ENR 5.6 BIRD MIGRATION AND AREAS WITH SENSITIVE FAUNA

1. Concentrations

The breeding or resting birds in Switzerland spend only a very low fraction of their time up in the air; flights are fairly low. The birds may be a risk for ACFT when flying to roosting and feeding places and when transferring to other lakes. In general, the farther the birds fly the higher they climb, so the highest risk of reaching ACFT FLT ALTs could be far from the indicated concentration areas. For reports on bird observations, see GEN 3.1 7.

2. Migration

Mass migrations occur mainly under tail wind conditions. The same rule is valid for the greatest flight heights. Low pressure areas induce lower flying (also in tail wind).

90% of migrations in Switzerland are a broad front migration of small birds, covering all the lower parts of the country, concentrated in valleys and passes under cyclonic conditions and in head winds. Under anticyclonic conditions, when flights are high, even the Jura and the Alps are affected by this broad front migration. Yet it seems that some concentrations above valleys and passes are still present. Many birds, especially large day migrants, avoid to crossing large mountain and water areas and so may (even in fine weather) concentrate along certain topographic lines.

There is practically no period during the year in which there is no migration. Day migration is heavier in the colder seasons, and night migration is more prominent in the warmer seasons. The movements of rooks (and in a comparable way those of pigeons and common buzzards) is most frequent in OCT.

3. Collisions with birds of prey in the Alps

In the Alps, as in the lowlands, birds of prey may climb fairly high on updraughts and occasional collisions with ACFT may happen. Single strikes with golden eagles show that these large birds of prey may also, as an exception, actively attack an ACFT. So there is some risk in spite of the relatively low number of breeding pairs in the Swiss Alps (about 300 pairs).

Soaring eagles on thermal updraughts usually show a pronounced indifference to ACFT. Somewhat more aggressive behaviour seems to occur in the case of pairs in sexual display (undulating flights: changing phases of upward spirals, diving and gliding). Flight display may occur in every season, most pronounced from JAN to MAY, and somewhat less in autumn after the fledging of the young. An attack may possibly be instigated by a direct flight of an ACFT towards the pair at the same or a slightly lower level, or by coming within a critical DIST, of APRX 100 m, of the pair.

Intraspecific flights occur particularly in the vicinity of the nest, suggesting that the pilot should also keep in mind this possible danger. Most of the nesting sites are at ALTs of 1000 to 2000 m (lower than the preferred hunting area), at the slopes of large valleys or the exit of small valleys, usually in the upper part of steep rocky walls with free approach.

4. Overflying of offical sanctuaries for silence and nature

Sanctuaries for silence and nature are areas of defined dimensions where antrophogenic (man-made) noise sources have been suppressed to a MNM level. The aim of such sanctuaries is a preservation of the diversity of natural sounds and silence for human recreation.

Sanctuaries for silence and nature are depicted as "Zones to be avoided" on aeronautical charts and shall be avoided or overflown by motorised ACFT considerably above the MNM FLT ALTs in in accordance with Implementing Regulation (EU) 923/2012 (Standardised European Rules of the Air), Art. 5005 letter f and by taking the shortest possible FLT path.

Areas	Lateral limits COORD WGS84
Nationalpark	46 48 32 N 010 24 15 E - 46 46 31 N 010 26 22 E - 46 45 10 N 010 26 10 E - 46 44 09 N 010 24 21 E - 46 42 52 N 010 25 05 E - 46 42 20 N 010 24 12 E - 46 41 05 N 010 22 54 E - 46 39 37 N 010 23 33 E - 46 38 07 N 010 24 24 E - 46 38 29 N 010 26 46 E - 46 36 54 N 010 29 19 E - 46 36 14 N 010 29 04 E - 46 34 42 N 010 29 04 E - 46 33 51 N 010 28 27 E - 46 32 32 N 010 28 04 E - 46 32 11 N 010 26 19 E - 46 32 58 N 010 24 39 E - 46 33 00 N 010 22 46 E - 46 33 06 N 010 20 59 E - 46 32 52 N 010 19 54 E - 46 32 59 N 010 17 55 E - 46 34 38 N 010 16 06 E - 46 35 12 N 010 14 34 E - 46 36 36 N 010 15 36 E - 46 37 43 N 010 13 21 E - 46 37 01 N 010 12 55 E - 46 37 23 N 010 11 36 E - 46 36 39 N 010 08 18 E - 46 36 39 N 010 06 09 E - 46 35 21 N 010 06 04 E - 46 34 32 N 010 04 41 E - 46 35 52 N 010 03 04 E - 46 36 20 N 010 02 14 E - 46 38 12 N 010 02 27 E - 46 40 05 N 010 04 28 E - 46 42 38 N 010 07 25 E - 46 43 31 N 010 06 54 E - 46 44 27 N 010 07 52 E - 46 44 23 N 010 09 06 E - 46 44 14 N 010 11 02 E - 46 46 03 N 010 16 44 E - 46 46 54 N 010 20 02 E - 46 46 38 N 010 21 22 E - 46 48 19 N 010 22 39 E

Areas	Lateral limits COORD WGS84
Adula/Greina/ Medels/Vals	46 41 27 N 008 54 21 E - 46 38 59 N 008 53 27 E - 46 37 24 N 008 50 27 E - 46 36 29 N 008 51 04 E - 46 35 36 N 008 51 36 E - 46 34 40 N 008 51 50 E - 46 34 39 N 008 52 45 E - 46 34 45 N 008 54 16 E - 46 34 21 N 008 54 44 E - 46 33 55 N 008 55 43 E - 46 33 42 N 008 56 34 E - 46 31 53 N 008 58 25 E - 46 29 51 N 009 00 17 E - 46 28 15 N 008 59 01 E - 46 23 58 N 009 01 32 E - 46 23 41 N 009 03 36 E - 46 22 31 N 009 07 29 E - 46 24 22 N 009 09 39 E - 46 24 50 N 009 09 16 E - 46 25 27 N 009 09 43 E - 46 25 43 N 009 08 39 E - 46 29 04 N 009 07 32 E - 46 31 31 N 009 07 29 E - 46 31 57 N 009 09 03 E - 46 34 00 N 009 13 30 E - 46 36 54 N 009 11 50 E - 46 36 23 N 009 10 04 E - 46 37 28 N 009 08 09 E - 46 38 42 N 009 06 54 E - 46 40 00 N 009 04 24 E - 46 40 46 N 009 01 05 E - 46 41 09 N 009 00 15 E - 46 41 58 N 008 59 06 E - 46 42 50 N 008 57 47 E - 46 41 27 N 008 54 21 E
Binntal	46 24 31 N 008 17 19 E - 46 24 17 N 008 17 54 E - 46 24 07 N 008 18 37 E - 46 23 38 N 008 19 02 E - 46 23 11 N 008 19 07 E - 46 22 49 N 008 18 53 E - 46 22 31 N 008 18 25 E - 46 22 10 N 008 17 26 E - 46 21 57 N 008 16 30 E - 46 21 39 N 008 15 39 E - 46 21 08 N 008 15 57 E - 46 20 46 N 008 15 46 E - 46 20 41 N 008 14 58 E - 46 20 24 N 008 14 07 E - 46 19 57 N 008 13 29 E - 46 19 33 N 008 13 28 E - 46 18 58 N 008 12 54 E - 46 18 08 N 008 11 55 E - 46 17 48 N 008 10 10 E - 46 18 12 N 008 08 17 E - 46 18 23 N 008 06 02 E - 46 18 17 N 008 03 41 E - 46 20 19 N 008 06 00 E - 46 22 24 N 008 09 53 E - 46 22 55 N 008 10 50 E - 46 23 49 N 008 14 13 E - 46 24 31 N 008 17 19 E
Weissmies	46 12 49 N 008 01 58 E - 46 11 18 N 008 03 40 E - 46 10 52 N 008 05 21 E - 46 11 29 N 008 08 23 E - 46 10 28 N 008 09 37 E - 46 08 51 N 008 09 17 E - 46 07 48 N 008 06 59 E - 46 06 36 N 008 06 03 E - 46 06 05 N 008 03 13 E - 46 05 14 N 008 01 53 E - 46 03 44 N 008 01 31 E - 46 02 26 N 008 01 34 E - 46 01 08 N 008 00 40 E - 46 00 14 N 007 59 47 E - 45 59 48 N 007 58 06 E - 45 59 46 N 007 55 10 E - 46 00 55 N 007 53 23 E - 46 02 45 N 007 53 39 E - 46 03 48 N 007 55 19 E - 46 05 01 N 007 57 32 E - 46 06 11 N 007 57 57 E - 46 07 29 N 007 57 51 E - 46 08 28 N 007 57 46 E - 46 10 33 N 007 56 00 E - 46 13 48 N 007 58 48 E - 46 13 36 N 008 00 18 E - 46 12 49 N 008 01 59 E

Official sanctuaries for silence and nature are depicted on the ICAO aeronautical chart 1:500 000, 2253-B Switzerland and on the glider chart 1:300 000 GLDC Switzerland.

5. Overflight of Wildlife Sanctuary “Derborence” (protection of the Bearded Vulture)

5.1 The Wildlife Sanctuary Derborence is depicted on aeronautical charts as "Zone to be avoided”.

5.2 Overflights shall be avoided or conducted considerably above the MNM FLT ALTs in accordance with art. 28 of the Ordinance on the Rules of the AIR (SR 748.121.11) and by taking the shortest possible FLT path. This applies to all ACFT.

Figure 1. BIRD MOVEMENTS

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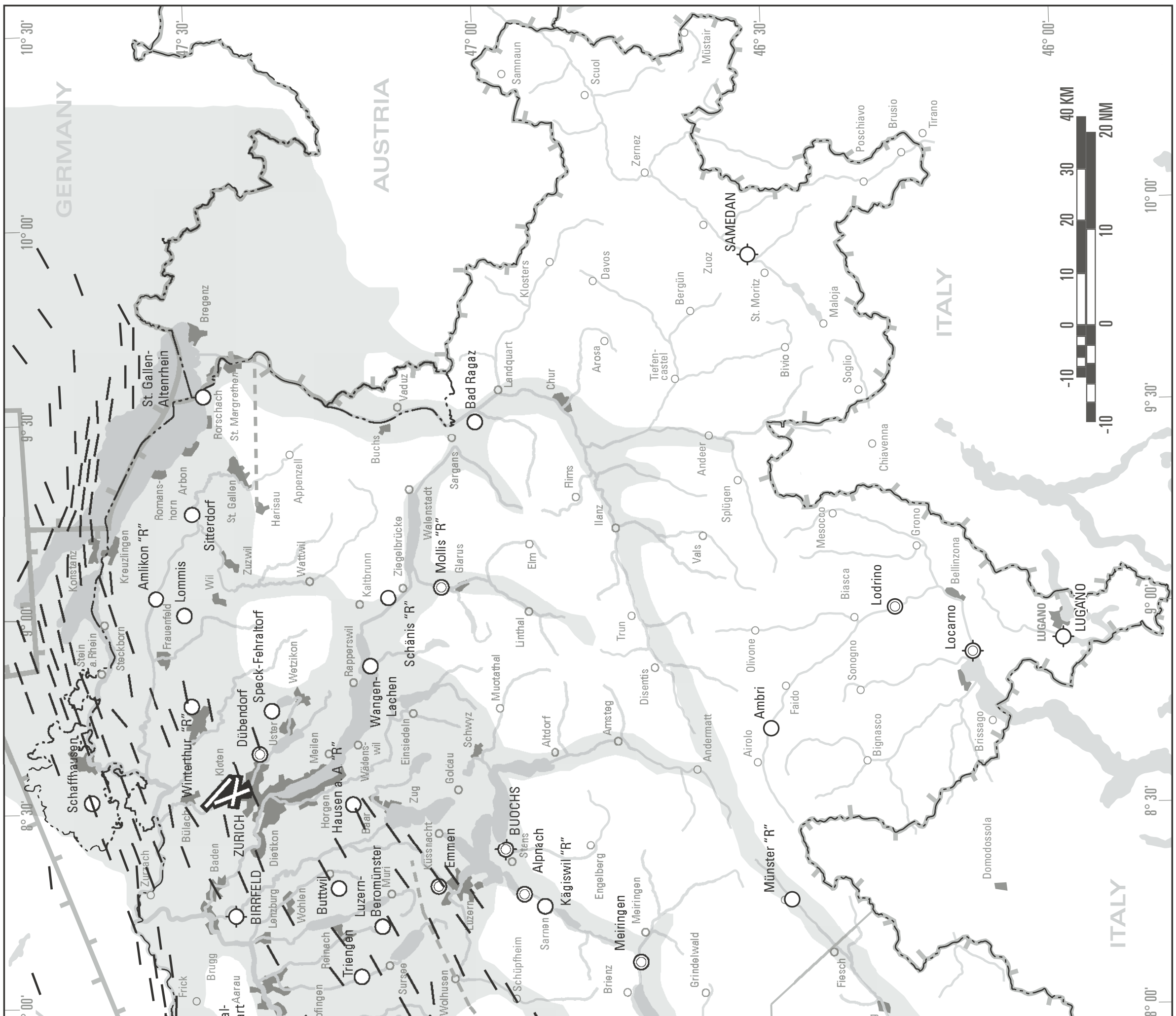
Bird Movements
MAR-MAY
APR-MAY
SEP-OCT
SEP-OCT
Main seasons and directions of migrations
For more Explanation see ENR 5.6.
For Chart Symbols see GEN 2.3.
GERMANY
AUSTRIA
FRANCE
ITALY
GENEVA
LA CÔTE
Montricher "R"
LAUSANNE-LA-BLÉCHERETTE
Yverdon-les-Bains
Môtiers
Neuchâtel
PAYERNE
LES EPLATURES
ECUVILLENS
Bellechasse "R"
Gruyères
Bex
Saanen
SION
Zweisimmen "R"
St. Stephan "R"
BERN-BELP
Biel-Kappelen
GRENCHEN
Courtelary
BRESSAUCOURT
BÂLE- MULHOUSE
Dittingen "R"
Langenthal
Olten "R"
Fricktal-Schupfart
Triengen
Luzern-Beromünster
Buttwil
BIRRFELD
ZURICH
Hausen a. A. "R"
Emmen
BUOCHS
Alpnach
Kägiswil "R"
Meiringen
Thun
Reichenbach
Raron
Münster "R"
Ambri
Locarno
Lodrino
LUGANO
SAMEDAN
Bad Ragaz
Mollis "R"
Schänis "R"
Wangen-Lachen
Speck-Fehraltorf
Dübendorf
Winterthur "R"
Schaffhausen
Lommis
Amlikon "R"
Sitterdorf
St. Gallen-Altenrhein
CTA ZURICH
CTA GENEVA
0 10 20 30 40 KM
0 10 20 NM
skyguide, CH-8602 Wangen bei Dübendorf
COR: several ARP corrected (WEF 18JUN2020)

Bird Movements	1	Broad front migration all over the country; and in fine weather also above the highest mountains. 90% small birds. Birds flying singly at night and flocked during daytime; often concentrated when flying towards mountain ridges or large lakes, especially in bad weather and head winds.
	1.1	Concentrations of large, flocked rooks in late autumn (similar pigeons and buzzards) and also in fine weather along "leading lines".
	2	**Flight heights**
	2.1	**50% below 1500 ft AGL (460 m), 90% below 6000 ft AGL (1830 m)**
	2.2	**Greater heights under anticyclonic, lower heights under cyclonic conditions**

Figure 2. **BIRD CONCENTRATION AREAS APR-AUG**

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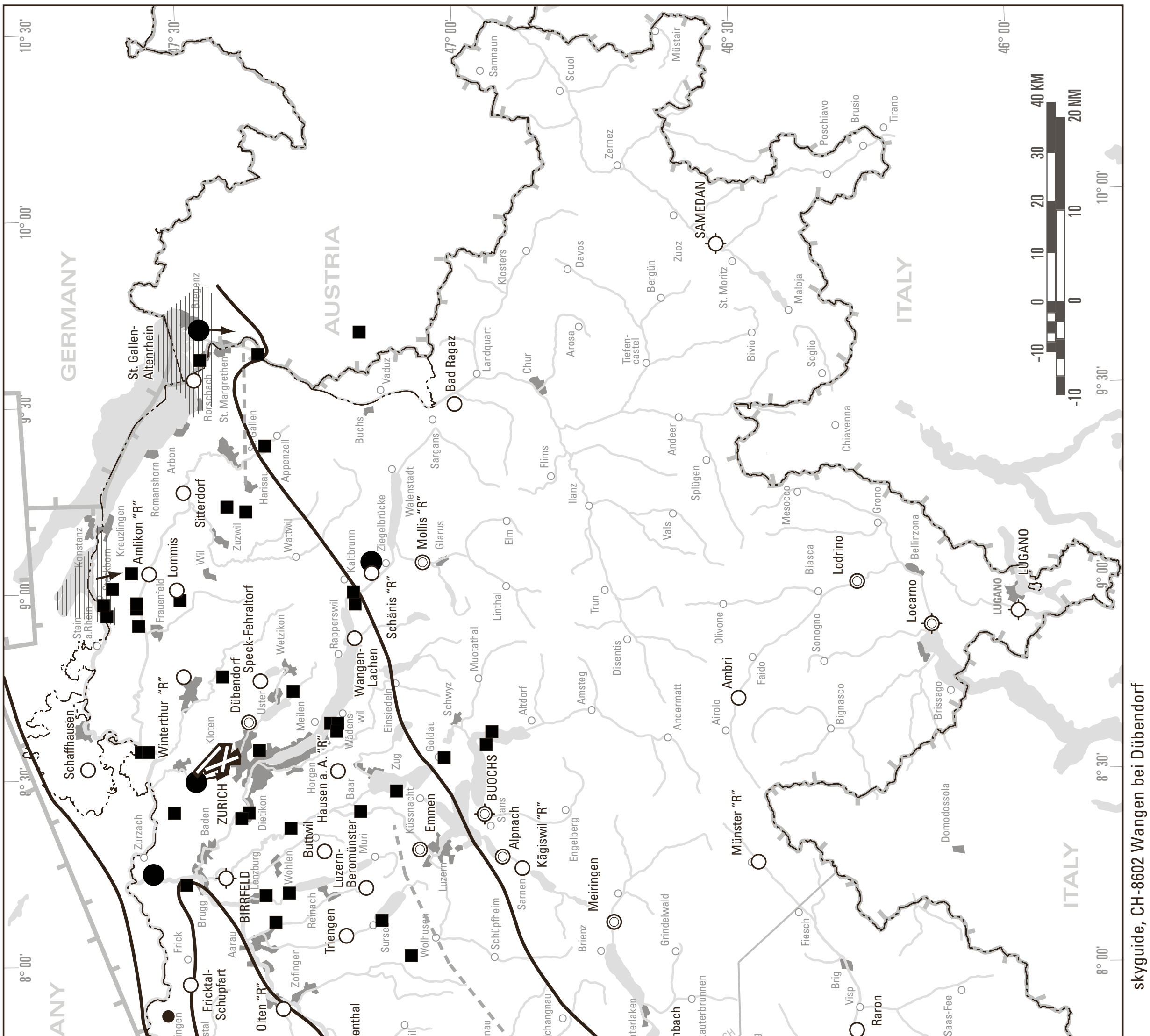

Bird Concentration Areas
APR - AUG
■ Colonies of Grey Herons (more than 10 nests)
● Colonies of White Storks (more than 10 nests)
● High concentrations of Black Headed Gulls only at nesting (more than 1000 per place)
▨ Important nesting sites for water birds
For more Explanation see ENR 5.6.
For Chart Symbols see GEN 2.3.
GERMANY
AUSTRIA
ITALY
FRANCE
ZURICH
BIRRFELD
BÂLE-MULHOUSE
BRESSAUCOURT
GRENCHEN
BERN-BELP
ECUVILLENS
PAYERNE
LES EPLATURES
LAUSANNE-LA-BLÉCHERETTE
GENEVA
SION
LOCARNO
LUGANO
SAMEDAN
BUOCHS
St. Gallen-Altenrhein
Schaffhausen
Winterthur "R"
Dübendorf
Speck-Fehraltorf
Amlikon "R"
Lommis
Sitterdorf
Wangen-Lachen
Schänis "R"
Mollis "R"
Bad Ragaz
Hausen a. A. "R"
Buttwil
Luzern-Beromünster
Triengen
Emmen
Alpnach
Kägiswil "R"
Meiringen
Fricktal-Schupfart
Olten "R"
Langenthal
Dittingen "R"
Courtelary
Biel-Kappelen
Bellechasse "R"
Thun
Reichenbach
Zweisimmen "R"
St. Stephan "R"
Saanen
Gruyères
Neuchâtel
Môtiers
Yverdon-les-Bains
Montricher "R"
La Côte
Bex
Raron
Münster "R"
Ambri
Lodrino
CTA ZURICH
CTA GENEVA
-10 0 10 20 30 40 KM
-10 0 10 20 NM
47° 30'
47° 00'
46° 30'
46° 00'
6° 30'
7° 00'
7° 30'
8° 00'
8° 30'
9° 00'
9° 30'
10° 00'
10° 30'

skyguide, CH-8602 Wangen bei Dübendorf

COR: several ARP corrected (WEF 18JUN2020)

Bird concentration areas April-August

1 **Concentrations**

1.1 High concentrations of water birds (more than 1000 per place) only at nesting sites of Black headed Gulls.

1.2 Raptors (mainly Buzzards) spread all over the lower parts of the country. Black Kites concentrated along large rivers and lakes especially:

1.3 Colonies of Grey Herons and White Storks more than 10 nests.

1.4 Main concentrations confined to the “Mittelland” between the Jura and the Alps.

1.5 Important nesting sites for water birds.

2 **Flight heights of birds**
Feeding flights of water birds usually below **700 ft AGL** (215 m), displaying raptors up to **2000 ft AGL** (610 m), herons on feeding flights up to **1000 ft AGL** (300 m).

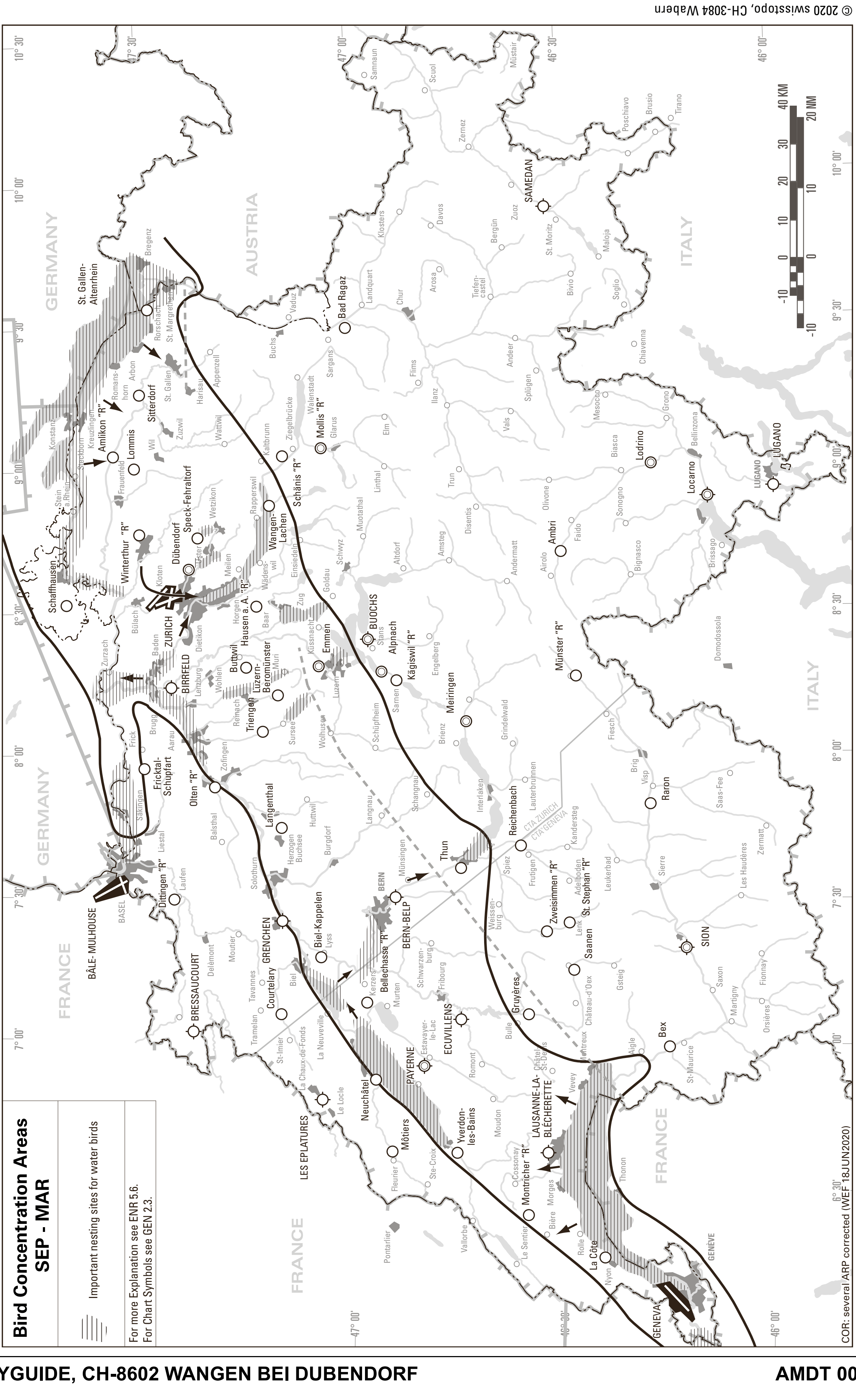
3 **Flights activity**

3.1 Low flight activity of breeding water birds until end of JUN. Noticeable feeding flights off the concentration areas starting in JUL (mainly dusk and dawn).

3.2 Feeding flights of Grey Herons at any time of day and period.

3.3 Displaying raptors only on warm days (whole period).

Figure 3. **BIRD CONCENTRATION AREAS SEP-MAR**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Bird Concentration Areas
SEP - MAR
Important nesting sites for water birds
For more Explanation see ENR 5.6.
For Chart Symbols see GEN 2.3.
skyguide, CH-8602 Wangen bei Dübendorf
COR: several ARP corrected (WEF 18JUN2020)
40 KM
20 NM
GERMANY
AUSTRIA
ITALY
FRANCE
BÂLE-MULHOUSE
BRESSAUCOURT
GRENCHEN
BERN-BELP
PAYERNE
ECUVILLENS
LES EPLATURES
LAUSANNE-LA-BLÉCHERETTE
GENEVA
BIRRFELD
ZURICH
BUOCHS
SAMEDAN
LUGANO
SION
CTA ZURICH
CTA GENEVA
Schaffhausen
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Bad Ragaz
Mollis "R"
Schänis "R"
Wangen-Lachen
Hausen a. A. "R"
Buttwil
Luzern-Beromünster
Triengen
Emmen
Alpnach
Kägiswil "R"
Meiringen
Fricktal-Schupfart
Olten "R"
Langenthal
Dittingen "R"
Courtelary
Biel-Kappelen
Bellechasse "R"
Thun
Reichenbach
Zweisimmen "R"
St. Stephan "R"
Saanen
Gruyères
Neuchâtel
Môtiers
Yverdon-les-Bains
Montricher "R"
La Côte
Bex
Raron
Münster "R"
Ambri
Locarno
Lodrino
10° 30'
10° 00'
9° 30'
9° 00'
8° 30'
8° 00'
7° 30'
7° 00'
6° 30'
47° 30'
47° 00'
46° 30'
46° 00'

Bird concentration areas, September-March

1 **Wintering water birds**
Highest numbers of wintering water birds (350000-400000) from NOV to JAN on the lakes and larger rivers between the Alps and the Jura (“Mittelland”).

2 **Flight heights of birds**
Wintering birds usually below 700 ft AGL (215 m). Migrating birds to 90% below 6000 ft AGL (1830 m) (immigration and emigration can take place during the whole period, but is confined mainly to night and to the “Mittelland”).

3 **Flight activity**

3.1 Regular feeding and roosting flights mainly during dusk and dawn.

3.2 Gulls dispersing up to 25 km from their roosting places (flights also during daytime).

3.3 Other water birds, few flights during day-time (only when disturbed or in very wet weather conditions).