



Decision Summary
Sandgates, Saint Mary's County, Maryland
Kelp Gull

Larus dominicanus Lichtenstein, 1823
January 25, 1998 – present
MD/1999-035

November 28, 2003

Summary. The Maryland/District of Columbia Records Committee (MD/DCRC) has accepted the record of the Kelp Gull (KEGU) *Larus dominicanus* that has been a virtual resident at Sandgates, Saint Mary's County, Maryland since at least January 25, 1998. The bird was first reported on that date by Patty Craig as a possible subspecies of Lesser Black-backed Gull (*L. fuscus*). Kyle Rambo next observed the bird on February 7, 1998 and then refound it almost a year later on a January 3, 1999 Christmas Bird Count. The bird was observed and reported several times during January and early February, but on February 14, 1999 it was first identified as a KEGU by Ottavio Janni, Rob Hilton, and Lisa Shannon (Kostenko 1999). Acceptance by the MD/DCRC adds KEGU as species number 418 to the Official List of the Birds of Maryland. The KEGU was also observed and reported several times crossing the Patuxent River into Calvert County, Maryland.

MD/DCRC Acceptance Process. There are nine voting members on the MD/DCRC and sighting reports are circulated up to a maximum of four times. To accept a record, the committee procedures require a unanimous decision to accept on either the first or second circulations or eight votes to accept on rounds three or four. Non-unanimous votes cast to accept a species identification but with reservations as to the bird's origin, require further recirculations to resolve. The committee accepted the KEGU record on its third circulation with nine unanimous and unqualified votes to accept. During the earlier rounds, some members voted to accept the species identification but with questions as to the bird's origin. No votes were ever cast that challenged the species identification.

Issue Investigations. Over the past four years a number of issues were raised and investigated regarding this controversial bird. Largely through the efforts of Harvey Mudd, former MD/DCRC Chair, and Phil Davis, MD/DCRC Secretary, the committee researched the information necessary for the voting members to conduct a thorough and fair review and analysis of the documentation submitted in support of this report. In the research process we consulted with several authorities who have expertise in various aspects of KEGU biology: Donna Dittmann, who has studied the Louisiana KEGU population; Alvaro Jaramillo, a specialist in South American birds; David James, from Australia; and Frédéric Jiguet, who has extensively studied KEGU subspecies worldwide. All graciously provided information that was very helpful in resolving the issues discussed below.

MD/DCRC Review Material. Information circulated to the committee's voting members was organized in the following manner: 1) original documentation, including published accounts and photos from various individuals and web sites; 2) older identification literature for background, largely superseded by recent Birding World (UK) articles and preprints of new papers; 3) literature on population expansion into Ecuador, the Mexican Yucatan Peninsula, Texas, Trinidad, and Barbados; 4) Kelp Gull hybrids and possible escapees; 5) expert opinions on

various issues; and 6) recent publications, especially important new information on differentiating geographically distinct populations. We chronologically organized and cross-referenced all pertinent information so that a given topic could be followed to its conclusion. Below, we offer our analyses of the major issues.

DNA Analysis. Working with the National Zoo and using material from a molted feather, we attempted DNA analysis to determine the bird's subspecies or the presence of any hybrid characteristics. However, in part for technical reasons, but also because of the currently limited available knowledge about the variation in Kelp Gull mitochondrial DNA sequences (Crochet et al. 2000), it appeared that further such studies were unlikely to add useful information beyond what we were learning by other means.

Hybridization. Initially, based on a somewhat pale appearance of the soft parts and a slightly washed out mantle color on the basic-plumaged bird, some observers suspected that the Maryland KEGU could be a hybrid. Later, however, images of the bird in full alternate plumage exhibited all the expected characteristics of a pure KEGU. Some observers also felt that the presence of basic plumage fine head streaking could also be a hybrid characteristic since popular literature indicated that the KEGU head is white in basic plumage. However, David James of Australia (pers. comm. 1998) commented that head streaks are sometimes present. The MD/DCRC investigated this field mark by examining two available specimens of basic plumaged KEGU at the Smithsonian National Museum of Natural History. The committee found that both specimens showed head markings. One was a third year bird (USNM #264135) from the South Shetland Islands. The other (USNM #496757) was a full adult collected off Valparaiso, Chile, that showed light flecking on the crown and nape. The conclusion reached was that this flecking is so light that in the field the birds appear white-headed unless examined very closely. In the end, hybrid status was not considered a problem by the committee members.

Subspecies Status. There are several distinct subspecies of KEGU, including *vetula*, which breeds in Africa; *austrinus*, which breeds in the Antarctic region; and the nominate *dominicanus*, which breeds in South America. The question of the Maryland bird's subspecies became a significant question related to the issue of captive vs. natural origin (see below). The most relevant information regarding subspecies identification was obtained by Harvey Mudd and related to plumage features that can be used to differentiate KEGU geographical populations. A new paper by Frédéric Jiguet (2002) outlined significant subspecies differences in the number and placement of tongues on the inner primaries. Birds from the Antarctic, *austrinus*, including those from the South Shetland Islands, exhibit tongues on P5, 6 and 7, as did USNM specimen #264135 that was collected in the South Shetlands. Figure 37 in Jiguet et al. (2001) shows this pattern clearly on an Antarctic bird. The Chilean bird, USNM #496757, had tongues on P4 and 5 and a trace on P6, the pattern Jiguet describes for birds from western South America. Nominate *dominicanus*, originally described from Brazil, has tongues on P4 and 5, as does the Maryland KEGU (shown clearly in flight shots) indicating that the Maryland bird is likely of Brazilian origin. Jiguet also personally offered his opinion (pers. comm. 2002) that the Maryland bird was derived from a northern South American population, i.e., the nominate subspecies *dominicanus*. At present we do not know whether the tongue pattern on birds from the northwest coast of South America resembles that of the Chilean or of the Brazilian population. Therefore, we cannot rule out the possibility that some of the North American birds originated on the west coast of South America.

Captive vs. Natural Origin. Research by Donna Dittmann (pers. comm. 1999) revealed that all known existing KEGUs in captivity in the US were derived from fertile eggs collected by Sea

World in the South Shetland Islands. There was concern that the first reports of KEGU from the Yucatan in 1988-89 followed the importation of KEGUs by Sea World in 1983 and that these and subsequent reports could refer to offspring of escaped birds. In addition, some committee members cautioned that there was a risk in depending on subtle differences in the wing pattern to determine subspecies identification, in view of the known variability in gull plumage. However, the committee ultimately concluded that the Maryland KEGU exhibited the characteristics of Brazilian birds and was unlikely to be an escapee from the known Sea World collections. Additionally, Sea World curators stated that no birds were known to have escaped from their facilities. However, this reasoning does not exclude the possibility that other Brazilian KEGUs could have been imported by other collectors, and subsequently escaped. Following extensive research by Phil Davis, however, there has been no indication, to date, that such an event occurred. The only imported bird with an unknown subspecies background was the 1969 acquisition of a bird by the Louisville Zoo from an importer in Miami. That bird died in 1992 after producing a hybrid offspring with a captive Ring-billed Gull in 1987. The hybrid was subsequently taken by a Great Horned Owl. The importer appears to have passed away and the company is no longer in business. We obtained the name of one of the former employees but were not able to successfully contact him, more than 30 years later. This investigation resulted in a dead end; however, the committee felt that the odds were indeed low that other captive KEGUs might have been imported from Brazil by this company over 30 years ago and then subsequently escaped, resulting in the Maryland bird.

Lack of Seasonal Movement. Another issue raised by many was the question of the Maryland KEGU remaining essentially in the same place for more than four years. Initially some members were uncomfortable with this lack of movement following a long-distance vagrancy. However Jane Kostenko, who closely tracked all reports and sightings of this bird, noted (pers. comm. 2001) that the bird tends to disappear for long periods in the spring (mating season?), reappearing in the summer to stay through the winter. It should also be noted that Dittmann sees the Chandeleur Islands, Louisiana, gulls during breeding season, but not during the rest of the year. We see the Maryland KEGU throughout the year, but seldom during the breeding season, so its pattern is similar to that of the Louisiana KEGUs, namely, in one location during the breeding season and in another location during the rest of the year. In both the Maryland and Louisiana cases, however, one of the two locations (and therefore, the distance between them) is unknown. In their native range KEGUs generally do not wander far (Jaramillo, pers. comm. 2002); however, seasonal movement between coastal and non-coastal locations has been noted (Blanco, et al. 1996). Although this behavior remained problematic for some committee members, it did not preclude their voting to accept the record.

Breeding Cycle. Some members raised concerns that the Maryland KEGU shows a Northern Hemisphere molt schedule even though it presumably originated in the Southern Hemisphere. The Maryland KEGU could possibly be derived from the existing Northern Hemisphere Louisiana or Yucatan birds; however, even a vagrant Brazilian bird could be expected to show a Northern Hemisphere molt cycle for the following reasons. Avian breeding is regulated by the length of the day, under the control of circadian oscillators in the eye and brain. The circadian oscillators are very sensitive to light conditions. Many songbirds begin to sing within about a month of the winter solstice. It is possible to completely reverse a laboratory animal's circadian rhythms in a matter of a few days by reversing the lighting cycle (Goldman, et al. 1980). So, although it may take some time to make the adjustment, it is probable that a bird wandering from the Southern to the Northern Hemisphere would adapt to a new breeding cycle. The associated molt cycles, being highly energy dependent, may take longer, but should follow the breeding cycle.

Range Expansion. The literature on population expansion indicates that KEGU is on the move and expanding world-wide and especially in South America where the species has recently arrived and is now breeding in Ecuador (Haase 1996) and surveys have shown significant population increases in Argentina over the past decades (Yorio et al. 1998). Population expansion has also been recorded in South Africa (Steele and Hockey 1990). Australia was only colonized during the past century with the first records in 1943 and breeding recorded in 1958; since then the species has rapidly expanded its range and increased in abundance (Underhill 2002a). The presence of KEGUs in the Yucatan (Howell et al. 1993), Tamaulipas (Lasley 2003), Trinidad and Barbados (Hayes et al. 2002), not to mention Texas (Gottschling 1996) and Louisiana (Dittman and Cardiff 1998), could be interpreted as an indicator of this movement. Surprisingly, the Barbados bird appears to be from the African population, having a dark iris and pale orbital ring. The presence of this bird could be related to the recent breeding attempt in Mauritania (Pineau et al. 2001). Jiguet (2002) treats the details of distinguishing these various populations in the field. Underhill (2002b) notes that young birds frequently move considerable distances in the first year after fledging. One committee member noted that the small number of extralimital sightings in the Northern hemisphere and the great distance from known breeding populations that each sighting represented was problematic. However, after the Maryland review process began five additional KEGUs were reported from Panama (Panama Audubon Society web site 2001) and another from Colorado which the committee felt further supported the case for range expansion. In 2003, the Indiana Records Committee accepted the 1996 record of Kelp Gull in that state (Don Gorney, pers. comm. 2003).

Possible Influence of El Niño. One member noted that it is instructive to consider that El Niño weather effects, even though most obvious in the Pacific, are global in extent. The prevailing equatorial easterlies weaken and the winds become westerly and onshore. The coastal upwelling dies and sea surface temperatures increase significantly. Under these conditions many coastal and seabird species fail to breed and may disperse widely in search of food or suitable habitat. It may be significant that the KEGU's western South American population is located very close to the peak of El Niño activity. The most recent El Niño events occurred in 1982-83, 1986-87, 1991-95, 1997-98, and 2002-3. It is interesting to note that the Maryland KEGU's documented arrival coincided with the most powerful El Niño ever recorded, that of 1997-98, as did the 1998 record from Tamaulipas, Mexico. In addition, the first record of KEGUs on the Yucatan peninsula of Mexico in 1987 coincided with the 1986-87 El Niño event, and the colonization of Ecuador in 1993 occurred during the 1991-95 El Niño (Haase 1996). Belcher's Gull (*L. belcheri*), whose range overlaps that of KEGU in Chile, Peru and Ecuador, was recorded at San Diego in 1997-98, coincident with the 1997-98 El Niño. Another Belcher's Gull report, from a single observer, came from the Channel Islands in 1987, another El Niño year. There are also four reports of Belcher's Gull from Florida from 1968-76 (AOU 1998), although one could have been Olrog's Gull (*L. atlanticus*). The Florida reports raise the possibility of birds from western South America crossing the Isthmus of Panama. Belcher's Gulls have been reported in Panama on three occasions and birds are known to use the Canal regularly to pass back and forth between the Atlantic and Pacific sides. Marcus C. England (2000) notes that birds have the potential to respond rapidly to environmental changes due to their mobility and that the El Niño-Southern Oscillation (ENSO) is one of the most important of climatic anomalies. He further characterizes the ENSO event of 1997 as one of the most powerful of the century. He further notes that changes in ocean ecosystems appeared to have modified dispersal patterns and caused the appearance of species in new localities. England documents that during the 1997 El Niño, two common species along the Peruvian coast-Peruvian Booby *Sula variegata* and Guanay Cormorant *Phalacrocorax bougainvillii*-extended their ranges north into Ecuador, extralimital records of Inca Tern *Larosterna inca* were reported in Colombia and the first record of South American Tern *Sterna hirundinacea* in Ecuador was made. Obviously, more research

needs to be conducted to support an El Niño theory of range expansion, but the above details provide interesting food for thought.

A formal acceptance report will be published in the future in *Maryland Birdlife*.

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