

## ENR 5.6 BIRD MIGRATION AND AREAS WITH SENSITIVE FAUNA

### 1. GENERAL INFORMATION

More than 540 bird species live in the Republic of Kazakhstan.

In various seasons of the year, 214 kinds (Genus), 60 families (Familie) and 18 detachments (Ordo) are represented in the Republic of Kazakhstan. Only Larks can be found 13 species, Bunting - 19, and 59 species of waders (Plover, Sandpiper and all.). Sparrow-shaped - 243 species (24 families).

### 2. BIRD MIGRATION

The Republic of Kazakhstan, with its vast territory and diverse landscapes, is not only a nesting place for birds but also a region where two of their most important migration routes converge: Central Asian-Indian and West Asian-African. Millions of birds flying along these routes use the territory of the Republic of Kazakhstan for molting and stopping on the fly. Migration is influenced by wetlands, which are particularly rich in the northern part of the country.

The main migration routes of migratory birds through the territory of the Republic of Kazakhstan:

- Routes from African and South European wintering in the Mangistau, Atyrau and West Kazakhstan regions;
- Ways from Pakistani and Indian wintering in the South Kazakhstan, Kyzylorda, Kostanay and North Kazakhstan regions;
- Paths from South Asian wintering in the Almaty, East Kazakhstan and Pavlodar regions.

The entire migration can be divided into three stages - earlier migratory birds, middle and late migratory, as well as earlier migratory, medium and late migratory. This circumstance depends on the ambient temperature. Spring migration of a pre-migratory bird, which includes such bird species as duck, goose and swan, occurs when the average daily air temperature falls in the interval 5-10C. Mass arrival occurs around the twentieth of February in the southern regions of the Republic of Kazakhstan and in the second decade of April in the northern part.

#### Migration over water sources.

Over the water sources, birds fly mostly above the water surface. Most land birds that avoid flying through vast water areas (the Aral and Caspian seas, lakes Alakol, Balkhash, Korgalzhino, Zaysan) adhere to the coasts, the location of which does not always correspond to the direction of their flight. Coastal and partly marsh birds from inland areas also often fly in huge flocks along the coast, as they find abundant food there. Most of the marsh birds during their migrations closely adhere to inland water bodies, with the directing lines being lakes and riverbeds. The reasons for this are easily explained by the biology of bird nutrition.

#### Altitudes.

The flight altitude of small and medium-sized bird species is up to 3,500 feet, of large species - 3,000 - 6,500 feet.

### 3. NUMBER OF BIRDS

In the Republic of Kazakhstan, more than 540 bird species nest and meet on migration.

### 4. DENSITY INFORMATION

Nil

### 5. CAUTION NOTE

A complicated ornithological situation occurs at the aerodrome area and on the flight path of the aircraft during periods of the mass appearance of birds associated with their daily or seasonal migrations and clusters.

In difficult ornithological situation, special cases may occur as a result of dangerous collisions between the aircraft and birds.

Before deciding to take off, the pilot-in-command takes into account information from the ATS authorities on the ornithological situation at the aerodrome area.

At the line up, after receiving information from the ATS authorities about the complication of the ornithological situation, the pilot-in-command evaluates the possibility of taking off. Take-off under these conditions is performed with the headlights on.

During en-route flight, in case of detection of birds on the flight path of the aircraft, the crew bypasses them or flies over them.

When approaching the landing aerodrome, after receiving information from the ATS authorities, about the difficult ornithological situation or the visual detection of birds, the crew:

1. Increases prudence;
2. Turns on the headlights and heating of the cockpit windshields and side windows (if they were not turned on previously);
3. Increases control over the parameters of the engine (engines);
4. If necessary, performs "go around".

## **6. BIRD STRIKE REPORT**

The data about collisions of aircraft with birds are recorded in the ornithological situation log at the airport.

## **7. AREAS WITH SENSITIVE FAUNA**

Large reservoirs - lakes Alakol, Balkhash, Korgaldzhino, Tengiz, Zaysan, Aral Sea and Caspian Sea, rivers Ili, Irtys, Ishim, Ural, Syr Darya are factors that influence the number and concentration of birds in the airport area.

The Republic of Kazakhstan has 10 nature reserves and 10 national parks, which are a refuge for many birds.