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## Scotsman ice machine not harvesting

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These bills are an unmistakable response to the unfounded and dangerous lies about fraud that followed the 2020 election. -- The Brennan Center Let's get it out on the table from the start. Donald Trump won the 2020 election. Find that followed a historic turnout and electoral trump won the 2020 election.
victory to be stolen from Trump. I'm not going to spend time in this post proving this or explaining the evidence (though I may do such a post, if there is interest). What I want to talk about is the response to the election in the state legislatures. I know, I know. What is the point? The Democrats stole an election and at least 3 Senate seats, they proved
they can do it, with the willing assistance of Republicans at both the federal and state levels. They will just do it again in 2022, and 2024, and on and on for what is left of our Republic. It's a good question. I don't know what the future holds, but I do know that our political philosophy is the majority opinion of this country and the majority in enough
states to deliver over 300 Electoral Votes. The future depends a great deal on whether or not the populations of individual states will enforce their political will on their states and demand fair elections. So let's pretend that voting still matters. In the aftermath of 2020 twenty-eight states have introduced legislation to put additional restrictions on
voting mechanisms. Now, not all of these are going to become law. Bills introduced in New Jersey and Washington are unlikely to become law because of Democrat opposition. But there is considerable activity in many of the Battleground states to address the mess from 2020 and to ensure elections in those states are fair going forward. The
legislative remedies run a wide gamut, including limitations on vote by mail, restrictions, poll watcher access, and voter roll purging. Let's take a closer look at what is going on in six states, Arizona, Florida, Texas, Georgia, Newsday, and voter roll purging. Let's take a closer look at what is going on in six states, Arizona, Florida, Texas, Georgia, Newsday, and voter roll purging.
Hampshire, and Pennsylvania. Arizona These proposals are a concerted effort from those in Arizona — and across the nation — who wish to sow additional doubts about our elections in the minds of voters, and feed into the paranoia that has plagued our political discourse over the past several months" -- Michael Bidwell, Arizona Cardinals President
Of course the big news out of Arizona is the ongoing audit. In the reporting on the audit you can see how the MSM manages to keep a lid on information. They flood the internet with the same story, all about how insane it is to question the legitimacy of the Arizona vote. Arizona's problem plagued audit" -- CNN Arizona Republicans flock to fringe
conservative media -- The Hill Arizona 2020 election Review: Risks for Republicans push to export absurd Arizona style election audits -- Huffington Post Finding factual information on the audit is difficult, and the media frenzy over the situation is very much a "Lady doth protest too much" moment. There is also a concerted
effort to discredit whatever results are announced with words like "flawed" "troubled" and "partisan" used liberally in all reporting. Also of note, representatives from both Georgia and Pennsylvania have visited Arizona to learn about the process being used. Outside of the audit, there was one piece of legislation passed. Michael Bidwell's
overwrought response above is to a pretty benign change that was signed into law on April 15, 2021. Arizona has eliminated the Permanent Early Voting List where ballots are sent automatically to voters in every election they are eligible to vote. The new law removes voters from the list if they do not use their ballot for two election cycles. This
change has been derided everywhere as "VOTER SUPPRESSION" (apparently a nationwide theme). I have to wonder how many votes Democrats receive legitimately, if a minor change like this amps their rhetoric up to eleventy. If the audit results in evidence that the Arizona election result were wrong, then expect additional legislation to be
introduced. A number of lawmakers have said that they are waiting to see those results. Florida If you can't cast your ballot, or others make it more difficult for you to be able to do, they're basically impeding your freedom and your voice. -- Charlie Crist, former Florida Governor, loser, and opportunist After running the cleanest and smoothest election
in the nation, you would think that Florida would sit back and rest on its laurels. You would be wrong. On May 6, 2021, Ron DeSantis signed SB90 into law which took effect immediately. The new law establishes restrictions in areas that are ripe for fraud. Mail-in ballot requests can no longer be requested for more than one general election. Requests
for a mail-in ballot must include identifying information, such as driver's license number or the last four digits of the SSN. Possession of more than 2 ballots in addition to your own is illegal, with very specific exceptions for family members and nursing home voting, in order to crack down on ballot harvesting. New restrictions on ballot drop boxes
including expanding the ban on political election related expense. This provision of the bill is the prohibition of any private entity from funding an election, thereby giving those counties an
 advantage. With no viable rationale for being elected to replace Ron DeSantis, both Charlie Crist and Nikki Fried have latched onto voter suppression as the cornerstone of their campaigns. Democrat front groups have also quickly filed lawsuits challenging SB90 as unconstitutional. Texas The bill would also make it easier to overturn an election
allowing courts to throw out results if enough ballots were cast illegally that it could have made a difference -- despite the fact that there is no evidence of widespread voter fraud in Texas or any other US state. -- Paul LeBlanc, CNN In Texas a bill to change election law has passed both chambers, but the Democrats staged a walkout to prevent a
quorum from voting on the bill. I'll be honest, I'm not sure the state of the bill. Governor Abbott is expected to call a special session of the bill to be voted on shortly. The key provisions of the bill are targeting mail-in ballots and voting procedures that can be exploited: 1) Ban afterhours voting 2) Restrict hours for early voting 3)
Prohibit dropboxes and drive through voting 4) Ban sending mail-in vote applications to voters who did not request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counties from helping facilitate distribution of unsolicited ballot request one 5) Bar counti
rolls Criminal penalties for election workers who obstruct poll watchers Georgia Democrats and voting rights groups were outraged by voter ID provisions and changes to mail voting that they believe will make more difficult for some minorities and poorer voters to cast a ballot. -- CBS News Ah Georgia, the epicenter of voting controversy. Not only
was Georgia outright stolen from Trump, two Senate seats were also stolen. This was done with the active participation of the Republican Secretary of State and the benign indifference of Governor Brian Kemp. However, the Georgia legislature immediately turned around and passed new voting laws, which were signed by Kemp in April, despite the
 active opposition of the likes of Coca Cola, Delta, and Major League Baseball. The new law in Georgia makes the following major changes to election law: 1) Expanded early voting in rural counties - bringing them on par with early voting in rural counties and Major League Baseball. The new law in Georgia makes the following major changes to election law: 1) Expanded early voting in rural counties - bringing them on par with early voting opportunities in the metro areas 2) ID requirements for mail-in voting - the returned ballot must include a driver's
license number or a state ID number. This is identical to the requirement for in-person voting. 3) Drop box regulation - limits to the number of dropboxes, requirements for security of the dropboxes, and limits on when they can be used. 4) Prohibits mailing unsolicited ballots - to get a mail-in ballot you must request one. 5) Prohibits food and drink
service to people in poll lines - apparently this was a thing. 6) Removes power from the Secretary of State - election board has new powers over local election officials including removal. 7) Reporting requirements - many changes here, but most importantly the total
number of votes cast including election day, early voting and mail-in votes must be posted by 10 PM on election day. No more suddenly finding 20,000 votes at 3AM. Fraud hotline - a hotline must be established for reporting voter intimidation or illegal activity. Also legislatively states that unlimited challenges can be made to a voter's qualifications to
cast a ballot. This addresses the courts that blocked True the Vote's efforts to challenge to 360,000 voter's eligibility during the runoff. New Hampshire The bill is blatantly unconstitutional...it would create a logistical nightmare for state elections -- Paul Bergeron, (D) NH House of Representatives I wanted to talk a little about the changes in New
Hampshire. These aren't sweeping changes such as those in Georgia, but they illustrate that even in blue New England, the states are concerned about election integrity. A bill just passed the legislature and is heading to the Governor for signature. The major changes are requiring a photo be taken of anyone registering to vote without a photo ID and
giving political parties access to absentee ballot requests. While the changes sound pretty benign, and did have bipartisan support, the major controversy was an amendment that passed the House 202-175. This amendment pushes back on the For the People Act stating the New Hampshire will not comply with national election requirements when
conducting state and local elections. Pennsylvania In Pennsylvania a more measured approach is being taken. Personally, I think this is due to the political realities. There are enough votes to pass any legislation, but they were all tabled
and routed to the joint House State Government Committee. This committee conducted 3 months of hearings on a wide range of subjects and issued a report on May 12, 2021. The report is very comprehensive and if you read past the "nice, bipartisan" language, you can see that they did not shy away from the real problems in Pennsylvania. There are
25 major conclusions including; "Any place where a ballot is being cast should be treated as a polling place, with meaningful access for bipartisan observers as well as consistent accessibility requirements. The Election Code should provide uniformity in ensuring that all places where voting occurs are subject to the same regulations regarding
 accessibility, transparency, electioneering, and security." I have to admit that taking off my partisan anger over the stolen election, the process used here looks very fair. If we were dealing with honest brokers in the Democrat Party, I would be impressed by the work done. They looked at concerns from both sides of the aisle and made
recommendations that both enhance the security of elections and expand voting access. The political reality is that the GOP controls 60% of both the Senate and the House, which is unsurprising given the demographics of the state as I discussed earlier. But the fraud machine makes it easier for the metro areas to dictate state-wide elections,
especially for Governor. I feel there is some hope here for legislature rescinded all of the emergency powers it also rescinded the eme
give a reason why. Here are some of the highlights I took from the report: 1) Clear and uniform guidance to election addit processes using other states for best practices and make them independent 4) Move the voter registration deadline back to 30
days prior to election 5) Follow the Florida model for voting machine certification 6) Allow no excuse mail-in voting but require voter ID with it 7) Consistent election day procedures for all 67 counties Cybersecurity protections to provide election integrity I've only touched on the surface of this report, and I think it is worth reading. It is clear and
avoids legislative language. There are many other states who have passed or are about to pass new election laws. I am encouraged to see all of the activity going on, and I hope that Michigan and Wisconsin will soon take up legislation. Assuming that our vote ever matters again, these changes are a good step forward, allowing us to cast our vote and
be able to trust the results. And the shrieks of "Voter Suppression" from the left tells me that these new laws are cutting into the core mechanisms used for fraud. Animals living in Scotland Wales Endemic Extinct Invertebrates Insects Ants Aquatic heteropteran bugs Bees Beetles
 Butterflies Conopid flies Damselflies and dragonflies Hoverflies Moths Orthoptera and allied insects Shield bugs Soldierflies and allies Wasps Molluscs Non-marine molluscs Crustaceans Crabs Woodlice Vertebrates Amphibians Fish Mammals Reptiles Birds British avifauna Wales Non-natives North American landbirds Feral parakeets Bee-
eaters Cranes Flora Ferns and allies Conifers Dicotyledons (Superrosids Asteraceae Rosaceae) Monocotyledons (Superrosids Asteraceae) Monocotyledons (Superrosids Asteraceaeaea
larger mammals were hunted to extinction in historic times and human activity has also led to various species of wild mammals, including a population of wild cats, important numbers of grey and harbour seals and the most northerly colony of bottlenose
dolphins in the world.[1][2][3] Many populations of moorland birds, including the black and red grouse live here, and the country has internationally significant nesting grounds for seabirds such as the northern gannet.[4] The golden eagle has become a national icon,[5] and white-tailed eagles and ospreys have recently re-colonised the land. The
Scottish crossbill is the only endemic vertebrate species in the UK.[6][7][8] Scotland's seas are among the most biologically productive in the world; it is estimated that the total number of Scottish marine species exceeds 40,000.[9] The Darwin Mounds are an important area of deep sea cold water coral reefs discovered in 1998. Inland, nearly 400
genetically distinct populations of Atlantic salmon live in Scottish rivers.[10] Of the 42 species of fish found in the country's fresh waters, half have arrived by natural colonisation and half by human introduction. Only six amphibians and four land reptiles are native to Scotland, but many species of invertebrates live there that are otherwise rare in the
 United Kingdom (UK).[11] An estimated 14,000 species of insect, including rare bees and butterflies protected by conservation action plans, inhabit Scotland. Conservation agencies in the UK are concerned that climate change, especially its potential effects on mountain plateaus and marine life, threaten much of the fauna of Scotland.[12] Habitats
Scots pine forest, Deeside Scotland enjoys diverse temperate environments, incorporating deciduous and coniferous woodlands, and moorland, montane, estuarine, freshwater, oceanic, and tundra landscapes.[13] About 14% of Scotland is wooded, much of it in forestry plantations, but before humans cleared the land it supported much larger boreal
Caledonian and broad-leaved forests.[14] Although much reduced, significant remnants of the native Scots pine woodlands can be found.[15] Seventeen per cent of Scotland is covered by heather moorland and peatland. Caithness and Sutherland have one of the world's largest and most intact areas of blanket bog, which supports a distinctive wildlife
community.[16][17] Seventy-five per cent of Scotland's land is classed as agricultural (including some moorland) while urban areas account for around 3%. The coastline is 11,803 kilometres (7,334 mi) long, and the number of islands with terrestrial vegetation is nearly 800, about 600 of them lying off the west coast. Scotland has more than 90% of
the volume and 70% of the total surface area of fresh water in the United Kingdom. There are more than 30,000 freshwater lochs and 6,600 river systems.[13] Under the auspices of the European Union's Habitats Directive, 244 sites in Scotland covering more than 8,750 square kilometres (3,380 sq mi) had been accepted by European Commission as
Special Areas of Conservation (SAC).[18][19] Scotland's seas are among the most biologically productive in the world and contain 40,000 or more species. Twenty-four of the SACs are marine elements extend to an area of around 350 square kilometres
(140 sq mi). The Darwin Mounds, covering about 100 square kilometres (39 sq mi), are being considered as the first offshore SAC.[19][21] Mammals Scotland was entirely covered in ice during the Pleistocene glaciations.[22] As the post-glacial weather warmed and the ice retreated, mammals migrated through the landscape. However, the opening of
the English Channel (as sea levels rose) prevented further migrations, so mainland Britain has only two-thirds of the species that reached Scandinavia. The Hebridean islands off Scotland including 13 species found in coastal waters.[3] The
populations of a third of the land mammal species are thought to be in decline due to factors including environmental pollution, habitat fragmentation from introduced species. [24] No mammal species are unique to Scotland, although the St. Kilda field mouse, Apodemus
sylvaticus hirtensi, is an endemic subspecies of the wood mouse that reaches twice the size of its mainland cousins, [25] and the Orkney vole or cuttick, Microtus arvalis orcadensis found only in the Orkney vole or cuttick, Microtus arvalis orcadensis found only in the Orkney archipelago, is a sub-species of the wood mouse that reaches twice the size of its mainland cousins, [25] and the Orkney vole or cuttick, Microtus arvalis orcadensis found only in the Orkney archipelago, is a sub-species of the wood mouse that reaches twice the size of its mainland cousins, [26] There are various
notable domesticated Scottish mammal breeds including Highland Cattle, the Shetland Pony, Soay Sheep and Scottish Terrier. Carnivores European wildcat (Felis silvestris) The representation of the weasel family (Mustelidae) in Scotland is typical of Britain as a whole save that the polecat is absent and that Scotland is the UK's stronghold of the pine
marten,[27] although the purity of the latter breed is threatened by a release of American martens in northern England.[28] Scotland hosts the only populations of the Scottish wildcat (Felis silvestris) in the British Isles with numbers estimated at between 400 and 2,000 animals,[29] and of the red fox subspecies Vulpes vulpes, a larger race
than the more common V. v. crucigera and which has two distinct forms. [30] The wild cat is at risk due to the inadequacy of protective legislation and is now considered at serious risk of extinction. [31] In 2013 it was announced that the island of Càrna is to provide a sanctuary and breeding station in order to protect the species. [33]
Exterminations of the population of feral American mink, which were brought to Britain for fur farms in the 1950s, have been undertaken under the auspices of the Hebridean Mink Project and the Scottish Mink Initiative, which hopes to create a mink-free zone in a large area stretching from Wester Ross to Tayside.[34][35] Other than occasional mink project and the Scottish Mink Initiative, which hopes to create a mink-free zone in a large area stretching from Wester Ross to Tayside.[34][35]
vagrants, among the seals only the Phocidae, or earless seals, are represented. Two species, the grey seal and harbour or common seal, are present around the coast of Scotland in internationally important numbers. In 2002 the Scottish grey seal and harbour or common seal, are presented at 120,600 adult animals, which is around 36% of the world population and
more than 90% of the UK's. The Scottish population of the common seal is 29,700, about 90% of the UK and 36% of the European total.[36] Rodents, insectivores and lagomorphs Red squirrels are found in Scotland. This species faces threats that include competition from the introduced
grey squirrel, and the 'Scottish Strategy for Red Squirrel Conservation of pine martens with assisting this programme by preying selectively on the grey squirrels.[39] Scotland has no population of the edible or hazel dormouse,
or of the yellow-necked mouse, and the harvest mouse's range is limited to the southern part of the country. The St Kilda mouse and Orkney vole (see above) are endemic, but otherwise population distributions are similar to the rest of mainland Britain. [40] Colonies of black rats remain only on the island of Inchcolm in the Firth of Forth and on the
Shiant Isles.[41] Mainland insectivore populations are generally similar to the rest of Britain. Recent steps by Scottish Natural Heritage, the Scottish Executive and the Royal Society for the Protection of Birds to remove European hedgehogs from the Outer Hebrides,[42] where their introduction has caused declines in internationally important
breeding populations of wading seabird such as dunlin, ringed plover and redshank, has caused considerable controversy, and hedgehog culls were halted in 2007.[43][44] The trapped animals are now relocated to the mainland. The programme has reduced this population; only two individuals were caught in 2007.[45] Of the lagomorphs only hares
and rabbits are represented in Scotland. The mountain hare is the only native member of the hare family and is the dominant species throughout most of upland Scotland. The European hare and European rabbit are both present, the latter having been brought to Britain by the Romans[46] but not becoming widespread in Scotland until the 19th
century. [47] Artiodactyls Scottish red deer stag (Cervus elaphus scoticus) Landseer's painting of a red deer stag, Monarch of the biological order artiodactyla or "even-toed ungulates", is still 400,000 strong, although its existence in the pure form is
threatened by hybridisation with introduced sika deer. Very much a hill-dwelling species in Scotland (and so typically smaller in stature than its European forest-loving cousins), it is generally replaced by roe deer in lower-lying land.[49] Although found elsewhere in the UK, no wild populations of Chinese water deer and no or very few Chinese
muntjac exist in Scotland. It has isolated populations of feral goats Capra hircus and feral sheep (Ovis aries),[24] such as the herd of 1,000 Soay sheep on St Kilda.[50] Since 1952 a herd of reindeer have lived in the Cairngorm National Park,[51][52] the species having become extinct in Scotland after it was recorded as having been hunted in Orkney
in the 12th century.[53] Other mammals Only nine of the sixteen or seventeen bat species found elsewhere in Britain are present in Scotland. Widespread species are common and soprano pipistrelles, the brown long-eared bat, Daubenton's bat and Natterer's bat. Those with a more restricted distribution are the whiskered bat, noctule, Leisler's bat
and Nathusius's pipistrelle. Absences include the greater mouse-eared bat and Bechstein's bat.[54] No bats reside in the Shetland Islands; the only records there are of migrants or vagrants.[55] Twenty-one species of cetacean have been recorded in Scottish waters within the last 100 years including Cuvier's
beaked whale, killer whales, sperm whales, sperm whales, minke whales and common, white-beaked and Risso's dolphins.[56] The Moray Firth colony of about 100 bottlenose dolphins.[1] is the most northerly in the world. As recent dramatic television coverage indicated,[57] this species preys on harbour porpoises; a third of the porpoise carcasses examined by
pathologists from 1992 to 2002 indicated that death resulted from dolphin attacks. [58] However, conservationists expressed dismay that the UK government decided to allow oil and gas prospecting in the Moray Firth, putting these populations of cetaceans at risk. In response, the government have placed seismic surveys "on hold" during 2009
pending further research.[59][60] The introduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial, the red-necked wallaby, is confined to a colony on an island in Loch Lomond.[61] Extinctions and reintroduced marsupial and re
rhinoceros, mammoth, polar bear, lemming, Arctic fox and the giant deer Megaloceros giganteus. [47][62] Other mammals that used to inhabit Scotland but became extinct in the wild during historic times include the Eurasian lynx, which lived in Britain until 1,500 years ago, [53] the European brown bear, subspecies Ursus arctos caledoniensis, which
was taken to entertain the Roman circuses[63] but died out in the 9th or 10th century, and the elk, which lasted until 1930 in Shetland.[65] The last known wolf was shot on Mackintosh land in
                              43,[66][67] and the walrus is now only an occasional vagrant.[68] St Kilda also possessed an endemic subspecies of the house mouse, Mus musculus muralis, which was longer, hairier, coloured differently and had a skull shape at variance to the norm. It became extinct in 1938, just eight years after the evacuation of the native States and the house mouse, Mus musculus muralis, which was longer, hairier, coloured differently and had a skull shape at variance to the norm. It became extinct in 1938, just eight years after the evacuation of the native States and the house mouse, Mus musculus muralis, which was longer, hairier, coloured differently and had a skull shape at variance to the norm. It became extinct in 1938, just eight years after the evacuation of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native States are not shaped as a state of the native S
Kildans.[69] A joint project of the Royal Zoological Society of Scotland, the Scotland using Norwegian stock. The species was found in the Highlands until the 15th century, and although the then Scotland using Norwegian stock. The species was found in the Highlands until the 15th century, and although the then Scotland using Norwegian stock.
rejected the idea, a trial commenced in May 2009 in Knapdale. [53][70][71][72][73] Separately, on Tayside, deliberate releases or escapes have led to up to 250 animals colonising the area. Although it was initially planned to remove these unofficially reintroduced beavers, in March 2012 the Scottish Government reversed the decision to remove
beavers from the Tay, pending the outcome of studies into the suitability of re-introduction. [74] Following receipt of the results of the studies, in November 2016 the Scotland. Beavers will be allowed to extend their
range naturally from Knapdale and along the River Tay, however to aid this process and improve the health and resilience of the population a further 28 beavers will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, wild boar (Sus scrofa) have been re-introduced to several places in Scotland including a further 28 beavers will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, wild boar (Sus scrofa) have been re-introduced to several places in Scotland including a further 28 beavers will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, wild boar (Sus scrofa) have been re-introduced to several places in Scotland including a further 28 beavers will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases, will be released in Knapdale between 2017 and 2020.[75] By means of escapes or deliberate releases of the population of the populati
wide area of Lochaber and West Inverness-shire. Various other schemes are under consideration. For example, the owner of the Alladale estate north of Inverness has expressed a desire to reintroduce wolves as part of a wilderness reserve, the first of its kind in Britain.[53] Avifauna The history of mammals suggests three broad overlapping phases:
natural colonisation after the ice age, human-caused extinctions, and introduction by humans of non-native species. [47] The greater mobility of birds makes such generalisations hard to substantiate in their case. Modern humans have done great damage to bird species, especially the raptors, but natural variations in populations are complex. For
venture into Scotland, and perhaps up to 300 more occur with varying degrees of rarity. A total of 247 species have been assessed and each placed onto one of three lists, red, amber or green, indicating the level of concern for their future. Forty species are red-listed and 86 are green-listed and 86 are green-listed. [78][79] The Scotlish crossbill, Loxiating the level of concern for their future.
 scotica, which inhabits the coniferous forests of the Highlands, is Britain's only endemic bird and, with only 300 breeding pairs, one of Europe's most threatened species. [81] St Kilda has a unique subspecies of wren, the St Kilda wren Troglodytes
troglodytes hirtensis, which has adapted to perching on the rocks and cliffs of this treeless Atlantic island, and consequently has developed larger and stronger feet than the mainland variant. It is also slightly larger, has a longer beak, a drabber though more varied colouring, and a "peculiarly sweet and soft" song. The subspecies was recognised in
1884 and was protected by a special Act of Parliament in 1904 to prevent its destruction "at the hands of ornithologists, egg-collectors, taxidermists and tourists".[82] Raptors The white-tailed sea eagle (Haliaeetus albicilla). Reintroduced to Scotland from Norway after an absence of 60 years. All but a few pairs of Britain's approximately 600 golden
eagles are found in Scotland as are most of the breeding peregrine falcons.[83] The hobby, marsh harrier and Montagu's harrier although found in England and Wales are generally absent.[84] In 1916 an English vicar stole the last native white-tailed sea eagle eggs on Skye,[85] and the last adult was shot in Shetland two years later. However, the
species was reintroduced to the island of Rum in 1975. The bird spread successfully to various neighbouring islands, and 30 pairs were established by 2006. Despite fears expressed by local farmers, the Royal Society for the Protection of Birds (RSPB) are in process of releasing up to 100 young eagles on the east coast in the Forth and Tay estuaries
[53][86][87] The red kite was exterminated in Scotland in 1879, and a reintroduction programme was launched by the RSPB in the 1980s. Although the species has made significant advances, it is estimated that 38% of the 395 birds fledged between 1999 and 2003 were poisoned and a further 9% shot or otherwise killed by humans. The RSPB stated
 "it may take a custodial sentence before people engaged with this activity begin to take the matter seriously".[88] After an absence of nearly 40 years the osprey successfully re-colonised Scotland in the early 1950s. In 1899 they had bred at the ruined Loch an Eilean castle near Aviemore and at Loch Arkaig until 1908. In 1952 they claimed a new site
at Loch Garten.[89] There are now 150 breeding pairs.[90] Other raptor species found in the UK such as the kestrel, hen harrier, goshawk, sparrowhawk, tawny owl, and barn owl are widely distributed in Scotland, although the little owl is confined to the south.[91][92] Buzzards have displayed a remarkable resilience, having recovered from human
persecution and the myxomatosis epidemic of the 1950s, which reduced their food supply. Numbers more than trebled between 1978 and 1998.[93] At the other end of the population scale, a single pair of snowy owls bred on Fetlar from 1967 to 1975.[85] In 2009 it was reported that the Scottish Government have decided to proceed with a
controversial plan to relocate sparrowhawks found near pigeon lofts in Glasgow, Edinburgh, Kilmarnock, Stirling and Dumfries at a cost of £25,000.[94] Seabirds Northern gannet (Morus bassanus) The Bass Rock from North Berwick Scotland's seas host almost half of the European Union's breeding seabirds (95) including about half of the world's new controversial plan to relocate sparrowhawks found near pigeon lofts in Glasgow, Edinburgh, Kilmarnock, Stirling and Dumfries at a cost of £25,000.[94] Seabirds Northern gannet (Morus bassanus) The Bass Rock from North Berwick Scotland's seas host almost half of the European Union's breeding seabirds (Northern gannet).
northern gannets and a third of the world's Manx shearwaters. Four seabird species have more than half of their breeding population in Scottish colonies.[19] St Kilda, which is a World Heritage Site, is a seabird haven of great significance
It has 60,000 northern gannets, amounting to 24% of the world population, 49,000 breeding pairs of Leach's storm petrel, up to 90% of the European population, 136,000 pairs of puffin and 67,000 northern fulmar pairs, about 30% and 13% of the respective UK totals. [96] The island of Mingulay also has a large seabird population and is an important
breeding ground for razorbills, with 9,514 pairs, 6.3% of the European population. [97] Sixty per cent of all breeding bonxies nest in Scotland, mostly in Orkney and Shetland, even though they did not arrive at all until the 18th century. Scotland is the breeding station for about 90% of the UK's Arctic terns, the majority of which make use of colonies in
Orkney and Shetland. A similar percentage of the UK's tysties breed on Scottish islands including Unst, Mingulay and Iona. [98] Scotland also hosts 1,000 pairs of Arctic skua and 21,000 breeding pairs of shag, 40% of the global population of the species. [99] In excess of 130,000 birds inhabit Fowlsheugh nature reserve in Aberdeenshire at the peak of
the breeding season, making it one of the largest seabird colonies in Britain. There are significant numbers of kittiwake, Atlantic puffin, razorbill, fulmar, herring gull and great black-backed gull.[100] The Bass Rock in the Firth of Forth hosts upwards of 40,000 pairs of northern gannets and is the largest single rock gannetry in the world. The bird's
scientific name Morus bassanus, derives from the rock.[101][102] Game birds, waders and water fowl Red-listed western capercaillie and ptarmigan breed in Scotland and are absent elsewhere in the British Isles. The former became extinct in Scotland and are absent elsewhere in the British Isles. The former became extinct in Scotland and ptarmigan breed in Scotland and are absent elsewhere in the British Isles. The former became extinct in Scotland and ptarmigan breed in Scotland and ptarmigan breed in Scotland and are absent elsewhere in the British Isles. The former became extinct in Scotland and ptarmigan breed in Scotland and ptarmigan breed in Scotland and are absent elsewhere in the British Isles.
significant populations of other Galliformes including blackcock and the famous red grouse. [105] Common quail, grey partridge and pheasant are well-distributed, although the red-legged partridge is less so. [106] A small colony of the introduced golden pheasant exists in the southwest. [107] Male capercaillie (Tetrao urogallus) Among the waders,
avocet, stone-curlew, little ringed plover and Kentish plover are absent, but most of the 100 or so pairs of dotterel in the UK spend their summers in Scotland as do all of the breeding Eurasian whimbrel, greenshank and red-necked phalarope, (although the latter two species also breed in Ireland).[108][109] In summer the shallow lochs of the machain
lands in the Uists and Benbecula provide for a remarkable variety of waders and ducks including shoveler and eider. The rare Slavonian grebe and common scoter breed on a small number of lochs in Highland region.[110] Goldeneye have colonised an area centred around the Cairngorms National Park since the 1970s, and about 100 pairs breed
there. The majority of the roughly 25,000 whooper swans in the British Isles winter in Scotland and Ireland. [111] About half of the 80,000 barnacle geese, which breed in Greenland, arrive on Islay for the wintering in Ireland. Tens of
thousands of pink-footed geese use the Montrose Basin as a winter roost in October and November as they do Loch Strathbeg and various lochs and reservoirs in Tayside and the Lothians.[112] The amber-listed black and red-throated diver's freshwater breeding strongholds in the British Isles are in the north and west of Scotland.[113] Other non-
passerines Considerable efforts have been taken to conserve the shy corncrake, and summer numbers of this red-listed species have recovered to over 1200 pairs. The wryneck is now almost extinct in Scotland with one or two birds singing each summer, but not breeding.[114] Of the Columbidae the turtle dove is largely absent, but in the British Isles
 the rock dove is confined to the north and west coasts of Scotland and Ireland.[115] Passerines Hooded crow (Corvus cornix) Ravens are typically forest-dwelling birds in much of Europe, but in Scotland they are generally associated with mountains and sea coasts. In 2002 the hooded crow was recognised as a separate species[116] from the carrion
crow. Scotland and Northern Ireland host all of the approximately 190,000 UK territories of the former.[117] A recent survey suggest that raven numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing but that hooded crows had declined by 59% while carrion crow numbers are increasing by 59% while carrion crow numbe
pairs of red-billed chough nest in Scotland. In addition to crossbills (see above), crested tits exist as a fragmented population such as the Culbin Forest in Moray. Ring ouzels have declined to around 7,000 pairs, possibly due to disturbance from the
growing number of human visitors to their upland habitat. There are fewer than 100 breeding pairs of snow bunting, although to have been in use by dippers since 1881. Scotland has 95% of the British breeding population of red-listed twite, about
64,000 pairs.[119] However, a recent RSPB survey found a sudden and dramatic fall in winter numbers from 6,000 in 1998 to only 300 in 2006 in the country visit from time to time. These
 include accidental visits by vagrant birds that have wandered far from their normal habitations. Fair Isle is an internationally renowned site for the observation of migrant birds that have wandered far from their normal habitations. Fair Isle is an internationally renowned site for the observation of migrant birds. Rarities have included passerines such as the thick-billed warbler, white-throated sparrow, yellow-rumped warbler and collared flycatcher.[121] More than 345 species of bird
have been recorded on this island, which measures only 7.68 square kilometres (2.97 sq mi).[122] Elsewhere, other rarities reported in 2006 include a white-billed diver at Gairloch, a black-browed albatross in the Western Isles, a laughing gull in Shetland and a buff-breasted sandpiper at Lossiemouth.[123] Accidentals recorded in earlier years
 include an American bittern in 1888 and a purple heron in the same year, a Baikal teal in 1958, and a black stork in 1977.[124] Birds are also presumed to have escaped from captivity, such as a lanner falcon in 1978, and a red-tailed hawk in 1989.[125] These records are but a small
selection from two counties in the north-east and give only a flavour of the complexity and diversity of avian life in Scotland. Extinctions The common crane and great bittern were exterminated by hunters and the draining of marshes in the 18th century.[66] The last great auk seen in Britain was killed on Stac an Armin, a rocky pinnacle in the St Kildand.
archipelago in July 1840.[126] Fish life in the sea Of the 42 species of fish found in Scottish fresh waters, only half have arrived by natural colonisation. Native species include allis shad, brown trout, European eel and river supporting
 under threat from introduced ruffe and the Arctic charr. The latter may have been the first fish species to re-enter fresh waters when the last ice age ended, and about 200 populations exist.[61][128] Atlantic salmon (Salmo salar) The freshwater pearl mussel was once abundant enough to support commercial activities,[129] and Scotland is the
remaining European stronghold with about half the global number present. There are populations in more than 50 rivers, mainly in the Highlands, although illegal harvesting has seriously affected their survival.[130][131] Scotland's seas, which constitute an area greater than that of the seas around the rest of the UK, are among the most biologically
productive in the world. They are home to a third of the world's whale and dolphin species, most of the UK's maerl, (a collective term for several species of calcified red seaweed, and an important marine habitat), Horsemussel (Modiolus modiolus) and seagrass beds, and distinctive species like the tall sea pen, Funiculina quadrangularis. It is
estimated that the total number of Scottish marine species exceeds 40,000.[9][20] This includes 250 species of fish, the most numerous inshore variety being saithe,[47] and deeper water creatures such as the dogfish, porbeagle and blue shark, European eel, sea bass, Atlantic halibut and various rays. There are four species of sea turtle, the
leatherback, loggerhead, Kemp's ridley and green turtle.[132] Scottish waters contain around 2,500 crustacean species and 700 molluscs[20] and in 2012 a bed of 100 million flame shells was found during a survey of Loch Alsh.[133] The Darwin Mounds, an important area of cold water coral reefs discovered in 1988, are about 1,000 metres (3,300 ft)
deep in the Atlantic Ocean, about 185 kilometres (115 mi) north-west of Cape Wrath in the north-east corner of the Rockall Trough. The area covers approximately 100 square kilometres (16 ft) in height, many having a teardrop shaped 'tail' orientated
south-west of the mound. This feature may be unique globally. The tops of the mounds have living stands of Lophelia corals and support significant populations of the single-celled Syringammina fragilissima. Fish have been observed in the vicinity but not at higher densities than the background environment. Damage from trawler fishing was visible
over about a half of the eastern Darwin Mounds surveyed during summer 2000, and the UK government is taking steps to protect the area.[134] In 2003 the European Commission provided emergency protection and banned damaging fishing activity in the locality.[135] Upogebia deltaura, a mud lobster commonly found in Scottish maerl beds[136]
Further action on a much wider scale may be required. According to a recent report "Scotland's marine life could be almost wiped out within 50 years unless tough action is taken to manage the way humans use the seas". Fears were expressed by a consortium of environmental organisations that commercial fish stocks, including Atlantic cod are
suffering from over-fishing, that fish farming, especially for salmon is damaging the aquatic environment, a reduction in coastal marsh habitats is affecting marine bird life, litter in densely populated estuaries such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries and life, litter in densely populated estuaries and life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the Firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the firth of Clyde is affecting marine bird life, litter in densely populated estuaries are such as the firth of Clyde is affecting marine bird life
example, basking shark. A call was made for a 'Scottish Marine Bill' to co-ordinate and manage human activity at sea and to provide more protected areas such as marine national parks. [137] The Marine (Scotland) Act 2010 was subsequently passed by the Scottish Parliament. Calyptraea chinensis (L.) is a gastropod that has invaded the shores of
Scotland and by 1998 had reached nearly as far north as Oban. One living specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound, and earlier records showed findings of gastropod shells.[138] Riverine extinction of both specimen was found at Clachan Sound at 
 1990s a successful attempt to reintroduce Coregonus vandesius to the Lochmaben area began. Coregonus albula remains absent.[139][140][142] Salvelinus inframundus, a rare char species that could be vulnerable to extinct, has been found in Loch Mealt, Isle of Skye, Scottish Highlands.[143] Amphibians and land reptiles Adder (Vipera berus)
Only six amphibians and four land reptiles are native to Scotland. [144] The amphibians include three species of newt: the great crested, of which fewer than 1,000 individuals survive; [145] the smooth, and the palmate. [146] The other amphibians are the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad, the natterjack toad, found in only four locations in the south-west, and the common toad to the natterjack toad, found in only four locations in the south-west, and the common toad to the natterjack toad, found in only four locations in the south-west, and the common toad to the natterjack toad to the natterjack toad to the natterjack t
frog. A single alien amphibian is known in Scotland, the Alpine newt, a recent escapee confined to the Edinburgh area.[61] The reptiles include the adder and the grass snake, the slowworm, which is a legless lizard, and the common lizard. Smooth snakes, found elsewhere in the UK are absent, and grass snakes are rarely reported.[147] Terrestrial
invertebrates Seventy-seven species of land snail[148] and an estimated 14,000 species of insect live in Scotland, none of them "truly" endemic.[149] These include Pardosa lugubris, a species of wolf spider first found in the UK in 2000 at Abernethy Forest nature reserve, and the Scottish wood ant. These ants, which are the most numerous residents
of the Caledonian pine forest, build mounds from the pine cones and needles they find on the forest floor and may inhabit the mounds for decades. A single colony may collect 100,000 insects a day to feed its half million citizens and produce up to 250 kilograms (550 lb) of honeydew per season. [150] Pine weevil (Hylobius abietis) In addition to the
Scottish wood ant, several Scottish species of invertebrate exist that are otherwise rare in the UK and important enough to have a specific "Action Plan" to provide protection. These are five species of ant and bee, six moths and butterfly, five flies and a single beetle (the reed beetle) and snail (the round-mouthed whorl snail, Vertigo genesii).[151]
Northern colletes is a rare species of bee, the most significant British habitat for which is in the Outer Hebrides, where there are more than ten colonies.[152] Scotland is also the UK stronghold of the Blaeberry bumblebee, and the Bumblebee Conservation Trust recently created the world's first sanctuary for this genus of insects at RSPB Vane Farm
 Nature Reserve near Loch Leven.[153][154] The bumblebee Bombus jonellus var. hebridensis is endemic to the Hebrides.[156] In 2010, a colony of the beetle Meloe brevicollis was found on the island of Coll. The species is otherwise extinct in Scotland and is also flightless, raising the question of how the colony arrived on the island.[156] The
northern February red stonefly (Brachyptera putata) has recently lost its range elsewhere in Britain and is now it considered to be a Scottish endemic.[157][158] Although many species of butterfly are in decline in the UK, recent research suggests that some, such as the pearl-bordered fritillary, marsh fritillary and chequered skipper, which are
becoming rare in the rest of the UK, are moving north into Scotland in response to climate change. [159][160] In June 2008 an adult Ethmia pyrausta moth was discovered in Easter Ross. This find was only the fifth sighting since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained "almost mythical status" according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 1853, and the species has gained according to Butterflying since its discovery in the UK at Loch Shin in 185
Conservation Scotland.[161] The most well-known invertebrate may be a species of midge (Culicoides impunctatus), a tiny flying gnat that is the scourge of summer visitors and residents alike. Its predations result in the loss of up to 20% of summer visitors and residents alike. Its predations result in the forestry industry.[162] Others of significance include the pine weevil, black pine we
beetle, clytra beetle, and the timberman, a long-horned beetle. [163] The archaeological site at Skara Brae provided the earliest known record of the human flea, Pulex irritans in Europe. [149] The islands of Colonsay and Oronsay are home to about 50 colonies of the only native species of honeybee in Britain-Apis mellifera mellifera. The Scottish
Government introduced the Bee Keeping (Colonsay and Oronsay) Order 2013 to protect the species from cross-breeding and disease as the species from cross-breeding and disease as the species from cross-breeding and disease as the species from cross-breeding (Colonsay and Oronsay) Order 2013 to protect the species from cross-breeding and disease as the species from cross-breeding (Colonsay and Oronsay) Order 2013 to protect the species from cross-breeding and disease as the species from cross-breeding and disease as the species from cross-breeding (Colonsay and Oronsay) Order 2013 to protect the species from cross-breeding and disease as the species from cross-breeding (Colonsay and Oronsay) Order 2013 to protect the species from cross-breeding and disease as the specie
 'Beast of Buchan'.[166] The 'Kellas Cat' of Moray is a jet black, long-legged animal, and is probably the result of a modern wild cat. In earlier times it may have spawned the legend of the Cat Sidhe or "Fairy Cat".[167][168] The fabulous Loch Ness Monster, possibly a form of "water horse", has a long
history; the first recorded sighting allegedly took place in 565 AD.[169] More recently, the Stronsay Beast was an unidentified cryptid washed ashore in the United Kingdom. The resources of the
organisations concerned may be insufficient to the challenge, but the contrast with earlier attitudes about the environment is striking. In Victorian times few animals became extinct in Scotland, but the scale of the slaughter on hunting estates was staggering. Richard Perry records that on a single estate in the Cairngorms between 1837 and 1840 the
following "vermin" were exterminated by keepers purely in the interests of preserving the grouse population: 246 Martens, 198 Wild Cats, 106 Polecats, 67 Badgers, 58 Otters, 475 Ravens, 462 Kestrels, 371 Rough-legged Buzzards, 285 Common Bu
Goshawks, 35 Long-eared Owls, 27 Sea Eagles, 18 Ospreys, 15 Golden Eagles, 18 Ospreys, 15 Golden Eagles, 11 Hobbys, 6 Gyrfalcons, 5 Marsh Harriers, 3 House Cats, 1,431 Hooded or Carrion Crow, 3 Barn Owls, 8 Magpies and 7 "Orange-legged Falcons'
Writing in 1947, Perry stated that his "first reaction to this dreadful black-list was that of amazed incredulity. I still find the details incredible. However, they were supplied by the lessee himself."[171] In several instances these extermination totals are larger than the current resident numbers for the entire country. It remains to be seen if the
destruction wrought by the Victorians continues to be the nadir for the fauna of Scotland. In addition to other difficulties the marine environment faces, climate change is a challenge facing all of Scotland's habitats. Among the birds, particular may be affected as they depend on high-altitude habitats, and
populations are likely to decline if warmer weather brings competitors into their restricted ranges. [172] Mammals and other vertebrates may fare better, although localised invertebrate populations are at risk. Marine life is already being affected. Planktonic species that prefer cold water are declining and are not able support the crucial food chains are at risk.
on which many seabirds depend.[173] Further evidence of problems for marine species has been provided by the St Andrews University Sea Mammal Research Unit. An analysis suggests that common seal populations in Orkney and Shetland fell by 40% from 2001 to 2006, prompting the then Scottish Executive to announce the likelihood of a new
protective conservation order.[174] The complexities involved in conserving Scottish wildlife are highlighted in an RSPB report, noting that pine martens have been found to be a significant predator of capercaillie nests. Both species are protected, providing conservation agencies with a challenging conundrum to address.[175] In 2012 the Scottish
 Government published a "Code of Practice on Non-Native Species" to help people understand their responsibilities and provide guidance as to which public body has responsibility for the various habitats involved.[176] Conservation organisations The High Cairngorms - Cairn Toul and Sgor an Lochain Uaine from Braeriach Various public sector
 organisations have an important role in the stewardship of the country's fauna. Scottish Natural Heritage is the statutory body responsible for natural heritage management in Scotland. One of its duties is to establish national nature reserves (NNR)s. Until 2004 there were 73, but a review carried out in that year resulted in a significant number of
sites losing their NNR status, and by 2006 there were 55.[177][178] As of 2018[update] there are 43.[179] Forestry and Land Scotland serves as the forestry department of the Scotland serves as the
nature conservation. The country has two national parks. Cairngorms National Park includes the largest area of arctic mountain landscape in the UK. Sites designated as of importance to natural heritage take up 39% of the land area, two-thirds of which are of Europe-wide importance. [180] Loch Lomond and the Trossachs National Park includes
 Britain's largest body of fresh water, the mountains of Breadalbane and the sea lochs of Argyll. Charitable and voluntary organisations also have important roles to play. The National Trust for Scotland is the conservation charity that protects and promotes Scotland's natural and cultural heritage. With more than 270,000 members it is the largest
 conservation charity in Scotland. The Scottish Wildlife Trust is a leading voluntary conservation organisation, working to protect Scotland's natural environment. The Royal Zoological Society of Scotland is a learned society and registered charity that maintains Edinburgh Zoo and the Highland Wildlife Park (a safari park and zoo near King
specialises in native fauna). The Society is also involved in various conservation of birds and other wildlife through the protection and re-creation of habitats. The John Muir Trust is a charity whose main role is as a guardian of wild land and
wildlife, through the ownership of land and the promotion of education and conservation. The trust owns and manages estates in locations including Knoydart and Assynt, and on the isle of Skye. It has links with the Sierra Club in the United States, which also celebrates the legacy of Dunbar-born John Muir.[181] Trees for Life is a charity that aims to
restore a "wild forest" in the Northwest Highlands and Grampian Mountains [182] See also British awifauna Climate of Scotland Geology of Scotland 
animals of Britain List of fauna of the Scotlish Highlands Lists of insects recorded in Britain (Arctiidae) List of moths of Great Britain (Arctiidae) Lis
Quick, N.; Durban, J.W.; Parsons, K.M. & Hammond, P.S. (2006). "An assessment of the current condition of the Moray Firth bottlenose dolphin population". Scottish Natural Heritage Commissioned Report. Perth (175).CS1 maint: uses authors parameter (link) ^ Matthews (1968) p. 254. ^ a b "Mammals". Scottish Natural Heritage. Archived from the
original on 30 December 2006. Retrieved 1 January 2007. A Fraser Darling and Boyd (1969) pp. 7, 98-102. Benvie (1994) p. 12. A In the past, this claim has been made on behalf of other species such as the red grouse (now considered to be a sub-species of willow ptarmigan) and Irish stoat (Mustela erminea hibernica), also now considered to be a
sub-species of stoat. Loxia scotica 's position as a true species is a matter of debate but the current consensus is that it does have this status (see for example Miles and Jackman (1991) pp. 21-30 and Benvie (2004) p. 55.) The position of the freshwater fish the vendace Coregonus vandesius is disputed, with many authorities considering it to be a
synonym of Coregonus albula. Adams, William Mark (2003) Future Nature. British Association of Nature Conservationists p. 30. Retrieved 14 July 2009. This source lists the UK's endemic species as being "14 lichens, 14 bryophytes, 1 fern, 21 higher plants, 16 invertebrates and 1 vertebrates and 1 vertebrate (the Scottish crossbill)." Perhaps because endemic
vertebrates are all but absent from the UK neither SNH nor JNCC appear to provide a definitive "list" but it is clear that the Scottish Crossbill: Loxia Scottish Crossbill is the only endemic freshwater fish (Maitland, P. and Lyle A.A. (1996)
"Threatened freshwater fishes of Great Britain" in Kirchofer, A. and Hefti, D. (1996) Conservation of Endangered Freshwater Fish in Europe. Basel. Birkhauser.) or mammals ("The British Mammals list" Archived 28 July 2011 at the Wayback Machine ppne.co.uk. Retrieved 7 July 2009.) in Britain. There are too few amphibians and reptiles native to the
UK for there to be any doubt that no endemic species exist. The position is implied, although not stated by SNH in their Information and Advisory Note Number 49 "Priority species in Scotland: animals" Retrieved 7 July 2009. See also Myers, Norman (2003) "Conservation of Biodiversity: How are We Doing?" Archived 16 July 2011 at the Wayback
Machine (pdf) The Environmentalist 23 pp. 9-15. Retrieved 7 July 2009. This publication confirms there is only one "endemic non-fish vertebrate species" in the British Isles, although it fails to identify the species concerned. ^ a b "Inshore Fisheries in Scotland". The Scottish Government. Retrieved 24 August 2008. ^ a b "Protecting and Promoting an
Scotland's Freshwater Fish and Fisheries". Scottish Executive. Retrieved 13 January 2007. Miles and Jackman (1991) p. 48. See for example Johnston, I. (29 November 2006) "Sea change as plankton head north'". Edinburgh. The Scotsman. This report quotes James Lovelock's concern that global warming will "kill billions" of people over the
coming century. ^ a b "Scottish wildlife habitats". Scottish Natural Heritage. Archived from the original on 22 December 2006. Retrieved 2 January 2007. ^ Although no one denies that past forests were much larger, they disagree about the timing and causes of the reduction. Many writers, from the 16th century author Hector Boece to the 20th
century naturalist Frank Fraser Darling, believed that the woods were much more extensive in Roman times than today. However, it is now thought that deforestation of the Southern Uplands, caused by climate and by people, was well underway when the legions arrived. See Smout (2007) pp. 20-32. ^ Preston, C.D.; Pearman, D.A.; Dines, T.D.
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