gested that Burrowing Owls (*Athene cunicularia*) and Great Egrets (*Casmerodius albus*) may also feed on them, but presently, verified avian predators of round-tailed muskrats include only three owls, the Marsh Hawk, Bald Eagle and Great Blue Heron.

This is contribution 36, Merritt Island Ecosystems Studies.

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Llewellyn M. Ehrhart, Department of Biological Sciences, University of Central Florida, P. O. Box 25000, Orlando, Florida 32816.

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Some comments about "white-winged" gulls in Florida.—Several species of gulls in Florida may be nearly white in certain plumages. Two of these, the Glaucous Gull (*Larus hyperboreus*) and the Iceland Gull (*L. glaucoides*), are very similar in plumage at the same age, and their first-year plumages can resemble paler examples of Thayer's Gull (*L. thayeri*). Also the problem may be compounded by occasional albinism in other species of gulls (Atherton and Atherton 1981, Anon. 1972).

Through the spring of 1977, Florida records of about 45 Glaucous Gulls and 27 Iceland Gulls had been published in Audubon Field Notes, American Birds, and Florida Naturalist. None of these gulls was reported to have been older than two years. We believe from our review of specimens and photographs that many of the birds thought to be Iceland Gulls were misidentified, and that Glaucous Gulls are by far more frequently encountered. For example, a "score of records" of Glaucous Gulls in Brevard County (Cruickshank 1980) implies that many other records of this species have not been published. In this paper we review existing records and identification criteria.

Specimens. A reported Iceland Gull (Cunningham 1965) collected by H. L. Stoddard, Sr., at St. Augustine (St. Johns Co.), 28 October 1964 (TTRS 358), proved to be an almost pure-white Ring-billed Gull (*L. delawarensis*) showing a faint bar on the bill (Stevenson 1972). A gull collected by Lovett Williams, Jr., on a spoil island off Port St. Joe (Gulf Co.), 19 August 1971 (FSM 15778),

being intermediate in some characteristics between Glaucous and Iceland, was identified as an Iceland Gull by some, but was called a Glaucous Gull by Kenneth Parkes and us. Because of bill measurements and color, we also consider an "Iceland" Gull collected by Frank Ligas at Fort Lauderdale (Broward Co.), 11 April 1962 (UMRC 4797; Paulson and Stevenson 1962) to be a Glaucous Gull. A Glaucous Gull collected by Stevenson near Flagler Beach (Flagler Co.), 18 March 1961, had been called an Iceland Gull by local observers (TTRS 3147, identification by Wetmore; Stevenson 1961). Additional specimens of Glaucous Gulls were collected by J. M. Stevenson at Mayport (Duval Co.), 2 March 1974 (FSU, not catalogued; Stevenson 1974) and by H. M. Stevenson near Eastpoint (Franklin Co.), 17 May 1978 (TTRS 3597; Kale 1978). If all these identifications are correct, as we believe, Florida has only one specimen of the Iceland Gull—the bird reported by Howell (1932) from Crystal River (Citrus Co.), 9 February 1927 (FSM 2103). In contrast, five specimens of Glaucous Gulls in Florida have been examined.

Photographs. A published photograph of a putative Iceland Gull, like some Florida specimens, may have been misidentified. This bird remained on the Florida Keys from January 1950 to 30 May 1952. The published photograph (Cruickshank 1951), however, shows a bill that is entirely pale and quite large, although somewhat out of focus. The only undisputed photographs of Iceland Gulls were taken of single birds in first basic plumage at Port Canaveral, 8 February 1975 (TTRS P183), and Toytown Landfill, Pinellas County, 4 February 1978 (TTRS P371). By contrast, at least eight different Glaucous Gulls have been photographed in Florida, although we have not examined every photograph. The first of these was reported by Howell (1932), who, along with H. C. Oberholser, viewed the cinefilm and corroborated the identification. We examined the following photographs of Glaucous Gulls: Port Canaveral, 22 December 1958 (TTRS P52) and 10 February 1961 (TTRS P53); approximately 32 km east of Cape Canaveral, 9 January 1977 (TTRS P373); Sebastian Inlet, 21 February 1978 (TTRS P180); and Toytown Landfill, 9 March 1981 (TTRS P374). We have not had an opportunity to examine photographs taken at Pensacola (Escambia Co.) in the spring of 1936 (Weston 1936) and in the winter of 1959-60 (F. M. Weston et al., *in* James 1960).

Identification. Probably the most important criteria in distinguishing Glaucous and Iceland gulls are color and size of the bill. In four sources (Ridgway 1919, Forbush 1925, Godfrey 1966, and Dwight 1925), the longest exposed culmen in the Iceland was 47 mm, shortest for the Glaucous 49 (max. 67) (Table 1). The Iceland Gull's bill is also more slender, so that the difference in overall bill size is usually noticeable in the field. The bill color of a first-year Kumlien's Iceland Gull (*L. g. kumlieni*), the predominant wintering race in North America (Heil 1983, Gosselin and David 1983), is usually entirely dark but shows a horn or gray color at the base in its second year. Until at least two years old, the Glaucous Gull's bill is flesh-colored with the distal one-third dark. Because the wing is relatively longer in the Iceland Gull than in the Glaucous, the bill/wing ratio should separate nearly all individuals. When the ratio of the exposed culmen to the wing arc was measured in specimens of known identity, the following results were obtained: Glaucous, TTRS 3147, 0.127; TTRS 3597, 0.138; FSM 15778, *ca.* 0.132 (tips of primaries frayed). UMRC 4797 matched these ratios well, with 0.137. Iceland Gulls had much lower ratios: TTRS 3211,

TABLE 1. Bill and wing lengths of Glaucous and Iceland gulls.

Source	Bill (exposed culmen) (mm)		Wing (arc) (mm)	
	Glaucous	Iceland	Glaucous	Iceland
Ridgway (1919)	49-67	40.5, 44.5[1]	424-474	379, 394[1]
Forbush (1925)	54-76	40-47	425-475	374-432
Godfrey (1966)	53.0-64.6[2]	43-47	447-477	395.5-423
Dwight (1925)	56-67	39-45	430-477	378-433

[1]Only two specimens
[2]Males only

0.102; FSM 2103, 0.115 (primaries frayed); USNM 394270, 0.0955; USNM 76230, 0.0907. This criterion would fail to provide a correct identification only in the highly unlikely circumstances that an Iceland Gull had a bill that was very long relative to a very short wing, or a Glaucous Gull had a bill that was very short relative to very long wing.

The problems of correctly identifying Iceland Gulls were further complicated when the occurrence of Thayer's Gull in Florida was suspected. The identifications of at least seven yearling Thayer's Gulls photographed at Toytown Landfill (1979-81) were confirmed by J. Jehl and Guy McCaskie (all photos on file at TTRS). The plumage colors of at least two of these, TTRS P359 and P368, were in the range of *kumlieni*. However, the former was as large as some Herring Gulls (*L. argentatus*) with which it mingled, and the latter, observed from late March through mid-April, appeared exceptionally pale owing to feather wear. Because ranges of both body and bill size overlap in Iceland and Thayer's gulls and their bill color is virtually identical in the first year, a positive identification in the field is sometimes impossible. However, the combination of the color pattern of the individual back and scapular feathers, along with the color of the primaries, is usually diagnostic in *unworn* first basic plumage. The back and scapular feathers are brownish or tan in Thayer's, edged with pale buff to white. In contrast, those of the Iceland are whitish to pale buff with narrow brownish barring. The primaries of Thayer's average darker in tone than those of the Iceland and approach those of the Herring Gull.

On 13 June 1983 at Port St. Joe (Gulf Co.), Atherton tentatively identified as Thayer's a very pale-winged gull standing adjacent to several noticeably larger Herring Gulls in first alternate plumage. However, extreme abrasion and bleaching of the wing and tail feathers prevented elimination of Iceland as a possibility. The bird was collected the following day, and when the specimen was prepared and measured we were able positively to identify it as a female Thayer's Gull (TTRS 3724, confirmed by Earl Godfrey), the only Florida specimen. Measurements include bill from naris 19.8 mm, exposed culmen 43.1, wing (arc) 375, and tarsus 57.0.

Only since the mid-1970's have the immature plumages of Thayer's Gull been adequately described, and the species' status in the eastern United States has become known even more recently. Therefore, it is likely that some Thayer's Gulls have been misidentified as "Iceland" Gulls. Burt Monroe, Jr., one of the observers of the Pensacola "Iceland" Gull (Weston 1960), commented to Atherton (*in litt.* 1982) that he now believes the gull "could very well have been Thayer's." In fact, the difficulty of distinguishing the two forms by overall size, lengths of body parts, and color pattern may suggest that they are more closely related than they are commonly thought to be. Salomonsen (1951) and, especially, Macpherson (1961) have suggested that the Iceland Gull (*Larus g. glaucoides* and *L. g. kumlieni*) and Thayer's Gull (*L. thayeri*) constitute a single, polymorphic species.

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American Crows feeding on and storing river otter dung.—I observed forty instances of American Crows taking the dung of river otter (*Lutra canadensis*) at the Hendrie ranch, 24 km south of Lake Placid, Highlands County, Florida, between 30 January and 19 February 1984. The crows were tame owing to years of protection, and, at distances of 10-14 m using 8 x 40 binoculars, I was able to watch them and three otters that I believed to be juveniles. Two adult otters were present on 18 February. All of my watching was along a stream that ran through open pasture and at a large culvert that provided a refuge for the otter.

The otters used three defectation or marking sites (Melquist and Hornocker 1983) repeatedly. The crows were quick to recognize what an otter was doing and flew down (n=29) to start eating the usually small and mushy scats when the otter left. In nine instances the crows visited defecation sites in an absence of otters. The crows either ate the feces directly (n=25) or loaded it in their bills and walked or flew to store it (n=13) elsewhere. In most of my observations of storing (n=9), the crows stored feces 3-7 m away in a clump of grass, covering it over with small wads of turf or other debris. In one instance otter dung was poked under a "cow pie" and, in another, was flown to a bay tree (*Persea* sp.) and pushed into a bromeliad.

I collected samples of fresh dung on 6 February. These, as kindly examined by James N. Layne, were found to consist almost entirely of well-fragmented remains of crayfish (*Procambarus* sp.) held together with mucous. Other than the mucous, it was difficult to perceive what the nutritive value of the scats might be. Crows eat sand (Kilham 1984), and sharp-edged pieces of *Procambarus* exoskeletons might serve the same purpose in their gizzards. In that the crows at the ranch stored food of many types (Kilham 1984), the caching of scats, in the same ways, did not seem unusual. I have described other relations of the American Crows and otter elsewhere (Kilham 1982).

Other birds reported to eat the dung of mammals include: the Common Raven (*C. corax*) (Bent 1946); the Black-billed Magpie (*Pica pica*) (Summers-Smith 1983); the Starling (*Sturnus vulgaris*) (Simmons 1983) and the Black Vulture (*Coragyps attratus*) (Welty 1982) all eating dog feces; and the Ivory Gull (*Pagophila eburnea*) (Welty 1982), eating the feces of polar bear, walrus, and seals.

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