

Peculiarities of animals migration

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Migration is a complex behavioral adaptation for survival of living organisms. This adaptation pattern is most characteristic to vertebrate animal although include invertebrate animals. It encompasses organisms inhabiting in inland area (terrestrial biomes) and water bodies. They move by flying, swimming, walking, or drifting. Migration is one of nature's most amazing phenomena. This complex behaviour patterns are sometimes vitally enables animals to exploit many important to force discrete area in space (e.g. growth, reproduction, predator avoidance). Animals may be migrate annual, multi-annual, seasonal, daily, etc.

Scientific literature concerning to biological and natural history, the term „migration” can encircling four different but overlapping concepts: (1) a type of locomotory activity that is notably persistent, undistracted and straightened out; (2) a relocation of the animal that is on a much greater scale, and involves movements of much longer duration, than those arising in normal daily activities; (3) a seasonal to-and-from movement of populations between regions where conditions are alternately favorable or unfavorable (including one region in which breeding occurs); and (4) movements leading to redistribution within a spatially extended population (Taylor 1986, Kennedy 1985).

Migration can take a number of species (their populations) and has been described by biologists in different ways. Migrants are often classified as either obligate or facultative, depending on whether they always migrate or so only in a proximate response to current deterioration of local conditions. In partial migration, a fraction of the population remains either in its breeding or its nonbreeding area while the remainder moves away, while in differential migration there are differences in the migration patterns of older and younger individuals or of the two sexes (Jahn et al. 2009).

Migrating taxa as diverse as birds, mammals, fish, reptiles, insects, crustaceans (Bowlin et al. 2008).

Certain birds, mammals, and insects migrate from North Hemisphere to South Hemisphere; altitudinally in mountainous areas, going from the alpine (i.e. high altitudinal) zones (belts), where they breed, to the foothills or plains during seasons when the climate is severe and unfavourable. Vertical type of migration involve essentially the same type of environmental change as horizontal, or latitudinal, force of space over long distances. Certain marine (or in general) animals, for example, move from deep water to the surface, sometimes from pole to pole of the Earth according to the season (<https://www.britannica.com/science/migration-animal>).

The success of migration depends on an animal's ability to orient and navigate along migratory pathways and requires physiological mechanism for taking the best

migratory route elaborate during via long, sometimes geological times (Bauer et al. 2011). Much work has been done on orientation and navigation in migrating animals, although the subject is still not well understood. Migrants often return to breed in the exact locality where they hatched or born. Some experiments involve removing animals from specific point (usually the nest), transporting them for various distance, and analyzing their speed and degree of success in returning. Animals use familiar landmarks – from topographical (for example, mountain system, river system, and coastlines), ecological (such as vegetation zones), climatic (e.g., air masses differing in temperature and humidity, prevailing winds). According to recent research, migrating species do have the ability to detect the Earth's magnetic field and use it to make their migrations (For example, bats and sea turtles use magnetic information to find their way (Alerstam, T. 2011).

Migration is an extraordinary diverse behavior and pattern of migration vary within and between species and populations, in their temporal characteristics, in terms of scale and geography. The migratory patterns of animals are incredibly varied, and reflect the natural history (from time of immemorial), biology and biogeography on the species' populations that make them. Given the taxonomic variations of migration phenomenon it is perhaps no surprise that the phenomenon is so wonderfully heterogenous. In a permanently changing Earth's life, patterns of migration are not static, but can shift regarding to deterioration of environment in many cases. If we take into consideration the vital phenomenon successfully conserve the vast biological diversity of natural history of which encompasses the myriad migratory species, knowledge of the patterns of migration is crucial.

Reference

- [1] Alerstam, T. 2011. Optimal bird migration revisited. *Journal of Ornithology* 152:5-23.
- [2] Bowlin MS, Wikelski M. 2008. Pointed wings, low wingloading and calm air reduce migratory flight costs in songbirds. *PLoS One* 3:e2154.
- [3] Jahn, A.E., Ouly, S., Chiang, E., et al. 2009. Opportunities through partnerships for conservation and research of austral migrants *Proceedings of the IV International Partners in Flight Conference, Tundra to the Tropics, McAllen, TX, USA*), pp. 557-564.
- [4] Kennedy JS (1985) Migration, behavioural and ecological. In: Rankin MA (ed) *Migration: mechanisms and adaptive significance. Contributions in Marine Science*, 27 (suppl), pp 1-20.
- [5] Taylor LR, Taylor RAJ (1983) Insect migration as a paradigm for survival by movement-In: Swingland IR, Greenwood PJ (eds) *The ecology of animal movement* pp 181-214. Clarendon Press, Oxford, pp 311.
- [5] <https://www.britannica.com/science/migration-animal>

