 2016. This would result in the owl's being in its third cycle (fourth calendar year) in January 2016 and in its fourth cycle (fifth calendar year) in January and February 2017, having hatched in 2012. However, its having molted no primaries during 2016 suggests that it could have skipped primary molt in previous years and may be older than this by a year or two (hatched in 2011 or before). Snowy Owls (*Bubo scandiacus*) are known to not molt any primaries during the second prebasic molt (Pyle 1997a, 1997b), and if this was so in the Great Gray Owl it would have been a year older than inferred above. Similarly, from its molt patterns the 2007 specimen may have been its third cycle, or it could have been an older individual that had skipped replacement of remiges or rectrices during its first two prebasic molts.

In any case, replacement of only two primaries during the owl's first four or five years represents molt slower than known in any other North American bird, with the possible exception of the California Condor (*Gymnogyps californianus*; Pyle 2008). Given that previous literature on the Great Gray Owl suggests that each annual molt encompasses more feathers (Cramp 1985, Suopajärvi and Suopajärvi 1994, Pyle 1997a, b), we suggest that this individual's being out of range could have contributed to its being in poor condition nutritionally, leading to a rate of feather replacement slower than typical of this species. In the 2007 specimen, molt also appears slower than reported in the literature, which could be related to the bird's emaciated condition when collected. Alternatively, the similarity of the patterns in both individuals could indicate that molt of the Great Gray Owl's remiges is much slower than is currently known, entirely possible given how little molt has been studied in this species. That both Humboldt County owls appeared to have replaced their rectrices incompletely each year also indicates an abnormally slow molt of these feathers, by comparison with the synchronous and complete tail molts that Gura et al. (2017) observed in Wyoming.

In any event, we believe the sequence of remex and rectrix molt we report here is typical of the Great Gray Owl and *Strix* in general, although more study is needed on the extent of molt in relation to food resources and nutritional stress. Finally, we suggest that systematic survey effort in northwestern California would be worthwhile for assessing whether additional Great Gray Owls may winter or even breed in the area.

ACKNOWLEDGMENTS

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NOTES

NORTHERNMOST RECORD OF THE WEDGE-RUMPED STORM-PETREL (*OCEANODROMA TETHYS*)

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On the morning of 1 May 2016, while monitoring Western Snowy Plover (*Charadrius nivosus nivosus*) breeding activity on the south spit of Humboldt Bay (40.741° N, 124.245° W), I found a storm-petrel carcass on the high waveslope. At Humboldt State University, Tamar Danufsky and I later identified it as a Wedge-rumped Storm-Petrel (*Oceanodroma tethys*), a neotropical species typically found offshore from Baja California Sur to northern Chile. Housed at Humboldt State University (HSU 9649), this specimen, the second for California, represents the 13th record for California accepted by the California Bird Records Committee (Tietz and McCaskie 2017) and the northernmost record of the species.

Measurements taken during preparation included wing chord 123 mm, wingspan 367 mm, tail 59 mm, culmen 10.7 mm, tarsus 23.5 mm, mass 14.6 grams, left ovary 3.8 × 3.1, with ova granular and translucent; these measurements support this identification (see Murphy 1936, Pyle 2008, Howell 2012). The bird was severely emaciated, with the keel clearly visible externally, and had no fat. It was undergoing flight-feather molt: primaries 1–5 were new, 6–7 were growing or dropped, and 8–10 were still retained from a previous molt. Secondaries 1 and 13 were new, 2, 5, 11–12, and 14 were growing or dropped, and 3–4 and 6–10 were retained. The central rectrices (pair 1) were new, 2–3 were growing or dropped, and 4–6 were retained (except for the left r6, which had been dropped). The retained feathers, narrower and browner than the replaced feathers, appeared to be juvenal, identifying this specimen as a second-year bird undergoing its second prebasic molt.

Three other white-rumped storm-petrels are known in California waters: Wilson's Storm-Petrel (*Oceanites oceanicus*), Leach's Storm-Petrel (*Oceanodroma leucorhoa*), and the recently split Townsend's Storm-Petrel (*Oceanodroma socorroensis*) (see Chesser et al. 2016). The medium-sized Leach's is larger than the Wedge-rumped. Both Leach's and Townsend's have a distinct, pale brown diagonal wing bar running across the secondary coverts; in the Wedge-rumped this bar is indistinct or lacking. In Leach's and Townsend's the amount of white on the rump is much more restricted, whereas on a Wedge-rumped the white covers over half the total length of the tail (see Pyle 2008; Figure 1). The legs of the Humboldt County bird do not extend past the tail, and the webbing between the toes is black, not yellow as in Wilson's.

Two subspecies of the Wedge-rumped Storm-Petrel are recognized: *O. t. tethys* and *O. t. kelsalli* (Dickinson and Remsen 2013). Nominate *tethys* breeds on the Galápagos Islands and ranges north to Mexico over pelagic waters, whereas *kelsalli* breeds in Peru and ranges from Mexico in the north to Chile in the south over continental shelf waters (Spear and Ainley 2007). The Humboldt bird's measurements identify it as subspecies *kelsalli* (Murphy 1936). The only other specimen known from California (California Academy of Sciences 68474)—from Carmel-by-the-Sea, Monterey County, 21 January 1969—is also an example of *kelsalli* (Yadon 1970). Two birds captured and measured on Southeast Farallon Island in spring 2015 (19 April and 20 May) have been identified as *kelsalli* as well (Pete Warzybok, Point Blue Conservation Science, in litt.). Because identification of these subspecies depends on

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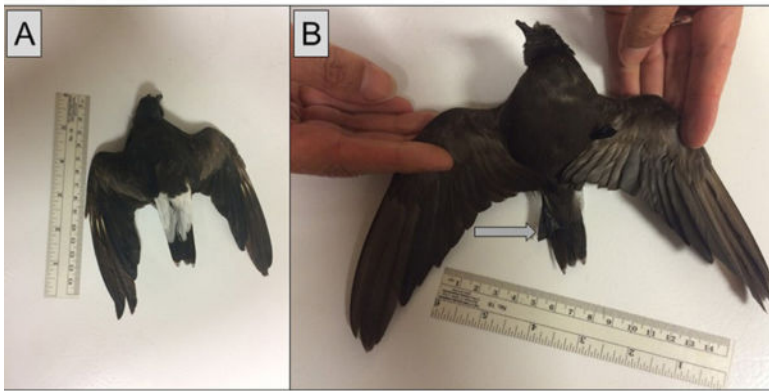


Figure 1. (A) Dorsal and (B) ventral view of the Humboldt County specimen of the Wedge-rumped Storm-Petrel. Note the black webbing between the toes (arrow), the lack of a distinct broad diagonal wing bar, and the extent of white on the rump—much greater than on Wilson's, Leach's, or Townsend's (compare figure 210 in Pyle 2008).

Photos by Deven Kammerichs-Berke

measurements taken in hand, it is impossible to identify other Wedge-rumped Storm-Petrels recorded in California to subspecies.

Seabirds are prone to wander outside their typical distributions, in part because of the lack of physical barriers on the open ocean and because storms can easily displace pelagic birds great distances. That said, this record fits a recent trend of neotropical marine species occurring in California waters more frequently than in the past. Four of California's 13 Wedge-rumped Storm-Petrels were recorded in 2015, a remarkably warm year characterized by an El Niño of near-record strength that resulted in record high ocean temperatures, particularly in large parts of the equatorial and northeastern Pacific Ocean. Ocean temperatures have been increasing rapidly since the turn of the century: all but one of the 16 warmest years on record (1880–2015) have occurred since 2000 (NOAA 2016). Oceanic warming has been associated with drastic changes in marine ecosystem dynamics at various trophic levels (Roemmich and McGowan 1995, Field et al. 2006), and changes in the distributions and breeding ranges of marine birds might well be one such consequence of ocean warming (Crick 2004). For example, the Brown Booby (*Sula leucogaster*) was considered a rarity in southern California and northern Baja California through most of the 20th century, but the 1980s saw a significant increase in sightings off California, with annual occurrences since 1990. Since 2005 boobies have also bred on Los Coronados Islands off northernmost Baja California, a considerable northward expansion of the breeding range (Whitworth et al. 2007). While difficult to monitor effectively, the increasing occurrence of neotropical seabirds in California waters might suggest a much wider trend to northward range expansions as a consequence of ocean warming related to global climate change.

I thank Tamar Danufsky for taking measurements and allowing me access to the HSU Wildlife Museum, Peter Pyle for providing information regarding storm-petrel molt, and Mark Colwell, Peter Pyle, and David Pereksta for providing helpful comments on the manuscript. I also thank Stephen C. Rottenborn, Daniel S. Singer, and Daniel D. Gibson for their reviews of this note.

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FIRST RECORD OF A TAHITI PETREL (*PTERODROMA ROSTRATA*) FROM HAWAIIAN WATERS

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The Tahiti Petrel, *Pterodroma rostrata* (Chesser et al. 2011) or *Pseudobulweria rostrata* (Bretagnolle et al. 1998, Birdlife International 2012, Howell 2012, Dickinson and Remsen 2013), breeds in the Society and Marquesas islands, New Caledonia, and other islands in the South Pacific Ocean (Villard et al. 2006). It ranges widely in the tropical central Pacific and is considered a nonbreeding vagrant in Hawaiian waters (Pyle and Pyle 2017). Three of this species' close relatives of the genus *Pseudobulweria* are "critically endangered," and the Tahiti Petrel itself is listed as "near threatened" on the Red List of the International Union for Conservation of Nature (Birdlife International 2012). The Tahiti Petrel is very similar in appearance to the endangered Phoenix Petrel (*Pterodroma alba*), which has made it difficult to establish the Tahiti Petrel's distribution in the north-central Pacific (King 1970, Spear et al. 1992, 1999, Spear and Ainley 1998, BirdLife International 2016). Early unsubstantiated sight reports of Phoenix or Tahiti Petrels near the Hawaiian Islands include four birds seen during cruises by the U.S. Fish and Wildlife Service in 1964 and 1965 (King 1970) and one or two Tahiti Petrels seen southeast of Hawai'i Island on 5 November 1984 (Spear et al. 1999). The first Tahiti Petrel record accepted by the American Ornithologists' Union for North America was based on photographs taken in 2009 off Costa Rica (Obando-Calderon et al. 2010, Chesser et al. 2011). Because of identification difficulties in the field, the Tahiti Petrel had been previously identified in Hawaiian waters with the Phoenix Petrel as part of a "species pair" (King 1970, AOU 1998, Pyle 2002).



Figure 1. Close-up view of the head and bill of the Tahiti Petrel that came aboard a ship off Kaua'i, 26 January 2012.

Photo by Emily Haber

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Figure 2. Side view of head and body of the Tahiti Petrel.

Photo by Emily Haber



Figure 3. Ventral view of the left wing of the Tahiti Petrel.

Photo by Emily Haber

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Figure 4. Ventral view of the Tahiti Petrel, including one foot.

Photo by Emily Haber

On the morning of 26 January 2012, a Tahiti Petrel landed on the cruise ship *The Pride of America* 2 km west of Nā-wiliwili Harbor on the island of Kaua'i (21.9562° N, 159.3541° W). Torres, the ship's environmental officer, retrieved the bird from a lifeboat side deck (to which mandatory safety lighting may have attracted it), and delivered it to the harbor security agency, who ultimately passed the bird on to personnel with Save Our Shearwaters (SOS). The ship's pick-up form identified the bird as a Wedge-tailed Shearwater (*Puffinus pacificus*), a species commonly rehabilitated by SOS, but the bird's head made it evident immediately (Figure 1) that it was not that species.

We photographed the bird and took standard measurements: unflattened wing chord 294 mm, length of the tarsus to the notch 48 mm, tail length 114 mm, back of the head to the tip of the bill 84 mm, bill length 36.5 mm, bill width at nares 12.2 mm, width of bill at tip 6.6 mm, and depth of bill at tip 13.2 mm. The behavior of the bird was judged as bright, alert, and responsive. It weighed 379 g, and had a keel score of 2+, indicating that it was in good general body condition. This weight appears to be toward the lower end of the spectrum for the Tahiti Petrel (Kimball L. Garrett, Natural History Museum of Los Angeles County, pers. comm., 2013). The bird was sturdy and robust, with dark grayish-brown to brown upper surface. There was a strong demarcation between the dark head and upper chest and the white underbelly. The chin was not white (Figure 2). The ventral surface of the wing was generally dark but slightly lighter and more silvery in color along the midline (Figure 3). The tail was wedge-shaped. The tarsi were pink, and the feet were black with a "dipped in ink" look (Figure 4). The bird had prominent eyes and a very heavy, strong, dark beak.

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This petrel's measurements fall within the zone of overlap of the two subspecies *rostrata* and *trouessarti* (Villard et al. 2006). Gangloff et al. (2012) did not find support for a distinction between these subspecies in the sequences of one nuclear and two mitochondrial genes. The measurements are too large for a Phoenix Petrel (Gangloff et al. 2009). The similarly plumaged and critically endangered Beck's Petrel (*Pseudobulweria becki*) is 25% smaller overall and has a bill more slender than the Tahiti Petrel's (BirdLife International 2015).

After measuring and photographing the bird, we banded its right tarsus with a metal band supplied by the U.S. Fish and Wildlife Service (number 1064-02628). Raine and Haber released the Tahiti Petrel at Salt Ponds Beach Park on the south shore of Kaua'i in the afternoon of the day it was found, and the bird flew off to the ocean without incident.

H. Douglas Pratt, Peter Pyle, Oscar Johnson, Reginald E. David, and Eric VanderWerf all helped with the identification. Additional constructive comments were provided by Kimball L. Garrett and Todd McGrath. Many heartfelt thanks for their keen and helpful comments and thoughtful analyses. Funding for the Save Our Shearwaters project is provided by the Kaua'i Island Utility Co-operative. The Kaua'i Endangered Seabird Recovery Project is a joint project between the state of Hawaii's Department of Land and Natural Resources (Division of Forestry and Wildlife) and the Pacific Co-operative Studies Unit of the University of Hawaii.

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EXTENSION OF THE BREEDING RANGE OF THE BLACK ROSY-FINCH IN WYOMING

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The Black Rosy-Finch (*Leucosticte atrata*) is one of the least studied bird species in North America, owing to its nesting in high alpine habitat, predominantly in cliffs (Johnson 2002). It breeds in low densities from west-central Montana/northeastern Idaho east to northwestern Wyoming, south to southern Utah, and west to north-eastern Nevada/southeastern Oregon (Johnson 2002). It nests in most contiguous mountain ranges of northwestern Wyoming: the Wind River Range (Cary 1917), the Absaroka Range (Miller 1925), the Gallatin Range (Bailey 1930), the Gros Ventre Range (Fuller and Bole 1930), the Teton Range (French 1954), and the Beartooth Mountains (Hoffmann and Taber 1960) (Figure 1). The Black Rosy-Finch is known to occur in the isolated Bighorn Mountains (see Johnson 2002, Faulkner 2010), where reported incorrectly as the Brown-capped Rosy-Finch (*L. australis*) by Carpenter (1876) and as the Gray-crowned Rosy-Finch (*L. tephrocotis*) beginning with Grave and Walker (1913), an error corrected by Mengel and Mengel (1952). We here report Black Rosy-Finches breeding in the Wyoming Range (observed by Johnson in 2002 and Brown in 2015) and in the Salt River and Snake River ranges (observed by Brown in 2015) (Figure 1), where no previous nesting records are known. These mountain ranges are clustered and abut others where the species is known to breed. The inclusion of the Salt, Snake River, and Wyoming ranges bridges the gap, where suitable habitat is available, in the Black Rosy-Finch's distribution between northwestern Wyoming and northeastern Utah. We also observed nesting pairs within the species' previously documented distribution.

The field work we discuss was accomplished by Brown as preliminary work for a graduate study at the University of Wyoming; all his surveys took place at 14 locations over the course of 21 days from June to August 2015. During site selection, he considered the availability of expansive north-facing cliffs, tundra, and persistent snowpack, as well as elevation (Johnson 2002), choosing survey sites to maximize the probability of detection.

All other field work was focused on confirming nesting in ranges in Wyoming where it was suspected but previously unpublished, as well as on revisiting ranges with historical nesting records. Confirmation of breeding was based on observations of fledglings begging for food from adults or discovery of active nests with hatchlings.

On 8 August 2002, Johnson confirmed breeding in the Wyoming Range for the first time when he observed a male and a female feeding two fledglings at Roaring Forks Lakes (42° 43' N, 110° 38' W). On 18 June 2015, Brown visited that site and observed 11 adults. In addition, he observed at least four adults and two young on 20 August 2015 and found on a north-facing cliff (elevation 3200 m) a nest containing at least two chicks being fed by an adult female. On Mt. McDougal's east face in the Wyoming Range (42° 52' N, 110° 35' W), he observed two adult Black Rosy-Finches on 19 June 2015 but did not note nesting behavior.

Near Crow Creek Lakes in the Salt River Range (42° 44' N, 110° 45' W), Brown observed four adult Black Rosy-Finches on 20 June 2015 and three or more adults followed by five begging juveniles on 20 August 2015. On the western flank of Ferry Peak in the Snake River Range (43° 13' N, 110° 59' W), he observed at least one adult followed by two begging juveniles on 7 August 2015.

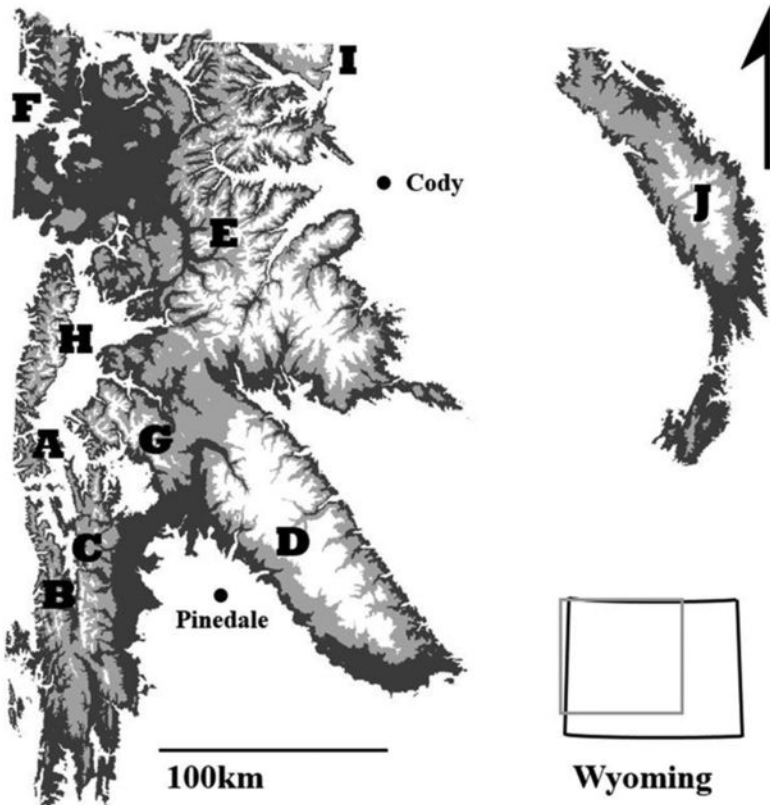


Figure 1. Range extension of the Black Rosy-Finch in northwestern Wyoming's Snake River Range (A), Salt River Range (B), and Wyoming Range (C). Mountain ranges previously reported occupied: Wind River Range (D), Absaroka Range (E), Gallatin Range (F), Gros Ventre Range (G), Teton Range (H), Beartooth Range (I), Bighorn Mountains (J).

Little is known about the Black Rosy-Finch's nesting ecology. Previously, only four authors have reported reaching the species' nests (Miller 1925, French 1959a, b, Johnson 1965, McDonald 2002). Therefore, we take this opportunity to present additional observations of nests. On 16 July 2015, Brown rappelled down a north-facing cliff in the Beartooth Mountains near Twin Lakes ($44^{\circ} 59' \text{ N}$, $109^{\circ} 26' \text{ W}$) to observe an active nest with four chicks (elevation 3300 m) tucked into an angled, fist-sized crack and built on a moss-covered shelf with wedged stones and vegetation providing protection from above (Figure 2). He also found an unoccupied nest with rosy-finch flight feathers in a separate crack system 3 m above the occupied nest. Both nests faced east.

In the Teton Range, Brown located two nests. The first, found on 25 July 2015 at 3200 m on the north face of Peak 10753 ($43^{\circ} 35' \text{ N}$, $110^{\circ} 53' \text{ W}$), had nestlings that begged in synchrony upon an adult's arrival. The second nest was found on 2 August 2015 in an east-facing tundra-lined crack on Cloud Veil Dome's north face

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Figure 2. Black Rosy-Finch chicks on nest in the Beartooth Mountains, Wyoming, 16 July 2015.

Photo by C. W. Brown

(43° 43' N, 110° 48' W) at 3450 m, where both adults were seen making frequent feeding runs to the nest, when begging young could be heard.

In Wyoming, away from the southeast where the Brown-capped occurs, all breeding rosy-finches are Black (Johnson et al. 2000, Johnson 2002, Faulkner 2010). Given that the Black Rosy-Finch's breeding habitat in Wyoming is located above timberline and appears to be tightly linked to both tundra and persistent summer snowpack (French 1959b), it is a species threatened by climate change (Romme and Turner 1991, Gottfried et al. 2012). The Wyoming Game and Fish Department (2010) has designated the Black Rosy-Finch a "species of greatest conservation need" because of the lack of knowledge of its demographics in the state.

The range extension we present here is not unexpected, but rather fills an important gap in our understanding of the Black Rosy-Finch's breeding distribution in Wyoming. The additional information on observations of nests furthers our understanding of the species' ecological niche, which is needed to improve our ability to predict how the species might react to a changing climate in future years.

Brown's field work in 2015 was funded by the Meg and Bert Raynes Wildlife Fund, through the Biodiversity Research Institute (BRI) of Portland, Maine. Current work on the species is under the guidance Anna Chalfoun of the Wyoming Cooperative Fish and Wildlife Research Unit of the University of Wyoming's Department of Zoology and Physiology and paid for by Wyoming's State Wildlife Grant Program. Thanks to Anya Tyson, Nick Rosenberger, Sean Beckett, Walter Scherer, and many other survey partners. Thanks also to reviewers Douglas W. Faulkner and Lucas H. DeCicco for helpful suggestions and comments. Finally, many praises to Vincent Spagnuolo of BRI for supporting this project and ensuring its execution.

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THE EFFECT OF A TOTAL ECLIPSE OF THE SUN ON BIRD CALLS

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I report on the effects of a total solar eclipse on calling birds at Market Lake Wildlife Management Area just north of Roberts, Idaho, on 21 August 2017. Market Marsh Wildlife Management Area (43.780° N, 112.194° W) was established in 1956 to restore the natural marshes around Market Lake, and consists of a system of levees separating marsh and open water. It covers 2052 hectares and is managed by the Idaho Department of Fish and Game. On 21 August 2017, the partial eclipse at this site started at 10:15 Mountain Daylight Time, totality started at 11:32 and ended at 11:34, and the partial eclipse ended at 12:57 www.timeanddate.com/eclipse/map/2017-august-21#. The National Weather Service measured the high for the day in nearby Idaho Falls at 28° C (<http://w2.weather.gov/climate/index.php?wfo=pih>), and the temperature dropped 7.2° C just before and during totality (local measurement).

Starting 90 minutes before totality, I conducted 1-minute auditory surveys ("samples") estimating the total number of individual bird vocalizations heard (all species combined) every 10 minutes (Table 1). At 30 minutes before totality, I increased the samples to one every 5 minutes. I also noted bird behavior during each sample. The species I tracked were the Canada Goose (*Branta canadensis*), Virginia Rail (*Rallus limicola*), Sora (*Porzana carolina*), Sandhill Crane (*Antigone canadensis*), Greater Yellowlegs (*Tringa melanoleuca*), Ring-billed Gull (*Larus delawarensis*), White-faced Ibis (*Plegadis chihi*), Northern Harrier (*Circus hudsonius*), Marsh Wren (*Cistothorus*

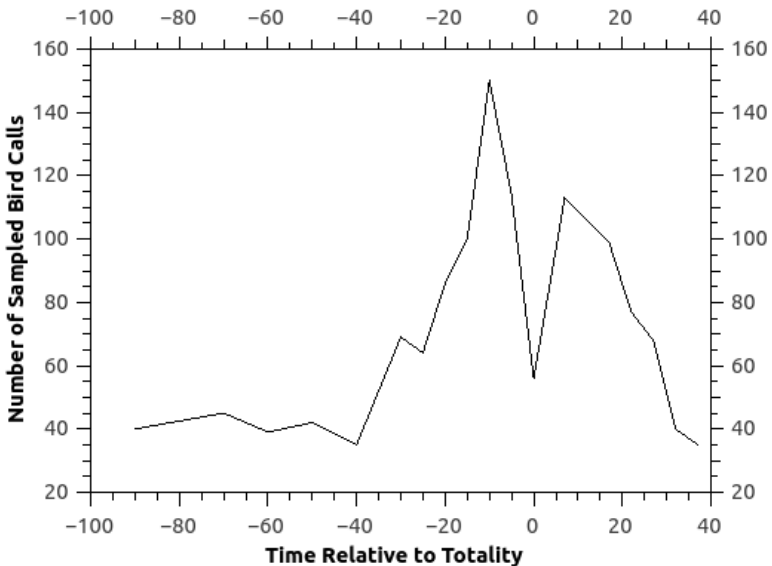


Figure 1. Number of bird calls by 1-minute interval relative to time of totality of the eclipse of the sun at Market Lake, Idaho, 21 August 2017.

NOTES

Table 1 Bird Vocalizations and Behavior Noted at Market Lake, Idaho, during the Total Solar Eclipse on 21 August 2017

Time relative to totality (min)	Number of calls (per 1-min sample)	Species calling	Behavioral and other notes
-90	40	Duck, Sandhill Crane, Marsh Wren	
-80	110	Duck, Marsh Wren	Canada Goose flock flies over (omitted from Figure 1)
-70	45	Duck, Marsh Wren, Yellow-headed Blackbird	
-60	39	Canada Goose, duck, Marsh Wren	
-50	42	Duck, Sora, Marsh Wren, Yellow-headed Blackbird	Northern Harrier activity seems to have increased; Sora calling seems to have increased
-40	35	Canada Goose, Sora, Marsh Wren, Northern Harrier	
-30	69	Duck, Sora, Marsh Wren, Yellow-headed Blackbird	Increased movement of birds
-25	64	Duck, Virginia Rail, Sora, Marsh Wren, Yellow-headed Blackbird	Ducks moving in and landing; sky noticeably darkening (as at dusk); White-faced Ibis arriving and roosting
-20	86	Sora, Yellow-headed Blackbird, Marsh Wren	Greatly increased Marsh Wren activity; ducks still coming in to land; swallow (Hirundinidae) activity increased
-15	100+	Duck, Virginia Rail, Sora, Greater Yellowlegs, Marsh Wren, Yellow-headed Blackbird; other calls not identified	
-10	150 ^a	All above species noted	
-5	114	All above species noted, plus White-faced Ibis	Marsh Wren calling decreased; Greater Yellowlegs stopped feeding; bird call noise level noticeably reduced.
0	56	Duck; other calls not identified	Marsh Wren less noisy
7	113 ^a	All above species noted, plus Ring-billed Gull	Marsh Wren very noisy; Ring-billed Gull in huge cloud making much noise (omitted from Figure 1)
12	106	Sora, Virginia Rail, Ring-billed Gull, Marsh Wren, Yellow-headed Blackbird	Birds seem to be calming down from peak.
17	99	Virginia Rail, Sora, Ring-billed Gull, Marsh Wren	Bird calls noticeably down.
22	77	Duck, Marsh Wren	
27	68	Duck, Marsh Wren	
32	40	Duck, Ring-billed Gull, Marsh Wren (far down from peak)	Bird activity back to pre-eclipse baseline (seemed same as ~1 hour before totality)
37	35	Canada Goose, Greater Yellowlegs, Marsh Wren (calls greatly reduced from peak)	

^aCount probably low; the number of birds calling made a totally accurate count impossible.

NOTES

palustris), Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), and Common Yellowthroat (*Geothlypis trichas*). Several species of waterfowl were also seen, including the Blue-winged Teal (*Spatula discors*), Cinnamon Teal (*S. cyanoptera*), Mallard (*Anas platyrhynchos*), and Northern Pintail (*A. acuta*), but I did not distinguish their vocalizations during the eclipse (noting them simply as “duck”).

Bird calls increased just before and after totality, building from a point near 40 minutes before totality (Figure 1). The Marsh Wren seemed particularly sensitive to the observed changes in sunlight. Just before and during the darkness of totality, the number of birds calling dropped dramatically. At no time during the eclipse, however, did the number of calls fall below the baseline observed before or after the eclipse. In other words, the birds at Market Lake did not actually go silent during totality, but the contrast between the maximum just before and after totality, and the dramatic drop in calls during totality, produced the subjective feeling of silence. This could account for the often-reported effect of birds going silent during totality. For example, during a total eclipse in a Maine forest, Kellogg (1963) reported that bird calls didn’t actually stop, but just dropped to a low level during totality. Similarly, in coastal Maine, Mousley (1933) reported Herring Gulls (*Larus argentatus*) “calling much as they do toward nightfall” 5 minutes before totality, and plovers, sandpipers and turnstones starting to call just prior to totality.

Conway (2011) noted “the half hour between sunset and complete darkness is often the time when detection probability (of marsh birds) is highest,” which corresponds with the increase in bird calls starting ~40 minutes prior to totality, when both light and temperature were dropping (mimicking the effects of approaching dusk). The drop in bird calls I observed after totality, however, occurred much more rapidly than that after dawn, when calls remain at an elevated level for up to three hours after sunrise (Conway 2011).

I thank Larry Norris (National Park Service and the University of Arizona, retired) for his field help and help editing the first draft. Thanks to the Idaho Fish and Game for its support at Market Lake.

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BOOK REVIEW

Those of the Gray Wind: The Sandhill Crane, new edition with a new preface and afterword, by Paul A. Johnsgard. 2017. University of Nebraska Press, Lincoln. xii + 157 pp., 6 black and white photos, numerous sketches. Paperback, \$14.95. ISBN 978-1-4962-0157-7.

Within the past two decades, the discipline of wildlife conservation has seen a surge in ecological-modeling approaches that has profoundly affected the way we perceive animals and ecological processes. One negative outcome of our own technological advances has been the shift in focus from observations of animals in the field to collecting data to fit ecological models. Although modeling does have its place in biology, animal behavior is a thing of inexplicable beauty and timelessness, and has intrinsic value well beyond our own interest as conservationists. In *Those of the Gray Wind: The Sandhill Crane*, Paul A. Johnsgard successfully describes the chronology of migration and other behaviors of the Sandhill Crane by creating a sense of wonder for the species via the sights and sounds witnessed by fictional human characters. The book is an excellent summary of the folklore of the Sandhill Crane, how its unique behaviors fascinate humanity, and the ecology of the species throughout its life cycle. *Those of the Gray Wind* was originally published in 1981 (St. Martin's Press), and this new edition includes a new preface and afterword by the author. The preface is an excellent start because it highlights the author's motivation behind the book, which is another story about one man's fascination with cranes (consider it the book's final, contemporary chapter). The afterword includes scientific data about crane populations in North America, including population trends, conservation needs, and long-term concerns, and emphasizes the author's expertise on the species.

This book is successful for three reasons. First is the incorporation of multiple North American cultures (German settlers, Inuit, North Dakotans, Pueblo) and how each culture has perceived the Sandhill Crane over 120 years, 1860–1980. The combination of time and culture make the book more robust and keep it interesting. Second, the book includes numerous, subtle descriptions of the crane's behavior, such as body painting, courtship dance, and reproductive ecology without using biological jargon or quantitative metrics. For the visual learner, the book also includes several original sketches and figures. Last, Johnsgard makes his points concisely. My first reading took one hour while I was sitting in a blind waiting to capture axis deer. I had enough time to go back and reread my favorite chapters and fact-check the afterword before we gave up our unsuccessful attempt with the deer.

Johnsgard's approach is to describe the Sandhill Crane's annual life cycle through human eyes—and, in some instances, from the birds' point of view. The focus is primarily on human children and their interactions with Sandhill Cranes; adults are secondary characters. The book is most successful when the adults highlight the mistakes of the past. For example, "The old man listened patiently and smiled. Yes, my son, those are the crane people, who once lived here in great numbers, with the Rio Grande ran full. Their numbers were as many as the sagebrush ...but in my lifetime... they [the cranes] no longer come to our valley." These sections inspire curiosity on the crane's historical ecology and how past mistakes can be remedied to improve its outlook. Much like Aldo Leopold's tree in *A Sand County Almanac* (Oxford University Press, 1949), adult cranes have a story. Johnsgard, however, stresses that, unlike the tree, we don't need to harvest cranes to know their history. The book convincingly argues through time that all we need to do is sit, watch, and listen to be fascinated.

Those of the Gray Wind is appropriate for all ages and reading skills, and a must-read for children or teenagers who are interested in nature or birds. The most astute and advanced readers will enjoy trying to pronounce the Inuit names of common waterfowl, waterbirds, and cranes, whereas novices will find the book easy and

BOOK REVIEW

enjoyable to read, with both memorable characters and scientific facts. Adults will especially appreciate the subtle message that wisdom and respect for all forms of life comes with age, as well as the interactions between the adults and children. I recommend above all the chapters “Dance of the Inuit” and “Crane People of the Sky” by the Pueblo, though the entirety of the book is thoroughly enjoyable and poetic.

The book’s biggest drawback is the assumption that consumptive users are ignorant of and not fascinated by cranes. The book is strongly against consumptive use, and includes numerous unsourced statements that crane harvest is unethical, barbaric, and even detrimental to crane populations in North America. The book fails to see the irony that since the 1950s, when Sandhill Crane harvest was authorized and regulated in the United States, the species has increased five-fold, according to 2017 population surveys on the Platte River by the U.S. Fish and Wildlife Service. Moreover, the new afterword includes numerous statements (all factual) that cranes stage, winter, or breed on U.S. Fish and Wildlife Service refuges or state wildlife-management areas, all of which are supported via consumptive activities through the Pitman–Roberson Act and the Waterfowl Stamp Act, among others. If you enjoy hunting in any capacity, to find balance between consumptive and nonconsumptive use, I recommend *Conservation and the American Sportsman* (University of Oklahoma Press, 1986) by John F. Reiger as a follow up to *Those of the Gray Wind*. In its new afterword, *Those of the Gray Wind* misses an excellent opportunity to promote unity between consumptive and nonconsumptive users, unity needed especially in a time when our differences so often separate us instead of common interest in the things we love binding us together.

Despite this flaw, *Those of the Gray Wind* is a must-own for the most intense crane-chasers, children interested in natural history, and adults interested in the humanities and culture. Johnsgard emphasizes our fascination with the Sandhill Crane through time, and successfully develops a sense of community for many of us who have taken time to appreciate the beauty and timelessness of this magnificent bird.

Blake A. Grisham

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TWO EXAMPLES OF APPARENT AVIAN KERATIN DISORDER FROM CALIFORNIA

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Bill deformities in wild birds are normally very rare, so when concentrations of Black-capped Chickadees (*Poecile atricapillus*) and Northwestern Crows (*Corvus caurinus*) with malformed bills were detected in Alaska in the late 1990s and early 2000s, citizens and researchers became alarmed. An epizootic of bill deformities was documented and described as an emerging avian disease, coined “avian keratin disorder” (AKD) (Handel et al. 2010). Birds with this disorder had elongated, twisted bills caused by accelerated production of keratin in the rhamphotheca, the outer layer of a bird’s bill (Van Hemert et al. 2012b). Between 1999 and 2008, studies revealed that 6.5% of Alaska Black-capped Chickadees had bill deformities characteristic of AKD (Handel et al. 2010), and in 2007 and 2008 the prevalence of AKD in Alaska populations of the Northwestern Crow averaged nearly 17%, ranging as high as 36% in the Kenai Peninsula (Van Hemert and Handel 2010). These were by far the highest rates of bill deformities reported in wild bird populations. Although chickadees and corvids have had the largest number of reported cases, woodpeckers, nuthatches, and an increasingly wide variety of other species have also been affected (Handel et al. 2010, C. Van Hemert pers. comm.). Significant outbreaks of AKD-like deformities have also been reported in the United Kingdom, affecting similar taxa (www.bto.org/volunteer-surveys/gbw/about/background/projects/bgbw). Afflicted birds become handicapped in their ability to accomplish essential activities such as feeding and preening, and mortality rates appear high (Van Hemert et al. 2012a, Van Hemert et al. 2012b, Handel et al. 2010).

The underlying cause of AKD remained elusive for nearly 20 years. Researchers tested bacterial and fungal infections, environmental contaminants, nutritional deficiencies, and trauma, and were unsuccessful in identifying an underlying cause. However, this mystery may now be solved. A team of scientists from the California Academy of Sciences, the University of California San Francisco, and the U.S. Geological Survey (USGS) have identified a new virus, termed Poecivirus, which has been strongly associated with AKD in Alaska birds (Zylberberg et al. 2016). Studies to test if the Poecivirus is the agent causing AKD are currently underway. If this relationship is confirmed, sampling and surveillance across a much larger geographical area may be initiated. The virus is detectable in cloacal swabs from birds, so collaboration with bird-banding and other programs that handle wild birds could relatively easily screen for this virus, which has yet to be tested for or documented outside of Alaska.

AKD appears to be spreading both geographically and in the number and diversity of bird species affected. Because AKD is being monitored primarily through solicited reports, public awareness plays a key role in documenting the disorder’s prevalence and distribution. In North America outside of Alaska and the Pacific Northwest, reports of birds with AKD are fairly widespread, although in low densities.

In California, researchers with the U.S. Geological Survey (USGS) have received over 90 reports from a variety of species with bill deformities consistent with AKD (C. Van Hemert pers. comm.). Here, I present evidence from two additional species. The White-headed Woodpecker (*Picoides albolarvatus*) depicted on this issue’s back cover is presumably the same individual that visited a suet feeder and bird bath in Mammoth Lakes, Mono County (elevation 2400 m), over a period of about 6 weeks in the fall of 2015. Advancement in the overgrowth of its bill is apparent in these two photographs taken 22 days apart. The image above was taken 20 September

FEATURED PHOTO



Figure 1. Western Meadowlark with deformed bill, the deformation possibly arising from avian keratin disorder, near Calipatria, Imperial County, 23 December 2015.

Photo by Nancy Overholtz

2015. Here, the mandibles are aligned, and the upper mandible appears about 15% longer than the lower mandible. In the image below, taken 12 October, the bill has grown longer relative to the head size, and the mandibles have become misaligned and crossed. Such rapid growth must make this condition very difficult for the bird to adapt to. Studies of captive Black-capped Chickadees afflicted with AKD also recorded rapid abnormal bill development occurring within a few weeks, and that growth in the upper mandible tended to outpace that in the lower (Van Hemert et al. 2012b). Additionally, the right foot of this woodpecker was thickened or swollen. Lesions and keratinized tissues are sometimes found on the legs, feet, and claws of birds suffering from AKD (Van Hemert and Handel 2010). Although this is the first reported case of a White-headed Woodpecker with a bill deformity consistent with AKD, similar deformities have been reported in eleven other woodpecker species throughout North America, including the Downy (*P. pubescens*) and Hairy (*P. villosus*) woodpeckers in Alaska (C. Van Hemert pers. comm., Handel et al. 2012b).

The Western Meadowlark (*Sturnella neglecta*) in Figure 1 was photographed near Calipatria, Imperial County, 23 December 2015. USGS has reports of Western Meadowlarks with bill deformities typical of AKD from several locations; this is the first for California (C. Van Hemert pers. comm.).

In conclusion, AKD appears to be a rapidly spreading disease afflicting a wide variety of species and may be caused by a newly discovered virus. Further investigations are needed to confirm whether the virus is the causal agent of AKD, or if other factors are involved in its development and spread. If bird(s) with deformed bills are seen, please report them to USGS at https://alaska.usgs.gov/science/biology/land-birds/beak_deformity/observerreport.php, and practice equipment hygiene if such birds are observed at bird feeders.

I thank Caroline Van Hemert for her helpful correspondence and sharing information used in this note.

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A schedule of events will be posted at www.westernfieldornithologists.org in May. Registration will open in June, so please make sure your membership is up to date. The last day to register will be Monday 10 September 2018.

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Photo by © Eric VanderWerf, of Honolulu, Hawaii:

Surfbird (*Calidris virgata*)

Near Halona Point, Oahu, Hawaii, 5 May 2012.

This issue of *Western Birds* features the first report of the newly formed Hawaii Bird Records Committee, affiliated with Western Field Ornithologists. This report by Eric A. VanderWerf, Reginald E. David, Peter Donaldson, Richard May, H. Douglas Pratt, Peter Pyle, and Lance Tanino includes 17 species new to the Hawaiian Islands from 2010 to 2016. Of these, only three, including the Surfbird, clearly originated from North America, whereas nine clearly originated from Asia and some of the others may have done so as well. Though some shorebirds commute regularly between Alaska and Hawaii, the Surfbird normally keeps tightly to the Pacific coast of the Americas in migration and winter.



“Featured Photos” by © Malcolm Clark of Mammoth Lakes, California: White-headed Woodpecker (*Picoides albolarvatus*) at Mammoth Lakes, Mono County, California, 20 September and 12 October 2015. The mandibles have grown rapidly far beyond their normal length, as seen in birds afflicted with avian keratin disorder, now frequent among some species in Alaska.