The State of Birds in Switzerland
Report 2017

vogelwarte.ch

Headlines

The counts are in! We look back on the last year of atlas surveys in 2016 and present first results. ➲ page 6

Long-distance migrants take a dive: the reasons can be found in Europe and Africa. ➲ page 8

Peregrine Falcons in trouble again: Eurasian Eagle-Owl and persecution by humans are the causes. ➲ page 14

After just 10 years we wonder: how did we ever do without it? ornitho.ch, a success story from Switzerland for all of Europe. ➲ page 20

Egrets, storks and co. gaining ground: upward trends in other countries and their impact on Switzerland. ➲ page 22

Dabbling ducks on a high: record-low water levels on Lake Constance created areas of shallow water. ➲ page 24

50 years of the International Waterbird Census: the world's oldest monitoring project is as important as ever. ➲ page 26

Contents

Editorial 4
Breeding birds 6
Migrants 18
Winter visitors 24
International news 30
Methodology 32
Thanks 34

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

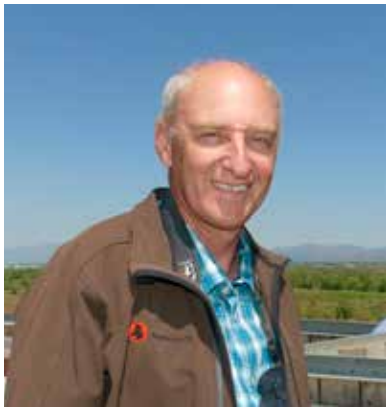
Cause for concern, but also hope

The Purple Heron on the front page has every reason to hold its head high. After all, the species is on the rise: in 2016, ornithologists detected 17 pairs at 6 sites. That is the highest count in 50 years. Still, we must bear in mind that Purple Heron populations are known to exhibit considerable fluctuations related to drought in wintering quarters or water levels in breeding grounds.

Several other species are also faring well: Yellow-legged Gull, Red Kite, Little Owl, Middle Spotted Woodpecker, Common Wood Pigeon, Rook, Western Bonelli's Warbler – and even the White Stork. We do not always understand the mechanisms that lead to significant population increases. However, thanks to a well-established network of over 2000 dedicated volunteers across Switzerland, we are now in a better position than ever to identify trends. This is true for common species, too: the field surveys for the Swiss Breeding Bird Atlas, successfully completed in 2016, and long-term projects such as our Monitoring common breeding birds scheme deliver a depth of information that receives international recognition.

An important addition to these projects is the huge repository of data collected via the online platform ornitho.ch, which celebrated its tenth anniversary in early 2017. This widely used recording platform was developed by Valais-based company Biolovision S.à.r.l. with our support. Among other things, it spreads the news of spectacular sightings and reports any large influx of birds taking place. The platform currently holds some 13 million records that are used to depict the seasonal and spatial occurrence of each species and to analyse trends such as those for the phenology index. But ornitho.ch is more than that. Our aim is to turn the platform into a tool that will allow users to enter the results of the waterbird census, special surveys and rarities reports.

Not all species are doing as well as Purple Heron and co. For several species, declines have been recorded in the past years, including various wetland birds and trans-Saharan migrants: European Turtle Dove, Whinchat, Garden Warbler, Icterine Warbler, Wood Warbler and Willow Warbler. The Ortolan Bunting gives particular cause for concern: only a handful of singing males remain, down from 200 twenty years ago. And then there are the species we thought were «out of the woods» – such as Peregrine Falcon and Northern Goshawk – now suddenly experiencing steep declines.

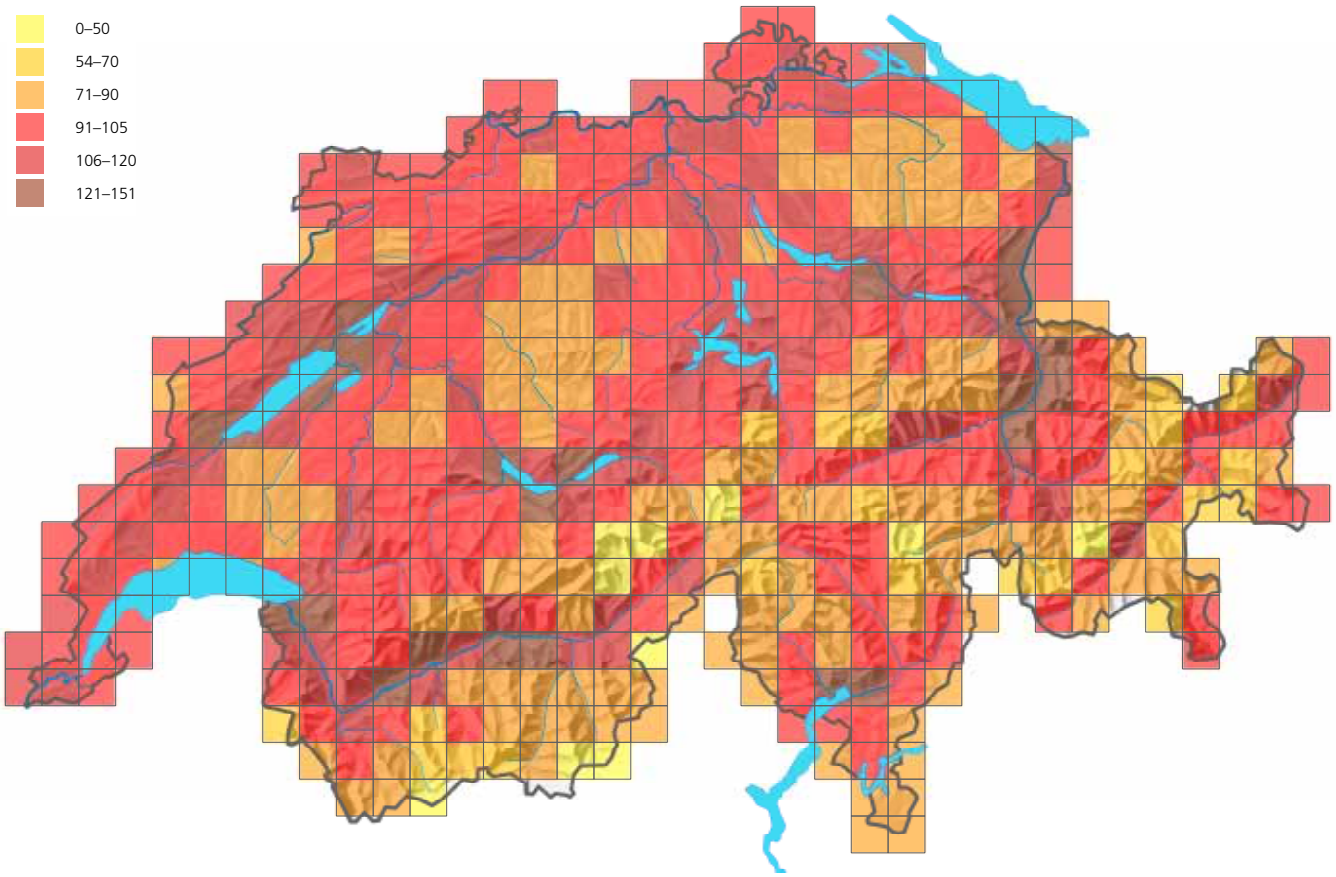


Our rigorous surveys, which we are able to carry out thanks to the generous support of the public and the Federal Office for the Environment, provide an important basis for species conservation. The Swiss Ornithological Institute has thus fulfilled a fundamental mission. But a much more difficult challenge remains: understanding the reasons for the sometimes drastic declines and taking effective measures to stop them.

Hans Schmid
Head of Monitoring

The White Stork has doubled its breeding population in the last ten years to 450 pairs in 2016. Thanks to ornitho.ch, we know that the size of groups passing through on migration is growing, too.

The beautifully coloured Ortolan Bunting is a long-distance migrant, making it an exception among thick-billed birds. Sadly, it is doubtful whether it can be saved as a breeding species in Switzerland. From 2014 to 2016, a single male was observed singing in the Central Valais.



Breeding bird atlas 2013–2016: Number of documented species per atlas square (10 × 10 km).

The situation of breeding birds

It is a well-known fact: the weather in spring has a big impact on the breeding season of birds. And in 2016, the fourth and last period of field surveys for the breeding bird atlas 2013–2016, the weather pulled out all the stops. After a very mild winter, the pendulum swung the other way: March was too cool; April was about as warm as usual, but very wet. In May and June, temperatures were again low and there was lots of rain. On 23 May, snow fell to below 1000 metres in some places, causing many Alpine birds to flee temporarily to lower altitudes. High water levels on lakes and rivers in June were followed by warm summer weather in July. These conditions were a challenge not only for breeding birds, but also for the fieldworkers.

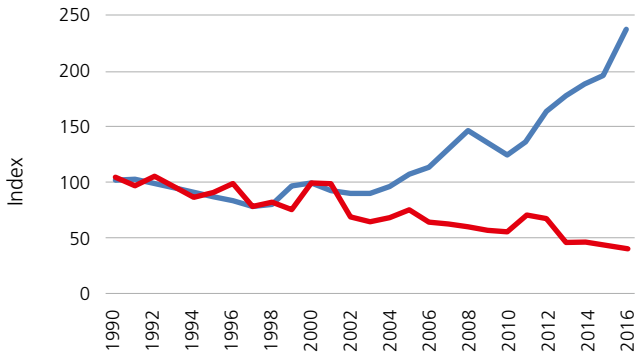
Threatened species show different trends

The populations of priority species for recovery programmes can exhibit quite different trends depending on their ecological needs and the details of species-specific support measures, as the following examples demonstrate. The Whinchat is a typical meadow bird, inhabiting flowery and diverse meadows managed at low intensity. Although low-intensity meadows receive federal funding, there are not nearly enough of them at present to support the Whinchat: the population has declined to 40 % of its size in the year 2000, with no sign of a reversal. Even stabilising the population at a low level would require a significantly greater effort. There are other causes for decline besides the continuing deterioration of habitat in the Alps, including habitat loss in the wintering grounds.

In contrast, targeted conservation measures to protect the Little Owl, an inhabitant of open landscapes with trees, have been implemented for several years. In the fifties and sixties, this well-loved bird was still very common across the Central Plateau. Thanks to the conservation efforts coordinated by BirdLife Switzerland, the population reached its highest level in more than 25 years in 2016, when 153 pairs were recorded. An action plan for the Little Owl was published in late 2016 by the Federal Office for the Environment

Completion of field surveys for the breeding bird atlas 2013–2016

2016 saw the conclusion of fieldwork for the breeding bird atlas 2013–2016. The survey status in all atlas squares was extremely satisfactory. Coverage of peripheral areas and mountain regions was also good, with no exceptions. Here are some astonishing numbers from the atlas project: All in all, more than two million data sets were recorded on ornitho.ch. 1527 users managed to record more than 100 sightings each. 753 people surveyed 2318 kilometre squares and mapped 745 428 territories. In total, 214 breeding bird species were recorded; six of them were escapes from captivity.



Differing trends for two farmland species: while the Whinchat (red) continues to decline, the Little Owl (blue) is gaining ground.

FOEN, BirdLife Switzerland and the Swiss Ornithological Institute, reinforcing the efforts with government support.

Parallel trends across countries

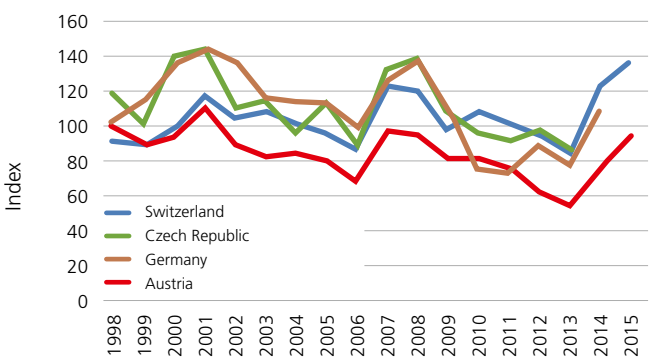
When an individual species' breeding population dwindles in Switzerland, it raises the question of whether the phenomenon is regionally confined. An analysis of population trends for several species by Norbert Teufelbauer of BirdLife Austria revealed a remarkable synchronicity across several neighbouring countries. Great Spotted Woodpecker, Red Crossbill and Eurasian Wren, for instance, appear to be influenced by large-scale weather patterns as well as by spruce mast years, leading to similar trends across central Europe.

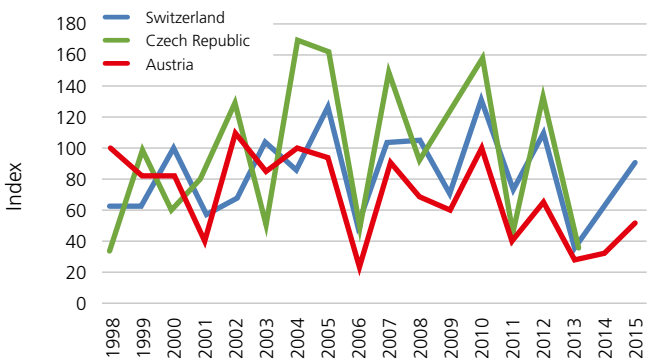
References

Meisser, C., A. Brahier, R. Lardelli, H. Schudel & M. Kestenholz (2016): Aktionsplan Steinkauz Schweiz. BAFU, Schweizerische Vogelwarte und BirdLife Schweiz, Bern.

Teufelbauer, N., B. S. Seaman & M. Dvorak (in press): Bestandsentwicklungen häufiger österreichischer Brutvögel im Zeitraum 1998–2016. Egretta 55.

Further information:
www.vogelwarte.ch/state/breeding





Between 1998 and 2015, Eurasian Wren and Red Crossbill populations exhibited surprisingly similar trends in four (Eurasian Wren) or three (Red Crossbill) central European countries (Switzerland: 1990 = 100 %, Austria: 1998 = 100 %, Germany: 1990 = 100 %, Czech Republic: 1982 = 100 %).

No more dove talk? The results of the 2013–2016 atlas surveys do not bode well for the European Turtle Dove.

Widespread species on the rise, migrants in decline

The Swiss Bird Index SBI® documents the population trends of 174 regular Swiss breeding birds since 1990 using simple indicators. The updated SBI® for all bird species has reached 111 % in 2016. This confirms the 10 % rise compared to the 1990 value (= 100 %). Since 2012 it has remained stable. Up until 2009, the value had been hovering around the 100 % mark. In contrast, the sub-index of Red List species indicates that populations have declined to 60 % of the 1990 numbers. This sub-index oscillated around the 80 % mark in the 1990s, then dropped again at the beginning of this century. Since 2008, the Red List index has remained at about 60 % of the 1990 level. Therefore the rise of the overall index to 111 % must in fact be attributed to widespread species becoming more common, while rare and threatened species have declined even further.

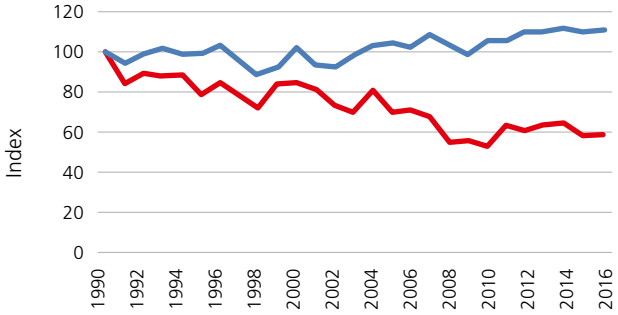
A tough time for trans-Saharan migrants

Depending on a species' migration behaviour, we distinguish between residents and short-distance migrants that winter in the Mediterranean region (collectively referred to as short-distance migrants; 120 species) and long-distance migrants that fly across the Sahara and deep into continental Africa (54 species). These two ecological groups have shown distinctly different trends since 1990. Short-distance migrants fluctuated around 100 % for quite a while before starting to rise in 2003. Since 2007, the index has stabilised at around 120 %. Long-distance migrants declined in the 1990s from the initial value of 100 % to around 90 %. Since 2006, this index has hovered between 85 and 90 %. 30 % of long-distance migrants exhibit a downward trend in the long term. The same is true for only 18 % of short-distance migrants.

Habitat loss on both ends of migratory routes

The reasons for this negative development are varied, and the main reason for decline is probably specific to each species. However, loss of habitat in breeding, stopover or wintering sites is a decisive factor for many species. A

Swiss Bird Index SBI® key indicators from 1990–2016: The SBI® for all species (blue) shows a slight rise; after a long period of steady decline, the sub-index for species on the Red List appears to have stabilised at a low 60 % (red).

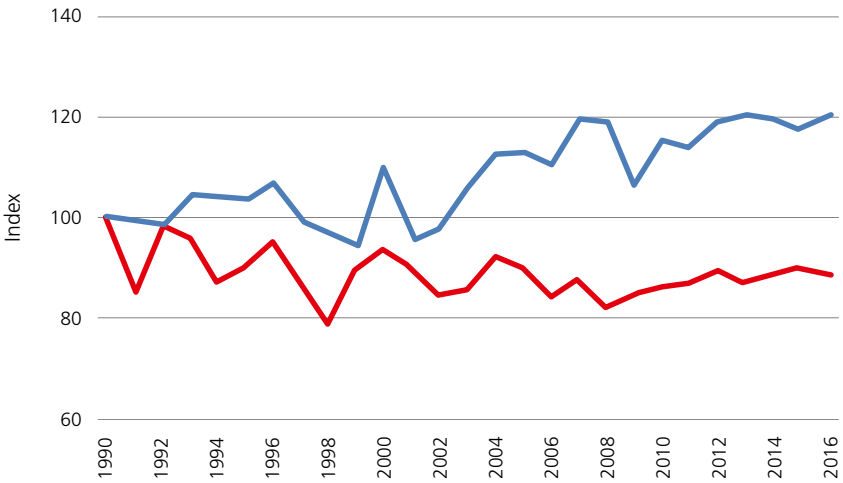


British survey of 26 long-distance migrants identified habitat loss in the wintering grounds as the foremost reason for their decline. An area larger than Switzerland is newly cultivated south of the Sahara every year, destroying the natural vegetation. The habitat loss causes insects to decline, an effect that is reinforced by the use of pesticides.

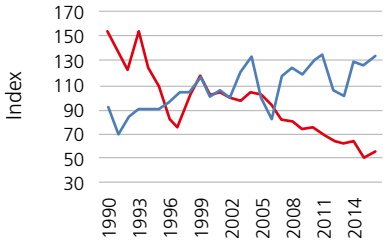
Illegal and legal hunting as well as climate change also take their toll. The number of birds migrating from Europe to Africa in autumn is assumed to be over 2 billion. A study by BirdLife International estimates the number of birds killed illegally while passing through the Mediterranean region at 11 to 36 million. Regardless of moral and ethical considerations and legal questions, the impact of hunting on European bird populations has to be examined for each species individually. For European Turtle Dove and Ortolan Bunting, to name just two species, hunting is assumed to be the main reason for decline along with habitat loss. The Ortolan Bunting has practically disappeared in Switzerland.

Due to climatic changes, the vegetation is developing earlier than it used to in our part of the world, and with it the insects. For long-distance migrants, this can mean that the food supply is no longer at its peak by the time the chicks hatch, reducing the offspring's chances of survival. Compared to short-distance migrants, migration periods in many songbirds that winter south of the Sahara are more strongly genetically determined and therefore less flexible. Recent research has shown that these species are slow to adapt to changes in food supply.

The myriad causes for the decline of long-distance migrants are unlikely to disappear in the near future, in Switzerland or elsewhere, so there is little hope that the tides will turn for this fascinating group of birds.



While the Swiss Bird Index SBI® for short-distance migrants (blue) indicates an upward trend, the SBI® for long-distance migrants (red) declined during the survey period 1990–2016.



They look very much alike, but exhibit different trends: the Common Chiffchaff (top), a short-distance migrant, shows an overall positive trend since 1990 despite a few dips (blue), while Willow Warbler (bottom) populations have dropped by two thirds (red).

A diagram for the Swiss breeding bird atlas 2013–2016 models the occurrence probability of the European Turtle Dove in Switzerland. The map locates the areas the species has retreated to following a period of steep decline.

Further information:
www.vogelwarte.ch/state/breeding

Rare breeding birds in wetlands: heavy losses and small gains

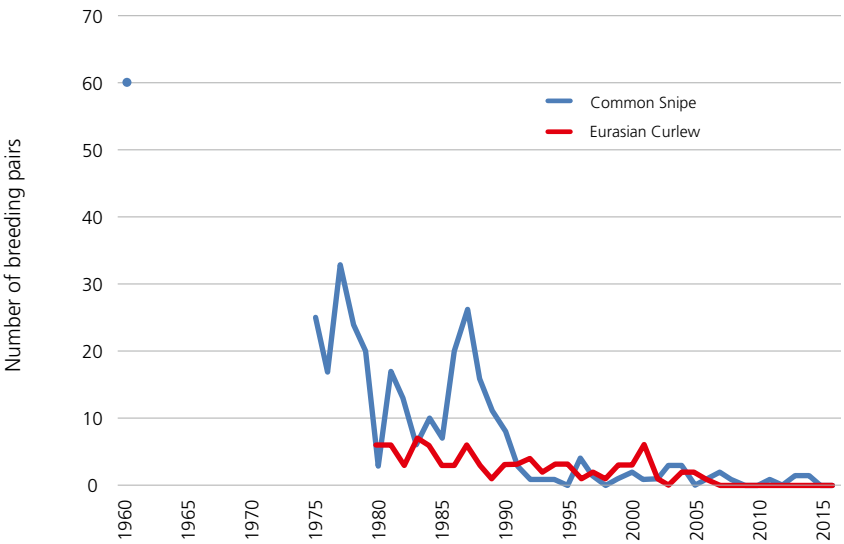
The wetland monitoring scheme conducts annual territory mapping surveys of rare breeding birds in wetlands. Opportunistic observations complement the systematic surveys. As some of these rare species have been recorded systematically for many decades, population trends can be tracked in detail over a relatively long period of time.

The Eurasian Curlew is gone

2016 marked the tenth year since the Eurasian Curlew's last breeding record in Switzerland. A Eurasian Curlew was last observed nesting in the Canton of Schwyz in 2006. At the beginning of the 20th century, the species still occurred in at least 40 atlas squares. Around 1960, the remaining population was estimated at 40 pairs. The huge loss of wetlands due to land improvement in the past 150 years is the main reason for this species' disappearance as a breeding bird in Switzerland. The remaining wetland areas are too small not only for the Eurasian Curlew, but for other species, too. Factors such as nutrient input, disturbance by visitors and the increase of ground predators also compromise the survival of many species.

Common Snipe almost gone

The Common Snipe faces a similar fate, the population having been severely diminished through habitat loss in the 19th and 20th centuries. Around 1960 there were about 60 pairs remaining in Switzerland. One to two territories were recorded in only five of the past ten years. Both species are declining throughout Europe due to loss of habitat. Moreover, Switzerland lies at the southern edge of the breeding range – peripheral populations are often particularly at risk. It is unlikely that either species will return as a regular breeding bird.

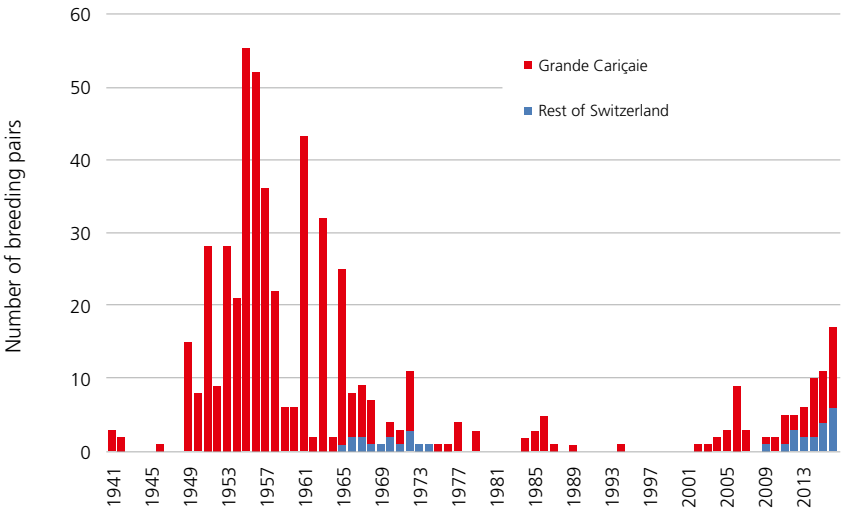


Eurasian Curlew and Common Snipe were once widespread in Switzerland. The detailed surveys of the past decades only served to document the disappearance of the last breeding pairs.

Small invasion of Zitting Cisticola and observations of Moustached Warblers in winter

Switzerland lies to the northeast of Zitting Cisticola's (left) usual range. The species is not observed here every year. In summer and autumn 2016, the largest influx of Zitting Cisticola since 2001 took place: 9 individuals, including 5 singing males, were recorded between late July 2016 and early January 2017 in four wetlands in central and eastern Switzerland (Kaltbrunner Riet SG, Lauerzersee SZ, Maschwander Allmend ZG, Littau LU) and in one wetland in western Switzerland (Aubonne VD).

A Moustached Warbler was recorded on an extended winter stay in Switzerland for the second time ever: the bird was seen at the Klingnauer Stausee AG on seven days between 8 December 2016 and 7 January 2017. On 28 December 2016 another individual was recorded near Champ-Pittet VD. Switzerland lies at the northern fringe of the species' range, and it is rarely observed here. In the Mediterranean region, the Moustached Warbler is considered a resident.



Most Purple Herons breed in the extensive sanctuaries on the southern shore of Lake Neuchâtel.

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 Zitting Cisticola and Moustached Warbler, 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 SRC publishes an annual report in German («Der Ornithologische Beobachter») and French («Nos Oiseaux»).

Purple Heron makes a comeback

The situation of the Purple Heron, on the other hand, is more encouraging. The Mediterranean species did not populate Switzerland until 1941, when the first breeding was recorded on the southern shore of Lake Neuchâtel. Subsequently, several colonies formed in the Grande Cariçaie (reaching a maximum of 54 pairs in 1955). Additional sites in the Cantons of Bern and Vaud were briefly colonised in the 1960s. The second Jura river regulation project, starting in 1962, led to lower water levels in the reedbeds, and the number of breeding pairs declined again. It was not until 2001 that the species started breeding almost every year; since 2009, the population has been steadily on the rise, reaching 17 breeding pairs in 2016. The designation of large nature reserves in the Grande Cariçaie, where most of the population occurs, probably enabled the renewed rise of this sensitive species. Climatic causes may also have played a part. The repopulation coincided with a strong increase of Purple Herons in the Netherlands.

Reference

Müller, C. (2017): Seltene und bemerkenswerte Brutvögel 2016 in der Schweiz. Ornithol. Beob. 114: 147–160.

Further information:
www.vogelwarte.ch/state/breeding

Trends for regular breeders in Switzerland

For each of the 174 regular breeding birds[1] in Switzerland that were analysed, a positive trend, a negative trend, or no trend is specified for the entire survey period (generally 1990–2016) and for the last ten years (2007–2016). No trend means that no statistically significant change was detected during the survey period. This is the case for populations that are actually stable, but also for those that fluctuate heavily. The colours in the last column show the status of the species with regard to the Red List (red = on the Red List, orange = near-threatened, green = least concern). Dots mark priority species for species recovery programmes.

Species	Trend 1990–2016	Trend 2007–2016	Red List Priority
Gadwall	+		
Mallard	+		
Red-crested Pochard	+	+	
Common Pochard			
Tufted Duck	+		
Common Eider	+		
Common Merganser	+	+	
Common Quail			
Rock Partridge	-		●
Hazel Grouse			●
Rock Ptarmigan	-	+	●
Black Grouse			●
Western Capercaillie			●
Grey Partridge			●
Little Grebe	-		
Great Crested Grebe	-		
Black-necked Grebe			
Great Cormorant	+	+	
Little Bittern	+		
Grey Heron	+	+	
Purple Heron	+	+	
White Stork	+	+	●
European Honey Buzzard	+	+	
Black Kite[2]	+		
Red Kite	+		●
Bearded Vulture	+	+	●
Northern Goshawk	+	+	
Eurasian Sparrowhawk	+	+	
Common Buzzard	+		
Golden Eagle	+		
Common Kestrel	+	+	
Eurasian Hobby	+		
Peregrine Falcon	+		
Water Rail			
Spotted Crake			
Corn Crake	+		●
Common Moorhen			
Eurasian Coot	+	+	
Northern Lapwing	-	+	●
Little Ringed Plover			●
Eurasian Curlew	-		●
Common Sandpiper	-		●
Eurasian Woodcock	-		●
Common Snipe	-		●
Common Tern	+		●
Common Black-headed Gull	-		●
Mediterranean Gull	+		
Mew Gull		-	
Yellow-legged Gull	+	+	

Species	Trend 1990–2016	Trend 2007–2016	Red List Priority
Stock Dove	+	+	
Common Wood Pigeon	+	+	
Eurasian Collared Dove	+		
European Turtle Dove	-		
Common Cuckoo			●
Barn Owl			●
Eurasian Scops Owl	+		●
Eurasian Eagle-Owl	-		●
Eurasian Pygmy Owl			
Little Owl	+	+	●
Tawny Owl			
Long-eared Owl[3]			
Boreal Owl	-	-	
European Nightjar	-		●
Common Swift[2]			●
Pallid Swift	+		
Alpine Swift	+		●
Common Kingfisher	+	+	●
European Bee-eater	+	+	
Eurasian Hoopoe	+	+	●
Eurasian Wryneck		+	●
Grey-headed Woodpecker[3]	-		●
European Green Woodpecker	+		
Black Woodpecker	+		
Great Spotted Woodpecker	+		
Middle Spotted Woodpecker	+	+	●
Lesser Spotted Woodpecker	+		
Eur. Three-toed Woodpecker		+	
Woodlark	+		●
Eurasian Skylark	-	-	●
Sand Martin	-		●
Eurasian Crag Martin	+	+	
Barn Swallow			
Common House Martin	-		●
Tree Pipit	-		
Meadow Pipit	-		
Water Pipit			
Western Yellow Wagtail	+		
Grey Wagtail			
White Wagtail			
White-throated Dipper	+		
Winter Wren	+		
Dunnock	+	+	
Alpine Accentor			
European Robin	+		
Common Nightingale	+		
Bluethroat	+		
Black Redstart		+	
Common Redstart	-		●

Species	Trend 1990–2016	Trend 2007–2016	Red List Priority
Whinchat	-	-	●
Eurasian Stonechat	+	+	
Northern Wheatear	+		
Rufous-tailed Rock Thrush			
Blue Rock Thrush			
Ring Ouzel	-		●
Common Blackbird	+	+	
Fieldfare	-		●
Song Thrush	+	+	
Mistle Thrush	+		
Com. Grasshopper Warbler			
Savi's Warbler	+		●
Icterine Warbler	-		
Melodious Warbler	+	+	
Marsh Warbler			
Eurasian Reed Warbler			
Great Reed Warbler	+	+	●
Barred Warbler			
Lesser Whitethroat			
Common Whitethroat			●
Garden Warbler	-	-	
Eurasian Blackcap	+	+	
Western Bonelli's Warbler	+	+	
Wood Warbler	-		●
Common Chiffchaff	+		
Willow Warbler	-	-	●
Goldcrest	+		
Firecrest			
Spotted Flycatcher	-		
European Pied Flycatcher	+		
Bearded Reedling			
Long-tailed Bushtit	+		
Blue Tit	+		
Great Tit	+		
Coal Tit			
European Crested Tit	+		
Marsh Tit	+		
Willow Tit[2]	+		

Species	Trend 1990–2016	Trend 2007–2016	Red List Priority
Eurasian Nuthatch			
Wallcreeper		+	
Eurasian Treecreeper	+		
Short-toed Treecreeper	+		
Eurasian Golden Oriole	+		
Red-backed Shrike	-	-	
Woodchat Shrike	-		●
Eurasian Jay	+		
Eurasian Magpie	+		
Spotted Nutcracker			
Alpine Chough			
Red-billed Chough	+		
Western Jackdaw	+	+	●
Rook	+	+	
Carrion Crow	+		
Northern Raven	+		
Common Starling			
House Sparrow			
Eurasian Tree Sparrow	+		
White-winged Snowfinch			
Common Chaffinch	+		
European Serin		-	
Citril Finch			
European Greenfinch		-	
European Goldfinch	-		
Eurasian Siskin	+		
Common Linnet			
Lesser Redpoll	+		
Red Crossbill	+		
Common Rosefinch		+	
Eurasian Bullfinch	-		
Hawfinch	+		
Yellowhammer	+		
Cirl Bunting	+		●
Rock Bunting	+		
Ortolan Bunting	-	-	●
Common Reed Bunting	-		
Corn Bunting	-		●

[1] This includes species categorised as regular breeding birds at least once since 1990 (i.e. the species has bred in Switzerland in at least nine of the past ten years) and for which we have the necessary data. 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 1999–2016
[3] Survey period 1996–2016

Further information:
www.vogelwarte.ch/state/breeding

Species that breed in Switzerland irregularly or exceptionally

Since 2000, a further 27 species have bred irregularly or exceptionally in Switzerland. These breeding occurrences are documented as fully and consistently as possible (table available online via the link under «Further information»).

Reference

Müller, C. (2017): Seltene und bemerkenswerte Brutvögel 2016 in der Schweiz. Ornithol. Beob. 114: 147–160.

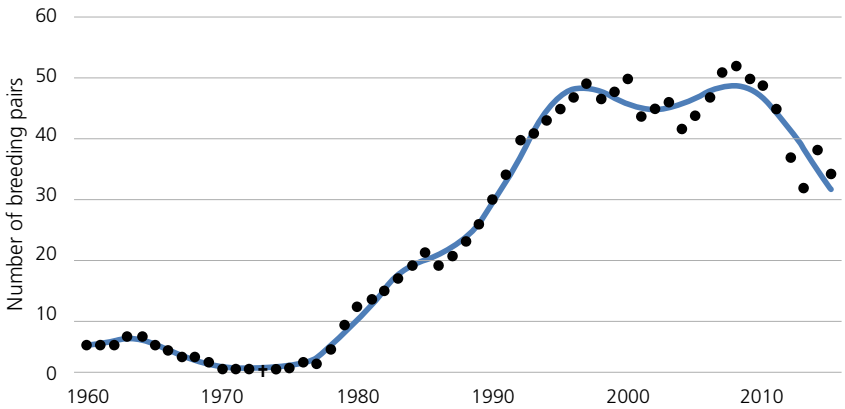
The Peregrine Falcon was believed to be saved and out of danger. But the newest trends are worrying.

The end of a golden era for the Peregrine Falcon

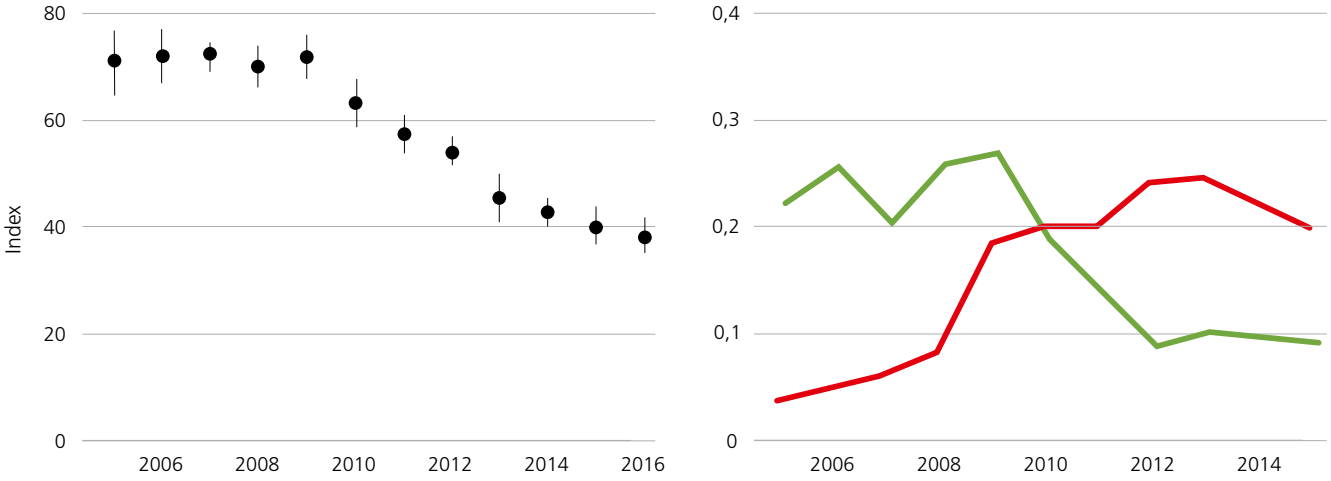
The Peregrine Falcon has become a global symbol of species conservation. In the sixties, environmental toxins pushed it to the brink of extinction, but thanks to legal protection and the banning of certain pesticides, the species experienced a spectacular recovery. By 2005, it had repopulated the whole of Switzerland, and in 2010, the population was estimated at about 340 pairs. At the same time, Peregrine Falcons started to nest at increasingly higher altitudes in the Alps and on increasingly smaller cliffs in lower-lying areas. They also occasionally nested on buildings.

Unexpected trend reversal

Since 2010, however, there is mounting evidence that all is not well: an increasing number of long-standing, traditional nesting sites have been abandoned. This gave cause for a closer analysis of the Peregrine Falcon population in the past decade. Detailed figures were available from several sources: a dedicated group of bird conservationists in western Switzerland led by Gabriel Banderet has recorded population size and breeding success on 90 cliffs since 1960; in the northern Jura, a group led by Marc Kéry has collected data on some 100 cliffs since 2005; and BirdLife Zurich has documented the population in the Canton of Zurich since 2002. Analysis of these data revealed that the Peregrine Falcon had declined in the three survey areas by 36 %, 47 % and as much as 86 %, respectively. In western Switzerland, for instance, there were 51 pairs in 2008 compared to only 33 in 2015. 73 pairs were counted in the northern Jura in 2007 and only 38 in 2016. In the



Population trend of the Peregrine Falcon in western Switzerland (4993 km²) over 56 years (1960–2015). The black dots indicate the number of breeding pairs. The blue line gives the smoothed population trend.



Population trend (left) and extinction and colonisation rates (right) for the Peregrine Falcon over 12 years (2005–2016) in the northern Jura (3270 km²). The population decline coincides with an increase of the extinction rate (red) from 5 % to 25 % and a drop of the colonisation rate (green) from 25 % to 10 %, which indicates higher mortality and a smaller pool of birds to repopulate abandoned sites.

Canton of Zurich, the population declined from 7 pairs to a single pair between 2010 and 2014.

Causes and protection

Natural and «unnatural» predators head the list of likely causes for this severe population drop. The Eurasian Eagle-Owl is the Peregrine Falcon's main predator; it occupies exactly the same cliff habitats and has increased in the last twenty years outside the Alpine region. In the northern Jura, there are now presumably more Eurasian Eagle-Owl territories than there are Peregrine Falcon territories, and 22 traditional Peregrine Falcon territories (25 %) were occupied at least once by Eurasian Eagle-Owls. When a Peregrine breeding site is occupied by a Eurasian Eagle-Owl, the Falcon will almost always abandon the site.

Events since 2008 have provided a sad reminder that human persecution of birds of prey is not yet a thing of the past: several very successful breeding pairs in Basel and Zurich suddenly disappeared, and in 2011 the poisoning of a Peregrine Falcon, presumably by pigeon breeders, was confirmed for the first time. Since then, several further incidents of poisoning have come to light in the Zurich and Basel areas and in the Canton of Aargau. There may be a considerable number of unreported cases. Thanks to the persistence of the Zurich cantonal police in collaboration with a local task force, two perpetrators have been charged and convicted so far.

Outlook

The decimation of the Peregrine Falcon population by the Eurasian Eagle-Owl is a natural process and one we have to accept. In contrast, all illegal persecution by pigeon breeders must be stopped. We can learn two lessons from the Peregrine Falcon's recent history: (1) even a species we believed saved can suddenly experience renewed decline; (2) a reliable early warning system, especially for rare species, is critical to detect trend reversals. In the coming years, the Swiss Ornithological Institute will reinforce its efforts to establish new monitoring projects for species that are difficult to survey and to support those schemes already in place.

References

Inderwildi, E., W. Müller & R. Aye (2016): Vorsätzliche Vergiftung von Wanderfalken und anderen Greifvögeln: Verdachtsfälle erkennen und melden (Merkblatt der Arbeitsgruppe Wanderfalke). BirdLife Schweiz, Zürich.

Kéry, M., H. Schmid & T. Sattler (2016): Bestandsentwicklung des Wanderfalken (*Falco peregrinus*) in der Schweiz mit besonderer Berücksichtigung des Zeitraums seit 2005. Schweizerische Vogelwarte, Sempach.

The loss of successfully breeding adult birds through poisoning rapidly impacts the populations of an entire region.

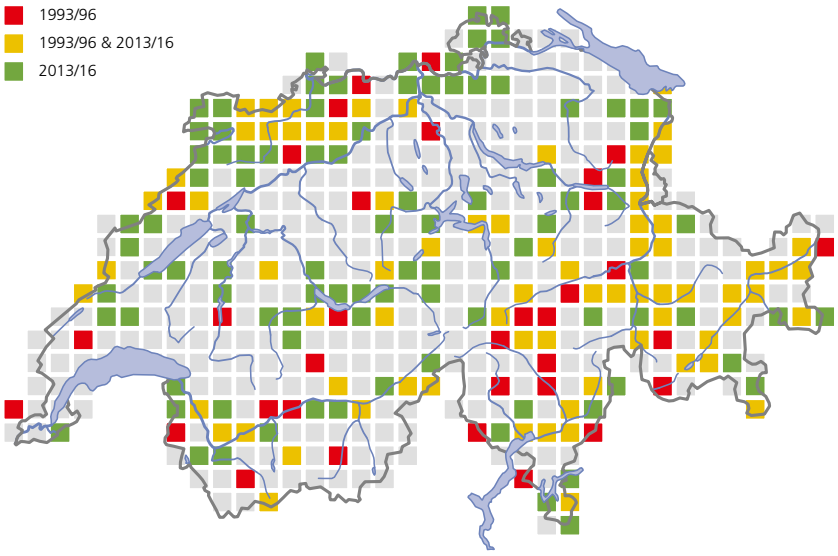
Monitoring the Eurasian Eagle-Owl: new possibilities thanks to bioacoustics

In the first half of the 20th century, the Eurasian Eagle-Owl population was reduced to a minimum mainly due to persecution. By the 1970s, it had recovered to about 60 pairs. This was followed by a marked increase, resulting in a population of at least 120 pairs in 1993–1996. Subsequently, the populations of the Jura and Central Plateau appeared to continue this positive trend, while observations in the Alps suggested stagnation or even decline. However, methodological challenges make reliable statements about trends difficult for this secretive, nocturnal species.

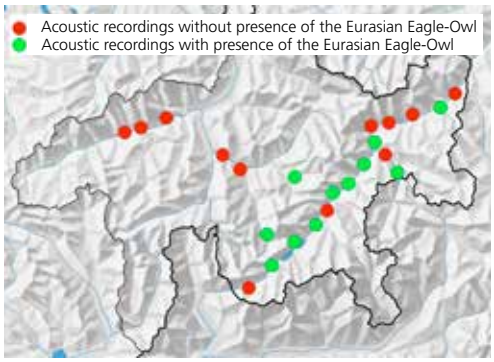
The Eurasian Eagle-Owl's calling activity peaks between late January and late March, when snow and icy temperatures mean that only few ornithologists are out and about in the Alps and the Jura in the evenings. But even those willing to expend considerable effort to detect calls are not guaranteed success: experience shows that calling activity differs for each male or pair and is influenced by many factors (such as weather or remoteness of the territory), so that the presence or absence of a bird cannot be ascertained even when potential breeding sites are visited multiple times.

The use of recording devices that record nocturnal calling activity automatically over the course of several weeks increases the reliability of survey results, especially in unoccupied territories. The Ornithological Institute's David Jenny appreciates the advantages of this method compared to human listeners for the monitoring of the Eurasian Eagle-Owl in the Engadine. Since 2016, he has been monitoring more than a dozen breeding sites in this way – and with reduced effort, too! Thanks to the positive results, the Ornithological Institute was able to extend this project to other parts of Grisons in winter 2017. Acoustic recording devices support the more than 60 volunteers of the local group «Ornithologische Arbeitsgruppe Graubünden» and the Ornithological Institute, who have been on the prowl for Eurasian Eagle-Owls in the Canton of Grisons for several years now. Some devices are also used by the game wardens.

In the coming years, the Ornithological Institute hopes to extend the use of acoustic monitoring to other parts of Switzerland.



Differing regional trends for the Eurasian Eagle-Owl in the period between the two atlas surveys 1993–1996 and 2013–2016: the percentage of occupied atlas squares rose by 56 % in the Jura and Central Plateau, by 39 % in the northern Alps and by 11 % in the Alpine cantons of Valais, Grisons and Ticino. The search effort was greater in 2013–2016 than twenty years ago, however, and more information is available as a result. The actual population increase is probably smaller, and some areas in the Alps may have even seen declines.



In the winter of 2017, acoustic devices were deployed in 23 potential breeding sites in the Canton of Grisons. Using this method, Eurasian Eagle-Owl pairs were detected in 11 sites; for three sites, this was the first record in several years. Relief: Institute for Cartography, ETH Zurich.

References

Jenny, D. (2011). Bestandsentwicklung und Bruterfolg des Uhus *Bubo bubo* im Engadin. Ornithol. Beob. 108: 233–250.

Lardelli, R. & N. Zbinden (2017): Il Gufo reale *Bubo bubo* in Ticino: confronto fra tre censimenti (1987–1989, 2009–2011, 2013–2016). Ficedula 51: 25–31.

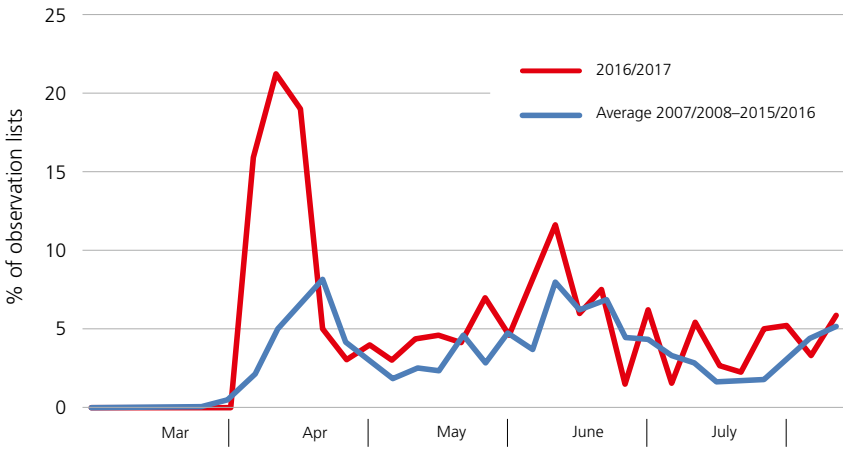
Schaub, M., A. Aebischer, O. Gimenez, S. Berger, & R. Arlettaz (2010). Massive immigration balances high anthropogenic mortality in a stable eagle owl population: Lessons for conservation. Biol. Cons. 143: 1911–1918.

The Swiss Ornithological Institute plans to expand acoustic monitoring of the charismatic Eurasian Eagle-Owl in the coming years.

In Switzerland, the Lesser Whitethroat breeds mainly in the mountains. It winters in eastern Africa and the Arabian Peninsula. Return migration peaks in late April.

An update on migrant birds

Our knowledge about bird life is based on the huge number of observations that volunteer bird-watchers record in the field. Nowadays, most observations are submitted via the internet. In Switzerland, the recording platform ornitho.ch receives several thousand data sets a day. At the same time, field notebooks are gradually being replaced by portable mini-computers the size of a mobile phone. The NaturaList application allows users to record their data directly in the field. They can choose to record selected species or all of the observed species. The second option produces complete species lists that are particularly valuable for analysis, because they tell us not only which species were observed, but also which were absent. This allows us to search for all locations where a species was seen – or all places where it was not found. It also enables us to determine the frequency of a species in a given location or time period by calculating the percentage of all complete species lists on which the species occurs.



Lesser Whitethroat sightings peaked in April 2016 due to early return migration that was interrupted by bad weather.

Complete species lists

Lists allow us to compare migration movements in different years. We discovered, for instance, that some long-distance migrants arrived a week earlier in spring 2016 compared to the long-term average; not only in Switzerland, incidentally, but in Germany, too. Among these species were Barn Swallow, Common House Martin and other insect eaters. The reason for this early return may have been a strong southern current that affected the weather in the Mediterranean at the beginning of April. Also, the Lesser Whitethroat occurred two and a half times more frequently than normal in April. A similar phenomenon was observed for other long-distance migrants, such as Common Redstart

and Common Nightingale. The run of bad weather that hit Switzerland in April provides an explanation for these unusually high numbers, as it caused many migrants to interrupt their flight north and make an extended stay in Switzerland.

Remarkable spring invasions

But spring 2016 will also be remembered for notable influxes of several southern and eastern species such as Western Cattle Egret, Black-crowned Night Heron, Subalpine Warbler and Collared Flycatcher. It was the second invasion of this size of Collared Flycatchers since 2013, which is truly remarkable given how rare the species is outside of Ticino and the southern valleys of Grisons. On average, there have been only two spring sightings a year in Switzerland since 1980. This contrasts with 21 observations accepted by the Rarities Committee in 2013 and at least 18 in 2016.

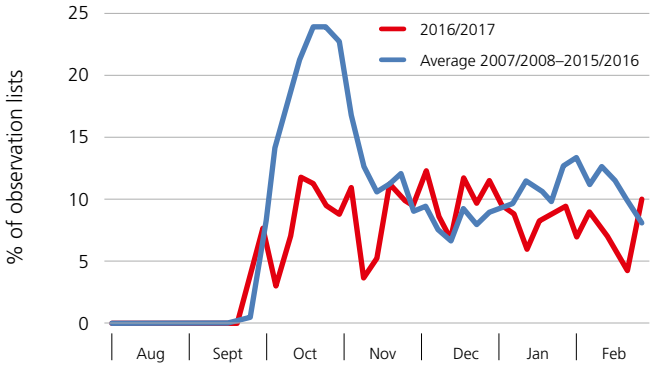
Beech mast and a cold spell

The small number of Bramblings seen here in autumn 2016 and the following winter was probably due to the exceptional beech mast in large parts of central Europe, which provided plenty of food all winter even in areas much farther north than Switzerland. The same phenomenon might explain why so few small birds were seen at bird feeders in winter 2016/17: they were only moderately interested in additional food provided for them in villages and towns. While seed eaters easily survived the winter, some partial migrants may have suffered during the cold spell in January 2017. Complete species lists from that period indicate that the European Robin, for example, was observed much less frequently in the second half of the month.

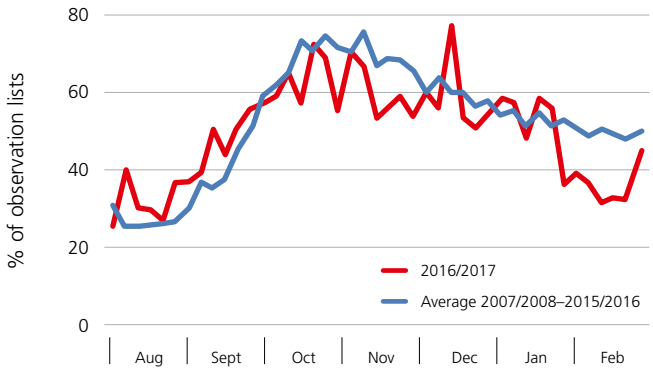
More complete species lists!

At present, about 30 % of records are made in the form of complete species lists. We hope to continue to grow this number in the coming years, as this type of data can be used here in Switzerland in so many diverse ways and also plays an important role in international projects like EuroBirdPortal.

Further information:
www.vogelwarte.ch/state/migration



Brambling numbers were modest in autumn 2016 and sunk below average in January 2017.



European Robin observations dropped abruptly during the cold spell in January 2017 and did not recover until the end of February.

The Common Blackbird – the original or a special edition – is the most frequently recorded bird on ornitho.ch. The photo gallery is always good for a surprise.

ornitho.ch – a wealth of data for many purposes

«Pro Natura is designing a new maintenance concept for area X. We would like to use all bird observations in that area as a basis.» Or: «We are working on a model to depict the future distribution of the main forest types in the Alps. Could you give us information on the breeding periods of Tawny Owl, Boreal Owl and Black Woodpecker?» Or: «We have been asked to evaluate a habitat network. For this purpose, we need the most recent distribution data for farmland species in the following municipalities…». These are just a few examples of enquiries directed to the Swiss data centres day after day. In 2016 alone, the Ornithological Institute received more than 300 such requests from ecological consultants, NGOs, government offices or researchers. The needs have changed enormously in the last ten years, and there is a growing exchange of data at the international level, too. Thanks to ornitho.ch, we can respond to these requests much better today, as the platform provides much larger spatial coverage as well as more recent and more accurate data for specific locations than were available before.

Data on bird life can help nature reserves and species conservation

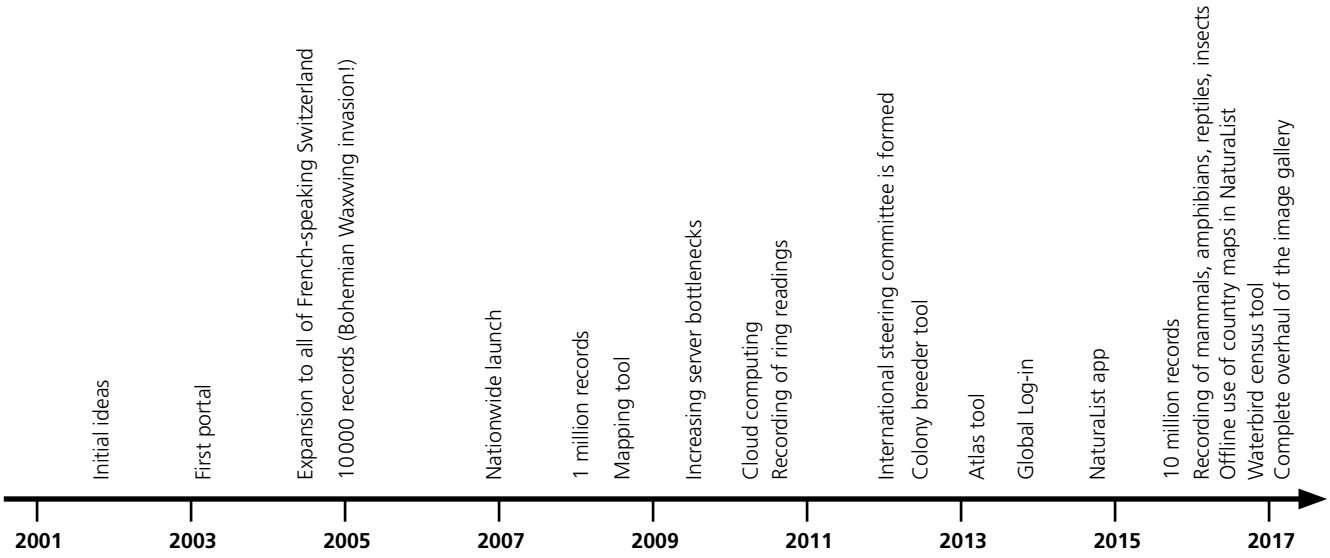
It is much more common today for ornithological data to be used in

At the annual meeting for the Ornithological Institute's volunteers, Hans Schmid, head of the international steering committee, looks back on ten years of ornitho.ch.

Multi-stage quality control

The records collected on ornitho.ch are used in scientific assessments and for planning purposes, among other things. Isolated mistakes are inevitable in a database of more than one million observations. But we want data users to know that we take every possible precaution to make sure the data we provide are as accurate and reliable as possible. Our goal is to achieve a high degree of reliability and credibility through multiple levels of quality control.

Once entered, a record first passes through an automatic filter. The filter checks for anomalies regarding time, place or number of sightings. Should any be detected, the user receives an automated message asking him or her to confirm the entry. Once it has been confirmed, the 30 or so regional coordinators are notified and asked to check the entry. The regional coordinators are experienced field ornithologists who review the entries and ask for clarification whenever necessary. Before the record enters into the Ornithological Institute's databases, further steps are taken to ensure the quality of the data. Finally, data users are generally only provided with data that were collected by registered volunteers, who all have several years of experience in field ornithology. These registered volunteers enter about two thirds of all records gathered on ornitho.ch.

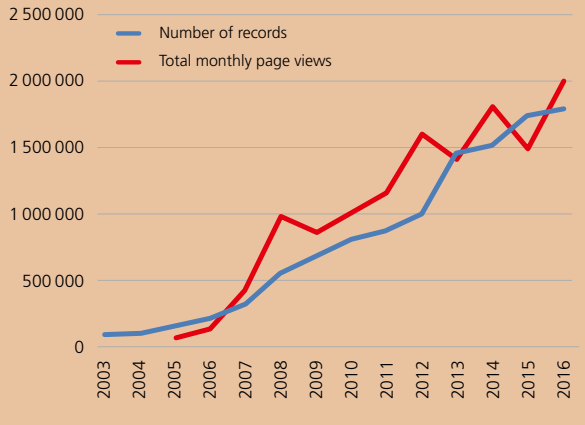


Milestones in the history of ornitho.ch: Launched in Geneva in 2003 and in French-speaking Switzerland shortly after that, ornitho.ch was made available nationwide in 2007. Following this expansion and after the Ornithological Institute stepped in as a partner, data volume as well as technical requirements increased, challenging the team to continuously develop innovative solutions.

planning and in scientific analyses. That is a good thing. The data directly contribute to conservation efforts in many ways: by detecting individual species in distress (such as the Corn Crake), helping to define site boundaries for future recovery projects (Eurasian Wryneck) or supporting success monitoring (Eurasian Hoopoe). Individual users have the satisfaction of knowing that their records do not simply land on a massive data pile, but are continually applied to a range of practical purposes. For the data centres themselves, the great challenge lies in selecting the most useful data while protecting the needs of sensitive species, showing individual ornitho users due consideration and fulfilling client requests. They need to process the data so that they serve their purpose without giving rise to misinterpretation or implying false precision (birds have species-specific spatial needs, even if an observation site is recorded with high spatial precision). This means that the data centres still have to verify the selected data, make adjustments and, in case of doubt, consult with the user who made the report.

10 years of ornitho.ch

In early 2007, ornitho.ch went online throughout Switzerland. Before that date, the platform – developed by Biolovision S.à.r.l. in Ardon VS – had already been a big hit in Geneva and later in the entire French-speaking part of Switzerland. Since then, almost 15 000 registered users have entered more than 13 million observations. The number of annual records increased more than fivefold between 2007 and 2016. The period 2013–2016 provided further momentum, as the data for the breeding bird atlas were collected via ornitho.ch. The number of monthly page views has also steadily increased, now reaching one to two million views every month. In spring 2016, ornitho.ch was expanded to include mammals, reptiles, amphibians and certain insects. Users are increasingly recording these species groups as well. Thanks to 400 000 image and sound files, ornitho.ch is also an important resource for self-directed study. To date, the ornitho family encompasses more than 40 platforms across Europe that have collected about 100 million observations.



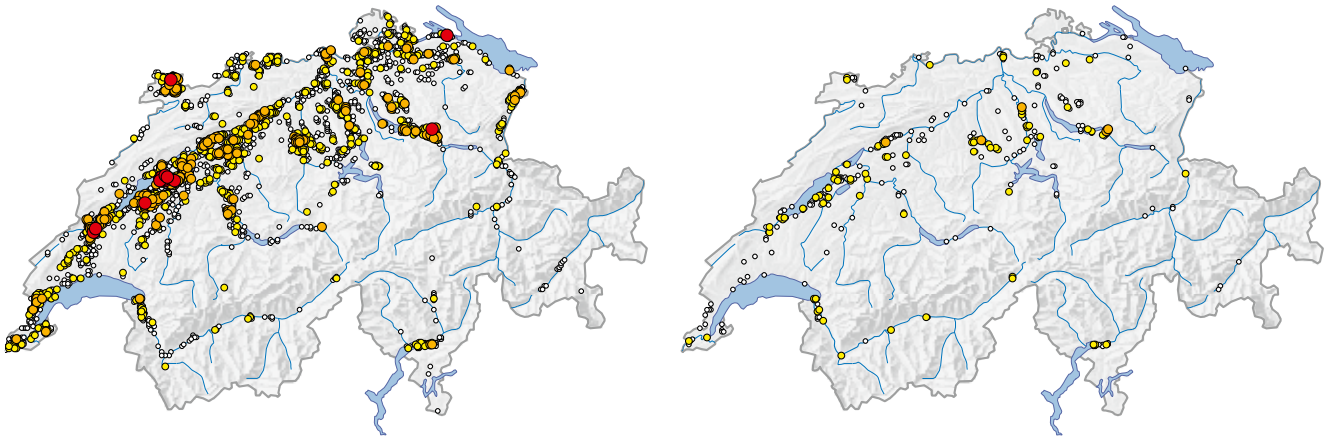
40 years ago, a Great Egret sighting in Switzerland was cause for excitement. Today, it is not uncommon to see large groups of these birds on the Central Plateau, especially in winter, as on this picture from Hungary.

Recovery of herons, egrets, storks & co.

It is hard to imagine that around 1900, there were only about 50 Grey Heron pairs left in Switzerland. The reason was intense persecution. Some one hundred years later, thanks to effective protection, the species is widespread once more, and has even lost much of its fear of humans. Other similar birds have experienced a comparable development and are occurring in increasing numbers in Switzerland, either as passage migrants or winter residents. This is the case for various heron species, White and Black Stork and Common Crane.

Expansion of the Great Egret

The Great Egret was heavily hunted in the 19th and early 20th century for its decorative feathers, leading to massive losses in its southeastern European breeding population. Not until the 1970s did the population recover and



In the breeding season, Great Egrets are much rarer; nevertheless, they can still be found in all parts of the country, even in Alpine valleys. The dots indicate the maximum number of observations at each site during 2013 to 2016, from May to July (right, n=311) and August to April (left, n=2395). White dots=1–2 individuals, yellow dots=3–10 ind., orange dots=11–50 ind., red dots=51–200 ind.

start spreading to western Europe, a movement that is still ongoing. Starting in the 1990s, the number of winter visitors increased in areas to the west of the Great Egret's traditional range; at the same time, the species expanded its breeding range to Spain, France, England, southern Sweden and the Baltic states.

In the early 20th century, the Great Egret was a rare sight in Switzerland. Since 1972, it has been observed annually. The first records were mostly of passage migrants in late autumn or spring. Then winter records started to increase. The first birds wintering in Switzerland were registered in 1985/86, and they have been regularly recorded since 1994/95.

Until about 1995, the Great Egret occurred mainly on the Central Plateau and near bodies of water; it was seldom seen in the Alps. Numbers were still modest, and groups included no more than ten birds. In the first years of the new millennium, the Great Egret behaved like a typical winter visitor: it appeared from September, with a weak migration peak in October, and disappeared again in March. The subsequent large increase of winter residents also led to longer migration periods in spring and autumn, meaning that the birds leave later and return earlier. There is now an additional migration peak in March, and the one in October has become more marked. Group numbers have also increased; flocks of 50 birds and more are no longer seen only on Lake Neuchâtel. Similarly, the Great Egret has increased its presence in the Alpine valleys. Summer sightings have become more frequent, too, although to a much lesser extent. Only 0.5 % of all records occur in June. However, these now include breeding records: the first breeding was reported in 2013 on Lake Neuchâtel, with further breeding attempts in each subsequent year.

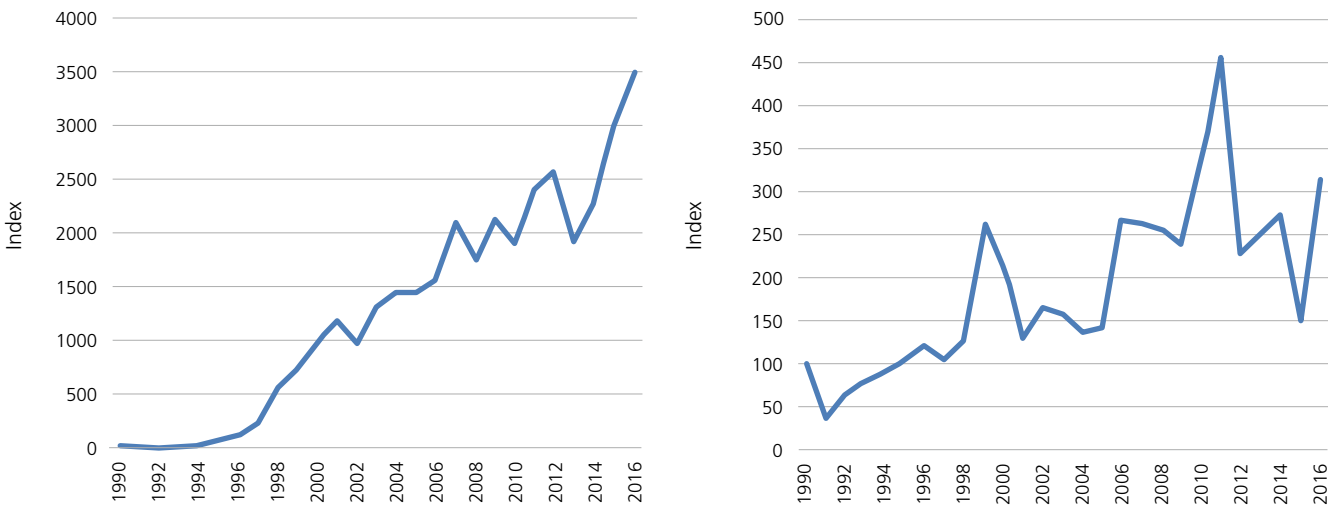
Encouraging trends

The Little Egret is occurring more frequently in Switzerland: there have been several wintering records in the past few years, a growing number of summer and autumn sightings, and even a breeding attempt in 2014. As for the White Stork, migrant groups of more than 150 birds have been appearing again for about ten years now, which is evidence for the continuing upward trend of this species that was reintroduced after going extinct.

We owe these great success stories to the conservation efforts of the countries where the most important breeding sites are located. Bans on hunting play an important role, of course, but so do newly created nature reserves in wetlands, as these provide crucial habitat for both species to nest and hunt for food. The fact that some species, like the Little Egret, have been able to expand their breeding range further north and away from coastal areas is probably also due in part to the milder winters of the past decades.

Beside the Great Egret the Little Egret is also observed more frequently in Switzerland. In 2016 1920 records were submitted.

Further information:
www.vogelwarte.ch/state/migration

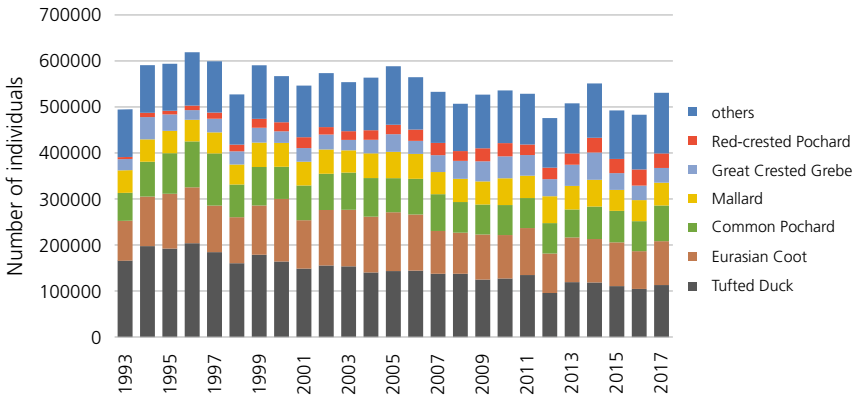


Great Egrets (left) are occurring more frequently in Switzerland; the same is true, albeit to a lesser extent, for the Little Egret (right).

Dabbling ducks such as this Eurasian Teal benefited from low water levels, especially on Lake Constance.

Dry spell impacts waterbirds

The autumn and winter months of 2016/17 were extremely dry. On Lake Constance in particular, the resulting low water levels had dabbling duck populations breaking all kinds of records. On top of that, temperatures plummeted just a few days before the January count, bringing an influx of winter visitors from the north.



January population of waterbirds in Switzerland (including the German and French parts of Lake Constance and Lake Geneva), broken down into six common species and all other species. The total population of waterbirds has dropped slightly in the past 25 years, due primarily to the decline in Tufted Ducks.

Dabbling ducks abound on Lake Constance

In November 2016, the total population of waterbirds in Switzerland (including the French and German

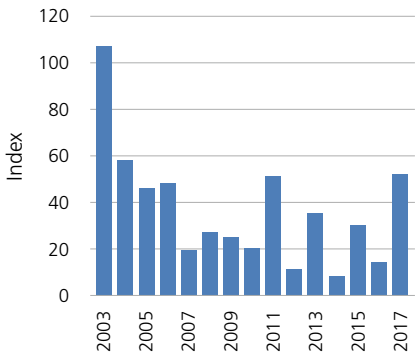
Minor impact of bird flu

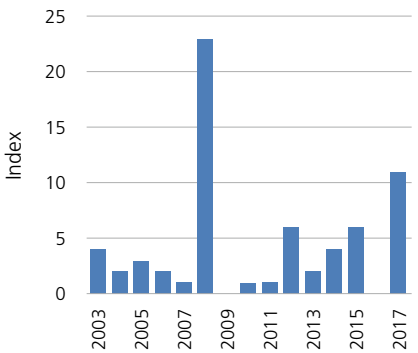
Between 4 November 2016 and January 2017, 124 cases of avian influenza H5N8 were registered in Switzerland, mainly on Lakes Constance, Neuchâtel and Geneva. The virus chiefly affected Tufted Ducks, and was detected in 18 different species in Switzerland. In contrast to some other European countries, no cases were detected in domestic poultry. This year's occurrence of bird flu thus had a considerably smaller impact than in 2005/06.

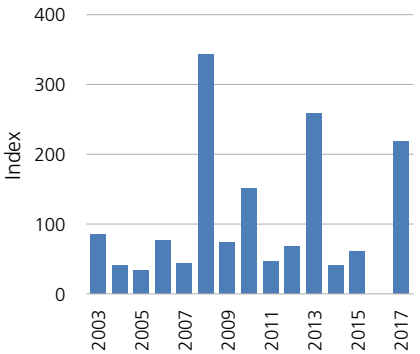
Smew

Long-tailed Duck

Velvet Scoter







January population trends of some northern species in the last 15 years. High numbers in winter 2016/17 stand out.

parts of Lake Geneva and Lake Constance) was relatively low at 458 000 individual birds. In January 2017, the population reached 531 000, which is slightly above the average for the preceding ten years. The abundance of dabbling ducks on Lake Constance this winter was particularly striking, leading to a series of new national records: the populations of Gadwall (16 800 in total, 11 900 on Lake Constance), Eurasian Teal (12 300 in total, 9200 on Lake Constance), Eurasian Wigeon (4200 in total, 2900 on Lake Constance), Northern Shoveler (1730 in total, 1330 on Lake Constance) and Northern Pintail (1620 in total, 1500 on Lake Constance) were approximately twice as high as in average years. The Tufted Duck, in contrast, continued its downward trend, reaching a new low of 76 000 in November 2016.

Influx of winter visitors from the north

Some northern species are only rarely seen on Swiss lakes, as they normally winter on the North Sea and Baltic coasts. The total population of these species in Switzerland fluctuates heavily. Only when conditions in the north are unusually harsh does part of the population migrate to more southern regions. This happened in January 2017. At the start of the new year, a low from northeastern Europe brought cold continental air to Germany. As a result, ornithologists were pleased to find relatively high numbers of several northern species during the January count, especially on Lake Constance. For example, they counted 52 Smews (the average of the past 15 years is 37). The Long-tailed Duck population was also remarkably high (11 individuals, 15-year average = 4), as was that of Greater Scaup (174 individuals, 15-year average = 75). 219 Velvet Scoters were counted, compared to just one the year before. (The numbers give the total January count for Switzerland, including the German and French parts of Lake Constance and Lake Geneva.)

In contrast, the populations of other typical winter visitors from the north were low again this year, Common Goldeneye, Tufted Duck and Mew Gull in particular. For years, a profound shift in wintering habits has been observed in these species. A single cold winter seems to barely affect this long-term development.

Further information:
www.vogelwarte.ch/state/winter

New: census results recorded via ornitho.ch

Last winter, the results of the waterbird census could be recorded via ornitho.ch for the first time using a specially developed module. Many counters made use of this possibility. An important advantage of this approach is that observations are available to site coordinators immediately via their own account on ornitho.ch; also, the counts are transferred automatically. We would like to take this opportunity to thank all collaborators for their support. Many have been counting for years, unperturbed by numb fingers and toes!

Members of the «Ornithologische Arbeitsgemeinschaft Bodensee OAB» counting waterbirds in the early days of the census.

Results from 50 years of waterbird census

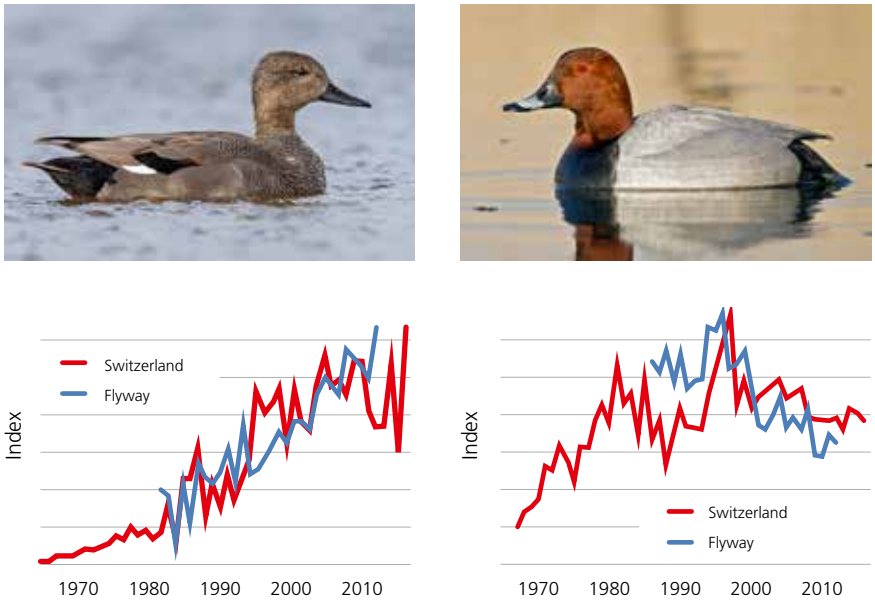
The International Waterbird Census is the longest-running large-scale wild animal monitoring programme in the world. The census entered its 50th year in January 2016. In the course of half a century, the world has changed dramatically for waterbirds.

Were those really the good old days?

50 years ago, the waterbird population in Switzerland was much smaller than today. Conditions were more difficult for waterbirds then. Harsh winters like the one in 1962/63 caused massive population declines. In many places, waterbirds were hunted, too. It took the creation of the first sanctuaries for the birds to find some respite. Water pollution due to nutrient input culminated in the 1970s. This led to the eradication of stoneworts (a submerged plant) in many Swiss lakes and thus the loss of an important food source for many species. Finally, the zebra mussel Dreissena began populating Swiss lakes in the 1960s. Today, it constitutes an important food source for diving ducks in particular.

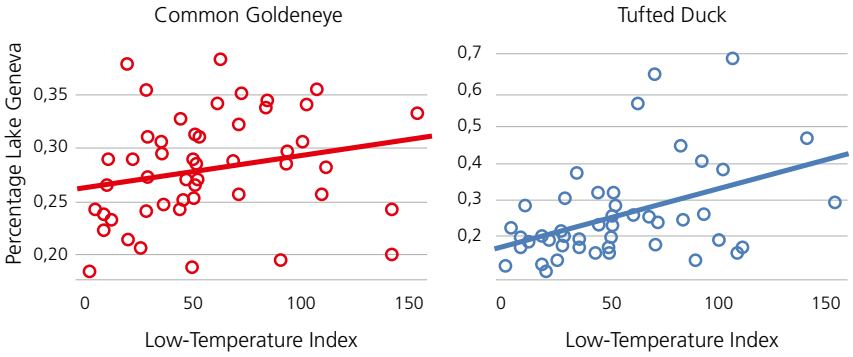
Recent trends

In the last few years, the January population of waterbirds in Switzerland (including the German and French parts of Lake Constance and Lake Geneva) has been around 500 000 with a slight downward trend. The January populations of the three most common winter visitors – Tufted Duck, Eurasian Coot and Common



Indexed trend of the wintering population, in Switzerland and internationally, for Gadwall (left) and Common Pochard (right).

Pochard – have decreased substantially in the last twenty years. These declines are consistent with the downward trend of populations internationally. The losses are attributed in part to the destruction of suitable breeding habitats and increased nutrient inputs in northern and eastern European breeding grounds. Also, fewer Tufted Ducks migrate all the way to central Europe, wintering closer to their northern breeding sites instead. For other species like the Gadwall, however, winter populations in Switzerland are on the rise. The European breeding population of this species is increasing, too. In brief, the increase or decline of populations in Switzerland is often related to large-scale changes in the environment.



In cold winters especially, Lake Geneva is an important site for waterbirds. The graphs show the percentage of the wintering population found on Lake Geneva.

Red-crested Pochard – recovery thanks to environmental protection

But there are also cases in which local improvements can impact the population of a species in a much larger area. The increase of the Red-crested Pochard is a case in point. Towards the end of the 1980s, the population of Red-crested Pochards in western Europe was estimated at 20 000 individuals. The population breeds mainly on the Iberian Peninsula, where it faced hunting and drought. In central Europe, the Red-crested Pochard was often seen in late summer when it came here to moult, but it did not winter on our lakes. This changed in the early nineties, when stoneworts returned thanks to improved water quality. Red-crested Pochards arrived in Switzerland in rapidly growing numbers and stayed for longer and longer periods, benefiting from the food supply and the protection they enjoy in Switzerland. This led to a recovery of populations across western Europe. Numbers are now at 50 000–60 000, with more than half of these birds wintering in Switzerland. The breeding population has increased along with the wintering population, but it remains small.

Water levels affect population numbers

Waterbirds live in a dynamic environment. They need to respond flexibly to changes in availability and abundance of food. One of the decisive factors influencing the availability of food in particular is the water level. On Lake Constance, low water levels have a distinct positive effect on dabbling duck populations, as foraging is easier in shallow water. Surprisingly, the opposite effect was found on Lake Neuchâtel. In years with higher water levels, Tufted Ducks, Common Pochards and Eurasian Coots occurred in higher numbers. This is probably also related to food availability, but the exact relationship is not clear.

Lake Geneva – a haven in cold weather

Traditionally, Lake Constance and Lake Neuchâtel accommodate the largest number of waterbirds. Lake Geneva seems to be an attractive alternative when the shallow-water areas of other large lakes start to freeze. Thanks to its depth and its location in the southwest of the country, Lake Geneva's shores generally remain ice free. The colder the winter, the larger the percentage of winter migrants on Lake Geneva. This has been observed in the case of Common Pochard and Tufted Duck, to name two examples.

Red-crested Pochards benefit from the growth of stoneworts, which have been spreading again in Swiss lakes thanks to improved water quality.

References

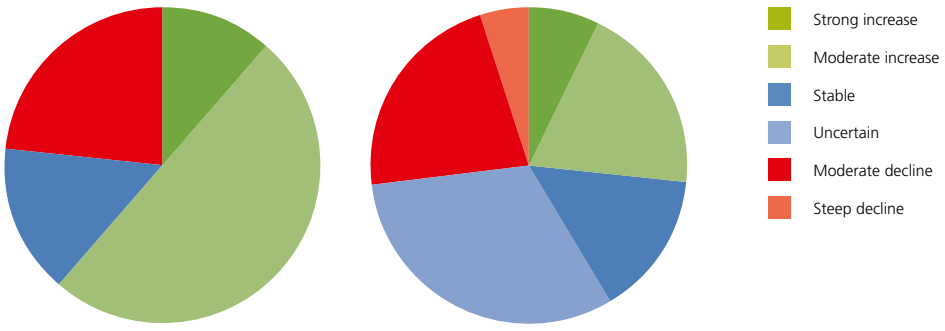
Fox, A. D., A. Caizergues, M. V. Banik, K. Devos, M. Dvorak, M. Ellermaa, B. Folliot, A. J. Green, C. Grüneberg, M. Guillemain, A. Haland, M. Hornman, V. Keller, A. I. Koshelev, V. A. Kostyushin, A. Kozulin, L. Lawicki, L. Luigujoe, C. Müller, P. Musil, Z. Musilová, L. Nilsson, A. Mischenko, H. Pöysä, M. Sciban, J. Sjenicic, A. Stipniece, S. Svazas & J. Wahl (2016): Recent changes in the abundance of Common Pochard *Aythya ferina* breeding in Europe. Wildfowl 66: 22–40.

Wintering waterbirds

January 2017 population in Switzerland (including the German and French parts of Lake Constance and Lake Geneva), and long- and short-term trends (percentage change). No trend means that no statistically significant change was detected during the survey period; this is the case when populations are stable, but also when they fluctuate widely.

Species	Individuals Jan 2017	% Trend 1967–2017	% Trend 2008–2017
Mute Swan	7103	60	10
Tundra Swan	31		308
Whooper Swan	1318	>1000	29
Bean Goose	3	–66	–96
Gr. White-fronted Goose	27		
Greylag Goose	2055		141
Canada Goose	2		
Barnacle Goose	7		
Egyptian Goose	72		
Ruddy Shelduck	1233		363
Common Shelduck	27		–45
Mandarin Duck	106		–41
Eurasian Wigeon	4198	>1000	–47
Gadwall	16786	>1000	–13
Eurasian Teal	12298	34	–1
Mallard	49540	–15	–15
Northern Pintail	1622	705	–8
Garganey	1		
Northern Shoveler	1735	870	44
Red-crested Pochard	31333		33
Common Pochard	77444	104	22
Ferruginous Duck	65	461	50
Tufted Duck	113250	66	–23
Greater Scaup	174	–19	28
Common Eider	39	–58	–11
Long-tailed Duck	11		
Black Scoter	3		
Velvet Scoter	219	61	–83
Common Goldeneye	4728	–26	–51
Smew	52	–53	–48

Species	Individuals Jan 2017	% Trend 1967–2017	% Trend 2008–2017
Red-breasted Merganser	63	574	–41
Common Merganser	5702	259	–2
Red-throated Loon	13		–35
Black-throated Loon	74	>1000	–55
Great Northern Loon	1		
Little Grebe	4211	–48	12
Great Crested Grebe	32111	69	–17
Red-necked Grebe	41	–22	8
Horned Grebe	20		–31
Black-necked Grebe	4351		5
Great Cormorant	5463	>1000	6
Eurasian Bittern	9		–71
Great Egret	446		236
Grey Heron	1886	119	38
Common Moorhen	965		13
Eurasian Coot	95201	–22	–9
Common Snipe	256		64
Eurasian Curlew	875		24
Common Sandpiper	36		27
Mediterranean Gull	0		
Com. Black-headed Gull	44568		
Mew Gull	2067		
Lesser Black-backed Gull	11		
Herring Gull	12		
Yellow-legged Gull	3558		
Caspian Gull	132		
Little Gull	0		
Common Kingfisher	272		92
Grey Wagtail	783		30
White-throated Dipper	1071		–8



Trend 1967–2017 Trend 2008–2017

Most species exhibit a long-term increase. There is no clear pattern in the short term. The Ruddy Shelduck has increased most significantly over the last ten years, followed by Tundra Swan and Great Egret.

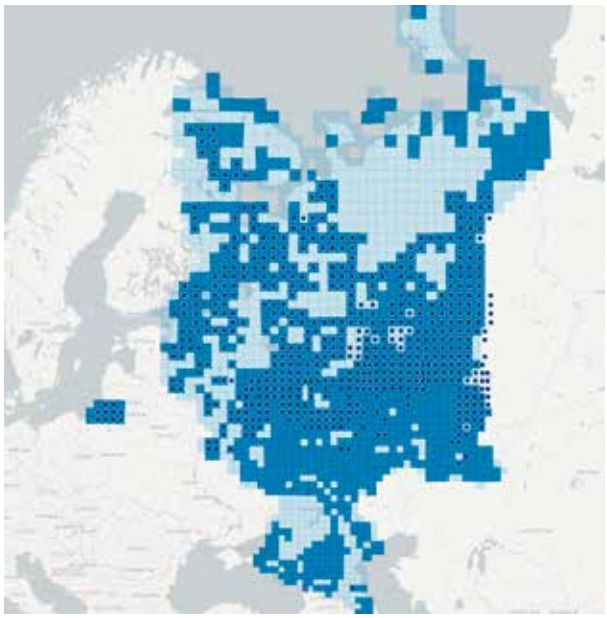
Further information:
www.vogelwarte.ch/state/winter

Due to the cold spell in January 2017, more Greater Scaup were observed than in previous years.

The vast landscapes of northern Russia are not easily accessible.

EBBA2 – the first maps are here

In Switzerland and some other western European countries, fieldwork for the new national atlas projects has been completed. The collected data are now being processed for the European atlas EBBA2 as well. In most countries, however, field surveys continued into 2017. In the sparsely populated and often inaccessible regions of eastern Europe, fieldwork was particularly challenging. Thanks to financial assistance from the MAVA foundation, we were able to support expeditions into areas that can only be reached by helicopter or motorboat. The results from eastern Europe are all the more valuable given that only few data were available at the time of the first European atlas.



The provisional map for the Russian atlas shows how widespread the Hazel Grouse is up to the northernmost reaches of Europe (dots). The dark blue squares are those already surveyed at the end of 2016.

Initial information on changes

Pilot maps comparing distribution in regions that were surveyed for both atlas projects provide some interesting pointers. In northern Europe, for example, the Common Blackbird appears to have extended its range further north. The Northern Wheatear, on the other hand, seems to be less prevalent in western Europe than it was in the 1980s.

Modelling gains importance

With regard to methodology, EBBA2 goes a step further than the first atlas. In addition to documenting occurrences in the 50 × 50 km atlas squares, modelled maps with a resolution of 10 × 10 km are produced. Essentially, the design is similar to the Swiss atlas, albeit with a lower resolution and simpler fieldwork methodology.

Territory mapping that requires multiple visits to estimate the number of territories per square kilometre would exceed most countries' capacities. Instead, a minimum of one survey visit per 50 × 50 km square is conducted to compile the list of occurring breeding bird species. The data are heterogeneous, as the monitoring projects in different countries may use different survey methods. The duration of the surveys is known across the board, however, and is used as a measure of search effort. Along with environmental parameters, the lists can be used to model the probability of a species occurring in a given 10 × 10 km square. The probability of observing a species in the field during a 1-to-2-hour survey visit also depends on the density of occurrence. The modelled maps thus provide an indication for the relative density of the species throughout Europe.

The first modelled map for the Eurasian Skylark shows that the species is much rarer in southern and northern Europe and in the mountainous regions of the Alps and Carpathians than in low-lying areas of central Europe.

An exacting task

Preparations for the modelling began in 2016 at the Institut Català d'Ornitologia in Barcelona and the Swiss Ornithological Institute, with the support of an international group of experts. The first task was to define relevant environmental parameters and adapt them for Europe. A total of 40 variables describing things like land use, climate and vegetation are used. The first modelled maps are very promising. In 2017, standardised surveys were intensified in eastern Europe especially. We have to wait for the final data before we know how many species can be depicted using modelled maps.

References

Herrando, S., M. Franch, P. Vorisek, M. Kipson, P. Milanesi & V. Keller (2017): EBBA2: Latest pilot maps, modelling work and planning ahead. Bird Census News 30: 12–18.

Herrando, S., V. Keller, P. Vorisek M. Kipson, M. Franch, M. Anton, M. Pla, D. Villero, H. Sierdsema, C. Kampichler, T. Telenský, S. Gillings, A. Johnston, T. Gottschalk, J. Guélat, T. Sattler, L. Brotons, N. Titeux, F. Jiguet, M. Kéry & P. Milanesi (2017): High resolution maps for the second European Breeding Bird Atlas: A first provision of standardised data and pilot modelled maps. Vogelwelt 137: 33–41.

Milanesi, P., S. Herrando, M. Pla, D. Villero & V. Keller (2017): Towards continental bird distribution models: environmental variables for the second European breeding bird atlas and identification of priorities for further surveys. Vogelwelt 137: 53–60.

We often only have indirect evidence of the Hazel Grouse, such as feathers found at dust bathing sites.

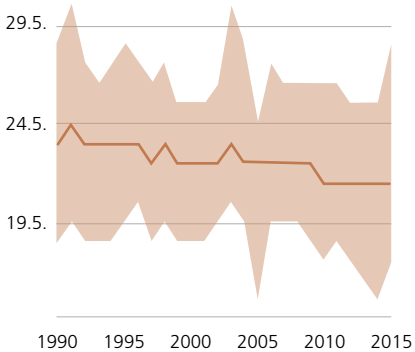
Is activity peaking earlier in the year?

The trilling song of the Eurasian Nuthatch is hard to miss. The species reaches its highest detectability as early as March.

For many years, the Ornithological Institute's volunteers have been reporting thousands of bird sightings a year. Thanks to these reports, we know the distribution and population trends of many species fairly well. But this treasure trove of data can be mined for other insights, too. For example, we can investigate how the singing activity of breeding birds changes throughout the season and whether these patterns have shifted over the years: Do birds start singing earlier than they did ten or twenty years ago?

Increased detectability shortly before breeding

This is the idea behind the phenology indicator: The singing activity of birds changes throughout the season. For many species, it is highest shortly before breeding. The singing activity also influences the chance of a species' presence being detected by an observer. So a species' so-called detectability changes in the course of the season, especially for birds that are mostly detected acoustically. The higher a species' detectability, the higher the number of observation lists that include this species. Based on the results for individual species, we then investigated whether the period of peak detectability across species had shifted in the past years.



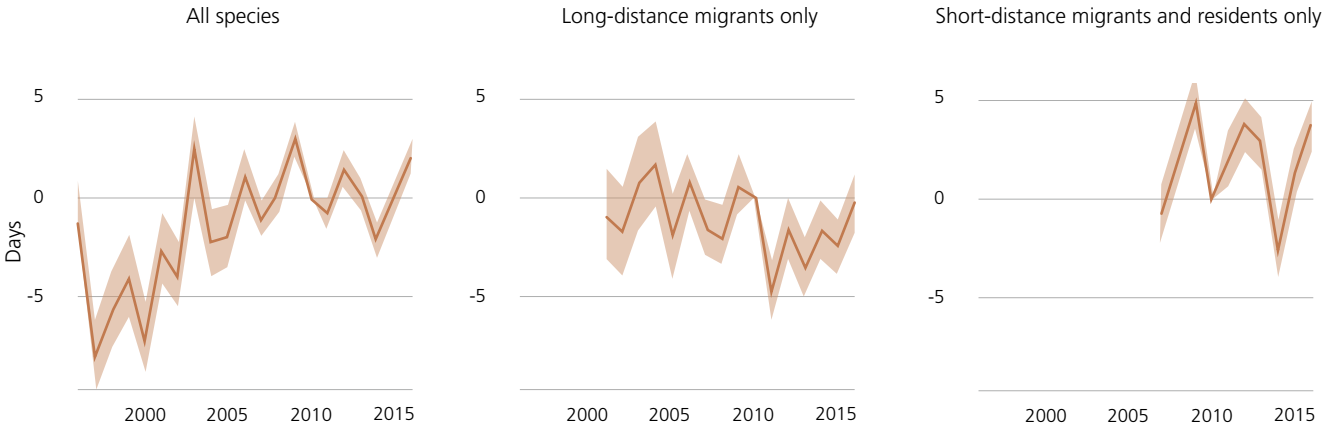
The Great Reed Warbler's period of peak detectability is about two days earlier than it was in 1990.

Species selection

For a species to be included in the phenology indicator, it must meet two requirements: First, we need a sufficient number of reports made during the breeding season over several years. Second, seasonal detectability must show a clear pattern. There will normally be a marked peak at the beginning of the breeding season, when singing activity is most intense. Based on these two conditions, we were able to include 34 species. The period of record differs from species to species. For some, we had sufficient records going back to the late nineties, but for most species, an adequate number of records had only been compiled in the last ten years.

Differences among species

There were considerable differences among species. The Grey-headed Woodpecker's peak phase of detectability has advanced ten days in the past twenty years, while the Middle Spotted Woodpecker peaks about five days later. The Great Reed Warbler displays almost no change. For some residents and short-distance migrants, we found a correlation between annual temperature fluctuations in spring and the period of peak detectability. In particular, the period of peak detectability appears to correlate with the temperatures of the preceding month. The detectability of the Middle Spotted Woodpecker, for instance, tends to be highest in March; early and late years correlate best with fluctuations in February temperatures. This means that residents and short-distance migrants adapt the start of their breeding



Values of the phenology indicator. The y-axis shows the difference in the date of peak detectability compared to the base year (=2010). Example: For long-distance migrants, the period of peak detectability was about two days later in 2004 than in 2016.

activity to the prevailing weather conditions.

Is there a general trend?

We summed up the changes exhibited by individual species to arrive at an overall trend. Across all species, the period of peak detectability has changed very little in the last 15 years.

These results are consistent with phenological data of different plant species, where no trend was found towards earlier leaf unfolding. Compared with the late nineties, birds actually appear to sing somewhat later today. There is some uncertainty attached to this finding, however, as the data we have from the 1990s are comparatively sparse.

To more easily track future changes, we plan to update the phenology indicator annually. Thanks to the busy recording activity on ornitho.ch, we hope to be able to underpin the indicator with an even broader species set in the near future.

The bird phenology indicator

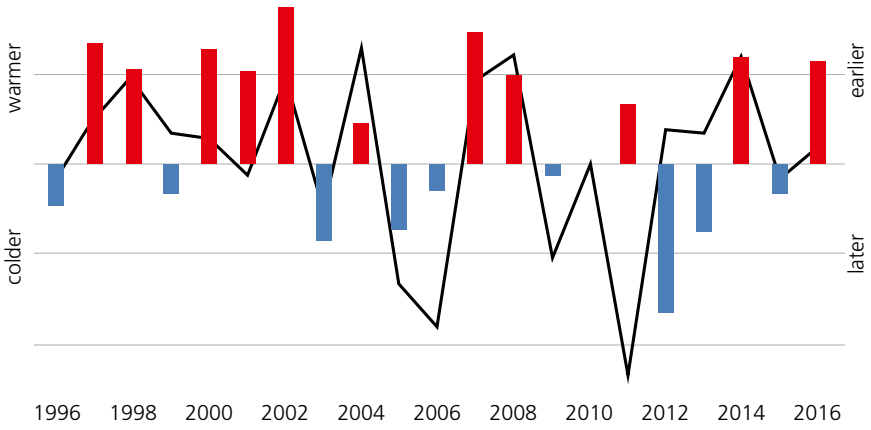
The Ornithological Institute developed the bird phenology indicator on behalf of the climate division of the Federal Office for the Environment. The indicator reveals whether the period of peak singing activity has shifted in the past few years. It complements the existing set of climate indicators summarised in the federal report «Climate change in Switzerland» and updated on a regular basis.

References

Perroud, M. & S. Bader. (2013): Klimaänderung in der Schweiz. Indikatoren zu Ursachen, Auswirkungen, Massnahmen. Umwelt-Zustand Nr. 1308. Bundesamt für Umwelt, Bern, und Bundesamt für Meteorologie und Klimatologie, Zürich.

Strebel, N., M. Kéry, M. Schaub, & H. Schmid (2014): Studying phenology by flexible modelling of seasonal detectability peaks. Methods in Ecol. Evol. 5, 483–490.

Strebel, N., H. Schmid & T. Sattler (2016): Phänologie-Indikator Vögel. Schweizerische Vogelwarte, Sempach.



Comparing fluctuations in peak detectability of the Middle Spotted Woodpecker (black line) with fluctuations in February temperatures (red and blue). The values have been scaled, which is why the axes are left unlabelled.

Decades of commitment

Many ornithological projects only exist thanks to the tremendous personal commitment of individuals who contribute decades of work in service of a particular species or conservation issue.

Gabriel «Gaby» Banderet is one of these people; his monitoring of Peregrine Falcons and Golden Eagles in a 6000 km² large area in western Switzerland has greatly expanded our knowledge of these species. Since 1960 (believe it or not!) he and his colleagues have monitored Peregrine Falcon nesting sites, 90 of them to date, and recorded breeding success. He has witnessed some dramatic developments: at the peak of the DDT crisis in the early seventies, the Peregrine Falcon vanished from his survey area completely. The area was subsequently repopulated, and Gaby Banderet has counted 33–50 broods every year for the past decades. In the course of his life, he has ringed more than 1000 young Peregrine Falcons. He and his colleagues also monitor more than 25 Golden Eagle territories.

Although Gaëtan Delaloye and his team are comparatively young, their reporting platform ornitho.ch has long outgrown its infancy. In early 2017, the popular platform celebrated its tenth anniversary. Initial developments date back to 2003, when a first portal was developed for Geneva and expanded shortly afterwards to encompass all of French-speaking Switzerland. Ornitho.ch has changed the world of field ornithology. More than 1.7 million records were logged in 2016 alone; in total, there have been more than 10 million entries made by 15 000 registered users. The reporting platform has also become a big success abroad. Biolovision now manages about 40 internet portals across Europe, which together collect more than 100 million records.

The technology has made recording easier – but field observation still requires the same qualities as it did when Gaby Banderet first started: taking pleasure in the outdoors, patience, persistence and attention to detail. Our admiration and our thanks go to each one of the Ornithological Institute's volunteers for their effort and commitment – without their tireless fieldwork, the monitoring of birds in Switzerland would not be possible!

For almost 60 years, Gaby Banderet has dedicated time and expertise to monitoring the population trends of Peregrine Falcon and Golden Eagle in his survey area.

Gaëtan Delaloye, Noémie Delaloye, Cyril Schönbächler, Jennifer Meinen, Kaelig Morvan and Jean-Philippe Clivaz of the company Biolovision S.à.r.l., Ardon (VS) are not always glued to the computer.

In 2016, the Short-toed Snake Eagle bred in Switzerland for the third and fourth time. In the Ticino, breeding succeeded for the first time, and further territories were detected, while a breeding attempt in the Valais was not successful.

Imprint

Authors
Thomas Sattler, Peter Knaus, Hans Schmid, Bernard Volet

Contributors
Sylvain Antoniazza, Marcel Burkhardt, Jérôme Guélat, Lukas Jenni, Isabelle Kaiser, Verena Keller, Marc Kéry, Matthias Kestenholz, Tabea Kölliker, Claudia Müller, Bertrand Posse, Christian Rogenmoser, Chiara Scandolara, Martin Spiess, Nicolas Strebel, Samuel Wechsler

Translation
Stephanie Morris

Images
R. Aeschlimann (Ortolan Bunting, Moustached Warbler, Northern Pintail, Little Owl, Zitting Cisticola), archive of the «Ornithologische Arbeitsgemeinschaft Bodensee» (waterbird counters), M. Burkhardt (Long-tailed Duck, Eurasian Nuthatch, Red-crested Pochard, Eurasian Teal, Middle Spotted Woodpecker, Purple Heron, European Robin, Gadwall, Little Egret, Common Pochard, Eurasian Wren), T. Chatagny (Purple Heron), G. Delaloye (Team Biolovision), P. Donini (Short-toed Snake Eagle), A. Juvonen (Eurasian Eagle-Owl), V. Keller (Hazel Grouse feather, Hazel Grouse search, landscape in Russia), R. Kistowski (Lesser Whitethroat, 2 × Peregrine Falcon, Smew), R. Martin (Greater Scaup), B. Mate (Great Egret), Y. Menetrey (Common Blackbird), V. Michel (Peregrine Falcon), T. Muukkonen (Red Crossbill), B. Rüegger (Tufted Duck), T. Sattler (observer), M. Schäf (Brambling, Great Reed Warbler, Eurasian Skylark, Eurasian Curlew, Great Egret), B. Schmid (Hans Schmid), H. Schmid (Gaby Banderet), M. Varesvuo (Common Snipe, Whinchat, Willow Warbler, Ortolan Bunting, Velvet Scoter, European Turtle Dove, White Stork, Common Chiffchaff). Copyright background maps: Institute of Cartography and Geoinformation ETH Zurich. All other images: archive Swiss Ornithological Institute.

ISSN
2297-5691 (electronic resource: 2297-5705)

Recommended citation
Sattler, T., P. Knaus, H. Schmid & B. Volet (2017): The State of Birds in Switzerland. Report 2017. Swiss Ornithological Institute, Sempach.

PDF-Download
www.vogelwarte.ch/state

© 2017, Swiss Ornithological Institute

printed in switzerland

Schweizerische Vogelwarte
Station ornithologique suisse
Stazione ornitologica svizzera
Staziun ornitologica svizra

CH-6204 Sempach