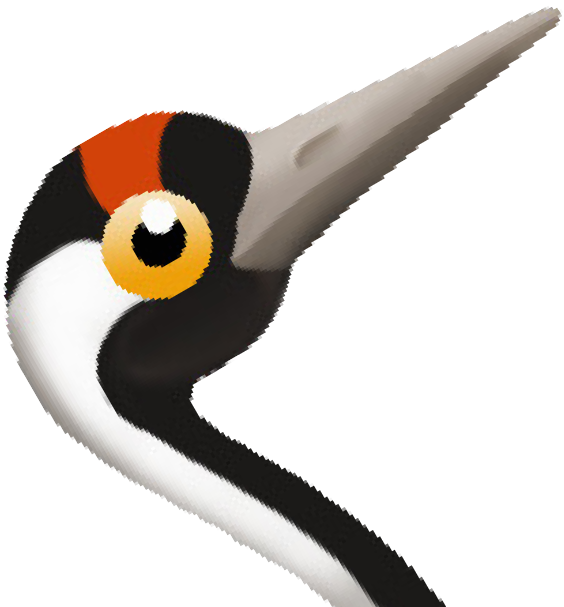
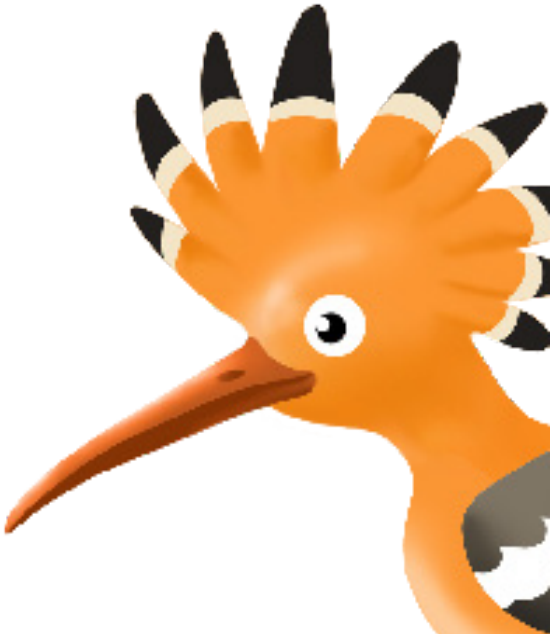
BLOCK 6

SPRING MIGRATION





BLOCK 6.
SPRING MIGRATION

The prolonged day and higher ambient temperatures are a signal of coming big changes in nature. We all can observe the first appearing in our environment signs of spring. Already in February we can see leaning out from the snow the first flowers, such as snowdrops and winter aconites. The hazel is also beginning to bloom. In March beginning to appear the early spring plants, there are flowers of primrose, kingcup, lesser celandine, coltsfoot, hepatica and trees: willow, birch tree, poplar, alder, aspen and shrubs: forsythia, dogwood and privet. In the first stage of development, plants benefit from the resources stored in the previous year in rhizomes, bulbs and roots. Then their growth processes will be faster, the more they will be favored by ambient conditions, i.e. the right temperature, access to sunlight, water and soil suitable for the species.

Of course, not only plants come to life. Animals wake up from the winter sleep: bears, badgers, raccoon dogs, hedgehogs, bats and amphibians, including common frogs and insects, which wintered buried in the ground or under the bark of trees. Such an early awakening can become a trap in the event of a significant deterioration of the weather. Many animals can die then. Deteriorating weather conditions are also not favorable for plants. For birds, the coming spring is an important signal to start preparing to an extremely vital life function, i.e. reproduction and upbringing of offspring. Of course, migratory birds that spent the winter in other geographical regions must reach the place where they will build nests and raise their offspring. Therefore, they are undertaking a return journey from wintering grounds, which in the meantime may become less friendly, due to the high competition between numerous wintering individuals. The date of migration is regulated by an internal biological clock, controlled by the neurohormonal system. It causes physiological changes in the body of birds and arouses spring migration anxiety. Return from wintering grounds takes place according to determined by the tradition return's calendar. As the first, starting from mid-February, begin to appear small birds, associated with meadows and arable fields- skylarks. Their loud trilling issued when they rise into the sky are very characteristic and it's hard not to hear it for visitors of suburban and rural neighborhoods. At the turn of February and March, the cranes flying in the characteristic Vshaped formation, migrate with a laud voice called the clang. It is so characteristic that it makes it easy to distinguish between cranes from similar in flight storks. In turn, storks appear in the second half of March and although they are traveling in groups, they never create V-shaped formation. They do not fly actively during the migration (they are not flapping their wings constantly like geese) but soaring using ascending air currents. They perfectly recognize such „lifts" that elevate them very high (the official record is 1550 meters high), and then they slide down to the base of the next lift and repeat the whole maneuver. These birds usually return to the same nest where many villagers are looking forward to their return, treating storks as permanent, bringing luck co-inhabitants. In the second half of April and at the beginning of May appear insectivorous birds, although insects which are their food will only come to life when it is hotter. Thus, in mid-April, barn swallow and house martins will come. At the latest, because sometimes at the turn of April and May comes an inhabitant of urban areas- swift. Most birds come back to us generally in

March and April. At the same time, the quantity of winter guests, which often came to
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our feeders, is also waning. Usually waxwings, bullfinches and redpolls leave us in March. . Young bird watchers should be encouraged to participate in an international campaign Spring Alive, in which children from three continents- Europe, Central Asia and Africa are taking part. As part of this action, children with their teachers and families follow yearly returns of swallow, white stork, cuckoo, swift and bee-eater. Participants register on the website www.springalive.net their first observations of these bird wanderers in a given year, creating an up-to-date map of the wandering, and thus a map of the progress of spring. Depending on the species and field conditions, the birds migrate during the day or at night. During the day wander birds familiar with open space, so they are capable of avoiding attacks of predators in the air, also forest species (such as tits or long-tailed tits), which fly at low altitude and can quickly hide in afforestation in case of danger. Birds which wander at night, avoid threats from the daytime birds of prey. Also when they fly in colder and more humid air, they reduce the loss of water, what is of special importance for overcoming places as unfriendly as deserts, where a hot day is definitely better to wait in the hideout.

The strategy of migration can take many forms. One of them is the so-called migration in a broad front, which is often used by small passerine birds (e.g. lark, finch, warblers). It consists of the fact that birds belonging to different populations migrate throughout the breadth of their breeding grounds and the various terrain forms. Migration does not passes through specific routes but through so-called flyways, which are used to determine current orientation. These can be the regular topographic forms of terrain, such as coastlines, watercourses or mountain ranges and water reservoirs or characteristic buildings. Another common and used by birds method is narrow migration corridors. It is mainly used by birds dependent on aerial updrafts (e.g. white storks). Birds migrate through narrow migration corridors in which updrafts form. Yet another form of migration is so-called the loop migration, which undertakes cuckoo, which chooses different routes in the case of spring and autumn migration. The mechanism of such a migration has not been fully explained yet. It is also worth to mention about the so-called return migration. It takes place when birds returning to the breeding grounds, encounter unfavorable weather conditions along the way. Then, they are forced to return to wintering grounds in order to wait the bad weather conditions and along with the warm front, return to the breeding grounds. This phenomenon often occurs in Central Europe. If such a situation takes place during the migration, a chance to withdraw to more conducive places is greater. If, however, the weather breaks down already after reaching the breeding ground, the risk of death from starvation or hypothermia is much more greater and therefore it is important to feed birds until the moment when the weather conditions will stabilize. The flight of birds may take an active form (it is a flight depend on continuous work of wings, requiring the current energy supply) or passive form, i.e. gliding, or short-time sliding flight. Gliding flight is used by many large birds, for which lifting and movement is a serious challenge because of their weight and can significantly reduce energy reserves. Hence, they use the occurring in the atmosphere the so-called updrafts, which are the effect of temperature differences between air masses at different altitudes, or large

differences in wind speed at small changes of altitude. Then are forming the so-called „thermal columns". Such a strategy is used, among others, by big birds with extended wing surface (e.g. birds of prey- eagles, vultures, or well-known to all of us storks). The rising air currents can be used under the condition of sufficiently warm and sunny weather. That's why storks start their journey in time, when the temperature is relatively high. They can not travel over the waters, because the rising air currents are not creating over the waters. An additional convenience in the case of gliding birds, is mentioned above a large wing surface, which creates additional resistance to the air masses, slowing down the bird's falling. The sliding flight is most often used during landing when the energy expenditure is not necessary to keep the bird's body at a certain altitude and all effort focuses on achieving a specific aim. Often it also requires an appropriate, holding wing setting and tail feather control. The variety of the way birds fly translates into a specialization in the construction of their wings. Birds, which are flying slowly, but are able to move agile among the thicket branches (e.g. magpie) have short and wide wings and a long tail. Heavy-flying pheasants have very wide wings equipped with muscles having almost equal power when lifting and when falling. Thanks to this, pheasants frightened by a four-legged predator can rising into the air almost vertically. Very narrow, curved backward wings of swifts, some falcons and waders resist little the air and are adapted to high speed of flight. This ability is a cost of the small efficiency of gliding and difficulty in taking off from a flat surface. Forming by migrating birds V-formation saves energy. The bird flying first performs the hardest work. Waving its wings, it generates current of air that facilities the flight of birds, which fly directly behind it. One can say that it paves the way for his companions. The effect is the greatest directly behind the wing tips. Birds, to ensure their visibility, stick to the line marked by the outer wing of the predecessor. The further away from the front of the V-shaped formation, the smaller is the air resistance and the work put into the flight decreases. There, the young and inexperienced or sick birds are always flying. At the end of the V-shaped formation also rest guides, which are changing from time to time. The Vshaped formation are formed by long-distance runners, eg cranes, geese, swans or cormorants. It's easier for birds that migrate in a group like geese or cranes, because they have the chance to learn the routes from older and more experienced relatives, who have already flown a migration route many times and are able to recognize permanent details of the area.

The return of birds from wintering grounds is not only a big physical effort. Birds are exposed to various breakdown and changes of the weather or encounter obstacles in the form of technical infrastructure (power lines, large windmills, etc.). They must also avoid predators and gain food. The greatest danger they may encounter on the part of numerous people hunting for them- in order to obtain meat (native Africans) or for sport (especially intensively in Malta, Cyprus, the Middle East, and Arabia). Migratory birds are an object of hunting in many parts of the world. Hunters and poachers catch or kill birds that gather in refuges, including endangered species and subjected to strict protection. Only in the countries surrounding the Mediterranean, during their migration, there are killed annually up to 250 million birds. Migration through the Balkans, the Middle East, and Sicily, Malta and Spain are a real death trail for birds. In the

case of species endangered by extinction, the losses during migration can make the populations unable to reproduce, despite the protective actions taken in the breeding grounds. To promote protection of

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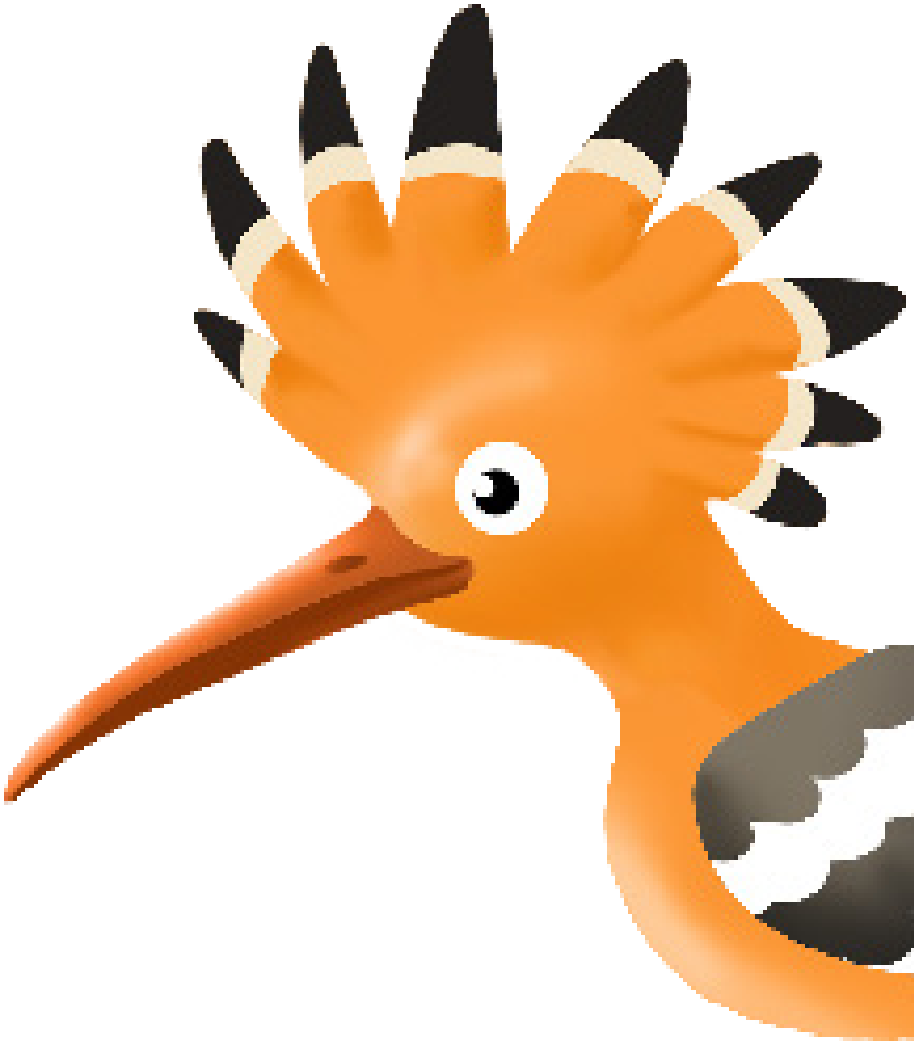
migratory birds around the world, especially those endangered with extinction every year in the second decade of May takes place the World Migrant Bird Day. The ability to fly is a huge convenience. In connection with endothermy it gives the birds the chance to reach almost all corners of our globe. When take into account speed of movement, distance covered and differences in height birds do not have equals among other flying animals- insects and mammals. Among birds we have speed recorders, such as swift (130 km / h), swallow (90 km / h) and peregrine falcon, which reaches 360 km / h in a diving flight. For comparison, the fastest terrestrial mammal, which is a cheetah, can chase the victim for short distances at a speed 120 km / h, 120 km / h antelope, 80 km / h, lion and horse- 70 km / hour. Spring observations of winged wanderers can be used to prepare a calendar of bird arrivals in the nearest surroundings. It is worth looking for them in various places because then the chance to collect additional interesting information about their traveling habits are much larger. Places where we will definitely see in the spring wandering birds are, for example, coastal beaches and meadows, riverside thickets, open areas with spring backwaters, suburban shelters and bushes, and balks. These are usually places where birds can find food or shelter and rest during the trip. When observing birds in flight, we must pay attention to distinctive features, specific to the species, especially if we observe birds from a greater distance and not all details are clearly visible, and the size of the body is difficult to assess. Such features include: the shape of the bird's silhouette in flight, the length of the neck, the length and shape of the beak, the length and shape of the tail (straight, rounded, forked) and the size and shape of the wings (wide, narrow, rounded, sharpened). We need to remember that when we evaluate the size of the bird we need to keep the right proportions, preferably referring them to other parts of the body, for example the beak twice the length of the head or the length of the tail corresponds to the length of the torso.



This material was prepared as part of the project „We live in harmony with nature. The educational program for teachers of pre-school and primary education". The project involved selected non-governmental organizations involved in the protection of birds associated as part of the international BirdLife International federation. In addition to the National Society for Bird Protection, which ran the project, the Spanish Ornithological Society (SEO), the Slovak Ornithological Society (SOS), the Macedonian Ecological Society (MES), the Czech Ornithological Society (CSO) and BirdWatch Ireland (BWI) were involved. The University of Gdańsk became the substantive partner of the project responsible for creating materials for teachers.

BirdWatch Ireland is a non-governmental organization with a public benefit status, dealing with the protection of wild birds and the places where they live. The aim of the Society is to preserve the natural heritage for the benefit of present and future generations. BirdWatch Ireland is the Irish partner of the global federation of bird protection societies - BirdLife International.

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