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The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Organization: Alexa Crawls Starting in 1996, Alexa Internet has been donating their crawl data to the Internet Archive. Flowing in every day, these data are added to the Wayback Machine after an embargo period. Starting in 1996, Alexa Internet has been donating their crawl data to the Internet Archive. Flowing in every day, these data are added to the Wayback Machine after an embargo period. Snow Buntings have several plumages, but they always show white inner wings with black wingtips and a black-and-white tail. Breeding males are sharp white with a black back. Breeding females are whitish overall with a brown, streaky back and a dusky head. Nonbreeding males are white below with rusty patches on the crown, "ear," and shoulder, and dark streaks down the back. Nonbreeding females have a rusty wash on the face and darker rusty patches on the breast. Breeding males and females have a dark bill that turns yellowish orange during the nonbreeding season. © Christoph Moning / Macaulay Library Snow Buntings are predominantly a winter visitor to Britain & Ireland although a tiny breeding population remains amongst snow fields on the highest Scottish mountains.Winter visitors from northern breeding grounds in Iceland and Fennoscandia are widely distributed across the uplands of Scotland and England, and to a lesser extent Wales and the island of Ireland. However, most birdwatchers will encounter flocks of this confiding little bird on North Sea coasts from the Tees to Norfolk. The population in winter has increased by a third in 40 years.In the breeding season, Snow Buntings adopt a very smart white summer dress, with black wings and tail making a superb contrast as they flutter across high mountain snowfields with their sweet bubbling call. You have to be lucky or determined to see them though, as the most recent survey identified only around 80 breeding territories in this harsh landscape. Curated resources to aid in the identification of Snow Bunting This section features BTO training videos headlining this species, or featuring it as a potential confusion species. Listen to example recordings of the main vocalisations of Snow Bunting, provided by xeno-canto contributors. Population size, trends and patterns of distribution based on BTO and partnership surveys and atlasses with data collected by BTO volunteers. This species can be found on the following statutory and conservation listings and schedules. * A guide only. Check details with the original legislation, especially those marked with an asterisk. See About Birdfacts for more information. * First documented occurrence. Most species undoubtedly occurred before this. See About Birdfacts for more information. The Snow Bunting is restricted as a UK breeding species to mountainous areas of Scotland where it breeds in small numbers. It is an Rare Breeding Birds Panel species but is under-reported due to the difficulties in finding and monitoring birds in such challenging habitat (Eaton et al. 2021). It is believed that the population may have increased during the 1970s and 1980s although the possibility that the recorded increases may have resulted from higher levels of observer coverage cannot be ruled out (Watson & Smith 1991).The population appears to have subsequently remained relatively stable and the population estimate from the last full survey in 2011 was 60 territories (Hayhow et al. 2018). The breeding range in 2008–11 was substantially larger than it was in 1968–72 but smaller than in 1988–91 (Balmer et al. 2013). A small relict population of Snow Buntings breeds on the high tops of mountains in the Cairngorms and northwest Highlands. During 2008–11 Bird Atlas distribution maps show where bird species breed or winter in Britain and Ireland. For breeding maps, larger dots indicate higher certainty the species bred in that area. To view and download up-to-date distribution information aggregated from across BTO and partnership surveys and schemes, see our data holdings on the NBN Atlas. The Snow Bunting range extent detected in 2008–11 was substantially larger than in the 1968–72 Breeding Atlas but smaller than in the 1988–91 Breeding Atlas. Occupancy figures are likely to be heavily influenced by the intensity of coverage on the high tops inhabited by this species. Nevertheless, other data confirm this trend. In winter there has been a 34% range expansion since the 1980s, with gains in the uplands and on the margins of the coastal range, in south and southwest England, Wales and Ireland. Bird Atlas distribution change maps show how bird distributions have changed through time. Coloured upward-pointing triangles show places apparently colonised over the period; grey downward-pointing triangles show places apparently vacated. Shading show places occupied. Snow Bunting is a localised breeder, autumn passage migrant and localised winter visitor. Weekly pattern of occurrence The graph shows when the species is present in the UK, with taller bars indicating a higher likelihood of encountering the species in appropriate regions and habitats. Weekly occurrence patterns (shaded cells and reporting rates (vertical bars) based on BirdTrack data. Reporting rates give the likelihood of encountering the species each week. Information about Snow Bunting movements and migration based on online bird portals (e.g. BirdTrack), Ringing schemes and tracking studies. Dots show the foreign destinations of birds ringed in Britain & Ireland, and the origins of birds ringed overseas that were subsequently recaptured, resighted or found dead in Britain & Ireland. Dot colours indicate the time of year that the species was present at the location. Winter (Nov-Feb)Spring (Mar-Apr)Summer (May-Jul)Autumn (Aug-Oct) EuroBirdPortal uses birdwatcher's records, such as those logged in BirdTrack to map the flows of birds as they arrive and depart Europe. See maps for this species here.The Eurasian-African Migration Atlas shows movements of individual birds ringed or recovered in Europe. See maps for this species here. Lifecycle and body size information for Snow Bunting, including statistics on nesting, eggs and lifespan based on BTO ringing and nest recording data. Survival is shown as the proportion of birds surviving from one year to the next and is derived from bird ringing data. It can also be used to estimate how long birds typically live.View number ringed each year in the Online Ringing Report. Taxonomy, names and species codes for Snow Bunting Order: PasseriformesFamily: CalcariidaeScientific name: Plectrophenax nivalisAuthority: Linnaeus, 1758 BTO 2-letter code: SBBTO 5-letter code: SNOBUEuring code number: 18500 Catalan: sit blancCzech: snehule severníDanish: SnespurvDutch: SneeuwgorsEstonian: hangelindFinnish: pulmunenFrench: Plectrophane des neigesGaelic: Gealag-an-t-sneachda German: SchneeammerHungarian: hósármányIcelandic: SnjótittlingurIrish: Gealóg ShneachtaItalian: Zigolo delle neviLatvian: sniedzeLithuanian: paprastoji sniegstarteNorwegian: Snøspurv Polish: sniegula (zwyczajna)Portuguese: escrevedeira-das-nevesSlovak: snehulka severskáSlovenian: snežni strnadSpanish: Escribano nivalSwedish: snösparvWelsh: Bras yr Eira English folkname(s): Snowflake Interpretation and scientific publications about Snow Bunting from BTO scientists. The small UK Snow Bunting population is believed to have remained relatively stable since at least the 1990s following previous increases (Hayhow et al. 2018) suggesting conditions have remained relatively favourable for this species. However, there are concerns that the species is likely to be vulnerable to climate change as Scotland lines at the far south of its breeding range (Chamberlain & Pearce-Higgins 2013) and declines and range losses have been reported elsewhere in Europe (Eaton et al. 2021). The Snow Bunting is a hardy Arctic specialist and holds the record for the northernmost breeding range among all songbirds. Its ability to adapt to extreme environments makes it a fascinating bird to observe. Physical Characteristics The Snow Bunting is larger than most buntings, measuring around 15 cm (6 inches) in length with a wingspan of 38 cm (15 inches). Males in their breeding plumage are mostly white, with black wingtips and a black back. In winter, both males and females sport a more subdued reddish-brown coloring on their back. Unique Molting Behavior Unlike most migratory songbirds, the Snow Bunting does not undergo a complete molt before migrating south for the winter. Instead, their plumage color changes naturally as old feathers wear down and are replaced by new ones. This adaptation allows them to stay longer in their breeding grounds, taking advantage of the Arctic’s abundance of insects. Nesting and Behavior During the breeding season, the female Snow Bunting stays at the nest to maintain the temperature required for incubating the eggs. She usually lays 3 to 4 eggs, and the male hunts for food for both the female and himself. Snow buntings are ground dwellers, commonly seen walking or running through the tundra. Migration and Habitat Snow buntings breed in the high Arctic, arriving in April and staying through September. Afterward, they migrate south to more temperate regions, including Southern Canada, the northern United States, northern Europe, and central Asia, where they spend the winter months. Interesting Facts Unique Molting: Instead of molting fully, Snow Buntings' plumage changes as feathers wear down and are replaced. Nesting Behavior: Females do not leave the nest after laying eggs to ensure a stable incubation temperature, relying on males to provide food. Arctic Adaptation: Snow Buntings remain in the high Arctic longer than other songbirds, taking advantage of the summer insect abundance. Species of bird Snow bunting Male in breeding plumage, Thule, Greenland Conservation status Least Concern (IUCN 3.1)[1] Scientific classification Domain: Eukaryota Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Calcariidae Genus: Plectrophenax Species: P. nivalis Binomial name Plectrophenax nivalis(Linnaeus, 1758) Breeding Migration Year-round Nonbreeding Synonyms Emberiza nivalis Linnaeus, 1758 Passerina nivalis (Linnaeus, 1758) The snow bunting (Plectrophenax nivalis) is a passerine bird in the family Calcariidae. It is an Arctic specialist, with a circumpolar Arctic breeding range throughout the northern hemisphere. There are small isolated populations on a few high mountain tops south of the Arctic region, including the Cairngorms in central Scotland and the Saint Elias Mountains on the southern Alaska-Yukon border, as well as the Cape Breton Highlands. The snow bunting is the most northerly recorded passerine in the world.[2] The snow bunting was formally described by the Swedish naturalist Carl Linnaeus in 1758 in the tenth edition of his Systema Naturae. He placed it with the buntings in the genus Emberiza and coined the binomial name Emberiza nivalis. He specified the locality as Lapland.[3] It is now placed in the genus Plectrophenax, described in 1882 by the Norwegian born zoologist Leonhard Stejneger with the snow bunting as the type species.[4][5] The genus name Plectrophenax is from Ancient Greek plektron, "cock's spur", and phenax "imposter", and the specific nivalis is Latin for "snow-white".[6] The snow bunting was formerly classified in the family Emberizidae, which included American sparrows, buntings, towhees and finches. All these species came into existence after a broad geologically recent radiation of passerine birds. However, it is now part of the narrower family Calcariidae, which also contains the longspurs. Despite the wide distribution of this species there are only very small differences between different phenotypes.[7] Four subspecies are accepted, which differ slightly in the plumage pattern of breeding males:[5][8] P. n. nivalis (Linnaeus, 1758) – Arctic Europe, Arctic North America. Head white, rump mostly black with a small area of white. P. n. insulae Salomonsen, 1931 – Iceland, Faroe Islands, Scotland. Head white with a blackish collar, rump black. P. n. vlasowae Portenko, 1937 – Arctic Asia. Head white, rump mostly white. P. n. townsendi Ridgway, 1887 – Aleutian Islands, Kamchatka, coastal far eastern Siberia. As vlasowae, but slightly larger. It is very closely related to the Beringian McKay's bunting (Plectrophenax hyperboreus), which differs in having even more white in the plumage. Hybrids between the two occur in Alaska,[8][9] and they have been considered conspecific by some authors,[10][11] though they are currently generally treated as separate species.[5][12] A hybrid with a Lapland longspur was photographed at St. Lewis Inlet, Newfoundland and Labrador, Canada, during spring migration in April 2011.[13] A female snow bunting wintering atop Mount Agamenticus in York, ME. The snow bunting is a sexually dimorphic, medium-sized passerine bird. It is ground-dwelling, and walks, runs and can hop if needed.[7] It is fairly large and long-winged for a bunting. It measures 15 cm with a wingspan of 32–38 cm (13–15 in) and weights 30 to 40 grams.[8][7][14] The bill is normally yellow with a black tip, however in males, the bill is all black in the summer. The plumage is white underneath and the wings and back have black and white on them. The female and male have different plumage; during the breeding season, the male is white with black wingtips and a black back, while the female has black wingtips and the black feathers on the back fringed with brown. During the winter, they both have broad orangey-brown fringes on the back feathers. In the spring, the buntings do not moult as many other passerines do; instead the breeding colours come with the wearing and abrasion of the brown fringes to show just the black centres of the feathers.[7] Unlike most passerines, it has feathered tarsi, an adaptation to its harsh cold environment. No other passerine can winter as far north as this species, apart from the common raven.[8][14] This species is easily confused with McKay's bunting due to the similarity of their plumage and the occurrence of hybrids.[7] It can also be confused with the Lapland longspur, which differs mainly in having minimal white in the wing; their calls are similar, but the snow bunting has more 'liquid' rippling tone, while Lapland longspur has a drier, more rattling tone.[14] Another species that it may occur with is the horned lark, although that has a conspicuous black-and-yellow head pattern, a longer, partly black tail and no white on the wings.[15] The call is a distinctive rippling whistle, per,r,r,rit, and the song is a brief but loud warble hudidi feet feet feew hudidi.[14] Snow buntings use vocalizations to communicate among each other and males will have a song to attract the female.[16] The communication calls are done by both the male and the female and they tend to be emitted in flight or in the ground, while the males will often emit the song from a perching position or in a flight display. The males will start singing as soon as they will reach the breeding grounds, and will stop once they find a mate.[7] Studies have shown that the quality and the rate at which a song is emitted affect the reproductive success of a male. The rate of a song measured by the number of strophes per minute is limited by the foraging needs of the male; therefore, a male that is able to sing more frequently shows that he is more successful and effective in his foraging behaviour. The song becomes an indicator of the parental care qualities of the male, since having an effective foraging behaviour will provide a better probability of survival of the nestlings. Females will then choose their mates based on their song rate.[17] Within snow buntings, vocalizations in males are unique to each individual, although there is certain syllable sharing between one another. The uniqueness of each song reveals a capacity of recognition between individuals and has an effect in the individual fitness and reproductive success.[16] The songs have duration of 2 seconds and have a frequency of 2 to 6 kHz. Each song is composed of similar and dissimilar figures that create different motifs that will alternate and repeat, resulting in a unique pattern for every male individual.[17] The snow bunting lives in very high latitudes in the Arctic tundra. There is no apparent limit to its northern range, while the southern range is limited by the duration of daylight, which influences their reproductive activity.[18] This species is found in the high Arctic tundra of North America, Ellesmere Island, Iceland, higher mountains of Scotland, Norway, Russia, North Greenland, Siberia, Novaya Zemlya, and Franz Josef Land.[14][19] During the winter, this bird migrates to the circumglobal northern temperate zone including the south of Canada, the northern United States, the coasts and plains of northern Europe in Great Britain, the Netherlands, Germany, Poland, Ukraine, and east to central Asia.[2][14] During the last ice age, the snow bunting was widespread throughout continental Europe.[20] Snow bunting young using a building as protection The same chicks eight days later During the breeding period, the snow bunting looks for rocky habitats in the Arctic.[7] Since the vegetation in the tundra is low growing, this bird and its nestlings are exposed to predators, and in order to ensure the survival of its offspring, the snow bunting nests in cavities in order to protect the nestlings from any threat.[21] During this period, buntings also look for a habitat rich in vegetation such as wet sedge meadows and areas rich in dryas and lichens.[7] In the winter, they seek open habitats such as farms, barren fields, and lakeshores, where they feed on seeds in the ground.[22] The snow buntings migrate to the Arctic to breed and they are the first migrant species that arrives in these territories. The males will arrive first at the beginning of April, when the temperature can reach as low as −30 °C. This early migration could be explained by the fact that this species is highly territorial and the quality of the nesting area is crucial to their reproductive success. Females will arrive four to six weeks later, when the snow starts to melt. They tend to migrate in small flocks and have an undulating flight at a moderate height.[7] The birds overwinter in northern temperate zones in open fields and forms moving flocks that can number into the hundreds.[8][7] They will leave the Arctic at the middle and end of September, although some will start the migration at the beginning of November. The female leaves first and tends to winter in more southern territories than the male, while the juveniles will leave the Arctic even later than the adults.[7] Once the snow bunting migrates south, they are able to lose the weight they had gained for breeding. The migration is nocturnal and the birds are able to detect the geomagnetic field of the Earth in order to guide themselves to their breeding and overwinter territory.[2] The orientation of the snow bunting during migration is independent of any type of visual cue. Furthermore, studies have shown that only those individuals with adequate energy storage will be able to select seasonally appropriate directions during their migration.[23] Right before the breeding season, snow buntings undergo significant physiological changes to prepare for their journey to higher Arctic regions. One of the most obvious changes is an increase in body weight. They undergo the process of hyperphagia, or increased food take, which builds up their fat reserves. Their overall fat mass increases by 30%, while their lean mass decreases by 15%.[24] The size of their pectoralis muscle also increases so that they can increase shivering thermogenesis through muscle contractions. As they reach the Arctic, snow buntings must be ready to engage in breeding and courtship. Their fat reserves also provide energy for reproduction during this time. Once the breeding season is over, snow buntings lose most of their extra fat to fly back to the southern regions where they continue to live until next season.[25] From the fall to the spring the snow bunting eats a variety of weeds such as knotweed, ragweed, amaranth, goosefoot, aster, and goldenrod and also eats various types of grass seeds. During this season it will forage in the snow collecting seeds from lower stems. During the summer their diet includes seeds of crowberry, bilberry, bistort, dock, poppy, purple saxifrage and invertebrates such as butterflies, true bugs, flies, wasps and spiders. The nestlings are fed exclusively on invertebrates. Snow buntings also prey on basking spiders by throwing rocks around and less regularly they will try to catch invertebrates in flight.[7] Snow buntings have a monogamous behaviour in which the males have a positive impact in the reproductive success of the female, although they are not essential to the survival of the nestling.[26] The male will follow the female during her fertile period to make sure that she will not mate with any other male.[26] The nest sites provide safety but bring other challenges to snow buntings, since in rock cracks and fissures the microclimate could be harsh, the incubation time might be longer for this species and there is a risk that the lower temperatures kill the embryo. To overcome this challenge, the male will bring food to the female during the incubation time, in this way she will be able to constantly control the temperatures of the nest microclimate improving the hatching success and reducing the incubation time.[7] It lays its eggs as soon as the ambient temperature is above 0 °C[27] The eggs are blue-green, spotted brown, and hatch in 12–13 days, and the young are already ready to fly after a further 12–14 days.[14] The courtship behaviour of snow buntings varies in different parts of the world. In Greenland, the male will have a threat display to defend his territory. This display will consist of very loud calls, the male will lower its head down and will turn completely to face the newcomer. The males will also have a ceremonial flight to attract the female, in which they will reach a height of 10–15 m (33–49 ft), then they will glide, they will sing the song very loudly and will then keep on singing from a perching position.[19] Several indices suggest that climate change could potentially have an important impact on the snow bunting's populations. The Arctic oscillation index (AO) is a regional climate index that helps to predict ecological processes. In the Arctic, when the AO index is in a positive phase, there are higher winter temperatures and precipitation, followed by an earlier and warmer spring, and the summer is cloudy and humid with lower temperatures. Usually the AO index tends to oscillate from a positive to a negative phase, but during the last past 40 years, the AO index has remained in the positive phase. Studies have shown that warmer springs trigger an early breeding behaviour in the snow buntings that mismatches the peak of their food sources, leading to a lower success rate of the hatchlings. Even more, the higher temperatures will bring to the Arctic other species that will compete with the snow bunting. It is also thought that higher temperatures might allow greater survival of second broods in the snow bunting species.[27] Illustration of adult & juvenile snow buntings by John Gerrard Keulemans, 1905. Adult breeding male P. n. insulae, Iceland Adult winter male, England Adult breeding male, Scotland P. n. nivalis, in spring Adult in winter plumage, Germany ID composite Eggs of snow bunting MHNT In flight, Alaska ^ BirdLife International (2016). "Plectrophenax nivalis". IUCN Red List of Threatened Species. 2016: e.T22721043A89345729. doi:10.2305/IUCN.UK.2016-3.RLTS.T22721043A89345729.en. Retrieved 12 November 2021. ^ a b c Sandberg, R.; Pettersson, J. (1996). 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Snow Bunting Species Account - Cornell Lab of Ornithology Snow Bunting - Plectrophenax nivalis - USGS Patuxent Bird Identification InfoCenter Stamps[usurped] (with world range map) at bird-stamps.org "Snow Bunting media". Internet Bird Collection. Snow Bunting photo gallery at VIREO (Drexel University) Snow Bunting Images - ARKive Interactive range map of Plectrophenax nivalis at IUCN Red List The Birds of North America Online Audubon Guide to North American Birds Bird Web: Snow Bunting Wild Bird Habitat Store Retrieved from " Page 2 Looking for bird ID help? Try Merlin Bird ID Red-breasted Nuthatch by Mark Daly / Macaulay Library. Organization: Alexa Crawls Starting in 1996, Alexa Internet has been donating their crawl data to the Internet Archive. Flowing in every day, these data are added to the Wayback Machine after an embargo period. Collection: Alexa Crawls 2000 Crawl data donated by Alexa Internet. This data is currently not publicly accessible Woodland The Snow Bunting is not typically found in Woodland habitats. Garden The Snow Bunting is not typically found in Garden habitats. Wetland The Snow Bunting is not typically found in Wetland habitats. Coastal The Snow Bunting can be found in Coastal habitats. Urban The Snow Bunting is not typically found in Urban habitats. Farmland The Snow Bunting is not typically found in Farmland habitats. Grassland The Snow Bunting is not typically found in Grassland habitats. Desert The Snow Bunting is not typically found in Desert habitats. Tundra The Snow Bunting can be found in Tundra habitats. Rainforest The Snow Bunting is not typically found in Rainforest habitats. Mountain The Snow Bunting can be found in Mountain habitats. Savanna The Snow Bunting is not typically found in Savanna habitats. Name: Snow Bunting, Bruant des neiges, Snowflake (Plectrophenax nivalis) Length: 15 cm. Weight: 30 to 45 g. Location: Arctic in summer, mid-way down U.S. or Eurasia in winter. Conservation status: Least Concern. Diet: Seeds, insects. Appearance: Medium-sized songbird configuration. White with brown or black wings, tail, stripe on head, and lighter brown striping across eyes and along sides. Colourization depends on location and season. How do Snow Buntings feed? Snow Buntings are ground foragers. Are Snow Buntings social? Snow Buntings will forage and migrate in flocks, but usually become more stand-offish when it comes to defending nesting sites during breeding season. How fast do Snow Buntings fly? Snow Buntings can fly at speeds approaching 45 km per hour. What are Snow Bunting birthing rituals like? Male Snow Buntings arrive in the high Arctic breeding grounds at the beginning of April when temperatures can still dip as low as -30°C. They will claim and defend nesting sites in loose colonies of usually a little less than 100 birds. Females arrive towards the middle of May. Nests are built in cracks in rocks, insulated against the cold with feathers and fur. 2 to 7 eggs will be laid. In order to keep the eggs warm the female will rarely leave the nest during the incubation; the male will do all the foraging in order to keep her fed. The eggs hatch after about 2 weeks. The chicks are able to fledge after another 2 weeks of parental care. How long do Snow Buntings live? Snow Buntings can live up to 9 years. How many Snow Buntings are there today? Estimates place the worldwide Snow Bunting population at over 30 million individuals. Do Snow Buntings have any natural predators? Snow Buntings are prey for Arctic Foxes, Snowy Owls, Falcons, and Skuas (Jaegers). 7 Bountiful Snow Bunting Facts 1. There are 4 subspecies of Snow Bunting: Plectrophenax nivalis townsendi – Aleutian Islands, Kamchatka, eastern Siberia. Plectrophenax nivalis insulae – Scotland, Iceland, Faroe Islands. Plectrophenax nivalis vlasowae – Asia. Plectrophenax nivalis nivalis – Europe, North America. 2. Snow Buntings have been known to cross-breed with Beringian McKay’s Buntings in Alaska. 3. When a flock finds a good foraging ground (like a farm field) the birds at the back of the flock will fly over and ahead of the birds at the front creating a rolling wave. 4. Snow Buntings are one of the few species that will inhabit exposed bits of tundra sticking up above the surrounding ice. These islands of tundra are called nunataks. 5. Snow Buntings represent the coming of winter to people living in their southern migration zone, but are looked for as a harbinger of spring by those living in the Arctic. 6. During the winter Snow Buntings have a more subdued colourization with light brown markings to break up the white. However by the time breeding season rolls around the males have grown into their high-contrast black on white covering. 7. Snow Buntings breed further north than any other land-based bird. Species of bird Snow bunting Male in breeding plumage, Thule, Greenland Conservation status Least Concern (IUCN 3.1)[1] Scientific classification Domain: Eukaryota Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Calcariidae Genus: Plectrophenax Species: P. nivalis Binomial name Plectrophenax nivalis(Linnaeus, 1758) Breeding Migration Year-round Nonbreeding Synonyms Emberiza nivalis Linnaeus, 1758 Passerina nivalis (Linnaeus, 1758) The snow bunting (Plectrophenax nivalis) is a passerine bird in the family Calcariidae. It is an Arctic specialist, with a circumpolar Arctic breeding range throughout the northern hemisphere. There are small isolated populations on a few high mountain tops south of the Arctic region, including the Cairngorms in central Scotland and the Saint Elias Mountains on the southern Alaska-Yukon border, as well as the Cape Breton Highlands. The snow bunting is the most northerly recorded passerine in the world.[2] The snow bunting was formally described by the Swedish naturalist Carl Linnaeus in 1758 in the tenth edition of his Systema Naturae. He placed it with the buntings in the genus Emberiza and coined the binomial name Emberiza nivalis. He specified the locality as Lapland.[3] It is now placed in the genus Plectrophenax, described in 1882 by the Norwegian born zoologist Leonhard Stejneger with the snow bunting as the type species.[4][5] The genus name Plectrophenax is from Ancient Greek plektron, "cock's spur", and phenax "imposter", and the specific nivalis is Latin for "snow-white".[6] The snow bunting was formerly classified in the family Emberizidae, which included American sparrows, buntings, towhees and finches. All these species came into existence after a broad geologically recent radiation of passerine birds. However, it is now part of the narrower family Calcariidae, which also contains the longspurs. Despite the wide distribution of this species there are only very small differences between different phenotypes.[7] Four subspecies are accepted, which differ slightly in the plumage pattern of breeding males:[5][8] P. n. nivalis (Linnaeus, 1758) – Arctic Europe, Arctic North America. Head white, rump mostly black with a small area of white. P. n. insulae Salomonsen, 1931 – Iceland, Faroe Islands, Scotland. Head white with a blackish collar, rump black. P. n. vlasowae Portenko, 1937 – Arctic Asia. Head white, rump mostly white. P. n. townsendi Ridgway, 1887 – Aleutian Islands, Kamchatka, coastal far eastern Siberia. As vlasowae, but slightly larger. It is very closely related to the Beringian McKay's bunting (Plectrophenax hyperboreus), which differs in having even more white in the plumage. Hybrids between the two occur in Alaska,[8][9] and they have been considered conspecific by some authors,[10][11] though they are currently generally treated as separate species.[5][12] A hybrid with a Lapland longspur was photographed at St. Lewis Inlet, Newfoundland and Labrador, Canada, during spring migration in April 2011.[13] A female snow bunting wintering atop Mount Agamenticus in York, ME. The snow bunting is a sexually dimorphic, medium-sized passerine bird. It is ground-dwelling, and walks, runs and can hop if needed.[7] It is fairly large and long-winged for a bunting. It measures 15 cm with a wingspan of 32–38 cm (13–15 in) and weights 30 to 40 grams.[8][7][14] The bill is normally yellow with a black tip, however in males, the bill is all black in the summer. The plumage is white underneath and the wings and back have black and white on them. The female and male have different plumage; during the breeding season, the male is white with black wingtips and a black back, while the female has black wingtips and the black feathers on the back fringed with brown. During the winter, they both have broad orangey-brown fringes on the back feathers. In the spring, the buntings do not moult as many other passerines do; instead the breeding colours come with the wearing and abrasion of the brown fringes to show just the black centres of the feathers.[7] Unlike most passerines, it has feathered tarsi, an adaptation to its harsh cold environment. No other passerine can winter as far north as this species, apart from the common raven.[8][14] This species is easily confused with McKay's bunting due to the similarity of their plumage and the occurrence of hybrids.[7] It can also be confused with the Lapland longspur, which differs mainly in having minimal white in the wing; their calls are similar, but the snow bunting has more 'liquid' rippling tone, while Lapland longspur has a drier, more rattling tone.[14] Another species that it may occur with is the horned lark, although that has a conspicuous black-and-yellow head pattern, a longer, partly black tail and no white on the wings.[15] The call is a distinctive rippling whistle, per,r,r,rit, and the song is a brief but loud warble hudidi feet feet feew hudidi.[14] Snow buntings use vocalizations to communicate among each other and males will have a song to attract the female.[16] The communication calls are done by both the male and the female and they tend to be emitted in flight or in the ground, while the males will often emit the song from a perching position or in a flight display. The males will start singing as soon as they will reach the breeding grounds, and will stop once they find a mate.[7] Studies have shown that the quality and the rate at which a song is emitted affect the reproductive success of a male. The rate of a song measured by the number of strophes per minute is limited by the foraging needs of the male; therefore, a male that is able to sing more frequently shows that he is more successful and effective in his foraging behaviour. The song becomes an indicator of the parental care qualities of the male, since having an effective foraging behaviour will provide a better probability of survival of the nestlings. Females will then choose their mates based on their song rate.[17] Within snow buntings, vocalizations in males are unique to each individual, although there is certain syllable sharing between one another. The uniqueness of each song reveals a capacity of recognition between individuals and has an effect in the individual fitness and reproductive success.[16] The songs have duration of 2 seconds and have a frequency of 2 to 6 kHz. Each song is composed of similar and dissimilar figures that create different motifs that will alternate and repeat, resulting in a unique pattern for every male individual.[17] The snow bunting lives in very high latitudes in the Arctic tundra. There is no apparent limit to its northern range, while the southern range is limited by the duration of daylight, which influences their reproductive activity.[18] This species is found in the high Arctic tundra of North America, Ellesmere Island, Iceland, higher mountains of Scotland, Norway, Russia, North Greenland, Siberia, Novaya Zemlya, and Franz Josef Land.[14][19] During the winter, this bird migrates to the circumglobal northern temperate zone including the south of Canada, the northern United States, the coasts and plains of northern Europe in Great Britain, the Netherlands, Germany, Poland, Ukraine, and east to central Asia.[2][14] During the last ice age, the snow bunting was widespread throughout continental Europe.[20] Snow bunting young using a building as protection The same chicks eight days later During the breeding period, the snow bunting looks for rocky habitats in the Arctic.[7] Since the vegetation in the tundra is low growing, this bird and its nestlings are exposed to predators, and in order to ensure the survival of its offspring, the snow bunting nests in cavities in order to protect the nestlings from any threat.[21] During this period, buntings also look for a habitat rich in vegetation such as wet sedge meadows and areas rich in dryas and lichens.[7] In the winter, they seek open habitats such as farms, barren fields, and lakeshores, where they feed on seeds in the ground.[22] The snow buntings migrate to the Arctic to breed and they are the first migrant species that arrives in these territories. The males will arrive first at the beginning of April, when the temperature can reach as low as −30 °C. This early migration could be explained by the fact that this species is highly territorial and the quality of the nesting area is crucial to their reproductive success. Females will arrive four to six weeks later, when the snow starts to melt. They tend to migrate in small flocks and have an undulating flight at a moderate height.[7] The birds overw