The State of Birds in Switzerland
Report 2019

vogelwarte.ch

Headlines

The harsh winter 2017/18 decimated the populations of residents and short-distance migrants such as Eurasian Treecreeper, European Robin and Goldcrest. ➲ page 6

Thanks to the common breeding bird monitoring scheme (MHB), the population trends of common and widespread breeding birds have been carefully documented since 1999. ➲ page 8

Despite the massive expansion of residential areas, birds typically found in settlements declined between 1993–1996 and 2013–2016. Causes include a lack of nesting cavities and highly manicured, uniform gardens. ➲ page 12

The EuroBirdPortal (EBP) tracks the spatial and temporal distribution of birds in Europe in near real time. The EBP was developed with support from the Swiss Ornithological Institute. ➲ page 22

For 25 years, we have been documenting the population trends of scarce winter visitors. While the rise of Red Kite and Common Woodpigeon extends to the breeding season, the Eurasian Skylark is declining in winter, too. ➲ page 24

The overall number of wintering waterbirds in Switzerland has declined slightly since the mid-1990s, but long-term trends are positive for herons and geese. ➲ page 26

Farmland birds have experienced steep declines throughout Europe, their population decreasing by 57 % since 1980. The trends of woodland species are largely stable. ➲ page 32

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You can find further information online, including population trends for breeding birds and additional analyses: www.vogelwarte.ch/state

Measuring slow and gradual change

It's 5 o'clock in the morning in the middle of May. I am standing in a typical mixed deciduous woodland on the Central Plateau, listening to the exuberant birdsong. The singing males of ordinary species belt out their tunes as if competing in a song contest. A Red Kite and several Carrion Crows eagerly search for food in the freshly mown field nearby. I spent countless hours in this same stretch of forest more than 30 years ago, together with two school friends. We looked for birds' nests and compared the eggs and nestlings with the pictures in our field guide. In the early hours of the morning we lay in wait at the forest edge, delighted to spot a hare or deer. While the finches, thrushes and tits continue to outdo each other in song, I try to recall which species I used to hear whose songs are absent this morning. I remember hearing my first Wood Warbler in this very spot. It was a regular member of the choir in these woods, as was the European Pied Flycatcher. Impossible at the time to imagine the forest edge without brown hares. All three species have since disappeared from this place.

Have you tried similar exercises in memory? We get accustomed to the changes in habitats and their residents all too quickly. These processes happen gradually, without us even noticing. Only the systematic monitoring of breeding birds over several years in «ordinary» habitats that are home to «ordinary» birds reveals how Switzerland and its avifauna are changing. With great foresight, in recognition of the importance of this kind of data, the common breeding bird monitoring scheme («Monitoring Häufige Brutvögel», MHB) was launched 20 years ago. Today, valuable data series from 267 kilometre squares are available, documenting the distribution and population trends of common breeding bird species. A tremendous achievement!

As head of the conservation, hunting and fisheries division in the Canton of St. Gallen, I have often been grateful for the ornithological data collected by the Swiss Ornithological Institute, in the MHB and other schemes – when preparing ecological assessments for wind-power plants, for example, or making adjustments to the cantonal spatial development plan, but also when we developed the biodiversity strategy for the Canton of St. Gallen. We started by conducting a comprehensive situational analysis of biodiversity in the canton before defining effective measures. The breeding bird data were among the most reliable and high-quality data we had access to.

It is my hope that the results compiled by countless dedicated

fieldworkers will increasingly be used to help conserve our country's biodiversity. I look forward to getting up at 4.30 am again next Sunday to survey «my» MHB square! For the sake of our birds.

Dr Dominik Thiel
Head of the Conservation, Hunting and Fisheries Division, Canton of St. Gallen, and member of the Swiss Ornithological Institute's Scientific Commission

When conducting territory mapping surveys for the common breeding bird monitoring scheme (MHB), the early start and physical exertion are often rewarded with once-in-a-lifetime observations. In 2017 and 2018, the warmth-loving Rock Bunting reached the highest numbers of the past ten years.

The Swiss population of Wood Warblers has declined by two thirds since 1990. Regional surveys reveal even more dramatic collapses. If the decline continues, the species will soon occur in too few sampling sites to be included in the common breeding bird monitoring scheme (MHB).

The Fieldfare population has declined by more than a third in Switzerland in 20 years – is this an effect of climate change?

The situation of breeding birds

2018 was another extreme-weather year. It set a new record for mean annual temperature, and summer was the warmest since records began in 1864. Besides the extreme heat, there was hardly any rain for months. Such «crazy weather» years impact our breeding birds, both in the short and long term.

Lots of snow in winter, but mild breeding season

The snowy and at times very cold winter of 2017/18 caused the populations of several residents and short-distance migrants to collapse. Species such as Coal Tit, Crested Tit, Eurasian Crag Martin, Long-tailed Tit, Eurasian Treecreeper, Eurasian Blackbird, European Robin and Goldcrest declined significantly compared to the previous year.

The severe winter was followed by favourable conditions during the breeding season with warm but also dry weather. April was warmer than the 1981–2010 average by 3.9 °C. The summer months of 2018 broke the previous heat record of 2003 with temperatures 2.4 °C above average (2003: +2.2 °C). Remarkable during this period, besides the heat, was the persistent lack of rain. In Switzerland as a whole, only 71 % of the normal rainfall occurred from July to August; in some areas (e.g. eastern Switzerland), the percentage was even lower.

These weather conditions improved the breeding success of many species. On the other hand, species that forage mainly on the ground (e.g. thrushes) had difficulty finding a sufficient supply of worms in the baked earth.

Climate effects by no means positive

The massive increase in summer temperatures in the past few years is a consequence of global warming. At first glance, the effects on breeding birds seem to be predominantly positive. Several rare or scarce species such as Short-toed Snake-eagle, European Bee-eater and Common Stonechat appear to benefit from climate change as breeding birds in Switzerland. Similarly, the Swiss Bird Index SBI® Climate Change Plus (SBI® CC Plus) has increased significantly since 1990, while the SBI® CC Minus shows no corresponding negative trend. SBI® CC Plus and Minus were calculated by selecting the 20 species for which models predict the largest range gains or losses.

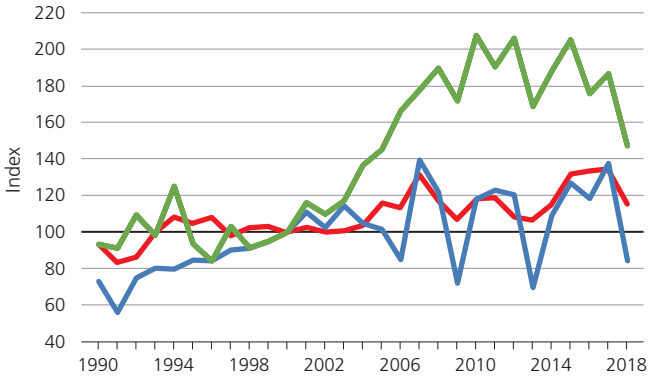
However, the SBI® averages the relative changes of individual species, and so the European Bee-eater, for example, a new breeding species in Switzerland, shows a huge increase. If we look at the changes in population size in absolute rather than relative terms, we get a different picture. Using the results from the new breeding bird atlas and combining them with the breeding bird indices, we can compare the estimates of population sizes from

2013–2016 with those from 1993–1996. In the past 20 years, the 20 species that make up SBI® CC Plus have increased by about 7700 pairs altogether (from 25 400 to 33 100). The three most abundant species in this group are Rock Bunting (+380 breeding pairs between 1993–1996 and 2013–2016), Eurasian Crag Martin (+2600) and Eurasian Golden Oriole (+920). However, the species in this group have much smaller populations than those in SBI® CC Minus. In the SBI® CC Minus group, all 20 species together declined by about 91 000 breeding pairs (from 453 000 to 362 000) in the same period. The three most abundant species in particular suffered huge losses: the populations of Ring Ouzel (–30 000 pairs), Eurasian Bullfinch (–32 500 pairs) and Fieldfare (–26 500 pairs) decreased significantly. But because this group, unlike SBI® CC Plus, also contains species with a huge increase in relative terms (especially the White Stork, +161 %), the increases and declines balance each other out and the index is level overall. A comprehensive overview of the numbers for all 40 species is available online.

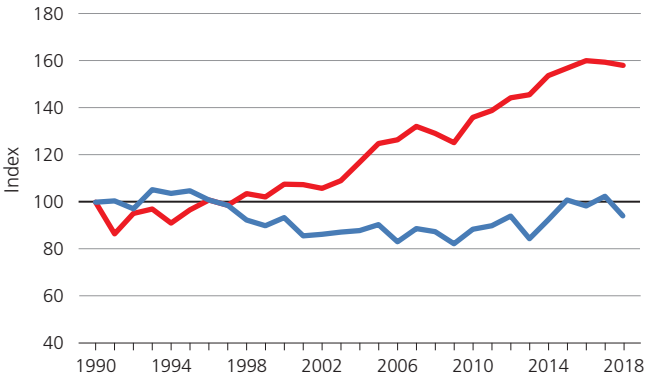
Although other factors also play a role, such as agricultural intensification and woodland encroachment following abandonment of marginally productive land, climate change is already having a substantial impact on breeding birds. The negative effects are most felt by mountain birds. This is a major cause for concern, as Switzerland has an international responsibility for the survival of many of these species.

Further information
www.vogelwarte.ch/state/breeding

Switzerland has an international responsibility for the Eurasian Bullfinch (left) and the White-winged Snowfinch. Both species are included in SBI® Climate Change Minus with a negative forecast. Both have declined since 1993–1996.



The populations of several residents and short-distance migrants such as Eurasian Treecreeper (green), European Robin (red) and Goldcrest (blue) saw a short-term decline in 2018 due to the cold and snowy winter 2017/18 in the mountains.



The Swiss Bird Index SBI® Climate Change Minus (blue) and SBI® CC Plus (red) 1990–2018: for species with a negative forecast (SBI® CC Minus), no trend is apparent. However, if we look at the change in absolute numbers instead of the combined index values displayed here, the trend is clearly negative.

The 267 kilometre squares, spread throughout the country, are as diverse as Switzerland itself. By representing all habitats, regions and altitude belts, they offer an overview of the trends affecting widespread breeding birds in Switzerland.

Widespread species on the rise, migrants in decline

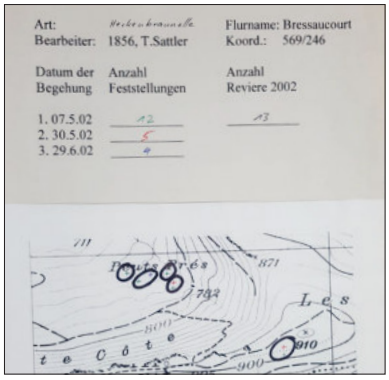
Since the mid-1980s, the Swiss Ornithological Institute has managed to track the population trends of many rarer breeding birds quite well, thanks to its country-wide network of active volunteers. In contrast, short-term fluctuations and long-term changes in population size for common and widespread breeding birds remained poorly documented for a long time. The completion of the 1993–1996 breeding bird atlas showed that data on distribution and population sizes could be collected throughout Switzerland in an efficient way using a simplified method of territory mapping. Extensive test runs were conducted in Ticino in 1997 and 1998, confirming the feasibility of quantitative surveys even in difficult terrain. Encouraged by these results, the Swiss Ornithological Institute launched its common breeding bird monitoring scheme («Monitoring Häufige Brutvögel», MHB) in 1999, collecting quantitative data every year in 267 representative kilometre squares.

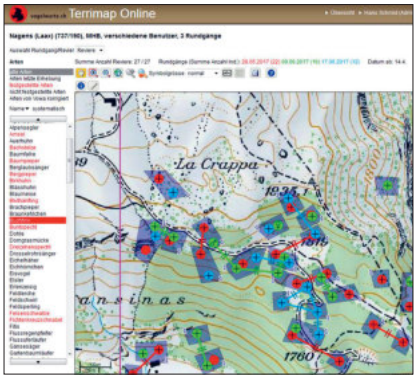
The 267 kilometre squares surveyed annually since 1999 are largely based on the grid established for «Biodiversity Monitoring Switzerland» (BDM).

Important standardisation process

When it comes to long-term data collection, clear guidelines that remain unchanged over the years are crucial. As all data is collected by humans, there is an element of imprecision, so a healthy degree of caution is recommended when interpreting the results.

The kilometre squares selected for MHB are for the most part included in the sampling grid established for «Biodiversity Monitoring Switzerland» (BDM). In some areas, the position of squares was adjusted slightly if they were unsuitable for quantitative surveys, for example due to very steep terrain or large expanses of water.





Much progress has been made in the processing of survey results: mapping the territories manually in 2002 (left) required a lot more time and effort than using «Terrimap online» in 2017 (right). The online system also improves legibility and helps to avoid input errors.

Overview of MHB territory mapping surveys 1999–2018

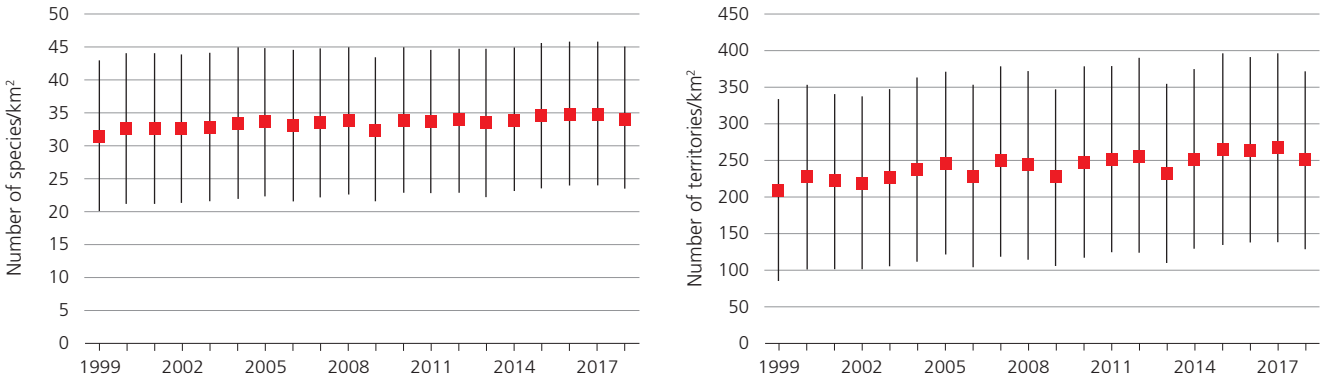
Surveyed kilometre squares per year	267
Total valid territory mapping surveys	5285
Missing or invalid surveys	55
Total mapped territories	1 278 236
Breeding species detected	164
Fieldworkers	≥ 528

Once defined, the routes remain fixed. New fieldworkers keep to the dates and survey durations established by their predecessors. For breeding birds arriving late in the season, observations have to fall after a specific date; in the case of irregular species, breeding records are subject to more stringent criteria. The «Terrimap» software introduced in 2006 and its online version «Terrimap online» launched in 2012 have also supported the standardisation process and helped avoid mistakes.

We try to achieve the best possible continuity by regularly offering courses, making sure that experienced fieldworkers instruct their successors, and carefully reviewing the survey results. We are currently considering supporting fieldworkers with a tool for automatic territory delimitation in order to achieve even better comparability across Switzerland.

Widespread species increasing

In order to calculate meaningful trends, a species should occur annually in at least 30 sites, a criterion currently met by 74 species; Whinchat and Wood Warbler, however, risk falling short of this threshold in the near future. Over the entire period (1999–2018), 56 species show gains, 25 species show no specific trend – in some cases with marked short-term fluctuations – and 17 species declined. This rather positive overall picture is due to the fact that MHB mainly records data of common, widespread and therefore undemanding species. Residents, generalists and various woodland birds have fared quite well. On the other hand, among the rather small group of long-distance migrants covered by the MHB scheme, several species have seen marked declines.



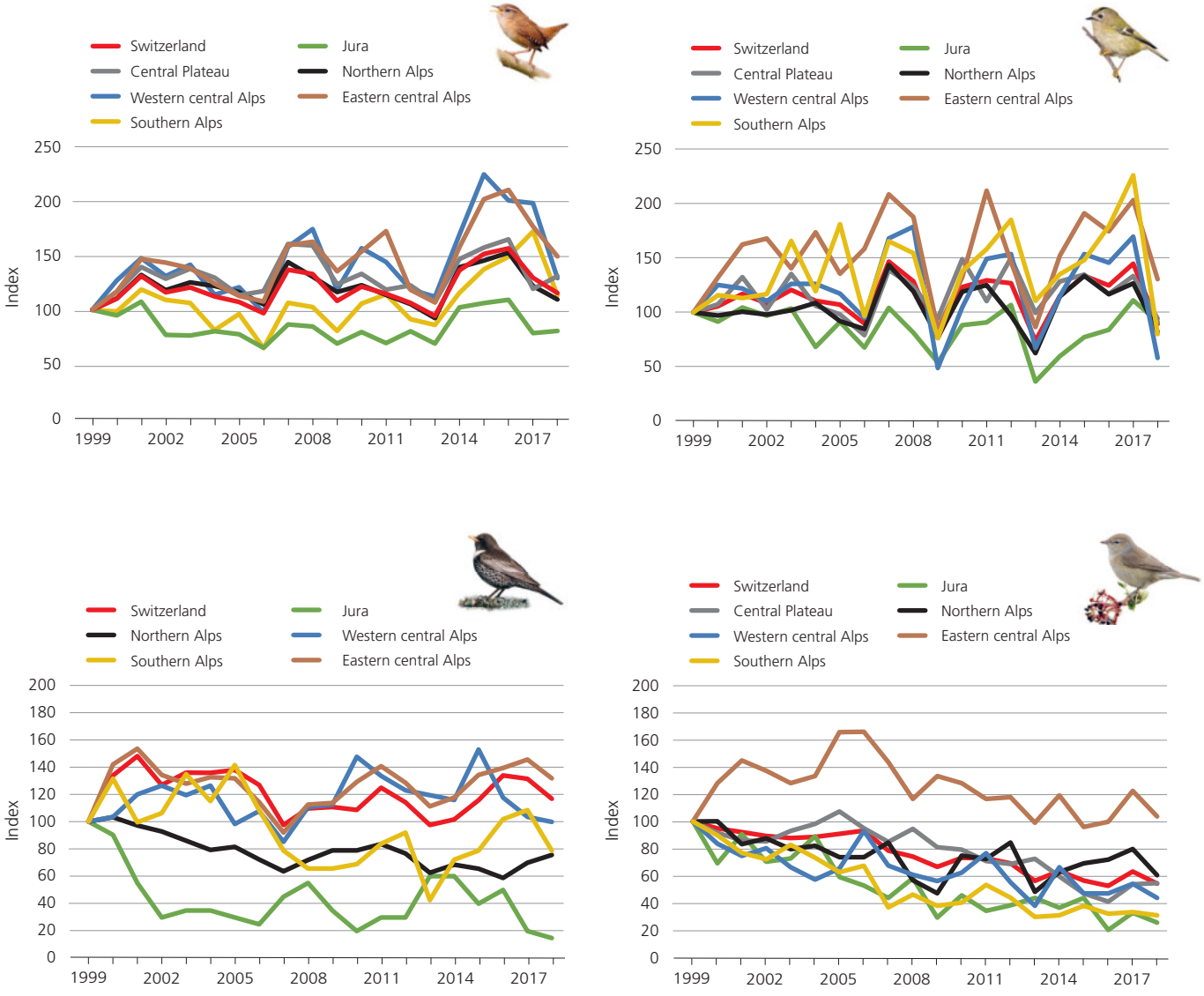
Per year and kilometre square, an average of about 33 species (left) with a total of 242 territories were found (right, mean values with standard deviation). Both values have increased slightly over time, due mainly to the increase of certain woodland species.

Dynamic trends – both in the mountains and the lowlands

Until recently, little was known about the population dynamics of birds in sub-Alpine and Alpine habitats – and data pertaining to long time periods or large geographic areas were even scarcer. The common breeding bird monitoring scheme (MHB) affords us fascinating new insights. It has already become apparent that the situation in the Swiss mountains is much less stable than might be expected. The Redpoll is an extreme example: the species is subject to large fluctuations that vary from one region to the next. Many areas are only occupied for one or two years before being abandoned, only to be suddenly recolonised at a later time. In Grisons especially, the Redpoll increased by a factor of five between 1999 and 2005. Numbers then fluctuated heavily, reaching the lowest point so far in 2018, i.e. just under half the population size of 1999.

Several species shift their range upwards

A different trend, revealed in the 2013–2016 breeding bird atlas as well, is the upward range shift of many species. In the case of the Song Thrush, this

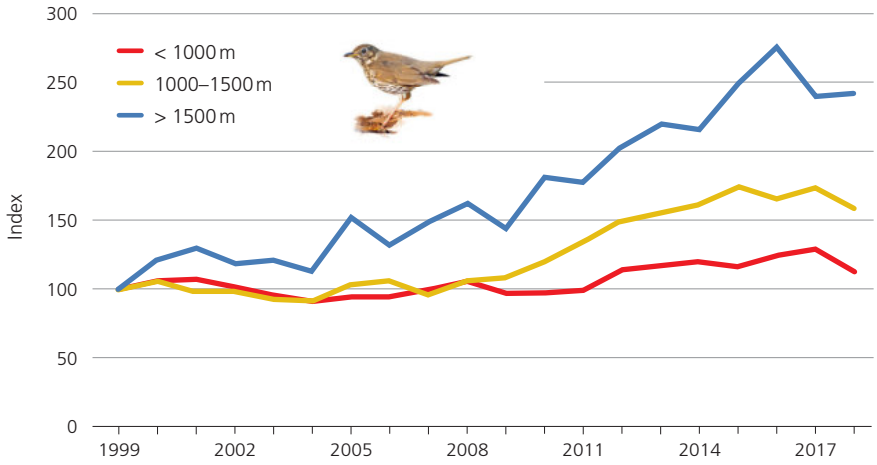


The MHB scheme offers new insights into the population dynamics of birds in sub-Alpine and Alpine habitats. For instance, the populations of Eurasian Wren (left) and Goldcrest fluctuate more heavily in the eastern and central Alps than in other biogeographic regions (above). Ring Ouzel (left) and Garden Warbler are faring better in the central Alps than in other areas (below).

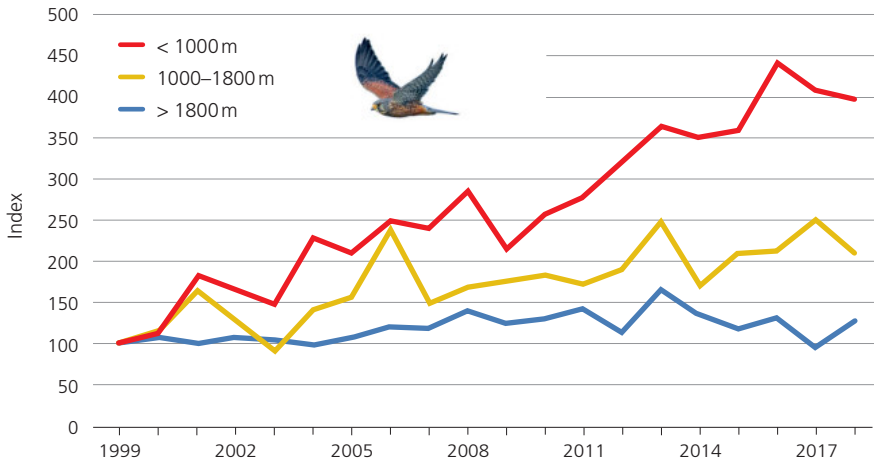
process has been ongoing in areas above 1500 m asl for 20 years. A look at individual squares gives us a clue as to why this is happening: the forest edge and abundant shrub vegetation are advancing in many places. This causes new habitats to emerge, e.g. in the lower reaches of survey sites with an Alpine character, which are quickly colonised by the Song Thrush. The reverse situation also occurs, however: Common Kestrel numbers, for example, have remained largely constant at high altitudes. There was a small long-term increase between 1000 and 1800 m. In contrast, the change in population size in MHB squares below 1000 m has been dramatic: the number of Common Kestrels has more than tripled since 1999. Probable drivers of this spectacular development are the widespread availability of nest boxes, above-average breeding success and an abundant food supply. Following the slump in the 1980s and 1990s, Common Kestrel numbers have returned to the level of the «good old days» in many places.

MHB takes the temperature

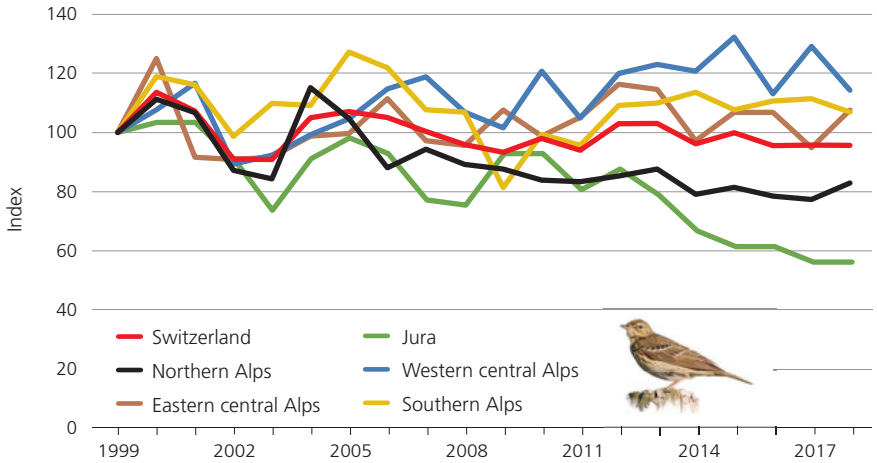
The atlas projects only allow for an assessment of the situation every 20 years – albeit with a higher spatial accuracy. The data provided by the MHB scheme, on the other hand, allow us to recognise new trends after just a few years. Garden Warbler and Spotted Flycatcher are two cases in point: these two species suffered significant declines in the early 2000s – without any warning signs at the time – and have since lost about a third of their population each. Here, the MHB functions as an early warning system that allows us to add such species to the Red List sooner and, where necessary, investigate the causes of decline and take conservation measures more quickly.



MHB reveals that the increase in Song Thrush numbers is particularly marked at higher altitudes.

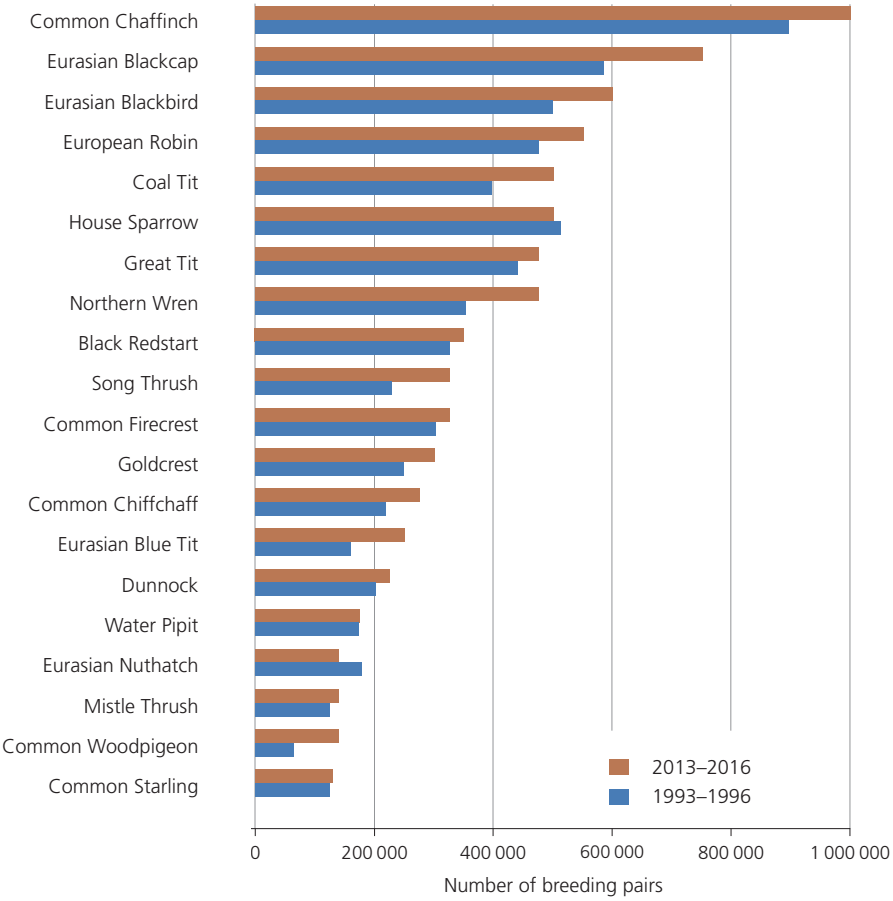


Stable at high altitudes but steep increase below 1000 m: since 2000, the Common Kestrel has once again become a widespread and relatively common breeding bird.



Crisis zone Jura: the Jura range is at risk of losing species like Ring Ouzel, Whinchat and Citril Finch. The trend of the Tree Pipit, too, is especially negative in the Jura.

Woodland species dominate, urban species in decline



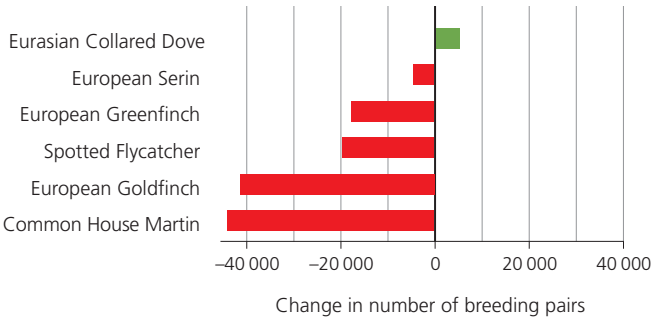
Population sizes of the 20 most common breeding birds in 1993–1996 and 2013–2016. Typical woodland species such as Common Chaffinch, Eurasian Blackcap, Eurasian Blackbird, European Robin and Coal Tit top the list and also show the most significant increases.

The data collected for the 2013–2016 breeding bird atlas provided an excellent foundation to revise the population estimates for all breeding bird species. Together with the breeding bird indices, this allows us to track changes in population size not only in relative terms, but also in absolute numbers.

In Switzerland, the most common species are those occurring in woodland habitats as well as settlements. Among the ten most common breeding birds, woodland is the most important habitat for all but two species, House Sparrow and Black Redstart.

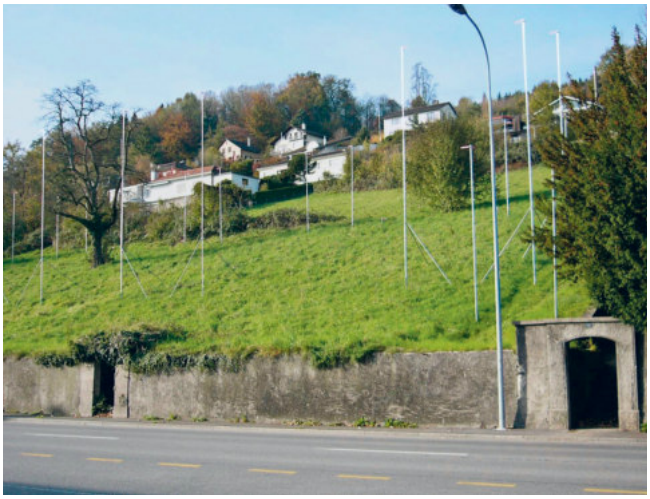
Territory density almost as high in settlements as in woodland

Based on the atlas surveys, we were able to estimate densities for the different habitats. Interestingly, in the surveyed kilometre squares, territory density is almost as high in settlements as it is in woodland, at least below 800 m asl, namely more than 500 territories per km², though it varies greatly depending on the existing structures and nesting opportunities. Above 800 m, territory density is lower in both habitats, but tends to be slightly higher in woodland than in settlements. Many typical woodland species have adapted to residential environments. The Common Woodpigeon, for example, shows a striking increase.



Change in population size between 1993–1996 and 2013–2016 of a few species typically found in settlements.

When was the last time you saw this kind of muddy puddle by the wayside?



Growth has its price: new houses are often built at the expense of old fruit trees and south-facing slopes.

In the 1990s in Switzerland, this species was largely confined to woodland habitats. Meanwhile, it also breeds in settlements as well as in trees and hedges in open country. Still, territory density is much higher in woodland than in other habitats. The Eurasian Blackbird, on the other hand, has an even higher density in settlements than in woodland, at least below 800 m (about 50 territories/km² on average).

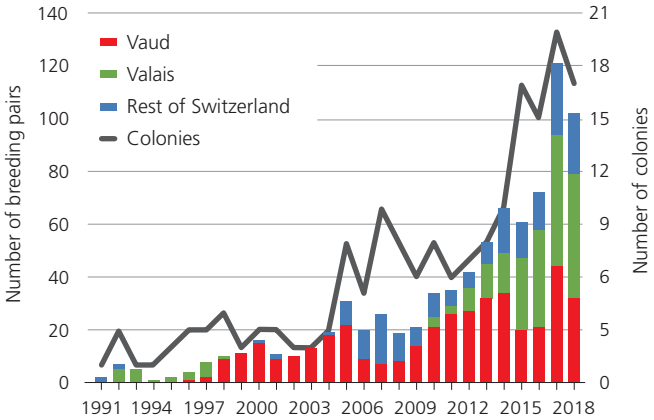
Marked declines in typical settlement species

However, we see a different picture when it comes to species that typically occur in settlements. Here, declines predominate between 1993–1996 and 2013–2016, with the exception of the Eurasian Collared-dove. In absolute numbers, Northern House Martin and European Goldfinch show the largest declines, with a loss of about 40 000 territories each. The Spotted Flycatcher lost about a third of its population in the same period. Given that settlement area has massively increased (+23 % from 1985 to 2009), the declines are all the more worrying. While many original woodland birds do well in residential areas thanks to the presence of old trees, typical settlement species have additional habitat requirements. Thanks to tree inventories in towns and cities, felled trees are replaced where possible, but the trend towards denser building and sealed surfaces causes seed-rich wasteland and waysides, bushes and unoccupied old buildings to disappear. In addition, the expansion of settlement areas is often at the expense of biodiversity. For example, new housing estates are often built on (south-facing) slopes, where valuable small-scale habitat structures were able to develop because the gradient made them unsuitable for intensified agricultural use.

Further information
www.vogelwarte.ch/atlas

Thanks to old trees and an ever milder climate, the Common Woodpigeon finds favourable conditions in settlements.

Trends vary for birds in gravel pits

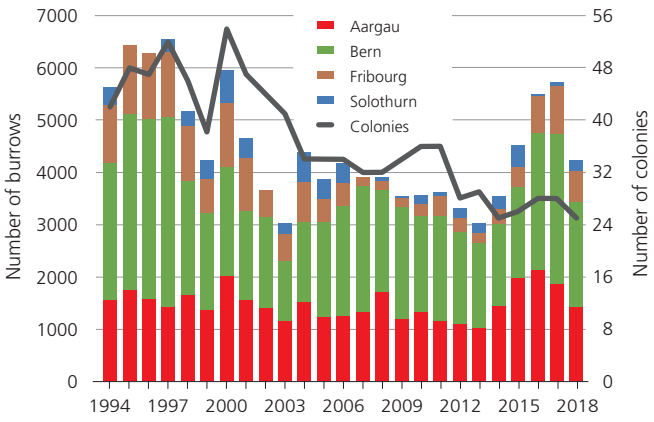


Population trend and number of colonies for the European Bee-eater in Vaud, Valais and the rest of Switzerland since 1991.

Steep, sandy riverbanks were almost completely destroyed by the canalisation of rivers on Switzerland's Central Plateau. Nevertheless, alternatives exist in Switzerland for the specialist species that breed in this type of environment: gravel pits serve as substitute habitats.

The European Bee-eater has expanded its range in central Europe since about 1984, breeding in Switzerland for the first time in 1991. Small colonies subsequently formed in central Valais (from 1992) and the Canton of Vaud (from 1996). The Canton of Geneva has been occupied since 2005. Population size hovered at 10–30 pairs up until 2009 before increasing significantly from 2010 and exceeding the 100-pair threshold in 2017 (121 pairs) and 2018 (102 pairs). Currently there are 17–20 colonies, with the most important populations in the Canton of Vaud (largest colony in 2011, 26 pairs) and in Valais (largest colony in 2017, 35 pairs). The European Bee-eater digs nesting burrows in gravel pits and steep slopes. Breeding success appears to be high overall in the Swiss colonies. Hot summers like in 2018 benefit the species.

The nesting burrows of Collared Sand Martins in gravel pits in the cantons of Aargau, Bern, Fribourg and Solothurn have been counted annually since 1994. Twenty-eight colonies were counted in 2017 and 25 in 2018, with 4221–5734 burrows, which corresponds to a breeding population of 1731–2351 pairs. The population size has fluctuated in the past 25 years, but the number of colonies has been in decline since 1950. Today, Collared Sand Martins are dependent on human activity. Gravel pits have become smaller and excavation times shorter. Artificial sand banks built especially for Sand Martins in the past few years have shown some success. Thanks to these alternative conservation measures, it may be possible – with a bit of luck – to preserve the species in an area even after the gravel pits have disappeared.



Population trend and number of colonies for the Collared Sand Martin in the cantons of Aargau, Bern, Fribourg and Solothurn since 1994.

Western Marsh-harrier and rails take us by surprise

More than 90 % of wetlands in Switzerland have been destroyed since 1850. The remaining ones are often rich in biodiversity and full of surprises.

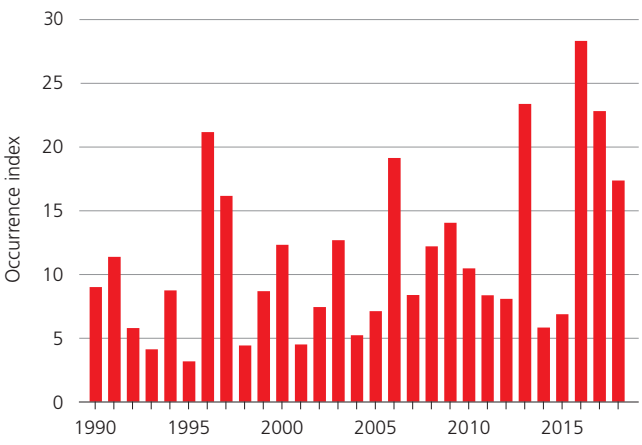
Breeding of Western Marsh-harrier was confirmed no more than seven times in Switzerland in the 20th century, the last record dating back to 1975 in Neeracherried ZH. However, the Western Marsh-harrier has bred quite regularly on the German side of Untersee (Lake Constance) since 1980. Breeding attempts were observed in Switzerland again in 2007–2009, once more in Neeracherried. Observations during the breeding season have become much more frequent, and the Western Marsh-harrier has attempted to breed in several wetlands on the western Plateau, such as Grande Cariçaie (2015–2016), Fräschelsweiher BE (2016), Meienriedloch BE (2016) and Wengimoos BE (2017). Breeding finally succeeded in 2018 at Niederried reservoir BE and near Chavornay VD.

Since the drainage of wetlands across the country, there have been few breeding records of rails, a secretive group of birds. We count about 10–15 territories annually for the Spotted Crake, 1–4 territories almost annually for the Little Crake, and 1–2 territories for Baillon's Crake only every second to third year. 2018 was an excellent year, however. A pair of Little Crakes was observed in Grande Cariçaie from late May and two juveniles with down feathers were seen at the end of July. This is the first confirmed breeding record in Switzerland since 1971 (when breeding was recorded near Chavornay)! In 2018, the water level in Neeracherried, one of our most suitable wetlands for rails, was not artificially reduced during the breeding season in response to precipitation as it had been before. The water level remained high, and two Baillon's Crake territories, eight Spotted Crake territories and 35 Western Water Rail territories (average of the past five years: 15 territories) were found in the flooded sedge meadows! This highlights the huge importance of sufficiently high water levels in wetlands during the breeding season.

For the first time since 1971, breeding by the Little Crake was recorded on the southern shore of Lake Neuchâtel.

Reference

Müller, C. (2019): Seltene und bemerkenswerte Brutvögel 2018 in der Schweiz. Ornithol. Beob. 116: 165–178.



The presence of Western Marsh-harriers during the breeding season from 31 May to 3 August in Switzerland has been above average in the past three years.

Regular breeders in Switzerland

Population trends for 174 regular breeding birds[1] analysed in Switzerland for the entire survey period (generally 1990–2018) and for the last ten years (2009–2018). Trends shown as +++ signify an increase by more than a factor of five, while ++ marks an increase between a factor of two and five and + an increase by less than a factor of two. The symbol • means that no statistically significant change was detected. This is the case for populations that are actually stable but also for those that fluctuate heavily. Trends shown as – describe a decline by less than a factor of two, –– marks a decline between a factor of two and five and ––– a decline by more than a factor of five. Population sizes refer to 2013–2016 and are taken from the Swiss breeding bird atlas: ♂ = males, bp = breeding pairs.

Species	Trend 1990–2018	Trend 2009–2018	Population 2013–2016
Common Quail	•	–	500–2000 ♂
Rock Partridge	––	++	2500–4500 bp
Grey Partridge	•	–––	5–10 bp
Hazel Grouse	•	•	3000–5500 bp
Rock Ptarmigan	–	•	12000–18000 bp
Western Capercaillie	–	+	360–470 ♂
Black Grouse	•	+	12000–16000 ♂
Common Eider	•	•	1–5 bp
Goosander	++	+	600–800 bp
Red-crested Pochard	+++	+	210–300 bp
Common Pochard	•	•	6–9 bp
Tufted Duck	+	•	160–280 bp
Gadwall	++	•	5–10 bp
Mallard	•	•	20000–30000 bp
Little Grebe	–	+	800–1300 bp
Great Crested Grebe	–	•	3500–5000 bp
Black-necked Grebe	•	+++	3–4 bp
Stock Dove	+	+	2000–4000 bp
Common Woodpigeon	++	+	130000–150000 bp
European Turtle-dove	–	–	150–400 bp
Eurasian Collared-dove	+	•	15000–25000 bp
European Nightjar	–	–	40–50 bp
Alpine Swift	++	•	1800–2300 bp
Pallid Swift	++	•	29–36 bp
Common Swift[2]		•	40000–60000 bp
Common Cuckoo	•	•	15000–25000 ♂
Western Water Rail	•	+	500–800 bp
Corncrake	++	•	15–40 ♂
Spotted Crake	•	++	10–20 bp
Common Moorhen	+	+	1000–2000 bp
Common Coot	+	•	5000–8000 bp
White Stork	++	++	370–460 bp
Common Little Bittern	•	•	90–120 bp
Grey Heron	+	+	1600–1800 bp
Purple Heron	+++	+++	6–17 bp
Great Cormorant	+++	+++	1200–2100 bp
Little Ringed Plover	•	•	90–120 bp
Northern Lapwing	––	+	140–180 bp
Eurasian Curlew	–––	•	0 bp
Eurasian Woodcock	–	•	1000–4000 ♂
Common Snipe	–––	•	0–1 bp
Common Sandpiper	•	+	70–90 bp
Black-headed Gull	––	•	560–800 bp
Mediterranean Gull	•	•	0–5 bp
Mew Gull	•	•	0–3 bp
Yellow-legged Gull	+++	+	1240–1430 bp

Species	Trend 1990–2018	Trend 2009–2018	Population 2013–2016
Common Tern	++	•	580–760 bp
Common Barn-owl	–	+	200–1000 bp
Eurasian Pygmy-owl	•	•	800–2000 bp
Little Owl	++	+	115–150 bp
Boreal Owl	•	•	1000–3000 bp
Eurasian Scops-owl	++	•	30–40 bp
Northern Long-eared Owl[3]	+	•	2000–3000 bp
Tawny Owl	•	•	6000–8000 bp
Eurasian Eagle-owl	•	•	200–230 bp
European Honey-buzzard	+	•	500–1000 bp
Bearded Vulture	+++	+++	9–15 bp
Golden Eagle	+	•	350–360 bp
Eurasian Sparrowhawk	+	•	3500–6000 bp
Northern Goshawk	•	+	1300–1700 bp
Red Kite	+++	•	2800–3500 bp
Black Kite[2]		•	2000–3000 bp
Eurasian Buzzard	+	•	15000–20000 bp
Common Hoopoe	+	•	180–260 bp
European Bee-eater	+++	++	53–72 bp
Common Kingfisher	+	•	400–500 bp
Eurasian Wryneck	•	+	1000–2500 bp
Grey-faced Woodpecker[3]	––	––	300–700 bp
Eurasian Green Woodpecker	+	•	10000–17000 bp
Black Woodpecker	++	+	6000–9000 bp
Three-toed Woodpecker	•	+	1000–2500 bp
Middle Spotted Woodpecker	++	+	1700–2100 bp
Lesser Spotted Woodpecker	+	+	1500–3000 bp
Great Spotted Woodpecker	+	•	70000–90000 bp
Common Kestrel	++	+	5000–7500 bp
Eurasian Hobby	+	•	500–1000 bp
Peregrine Falcon	++	•	260–320 bp
Eurasian Golden Oriole	+	•	3000–4500 bp
Red-backed Shrike	––	•	10000–15000 bp
Woodchat Shrike	–––	•	0 bp
Red-billed Chough	++	•	70–80 bp
Yellow-billed Chough[2]		•	11000–21000 bp
Eurasian Jay	+	•	60000–75000 bp
Eurasian Magpie	++	•	35000–40000 bp
Northern Nutcracker	•	•	20000–25000 bp
Eurasian Jackdaw	+	+	1250–1500 bp
Rook	+++	++	5800–7300 bp
Common Raven	+	•	2000–3000 bp
Carrion Crow	++	–	80000–120000 bp
Coal Tit[2]		•	400000–600000 bp
Crested Tit	+	•	90000–110000 bp
Marsh Tit	+	–	70000–100000 bp

Species	Trend 1990–2018	Trend 2009–2018	Population 2013–2016
Alpine or Willow Tit[2]		•	70 000–95 000 bp
Eurasian Blue Tit	++	•	200 000–300 000 bp
Great Tit	+	•	400 000–550 000 bp
Woodlark	•	•	250–300 bp
Eurasian Skylark	–	•	25 000–30 000 bp
Bearded Reedling	+	++	80–110 bp
Melodious Warbler	+	+	300–350 bp
Icterine Warbler	––	•	100–150 bp
Marsh Warbler	•	•	3000–6000 bp
Common Reed-warbler	•	•	9000–11 000 bp
Great Reed-warbler	+	++	270–320 bp
Savi's Warbler	+	•	280–310 bp
Com. Grasshopper-warbler	+	•	150–250 bp
Northern House Martin	–	•	70 000–90 000 bp
Barn Swallow	•	+	70 000–90 000 bp
Eurasian Crag Martin	+	+	7000–9000 bp
Collared Sand Martin	–	+	2300–3000 bp
Western Bonelli's Warbler	++	•	40 000–60 000 bp
Wood Warbler	––	•	5000–7500 bp
Willow Warbler	––	–	4000–5000 bp
Common Chiffchaff	+	•	250 000–300 000 bp
Long-tailed Tit	+	•	20 000–35 000 bp
Eurasian Blackcap	+	•	700 000–800 000 bp
Garden Warbler	–	–	35 000–50 000 bp
Barred Warbler	–––	–––	0–5 bp
Lesser Whitethroat	•	•	17 000–23 000 bp
Common Whitethroat	+	•	1800–2500 bp
Short-toed Treecreeper	+	•	45 000–55 000 bp
Eurasian Treecreeper	++	•	75 000–100 000 bp
Eurasian Nuthatch	–	•	110 000–170 000 bp
Wallcreeper	–	•	1000–2500 bp
Northern Wren	+	•	400 000–550 000 bp
White-throated Dipper	+	•	6000–8000 bp
Common Starling	•	+	120 000–140 000 bp
Mistle Thrush	+	•	130 000–150 000 bp
Song Thrush	+	+	300 000–350 000 bp
Eurasian Blackbird	+	+	500 000–700 000 bp
Fieldfare	–	•	40 000–45 000 bp
Ring Ouzel	–	•	50 000–75 000 bp
Spotted Flycatcher	–	•	35 000–55 000 bp
European Robin	+	•	450 000–650 000 bp

Species	Trend 1990–2018	Trend 2009–2018	Population 2013–2016
Bluethroat	++	•	5–12 bp
Common Nightingale	+	•	1700–2200 bp
European Pied Flycatcher[2]		•	17 000–22 000 bp
Black Redstart	+	•	300 000–400 000 bp
Common Redstart	•	•	12 000–18 000 bp
Rufous-tailed Rock-thrush	–	+	2000–3000 bp
Blue Rock-thrush	•	•	15–25 bp
Whinchat	––	•	7000–9000 bp
Common Stonechat	+	+	1500–2000 bp
Northern Wheatear	+	•	40 000–60 000 bp
Goldcrest	+	•	200 000–400 000 bp
Common Firecrest	•	++	250 000–400 000 bp
Alpine Accentor	•	•	25 000–40 000 bp
Dunnock	+	•	200 000–250 000 bp
House Sparrow	+	+	450 000–550 000 bp
Eurasian Tree Sparrow	+	•	80 000–95 000 bp
White-winged Snowfinch	–	•	6000–9000 bp
Tree Pipit	–	•	50 000–70 000 bp
Meadow Pipit	––	•	500–800 bp
Water Pipit	•	+	150 000–200 000 bp
Western Yellow Wagtail	+	•	300–340 bp
Grey Wagtail	•	•	17 000–20 000 bp
White Wagtail	–	–	90 000–110 000 bp
Common Chaffinch	+	•	900 000–1 100 000 bp
Hawfinch	•	•	13 000–17 000 bp
Common Rosefinch	•	•	50–70 bp
Eurasian Bullfinch	–	•	40 000–75 000 bp
European Greenfinch	–	–	90 000–120 000 bp
Common Linnet	•	+	25 000–30 000 bp
Redpoll	•	•	15 000–20 000 bp
Red Crossbill	++	•	25 000–35 000 bp
European Goldfinch	–	+	50 000–70 000 bp
Citril Finch	–	•	10 000–20 000 bp
European Serin	–	•	35 000–45 000 bp
Eurasian Siskin[2]		•	10 000–16 000 bp
Corn Bunting	–	•	80–110 bp
Rock Bunting	+	•	7000–10 000 bp
Ortolan Bunting	–––	–––	1–5 bp
Cirl Bunting	+	•	1000–1500 bp
Yellowhammer	•	–	65 000–75 000 bp
Reed Bunting	–	•	1700–3000 bp

[1] This includes species categorised as regular breeders at least once since 1990 (i.e. the species has bred in Switzerland in at least nine of ten consecutive years). 177 species belong in this category, not counting introduced species (i.e. Mute Swan, Ruddy Shelduck, Common Pheasant). No assessment is possible for White-backed Woodpecker, Collared Flycatcher and Italian Sparrow due to lack of data.
[2] Survey period 1999–2018
[3] Survey period 1996–2018

Further information
www.vogelwarte.ch/state/breeding

Irregular and exceptional breeders

Since 2000, a further 28 species have bred in Switzerland irregularly or exceptionally. Their breeding occurrences are documented as consistently as possible (table available online in the section «Further analyses»).

Reference

Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strebel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach

Unprecedented influx

In the spring of 2018, western and central Europe experienced a spectacular influx of Rosy Starlings. This gregarious and erratic species comes from the steppes and semi-deserts of central Asia and overwinters in India, but is known for occasional invasions outside of its traditional range. They very rarely come as far as Switzerland, however. Most of the 48 observations recorded up until 2017 pertain to individuals, with rare observations of 2–3 birds at once. The only exception was a flock of 15–20 Rosy Starlings seen on 5 June in Lucerne during the invasion of 1875.

Westward advance

The 2018 invasion occurred between mid-May and late June. About 10 000 birds were observed in Hungary and several thousand breeding pairs in Bulgaria, Romania and Crimea. The main movement to the west occurred from 23 May to 7 June south of the Alps across central and northern Italy and southern France. Continuing on their journey west, the birds reached Spain and the UK in particularly large numbers.

Short, intense passage through Switzerland

In Switzerland, sightings occurred between 21 May and 7 June. Following two individuals in Grisons, a first group of six birds was seen in Ticino on 25 May. The Rosy Starlings appeared on the same day north of the Alps on the eastern Plateau, and the following day in Valais and the Lake Geneva region. The largest groups were seen on 26 May in Valais (20 birds) and Ticino (13 birds). The irruption peaked on 27 May with observations in at least 17 sites, mostly in the southern part of the country. The number of birds declined after that; the last sightings were on 1 June in the Alps and on 7 June on the Central Plateau. A late straggler was seen in Engadine on 14 July. The 155 individuals approved by the Swiss Rarities Committee should be considered a minimum estimate, since it is impossible to determine whether the birds observed in one place over several days were always the same individuals.

Country	Number of individuals	Country	Number of individuals
Hungary	10 000	Norway	19
Italy	2500	The Netherlands	15
France	>2000	Ireland	>10
Switzerland	>155	Poland	9
UK	150	Finland	8
Austria	135	Belgium	5
Spain	79	Estonia	3
Slovakia	65	Iceland	1
Sweden	>20	Cape Verde Islands	1
Denmark	20	Latvia	1
Germany	20		

The invasion of Rosy Starlings mainly occurred in southwestern Europe, as the estimated totals per country between mid-May and late June 2018 indicate.

The 2018 influx of Rosy Starlings was particularly intense in the southern part of Switzerland. The dots indicate the maximum number of birds per site: white = 1–2 ind., yellow = 3–9 ind., orange = 10–14 ind., red = 15–20 ind.

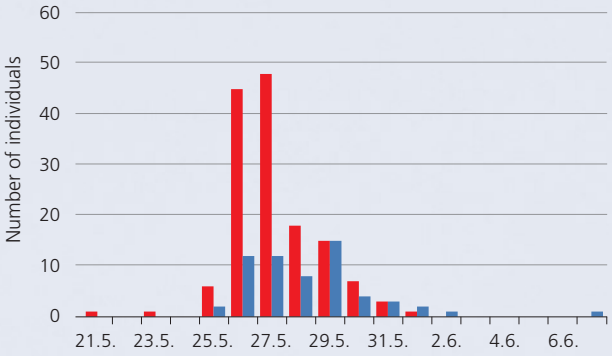
Swiss Rarities Committee

The Swiss Rarities Committee (SRC) is an independent group of experts whose main task is to verify whether reports of unusual bird observations are sufficiently documented to be cited in scientific literature. This concerns species that are rarely seen in Switzerland, such as Rosy Starling or Baillon's Crake, but also species that may be common but are rarely seen at a specific time of year or in a particular part of the country, as well as species that breed here for the first time.

The Swiss Rarities Committee publishes an annual report in German («Der Ornithologische Beobachter») and French («Nos Oiseaux»).

Further information

www.vogelwarte.ch/src



The passage of Rosy Starlings in 2018 was concentrated in southern Switzerland, as the daily totals recorded from 21 May to 7 June in Valais, Ticino and Grisons (red) and the rest of Switzerland (blue) show.

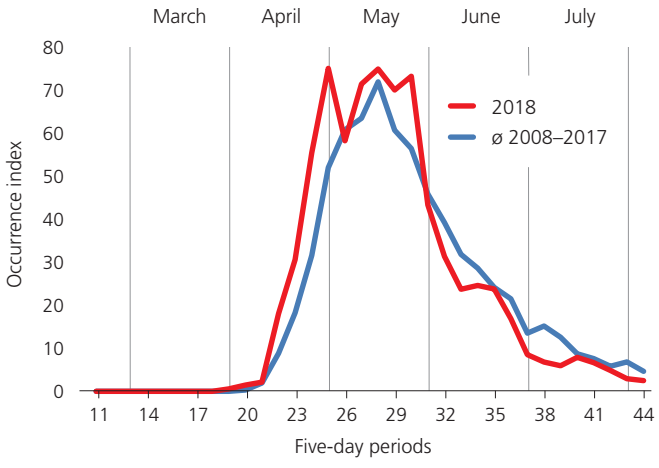
The Eurasian Penduline-tit is a scarce passage migrant and only rarely breeds in Switzerland. Its characteristic call is high-pitched, piercing and somewhat melancholy.

An update on migration

In winter 2017/18 lots of snow fell in the mountains, limiting access to food for Alpine species so severely that they were forced to move from the mountain tops to lower altitudes. Rock Partridges appeared at the foot of southern mountainsides in the Valais at only 540 m asl and in some places in Ticino and Grisons at 650 m. From mid-December onwards, Alpine Accentors and White-winged Snowfinches were found in valley bottoms throughout the Alps. Snowfinches even reached the lowest-lying areas of Switzerland in the Magadino Plain TI. This has only happened twice before in the past 30 years, in 1992 and 2009. Redpolls are known to occur in irruptive migrations in some years. Such an event happened in Switzerland in winter 2017/18. Among the observed birds were several that showed characteristics of the northern subspecies Common Redpoll (*Acanthis f. flammea*).

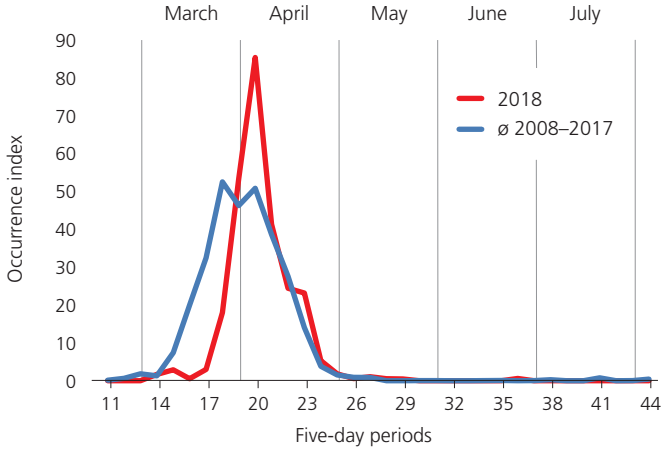
Delays and early arrivals

Following a cool month of March, spring 2018 continued with very mild weather. April temperatures exceeded the long-term average by almost 4 °C. Snowfall in low-lying areas around 18 March prevented many migratory birds from continuing their journey.



The Great Reed-warbler breeds in large lowland reedbeds, but can be found throughout Switzerland during migration. The peak of its spring migration is in May. In 2018, the first Great Reed-warblers arrived earlier than usual.

An unusual number of European Golden Plovers were forced to make stopovers, leading to sightings of groups of over 50 birds in northern Switzerland. The largest flock numbered 319 birds on 19 March near Möhlin AG, a new record for Switzerland. Lesser Black-backed Gulls were also delayed in unusually large numbers. A maximum of 218 birds gathered near Yverdon VD on 17 March, another new record. Other migrants returning in March such as Eurasian Blackcap or Eurasian Penduline-tit experienced delays. In contrast, certain long-distance migrants returning later benefited from the mild spring weather and arrived earlier than usual, e.g. Common Nightingale, Great Reed-warbler and Lesser Whitethroat.



The Eurasian Penduline-tit's spring migration normally peaks between late March and mid-April, but there were hardly any March sightings in 2018.

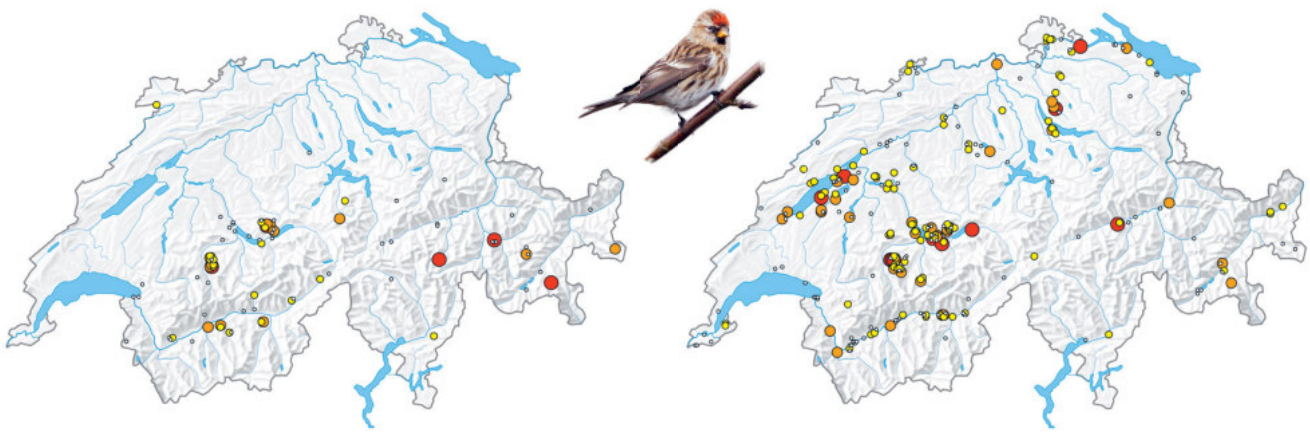
Persistent heat and lack of rain

Autumn 2018 was the third warmest ever recorded in Switzerland. For the first time, the traditional summer sojourn of Griffon Vultures in the western Pre-Alps and Alps extended into mid-October. Records of Cinereous Vultures were much more numerous than in previous years and referred to up to three birds at a time. Due to a successful reintroduction programme in France, both species appear in Switzerland with increasing regularity.

The endless heatwave also caused very low water levels on lakes, leading to the exposure of large mudflats that attracted waders, on Lake Constance especially. The abundance of food well into autumn was particularly appreciated by Dunlins, which appeared on Lake Constance for an extended period in groups of up to 300 birds. Presumably due to the low water levels, certain species prolonged their stay in various sites, for instance Northern Lapwing and Common Ringed Plover. Others tried, in part successfully, to winter in these areas. Among them are Eurasian Oystercatcher, Ruff, Black-tailed and Bar-tailed Godwit, Common Greenshank and Common Redshank.

In addition, 2018 was a mast year for several tree species and many shrubs produced an enormous amount of berries, benefiting Red Crossbill and Eurasian Siskin, but also Redwing and Fieldfare. In winter, two large Brambling roosts numbering several million birds each formed just beyond the Swiss border, near Vendlincourt JU and Schaffhausen.

Further information
www.vogelwarte.ch/state/migration



The abundance of the Redpoll can vary greatly from winter to winter, as the observation sites in winter 2016/17 (left) and 2017/18 (right) show. The dots indicate the maximum number of birds per km² between 1 December and 15 February: white = 1–2 ind., yellow = 3–10 ind., orange = 11–20 ind., red = 21–70 ind.

EuroBirdPortal (EBP) – now in near real time

The EuroBirdPortal (EBP) began with an idea conceived in the «ornitho» family's international steering committee in 2012. The committee resolved to compile the data gathered by national and regional recording platforms across Europe in a new European database. The primary objective was to provide an overview for ornithologists and nature lovers, enabling them to track the spatio-temporal distribution of birds in Europe in real time. The second objective was to establish a basis for continent-wide analyses. Finally, a third goal was to increase the appreciation for databases and the enormous effort involved.

The Swiss Ornithological Institute supported the development of EBP from the start with funding and expertise. It was no easy venture, because each database had its own structure – not a trace of European unity! Coordinated by the Catalan Ornithological Institute (ICO), under the auspices of the European Bird Census Council (EBCC) and with partners from the UK (BTO), Belgium (NATAGORA) and the Netherlands (SOVON) an EU LIFE project was implemented in the past three years and brought to a successful conclusion in 2018. Its purpose was to introduce a data-sharing standard, automate data transfer, build a central database, and facilitate the transfer of knowledge to portals which are not yet well established.

April 2019 – EBP goes «live»

In April 2019 the live version of the new online viewer was presented to the public. Currently, 99.2 % of the records gathered via the online platforms, pertaining to 105 bird species – 120 000 records per day on average – are automatically fed into the EBP database every night. The data are summarised at a grid resolution of 30 × 30 km, so individual users need not worry that their records will be treated as high-precision raw data and distributed in an uncontrolled way.

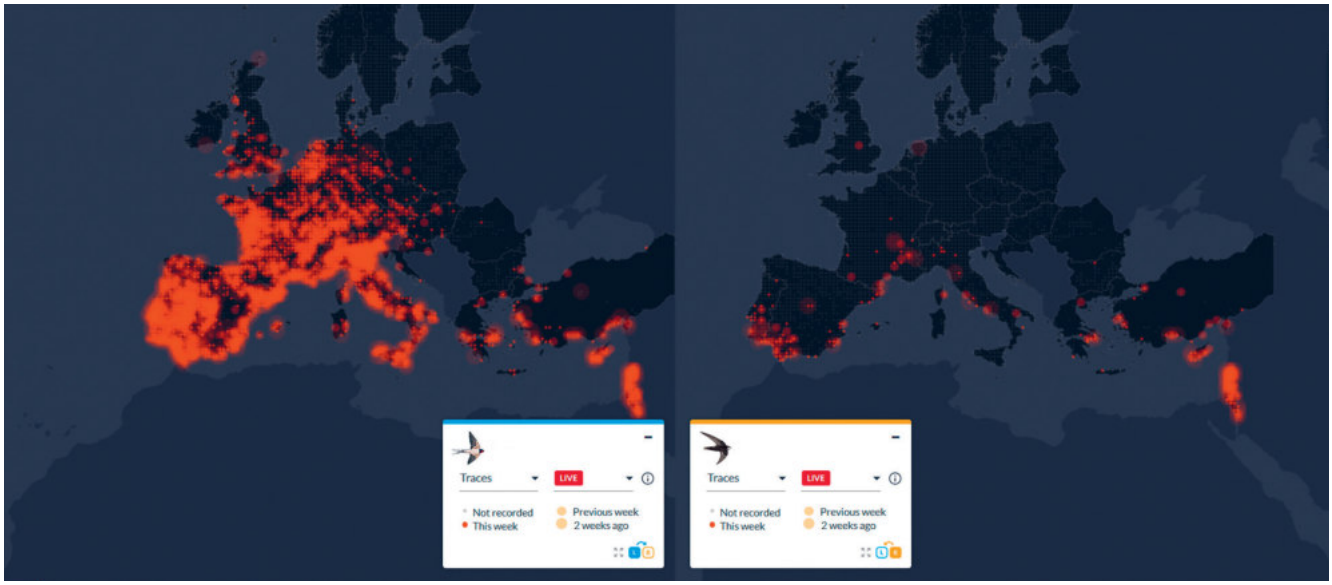
Great potential, but future uncertain

The vision for future development includes extending the scope to include all bird species, increasing the density of the survey grid in eastern and southern Europe, completely automating the data transfer, and establishing an editorial team. There are also a range of practical applications, for example combining EBP with weather radars to produce forecasts. There is no guarantee for the continuation and further development of EBP, however, as the necessary funding has not been secured.

EuroBirdPortal in numbers

Partner organisations	81
Participating countries	29
Online portals contributing data	19
Active users	120 000
Records per year	45 Mio.
Total records	320 Mio.
Current no. of species included in the viewer	105
Cost of the LIFE project	CHF 580 000

Further information
www.eurobirdportal.org/swi



The EuroBirdPortal tracks the arrival of migratory birds in Europe. The phenology of two species or the arrival dates of a certain species in two different years can be compared side by side. For example, the Barn Swallow (left) is already widespread in southern and central Europe in the last week of March, when the Common Swift (right) is only just arriving in the southernmost areas and in western France.

Cold periods and the severity of winter heavily influence when and in what numbers Hen Harriers occur. The EuroBirdPortal tracks winter movements and shows the centres of winter distribution.

In winter, the Reed Bunting is found not only in wetlands but also in wet stubbles, fields and fallows as well as waysides and embankments. The frequency of this seed-eating bird remains largely unchanged throughout the winter.

Scarce winter visitors

Since winter 1994/95, the Swiss Ornithological Institute has asked field ornithologists to systematically record observations of 12 short- and middle-distance migrants (the so-called «H species») between 1 December and 15 February. A further seven species were added in December 2004. After 25 and 15 years, respectively, the standardised collection of data has made first analyses of these species' winter distribution, population trends and phenology possible.

Varying distribution patterns

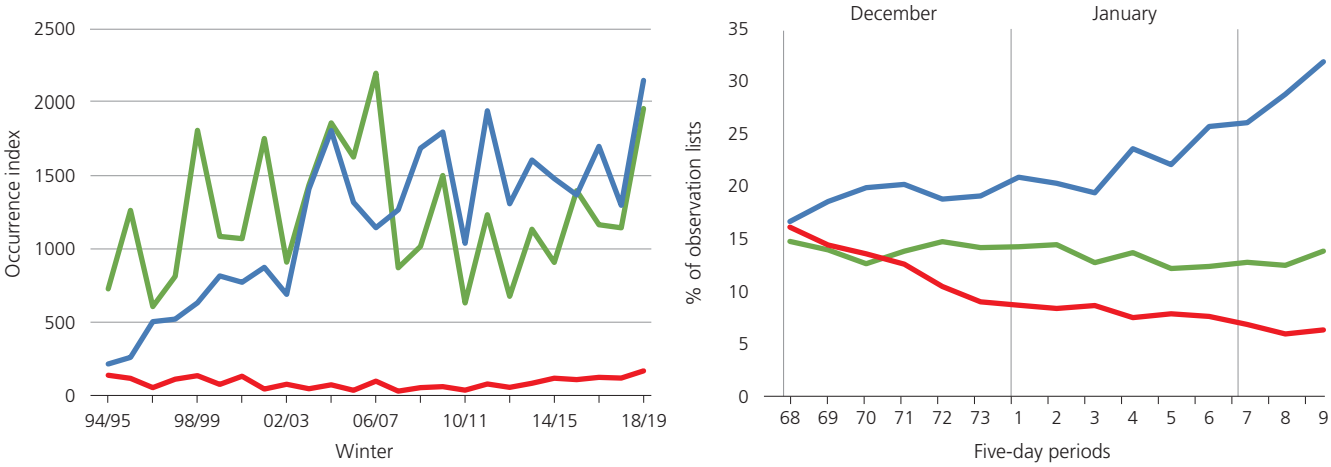
There are marked differences in the winter distribution of H species. The Common Woodpigeon occurs in almost all lowland areas. Certain species like Eurasian Blackcap, Black Redstart and Dunnock show a clear preference for southern parts of the country between the cantons of Geneva and Ticino. Meadow Pipit and Common Linnet mainly occur in the west of Switzerland and are rarely seen in Ticino and in Grisons. Common Chiffchaff and several other species are often found near lakes and rivers on the Central Plateau.

Long-term trends

Since we started recording the data systematically, most H species have slightly or even significantly increased in number. The Woodpigeon shows the largest gains. Its index value increased tenfold between 1994/95 and 2018/19, the increase being particularly strong in the first ten years and more moderate after that. The species appears to benefit primarily from mild winters due to global warming. Similar trends apply to Red Kite and Reed Bunting, whose index values doubled from 2004/05 to 2018/19. Among the few H species with negative trends are Eurasian Skylark and White Wagtail. Since 1999/2000, the index of the Eurasian Skylark has remained at a low level overall, albeit with large fluctuations. In the second half of the 1990s, the species was much more common. Similarly, White Wagtail numbers were higher between 2004/05 and 2008/09 than in the last ten years. The index values of seed eaters like European Goldfinch and Common Linnet vary considerably with no clear trend.

H species	from 1994/95	from 2004/05
Common Woodpigeon	•	
Red Kite		•
Eurasian Skylark	•	
Common Chiffchaff	•	
Eurasian Blackcap	•	
Song Thrush	•	
Redwing	•	
Black Redstart	•	
Common Firecrest	•	
Dunnock	•	
Meadow Pipit		•
Water Pipit		•
White Wagtail		•
Common Linnet	•	
Redpoll		•
European Goldfinch	•	
Citril Finch		•
European Serin	•	
Reed Bunting		•

Since winter 1994/95, the H species are included in the standard monitoring scheme for rare or scarce breeding birds, migrants and winter visitors, launched in 1984.



The Common Woodpigeon (blue) has increased massively in Switzerland in the past 25 years, while Common Chiffchaff (red) and European Goldfinch (green) show no change (left). The frequency of the Common Woodpigeon increases during winter; towards the end of winter, the species is more easily spotted due to its display flights (right). As an insectivore, the Common Chiffchaff is ill-suited to survive winter in Switzerland. It occurs with declining frequency during winter, starting with a steep decline in December. The European Goldfinch is one of the most widespread H species. It occurs with more or less constant frequency throughout the winter.

Presence throughout the of winter

The frequency of occurrence of H species is determined using complete species lists. When an observer fills in a complete list of all the species observed in a given area, this not only provides us with information about the detected species, but also tells us which species were not seen. Such data sets are more valuable than single records, because they allow us to calculate the relative frequency of occurrence of various species in the course of the year and thus their phenology. Most insectivores among the H species decline in frequency throughout the winter. The Common Chiffchaff is a particularly striking example, with frequency sinking from 16 to 6 % between 1 December and 15 February. For other species such as Black Redstart or White Wagtail, frequency mainly decreases in early December and then remains constant. The Eurasian Blackcap is a remarkable exception: its frequency increases throughout the winter and receives another boost in February with the return of the first migrants. The arrival of the first migratory birds in February also causes a significant rise in frequency for Eurasian Skylark and Song Thrush. From December to January, both species show a slight decrease. Seed eaters such as European Goldfinch or Reed Bunting experience no change in frequency all through the winter. Finally, two species show a continual increase during winter: Common Woodpigeon, from 17 to 32 %, and Red Kite, from 21 to 29 %.

Further information
www.vogelwarte.ch/state/winter

The Eurasian Blackcap mainly winters in southern Switzerland and is rare north of the Alps and in Grisons. The dots indicate the maximum number of birds per km² between 1 December and 15 February from 1994/95 to 2018/19: white = 1–2 ind., yellow = 3–9 ind., orange = 10–19 ind., red = 20–40 ind. Outside of the breeding season, the Eurasian Blackcap also likes to feed on fruits and berries.

The wintering population of Ferruginous Ducks has steadily increased since the 1990s. Still, the species remains a rare winter visitor.

More herons and geese in winter

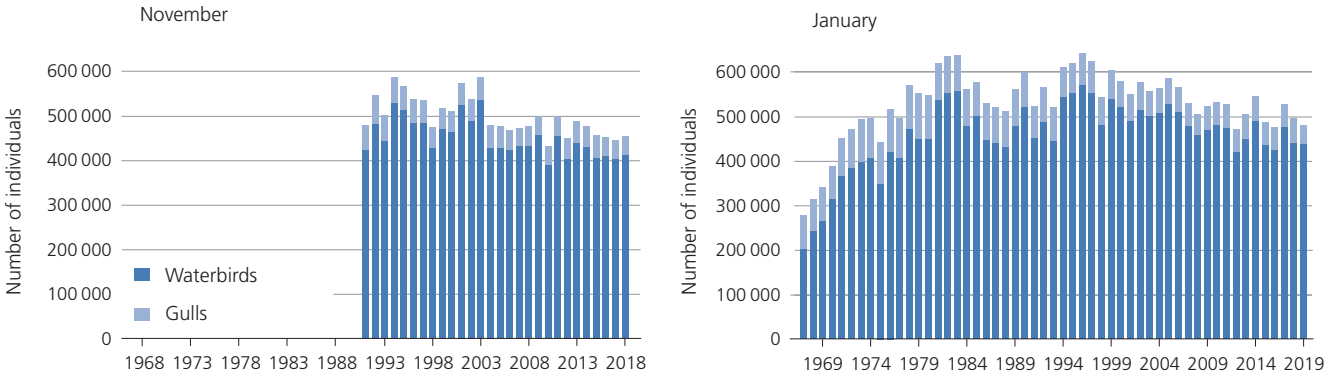
After the extremely dry and hot summer 2018, widespread rainfall did not occur until late October. This led to extremely low water levels, especially on Lake Constance. Weather conditions were awful for counting birds in January 2019, with wind, rain and some snowfall.

Overall numbers declining

In November, the overall population of waterbirds in Switzerland, including all of Lake Constance and Lake Geneva, was within the range of previous years, numbering about 463 000 individuals. In January, approximately 486 000 waterbirds were counted – a relatively low figure for a January count. In the long term, the total numbers show a negative trend both in November and in January since the mid-1990s, which is driven by a small number of abundant winter visitors (mainly Tufted Duck, Common Pochard and Common Coot). A look at individual species shows that positive trends prevail (overview on page 30).

Dabbling ducks, geese and herons with record highs

Due to the low water levels, shallow-water zones went completely dry, for example on Lake Constance, benefiting some waterbirds, but also human leisure seekers. Among the dabbling ducks, the Northern Pintail reached an



The populations of waterbirds on Swiss rivers and lakes (including the French and German parts of Lake Geneva and Lake Constance) have continually declined since the mid-1990s, a trend apparent in both the mid-November (left) and the mid-January (right) counts.

all-time record in Switzerland in November with almost 1800 individuals. Record November highs were also attained by the Gadwall (17 000 ind.) and Eurasian Wigeon (3100 ind.), while the Eurasian Teal hit the highest level of the past 25 years with almost 15 000 individuals. November also saw all-time records for Mute Swan (8200 ind.), Grey Heron (2000 ind.), Ferruginous Duck (97 ind.) and Egyptian Goose (82 ind.). Record numbers for the November count were attained by Goosander (4600 ind.), Great White Egret (400 ind.) as well as Greylag Goose (1800 ind.), Ruddy Shelduck (1000 ind.) and Common Shelduck (58 ind.). For most of these species, the record highs were the result of long-term positive trends in combination with the low water levels.

Along with the increases, the negative trends also persisted. In January 2019, about 3100 Common Goldeneyes were counted in Switzerland, which is only about a quarter of the population in the 1990s. January counts of Black-headed Gull (38 000 ind.) and Mew Gull (1200 ind.) have never been as low as in 2019. Finally, at about 64 000 ind., the Tufted Duck also had the smallest November total since the start of the November counts in 1991.

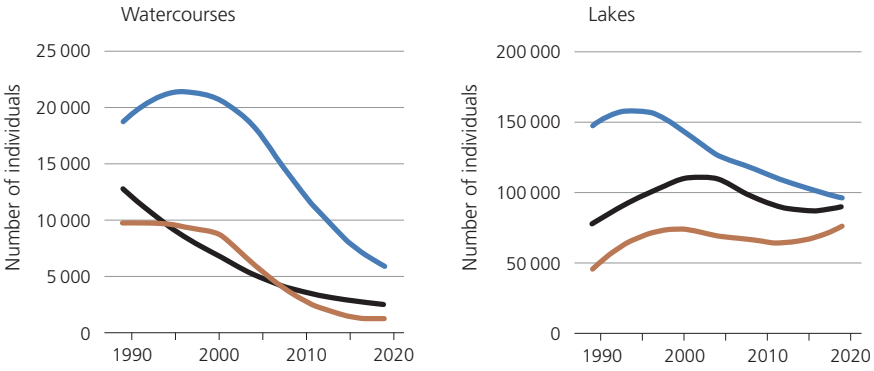
The mudflats on Lake Constance were not only popular with birds, as this image taken in late October 2018 shows.

Lakes more popular than rivers

The decline in the total number of waterbirds since the mid-1990s is more marked on reservoirs and rivers than on lakes. Three common species in particular, Tufted Duck, Common Pochard and Coot, have declined massively on rivers and reservoirs since the 1980s. Fewer and fewer Tufted Ducks migrate as far as central Europe in winter. The resulting drop in numbers is apparent on lakes as well, but to a much lesser degree. Coot and Common Pochard have declined significantly on rivers; on lakes, the population of Common Coots is largely stable, while the Common Pochard actually shows a positive trend. Lakes appear to have become more attractive compared to rivers, for the latter two species especially.

During the phase of maximum eutrophication (i.e. excessive nutrient input) of lakes in the 1970s and 1980s, large numbers of diving ducks and Common Coots took refuge on dammed rivers. The arrival of the zebra mussel then caused the birds to move back to the lakes. Today, Common Pochard and Common Coots feed largely on stoneworts, which have recolonised Swiss lakes since the 1990s. This positive development is due to the introduction of sewage treatment plants and shows that consistent environmental protection pays off.

Further information
www.vogelwarte.ch/state/winter



In relative terms, the populations of Tufted Duck (blue), Common Pochard (brown) and Common Coot (black) have declined much more steeply on watercourses than on lakes in the past 30 years. The chart gives the smoothed results of the January counts.

The wintering population of Common Coots is declining on rivers, but remains largely stable on lakes.

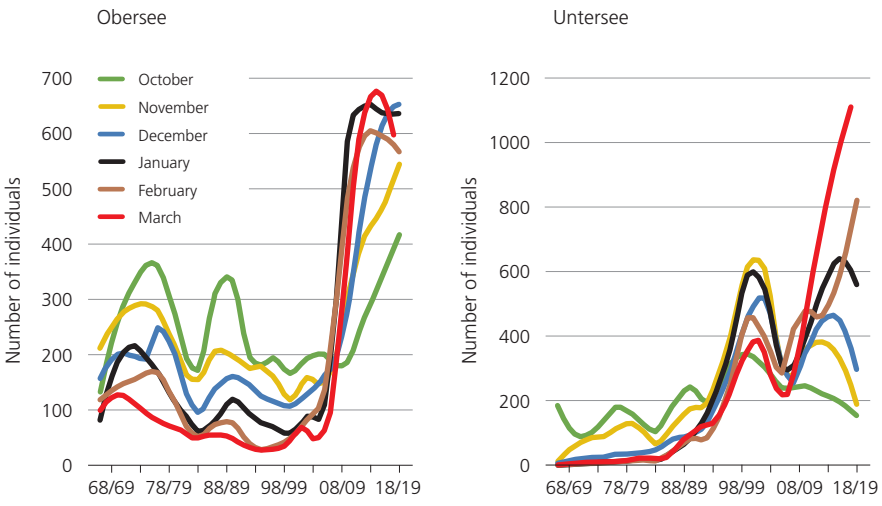
The Black-necked Grebe feeds on young and small fish, water insects and small crustaceans as well as invasive freshwater shrimps that occur in large swarms in some lakes.

Likes it warm: Black-necked Grebe on the rise

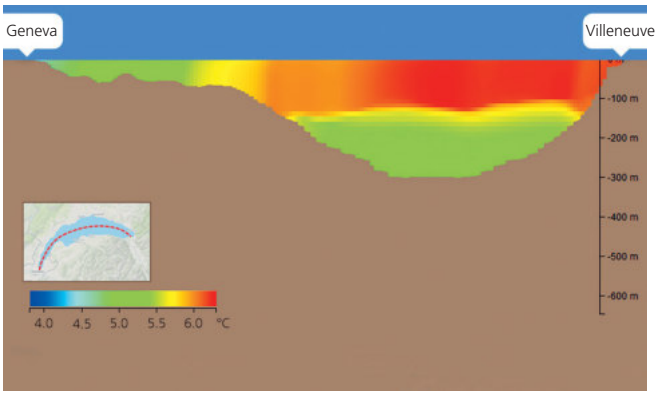
The breeding range of the Eurasian population of Black-necked Grebes stretches from western Europe far to the east of the Ural Mountains. The most important wintering grounds in Europe are the Mediterranean region and the western European Atlantic coast. The Eurasian population has seen a clear decline in the past 15 to 20 years. In contrast, the wintering population in Switzerland has more than doubled in the last 20 years. The largest increases occurred on Lake Geneva and Lake Constance.

Cold water? – No thanks!

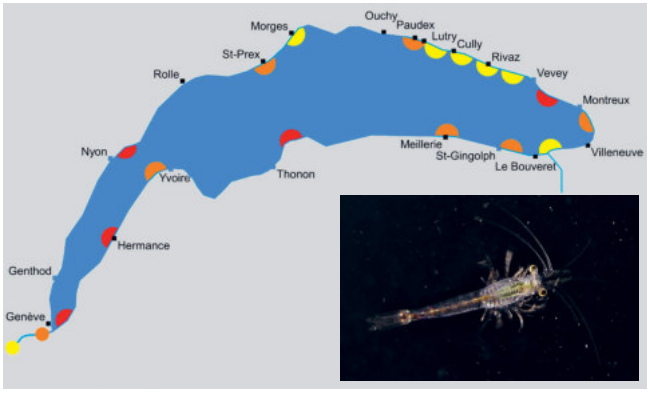
The energy budget of diving waterbirds in winter can be a limiting factor. In relative terms, small species with an unfavourable surface-to-volume ratio such as Little Grebe or Black-necked Grebe suffer the largest energy loss. While the Little Grebe feeds mainly on fish during



Smoothed monthly results of the winter waterbird counts for the Black-necked Grebe on Lake Constance, 1966/67–2018/19. Since the census began, the species has been observed on Obersee (Lake Constance) during the entire winter season. The flatter and cooler Untersee, on the other hand, has only been occupied in the midst of winter since the late 1980s. The sudden increase in the late 2000s was probably due to the introduction of freshwater shrimps.



Lakes have a marked temperature gradient when water temperatures are above 4 °C. Due to this stratification, the water at the surface stays relatively warm. The gradient disappears as soon as temperatures fall below 4 °C. On Lake Geneva, the temperature gradient normally persists until late December, and even then, the surface temperature drops more slowly than in other lakes north of the Alps – all these factors benefit the Black-necked Grebe. Source: EPFL, http://meteolakes.ch/#!/hydro.



Occurrence of the freshwater shrimp Hemimysis anomala*, 6–13 mm in size, in Lake Geneva 2007–2012: red = high local density (large swarms), orange = strong presence (many groups), yellow = weak presence (isolated individuals and small groups). The introduction of freshwater shrimps and the increase in population size of the Black-necked Grebe are probably correlated. Source: adapted from Golaz & Väinölä (2013).*

the winter, the Black-necked Grebe is largely confined to the smaller and energetically less valuable invertebrates. A look at winter distribution indicates that water temperature during the cold season plays a decisive role for the Black-necked Grebe. It keeps to the warmer coastlines in winter, rarely using the central European lakes and rivers.

The Black-necked Grebe's preference for warmer water is also reflected in its long-term winter distribution in Switzerland. Until the late 1980s more than 80 % of the Swiss wintering population was found on Lake Geneva in January. Thanks to its volume, Lake Geneva has a high heat-storage capacity and therefore a higher surface temperature in winter than other lakes north of the Alps, making it an attractive wintering site for the Black-necked Grebe. In the 1980s, only Lake Thun and Obersee (Lake Constance) regularly had 100 and more Black-necked Grebes – these are also deep lakes whose surface temperature takes a long time to fall below 4 °C.

More options thanks to climate change …

In the late 1980s, a change took place that greatly affected the Black-necked Grebe. A sudden rise in temperatures in the northern hemisphere caused an increase in winter water temperatures in Swiss lakes. That meant that other lakes also became attractive wintering sites for Black-necked Grebes. For example, the species began to winter in three-digit numbers on the rather flat and therefore cold Untersee (Lake Constance); up until the 1980s, it had used this site mainly for stopovers and moulting without wintering there. The proportion of the overall Swiss population wintering on Lake Geneva dropped from more than 80 % to just over 50 % between 1980 and 2000.

… and thanks to new food sources

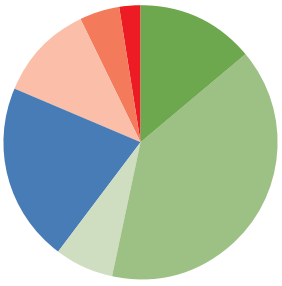
This improvement in local conditions for the Black-necked Grebe primarily affected the species' distribution in Switzerland, while the size of the wintering population declined somewhat between 1980 and 2000. This changed in the early 2000s. Between 2000 and 2010, the population on Lake Geneva increased from about 1000 to at least 3000 individuals. Sharp increases followed shortly after on Lake Constance as well. At the same time, researchers discovered invasive forms of freshwater shrimps in both lakes (Lake Geneva: *Hemimysis anomala*, Lake Constance: *Limnomysis benedeni* and *Katamysis warpachowskyi*); they had proliferated in the space of a few years and perfectly match the Black-necked Grebe's food preferences. The Black-necked Grebes responded to the new source of food with local increases but also by changing their hunting strategy. Since 2005 large, concentrated groups have been observed diving in a synchronised fashion. A significant increase was also recorded on Lake Neuchâtel, where invasive crustacean *H. anomala* was first discovered in 2009. A striking change in wintering numbers was observed on Lake Lugano as well. Before 2003 only a few Black-necked Grebes wintered here; since 2007, the population has regularly reached 100–200 individuals. Although a change in the food supply is a probable cause, freshwater shrimps have not yet been detected in this lake.

Wintering waterbirds in Switzerland

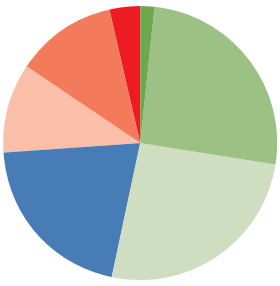
Population trends for waterbirds in Switzerland for the entire survey period (1967–2019) and for the last 20 years (2000–2019). Trends shown as +++ signify an increase by more than a factor of five, while ++ marks an increase between a factor of two and five and + an increase by less than a factor of two. The symbol • means that no statistically significant change was detected, which also applies to populations that fluctuate heavily. Trends shown as – describe a decline by less than a factor of two, –– marks a decline between a factor of two and five and ––– a decline by more than a factor of five. The January count 2019 also includes the German and French parts of Lake Constance and Lake Geneva.

Species	Trend 1967–2019	Trend 2000–2019	Individuals January 2019
Mute Swan	+	+	7644
Whooper Swan	+++	++	633
Tundra Swan		++	15
Barnacle Goose		•	7
Canada Goose		•	1
Greylag Goose	++	+++	1475
Bean Goose	–––	–––	1
Gr. White-fronted Goose	+++	•	0
Long-tailed Duck	++	•	1
Common Eider	•	––	35
Velvet Scoter	++	+	160
Common Scoter	––	––	1
Common Goldeneye	-	––	3120
Smew	––	––	24
Goosander	++	+	5973
Red-breasted Merganser	++	•	98
Egyptian Goose		++	93
Common Shelduck	++	+	68
Ruddy Shelduck		++	1077
Mandarin Duck		+	126
Red-crested Pochard	++	++	33037
Common Pochard	++	-	80543
Ferruginous Duck	+++	++	72
Tufted Duck	++	-	103481
Greater Scaup	•	––	21
Garganey	•	•	1
Northern Shoveler	++	•	833
Gadwall	++	+	8465
Eurasian Wigeon	++	++	3220
Mallard	•	–	43005
Northern Pintail	+++	++	1233

Species	Trend 1967–2019	Trend 2000–2019	Individuals January 2019
Common Teal	+	+	9525
Little Grebe	–	•	3357
Red-necked Grebe	–	–––	7
Great Crested Grebe	+	+	27888
Horned Grebe	++	++	9
Black-necked Grebe	++	++	5155
Common Moorhen		+	880
Common Coot	–	–	89764
Red-throated Loon	+++	•	3
Arctic Loon	+++	+	50
Common Loon	•	•	2
Eurasian Bittern		––	7
Grey Heron	++	+	1682
Great White Egret		++	270
Great Cormorant	++	•	6234
Eurasian Curlew		++	850
Common Snipe		++	134
Common Sandpiper		+	54
Little Gull	++	++	2
Black-headed Gull	–	–	37521
Mediterranean Gull	•	++	3
Mew Gull	•	––	1214
Lesser Black-backed Gull	•	–	15
European Herring Gull			13
Yellow-legged Gull	+++	+	3406
Caspian Gull			146
Great Black-backed Gull	•	•	2
Common Kingfisher		+	236
White-throated Dipper		+	1044
Grey Wagtail		+	473



Trend 1967–2019

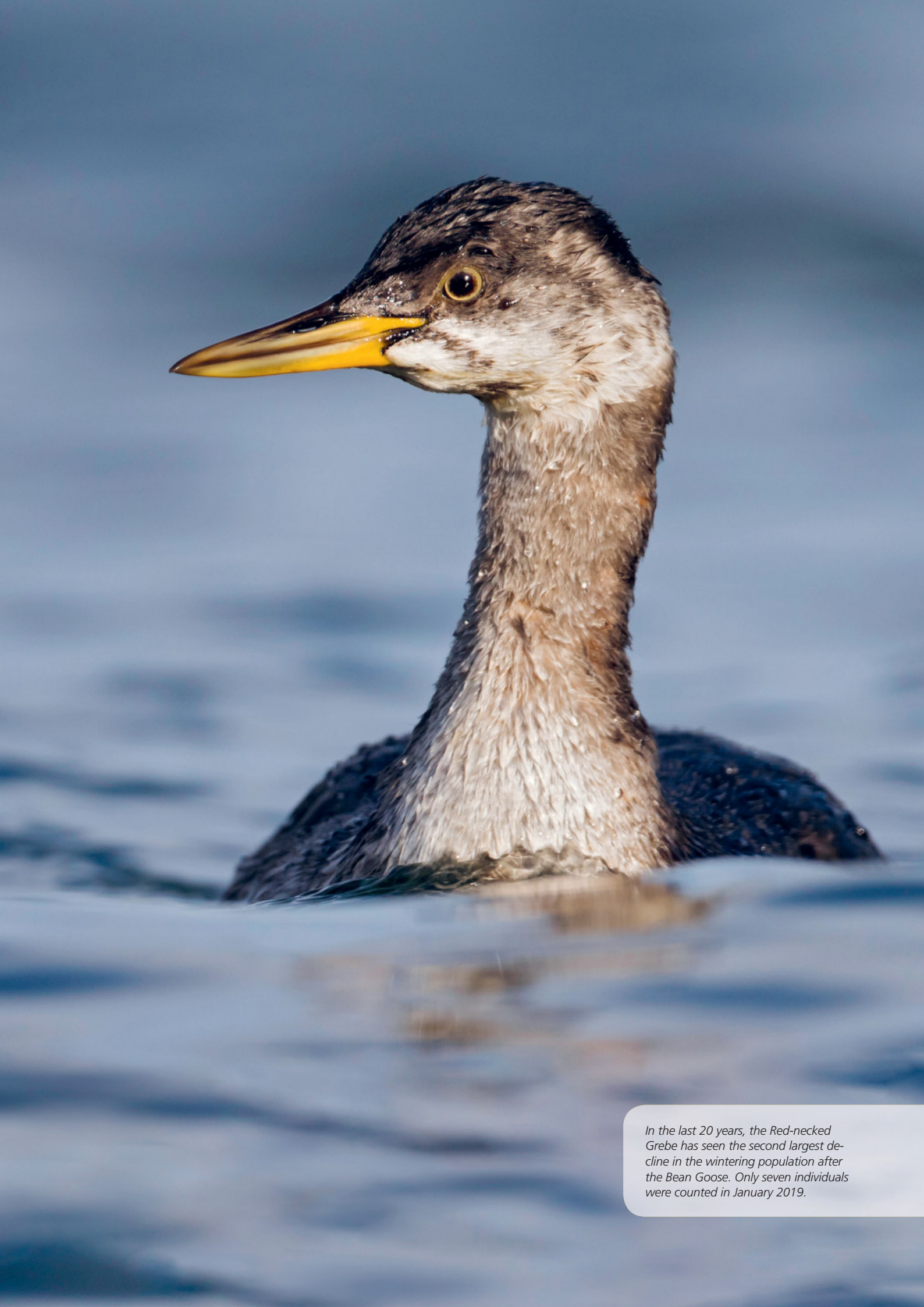


Trend 2000–2019

+++ increase > factor of 5
++ increase between factor of 2 and factor of 5
+ increase < factor of 2
• not significant or fluctuating
– decline < factor of 2
–– decline between factor of 2 and factor of 5
––– decline > factor of 5

Most waterbird species show a long-term increase. In relative terms, Egyptian Goose, Ruddy Shelduck, Great White Egret and Greylag Goose have seen the strongest gains in the last 20 years.

Further information
www.vogelwarte.ch/state/winter



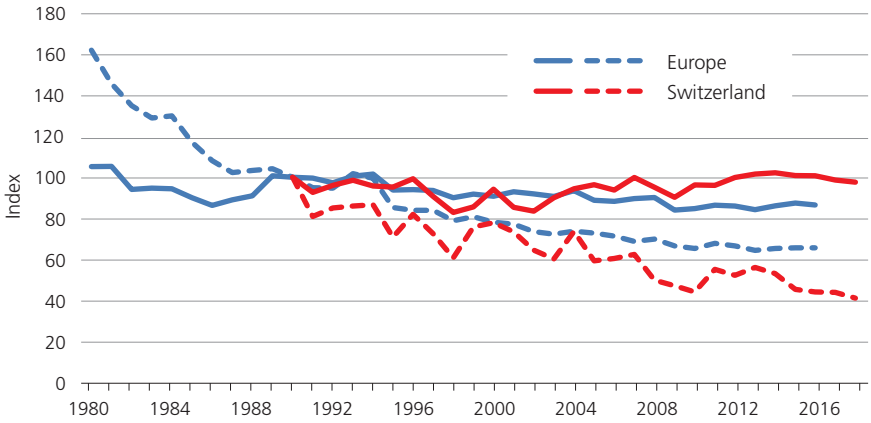
In the last 20 years, the Red-necked Grebe has seen the second largest decline in the wintering population after the Bean Goose. Only seven individuals were counted in January 2019.

Despite having the cone-shaped beak of a seed eater, the Corn Bunting needs insects to raise its young. In Switzerland, suitable habitat is now limited to farmland areas that have been the target of large-scale restorations (mainly Champagne genevoise, Grosses Moos BE/FR, Klettgau SH).

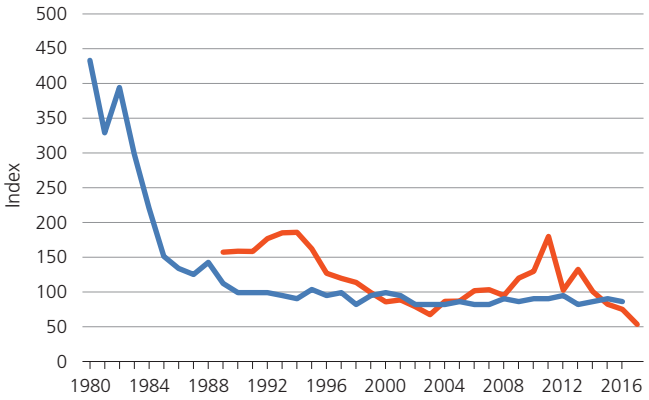
Swiss data for Europe

The common breeding bird monitoring scheme (MHB) is the Swiss Ornithological Institute's most important source of data on the population sizes of 137 breeding birds that it delivers to the «Pan-European Common Bird Monitoring Scheme» (PECBMS). The PECBMS coordination team, located at the Czech Society for Ornithology (CSO) in Prague, uses this information as well as data from 27 other countries to calculate Europe-wide trends. Every year, the population trends of 170 bird species are combined to produce a pan-European index that starts in 1980. PECBMS was founded in 2002 by the European Bird Census Council (EBCC) and BirdLife International and is thus the longest-standing project by EBCC, a Europe-wide network of national ornithological data centres. The combined indices are officially recognised by the European Union and other international

A total of 28 countries (brown) participate in the Pan-European Common Bird Monitoring Scheme (PECBMS). Other countries (yellow) also have ornithological monitoring projects, but they are still in the development stage.



Comparing trends in Europe (blue) and Switzerland (red): the trend for all species is shown with a solid line (Switzerland: 174, Europe: 170 species), the dotted line represents farmland birds (Switzerland: 28 target species of the «Environmental Objectives in Agriculture» EOA, Europe: 39 indicator species).



The European trend (blue) of the Corn Bunting in the 1980s is based on data from the Czech Republic, Denmark and the UK and shows the massive decline of the species; a similar process probably took place in Switzerland before the index started in 1990.

European Breeding Bird Atlas EBBA2 enters the final round

In addition to the Pan-European Common Bird Monitoring Scheme (PECBMS) project, the European Bird Census Council (EBCC) also coordinates the data platform EuroBirdPortal (EBP) and the second European Breeding Bird Atlas (EBBA2). The fieldwork for this gargantuan European project was completed in 2017. Currently, the final distribution modelling at a resolution of 10 × 10 km is underway for about 280 species as well as the production of maps in a 50 × 50 km grid for more than 600 species. At the same time, the species accounts are being written. The 1000-page book will be out in print in late 2020. The overall coordination of EBBA2 lies with Verena Keller of the Swiss Ornithological Institute, where Pietro Milanesi also produces the modelled maps. Other extensive EBBA2 tasks are carried out at the Catalan Ornithological Institute (ICO) in Barcelona and the Czech Society for Ornithology (CSO) in Prague.

EBBA2 continues to seek financial support, for example via species sponsorship (www.ebba2.info/support-ebba2/ebba2-species-sponsorship). Donate to support your favourite birds!

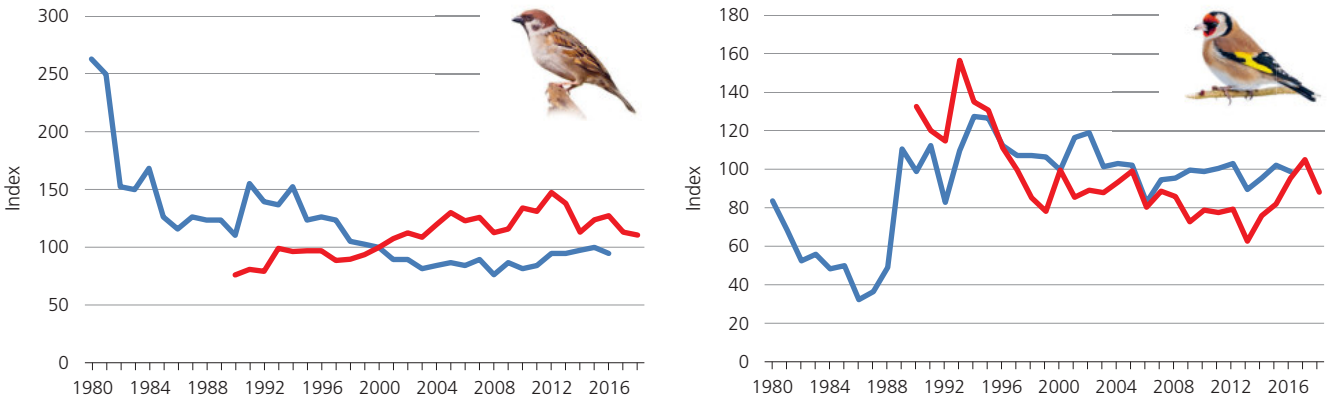
organisations as indicators for the state of the environment.

Steep decline of farmland birds in Europe too

Comparing Swiss trends with those in Europe shows that the trend for all species in Switzerland combined is slightly more positive than that of the 170 species included in the European index. This is mainly due to the fact that woodland birds are increasing in Switzerland. As for farmland birds, the situation is similarly dramatic in both areas. From 1980 to 2016, farmland bird populations have declined by 57 % in Europe and by 55 % in Switzerland in a slightly shorter time period (1990 to 2018). However, many typical farmland species such as Grey Partridge, Little Owl, Whinchat and Corn Bunting had already disappeared from the Central Plateau by 1990, so the overall loss is significantly higher in Switzerland than in the rest of Europe. Still, we cannot simply hope for farmland birds to survive in other European countries.

A look at the European trends brings new insights, but also new questions. Well-known patterns are often confirmed – the Eurasian Skylark is declining across Europe, while the European Bee-eater population is increasing. But there are also differences. Why, for example, is the European Goldfinch increasing in some countries but declining in Switzerland? And why is the reverse true for the Eurasian Tree Sparrow? Answers to such questions can improve our understanding of a species and hopefully also – where necessary – enable targeted conservation action.

Further information
https://pecbms.info



Different species trends for Eurasian Tree Sparrow (left) and European Goldfinch in Switzerland (red) and in Europe (blue). The reasons for the divergence are unknown.

Thank you for your enduring support!

Long-term projects like the common breeding bird monitoring scheme (MHB) benefit from ongoing contributions by reliable field ornithologists. Having volunteers that participate for several years considerably reduces the effort that goes into recruiting and instruction. It also minimises the almost inevitable observer effects in the data that happen when personnel changes take place. The Swiss Ornithological Institute is therefore particularly grateful to the following collaborators for their faithful services to the MHB scheme. The following ornithologists look back on 20 years of MHB surveys: Hanspeter Aeschlimann, Edi Baader, Ueli Bühler, Pirmina Caminada, Gottardo Crameri, Richard Dajcar, Gallus Ebneter, Martina Eggenschwiler, Max Gasser, Martin Gerber, Albert Good, Jérôme Gremaud, Ruedi Hasler, Hannes Jenny, Luca Jurietti, Daniel Kleiner, David Külling, Christian Marti, Roland Meier, Alain Meister, Mathis Müller, Sales Nussbaumer, Veronica Oswald, Gabriele Peter Hilke, Werner Portmann, Benoît Reber, Emmanuel Revaz, Paola Ricceri, Stéphane Roulet, Peter Salzgeber, Roland Santschi, Yvan Schaerer, Imelda Schmid, Manfred Steffen, Mireille Thélin, Stéphane Theytaz, Marguerite Trocmé, Marcus Ulber, Christoph Vogel, Bernard Volet, Ursula & Hermann von Gunten, Laurenz Wirth and Gabriel Wyer. The following individuals have conducted 18 or 19 years of fieldwork: Christof Angst, Alain Barbalat, Hanspeter Bieri, Frank Borleis, Flavio Del Fante, Armin Eugster, Claudio Foletti, Marcel Güntert, Heinz Hersberger, Laurent Juillerat, Dani Jutz, Verena Keller, Jakob Marti, Christoph Meier-Zwicky, Markus Mooser, Gaby Schneeberger, Martin Spiess, Gian Voirol, Johann von Hirschheydt, Bruno Wyss and Niklaus Zbinden. We also express our recognition and gratitude to all the other volunteers for their effort and commitment – without their tireless work in the field, the monitoring of birds in Switzerland would not be possible!

For project management, statistical advice and publications in the context of MHB, we thank Niklaus Zbinden, Marc Kéry and Andy J. Royle (U.S. Fish & Wildlife Service). Guido Häfliger and Sourcepole provided technical support and developed «Terrimap» and «Terrimap online». For the close and friendly collaboration with «Biodiversity Monitoring Switzerland» (BDM), we are grateful to Hintermann & Weber AG and the Federal Office for the Environment (FOEN).

On the 20th anniversary of the common breeding bird monitoring scheme (MHB), project director Hans Schmid (far right, back row) honours the 64 fieldworkers who have participated in the project without interruption for at least 18 years. The above image shows a few active members of this illustrious but grizzled circle during the 79th annual meeting for volunteers in Sempach on 26 January 2019.

The common breeding bird monitoring scheme (MHB) gives us a better understanding of the population dynamics of widespread breeding birds, both in Switzerland as a whole and in certain regions and altitude zones. The population of the Common Firecrest has increased throughout Switzerland since 2013. The gains were particularly strong in southern Switzerland and in the eastern and western central Alps.

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