Notes on conversion from EURING 1979 code to EURING 2000 code

These notes are an updated and corrected version of the notes written by Arie J. van Noordwijk of the Netherlands Institute of Ecology for the EURING General Assembly in Chemnitz, 2003.

Some amendments result from changes and clarifications to the EURING 2000 code, others are corrections of errors.

Thanks are due to Arie for the production of the initial draft and also to staff in various ringing schemes in Europe who have contributed to the improvements in the document with their queries and suggestions.

Initially it was intended that these notes be included in the EURING 2000 code manual. This has not yet been done.

Chris du Feu, May 2007.

Preface to the 2003 version.

To the EURING general assembly in Chemnitz 2003.

This document is intended to spell out and define the conversion from EURING 1979 code to the 2000 code. Most of the conversion is straightforward, since in general, the codes in the fields have not changed. However, in a number of cases, the old code had combined fields that need to be split and in several cases new information is taken up. There are two main points that should be discussed at the EURING General Assembly.

1 In one or two cases, the new code distinguishes two or more categories within a single previous code. e.g. the new field Primary identification method **[4-5**] takes information from previous column ***{18}***. The old code *7* is equivalent to the new codes C,D,R or T. Option one is to widen the definition of one of the codes to include uncertain whether C,D,R or T (in this case I would suggest to do this with T) or option two is to create a new category (code) for colour marks other than colour rings without metal ring. This code will then only be used in old records and every analyst has to be careful (as always) for patterns of code use over time.

   My recommendation is option two.

2 Converting the discrepancy in observed species between ringer and finder. In the old system there is one field for species and a field for discrepancy. In the new system there are four fields with species information (remember that every old record leads to two records in the new code). Two on record zero (the ringing occasion) and two on record one (the reporting occasion). In both cases there is a field for species observed and one for species concluded. If ringer and finder agree, all four species codes should be the same. If they disagree, then species observed and concluded on record zero and species concluded on record one should be the same and be the same as the species in the old code. There are two options of how to handle the species observed on record one in case of disagreement:
   The **first** option is to back-translate the information in the old agreement column and to fill out the genus species code or the family species code for the species concluded. This is a lot of work, since the species code is not hierarchical. The **alternative** is always to code species observed as 00000 unrecorded if there is a discrepancy, regardless of whether the discrepancy is at the genus or family level. In practice, many discrepancies stem from misreported ring numbers (reading or typing errors) and in that case the level of discrepancy is irrelevant. Discrepancy about subspecies is relatively easy, because subspecies differ only in the last digit. Reconstructing the observed subspecies should be done by using the species code ending in 0 as the species observed.
   My recommendation is to use the alternative option.

When these two points are decided, there should not be any more problems in the conversion.

Arie van Noordwijk

Introduction

This document is intended to describe the conversion from EURING 1979 code to the 2000 code. Most of the conversion is straightforward, since in general the codes in the fields have not changed. However, in a number of cases, the old code had combined fields that need to be split and several cases new information is taken up.

In following the instructions, it has become apparent that some amendments were required. These are incorporated in this version. They have been discussed by the EURING Board and the Data Management Committee. It is expected that, as more schemes proceed with code conversion, the need for further amendments will become apparent.

General Issues

The old (1979) EURING code was based on the assumption that the typical history of a bird was being ringed and being recovered. Each record contains, essentially, four blocks of information: 1) identification of the individual,

2) details of ringing, 3) details of finding, 4) several items on the connection between 2) and 3) dealing with quality of the data and with derived data.

For a number of reasons (see below) this system has been changed to a system where one record refers to one encounter with an individual. Thus, one record in the 1979 code leads to two records under the 2000 code. These records will be the same for the information in part 1, the information on the identity of the individual and the equivalent information on ringing and on finding will be found in the same fields in the first and the second record. These three blocks will in general give few problems in conversion. In the fourth block of information there are a few points where conversion could be done in different ways, here solutions to these problems are described. Herewe use *record zero* for the record referring to the (first) ringing encounter and *record one* for any subsequent encounter.

Changes in philosophy underlying the code changes

The 1979 code is based on the typical situation of birds being ringed and then subsequently being recovered dead. Although this type of data is still accumulating, an ever greater proportion of data concerns birds being ringed and then repeatedly being observed alive. In the 1979 code this required a duplication of the ringing information in each record. However, there are more basic changes in philosophy.

One is that a EURING code record for a bird ringed but never recovered led to problems, because some of the fields were combinations of observation and correspondence between the observations at ringing and at recovery. In the 2000 code, every record can be fully coded before any subsequent information has been gathered.

Further there is a great need for more detailed information on methods used, both at the time of ringing and at the time of recapturing or recovering. Several new fields have been introduced for this purpose and at the same time the code has become very suitable for animals identified individually by other means such as radio or satellite tracking, transponder readings etc. where many observations on a single individual are the normal case.

Notation

O is used for the letter and 0 for the digit zero in all code descriptions. Fields in the 1979 code have been indicated by ***{xx}***. Fields in the 2000 code are indicated by **[xx]**, in bold.

Each EURING 1979 code record leads to two records in the 2000 code. The term **record zero** is used for the ringing event and **record one** for any later event. Where multiple records of the same individual already exist, duplicate records zero will arise that should be identical and should be removed. Field ***{68}*** indicates whether a previous recovery or control record exists for the bird. If the field is set to any of 1, 4, 5, 8, 9, D, E, M, N there will be a previous record. In order to avoid duplication of the original ringing record during the conversion process, do not create a record zero if field 68 has one of these values. (Check first, however, that field ***{68}*** has been correctly applied.)

There is no sequential code to indicate how many encounter events a bird has undergone. However, sorting by date and by time will give a temporal order of encounter. One of the reasons is that records already coded will not have to be changed if at a later time an earlier record emerges.

Conversion, field-by-field

Scheme [1-3]

Both in record zero and record one:

Equivalent to col. 1-3 in 1979 code.

No conversion necessary. Where a scheme code has changed, leave the old codes as they are and use new codes for new records.

Primary identification method [4-5]

Both in record zero and record one:

This is a new field.

{***18}*** Factors	**[4-5]** Primary Identification Method
3	D0
5	B0
7	T0
all other codes	A0

Identification number [6 - 15]

Both in record zero and record one:

This field was extended from 8 to 10 columns.

In conversion two extra dots should be placed following the rules for placing dots.

The main rule is that the code is always right justified, when there are letters followed by figures, dots are placed between the letters and the figures, with multiple letter and figure groups, dots are placed left of the rightmost group of figures. For any code already containing dots, two dots should be added to the dots already present. Examples are given in the code manual.

Verification of metal ring [16]

In record zero:

Use code 0 for all records.

In record one:

Use a conversion of ***{17}***.

0, 2,4,6,B,D,F and any invalid or missing values become 0. 1,3,5,7,A,C,E become 1.

The distinction between the old codes ***{17}*** is expressed in the matching of the fields species as reported and species as concluded by the scheme, see field **[25-29]**

Metal ring information [17] and other marks [18 -19]

For record zero:

Condition	***{18}***	**[17]**	**[18 - 19]**
Metal ring on tarsus or unknown position	0	1	ZZ
Metal ring on tarsus	1	2	ZZ
Metal ring above tarsus	2	3	ZZ
Not normal metal leg ring, no colour rings	3	0	OM
Colour ring and metal ring	4	1	BB
Unique colour ring mark, no metal rings	5	0	BB
Other colour mark and metal ring	6	1	MM
Unique other colour marks, no metal ring	7	0	OM
Human interference at ringing	any letter	1	ZZ

For records one:

Condition	*{18}*	[17]	[18 - 19]
Metal ring on tarsus or unknown position	0	4	ZZ
Metal ring on tarsus	1	4	ZZ
Metal ring above tarsus	2	4	ZZ
Not normal metal leg ring, no colour rings	3	0	OM
Colour ring and metal ring	4	4	BC
Unique colour ring mark, no metal rings	5	0	BC
Other colour mark and metal ring	6	4	MM
Unique other colour marks, no metal ring	7	0	OM
Human interference on recapture	any letter	1	ZZ

Notes that the letter codes P, R, M, T, F, C, H from col. 18 go into **[30]**

Species (or subspecies) as reported [20-24]

Both in record zero and in record one:

Use the same codes as the previous cols. 12-16.

Codes A, B, C, D, E, F in ***{17}*** should be coded as 00000 in field **[20 - 24]** in record one.

Species as concluded [25-29]

When the old col. 17, Verification contained the codes 0,1,4,5,6,7 the species code in this field should be identical to both the species code in the field **[20 - 24]** and the species code in both field **[20 - 24]** and **[25 - 29]** of the record zero and record one.

When the old col 17 contained code 2 or 3, (and in some cases 6 or 7) the species code here should be contained in the species code reported.

Many species codes (ending in 9) have been created for groups of birds species recognised by the reporting public.

When the old col 17 contained the codes A,B,C,D,E or F there should be a discrepancy in the species codes between species reported and species concluded.

In general, the species concluded should be the species reported by the ringer.

Codes A, B, C, D, E, F in ***{17}*** should be coded 00000 in field **[20 - 24]** in record one.

Manipulation [30]

For record zero:

If ***{18}*** has any alphabetic code, use that. If ***{18}*** has a numeric code then, use N for normal, non-manipulated bird. If ***{18}*** has any other code use U for unknown.

For record one:

Use code U for all records.

Moved before capture/recapture/recovery [31]

In general, *record zero* will be 0.

For record one:

Use the information from previous ***{67}.***

{67} Finding circumstances	**[31]** Moved
0, Z	0
2, 3, B, C	2
4, 5, D, E	4
6, 7, F, G	6

Catching method [32]

Both in record zero and record one:

This is a new column and should be Z (=unknown) in conversion, unless additional information is added.

Lures used [33]

Both in record zero and record one:

This is a new column and should be U (=unknown) in conversion, unless additional information is added.

Sex reported [34] and Sex concluded [35]

This field takes its information from previous col 19, which was a combined code for sex and its verification, which is the agreement between ringer and finder.

Previous	Meaning		*Record zero*		*Record 1*	
{19} Sex	Ringer	Finder	**[34]** Sex reported	**[35]** Sex concluded	**[34]** Sex reported	**[35]** Sex concluded
0	U	U	U	U	U	U
1	M	U	M	M	U	M
2	F	U	F	F	U	F
3	U	M	U	U	M	M
4	U	F	U	U	F	F
5	M	M	M	M	M	M
6	F	F	F	F	F	F
7	U	U	U	U	U	U
8	M	F	M	M	F	M
9	F	M	F	F	M	F

Note 1. The previous codes 7,8 & 9 cannot be translated exactly. The transformations given here are exact as to their conclusions and suppose the most common case, where the sexing of the ringer is thought to be more reliable than that of the finder. However, if record one refers to a live recapture of a bird ringed as a pullus or juvenile, the sex of the finder may thought to be more reliable. In those cases the codes 1 and 2 in records zero and one should be reversed.

Note 2. A choice has to be made between two strategies: A) only information available at the time of the observation in the record is included in that record. Later information is not added and hence the person using the information should refer to the latest record of that individual. B) Later information is added. Under this strategy, **[35]** in record zero should become 1 and 2 for codes 3 and 4 in previous col 19. Strategy A is strongly recommended and adopted in this conversion table.

Age reported [36]

For record zero:

The information comes from ***{20}*** codes are the same.

For record one:

The previous system did not allow an age observation, thus code 0, for unknown, should be used.

Age concluded [37]

This field has been added to allow the scheme to include a judgement whether the observer is capable of assigning the observed age. It is not intended to include calculated ages. Thus in converting records, the code should be equivalent to **[36]** in record zero and should be 0 in record one.

Status [38]

This is a new field which takes the information from part of ***{21}*** in record zero and part of ***{69}*** in record one.

For record zero:

This field should be hyphen (-) if the age is 1 (pullus) see **[39 - 40].**

If the age is not 1, then codes M - W are copied from ***{21}***. Code O (or 0) becomes code U.

If the bird is not a pullus and ***{22}*** has value 5-8 inclusive (moulting flight feathers), then use the new code T when this field has no value other than unknown.

For record 1:

Use the information in ***{69}*** and, sometimes, ***{70}*** according to the table below.

Status when found	***{69} Status***	**Record 1, [38]**
Nesting	1, A, N	N
Roosting assemblage	2, B, R	R
In colony	3, C, K	K
Moulting assemblage	4, D, M	M
Local but not breeding	5, E, L	L
Wintering	6, F, W	W
On passage (including at lighthouses)	7, G, P	P
At sea	8, H, S	S
Unknown, unrecorded	any other code	U or T if ***{70}*** has value in range 5-8 (moulting)

Brood size [39-40]

This new field takes the information from part of ***{21}.***

For record zero:

If age **[36]** is 1 (pullus) then old codes 1-9 become 01-09 and codes A-H become 10-17. Code O (or 0) becomes 00.

If age is not 1, this field must be -- (two hyphens).

Note: code J (more than 18 in brood, or brood from more than one female) becomes 99 on conversion unless more information can be added from other sources. In that case, J will translate to the number of pulli alive or 50+ number of pulli alive in the case of broods from more than one female.

For record one:

In general, this field will be -- (two hyphens).

Pullus age [41-42]

New field takes the information from part of ***{22***.

For record zero:

Code O or 0 becomes 99 (unknown).

If age is not 1 (bird is not a pullus) then use code -- (two hyphens).

If age is 1 (bird is a pullus) and ***{22}*** has codes A-Z then use the table below for codes to be used in **[41 - 42]**

{22} Pullus age	*{23}* Accuracy of pullus age		
	L, T	N, V	M, P, Q, R, U, X, Y, Z
A	01	03	02
B	04	06	05
C	07	09	08
D	10	12	11
E	13	15	14
F	16	18	17
G	19	21	20
H	22	24	23
J	25	27	26
K	28	30	29
L	31	33	32
M	34	36	35
N	37	39	38
P	40	42	41
Q	43	45	44
R	46	48	47
S	49	51	50
T	52	54	53
U	55	57	56
V	58	60	59
W	61	63	62
X	64	66	65
Y	67	69	68
Z	70	72	71

For record one:
In general, this field will be -- (two hyphens).

Accuracy of pullus age [43]

New field takes the information from part of ***{23}.***
For record zero:
If **[42]** is 99 then use U (unknown), otherwise refer to the table.

{23} Accuracy of pullus age	L, M, N, T, U, V	P, X	Q, Y	R, Z
[43] Accuracy of pullus age	0	1	7	9

Note that the new system allows for a greater number of coding possibilities than did the old system.
For record one:
In general the bird is not a pullus and this field will be - (one hyphen).

Date [44-51]

For record zero: this field takes the information from ***{24 - 29}***.
For record one: this field takes the information from ***{44 - 49}***.
Note that the year sub-field has been expanded from 2 to 4 columns, so, for the majority of old records '19' should be inserted in columns **[47 - 48]**. Records since 2000 will need '20' to be inserted in these columns.

Accuracy of date [52]

For record zero: the information is copied from ***{30}***.
For record one: the information is copied from ***{50}***.
In both records, the old value of 11 should be coded as 9.

Time [53 - 56]

This is a new field. Converted records should be coded as ---- (four hyphens) in both record zero and record one unless a time was given as part of the Inaccuracy of Date fields (alphabetic characters in ***{30}*** or ***{50}***. For these records times should be coded as in the table below.

{30} or ***{50}***	**[53 - 60]** Time	{***30}*** or ***{50}***	**[53 - 60]** Time	***{30}*** or ***{50}***	**[53 - 60]** Time
A	00--	J	08--	S	16--
B	01--	K	09--	T	17--
C	02--	L	10--	U	18--
D	03--	M	11--	V	19--
E	04--	N	12--	W	20––
F	05--	P	13--	X	21––
G	06--	Q	14--	Y	22––
H	07--	R	15--	Z	23––

Place code [57 - 60]

For record zero: this field takes the information from ***{31 - 34}***.
For record one: this field takes the information from ***{51 - 54}***.
New codes have been (and will be added) but previous codes remain unchanged.

Geographical co-ordinates [61-75]

For record zero: this field takes the information from ***{35 - 42}*** & ***{43}***
For record one: this field takes the information from ***{55 - 62}*** & ***{63}***

The coding system has changed in several ways:

a) the previous system worked with quadrants and 4 characters for degrees and minutes. The new system works with 6 characters for degrees, minutes and seconds for latitude and 7 characters for longitude.
b) the old system used punch codes 11 or 12 for unknown digits. In the new system, the best estimate should be given and the accuracy coded in field **[76].**

The quadrant, ***{43}*** & ***{63}*** must be converted to signs of latitude and longitude according to the table below.

{43} *(record zero)* ***{63}*** *(record one)* Quadrant	**[61]** Sign of latitude	**[68]** Sign of longitude	**[69]** First digit of longitude
C	+	+	1
E	+	+	0
A	–	+	1
S	–	+	0
H	+	–	1
W	+	–	0
P	–	–	1
U	–	–	0

If there are non-digit codes (usually hyphens) in any of the numeric fields, these should be replaced by 0 and one of the codes 3, 4, 5 respectively should be used in field **[76]** when there are one, two or three missing digits in either latitude or longitude.
Full description of conversions

New column	Field	Record zero	Record one
[61]	Sign of latitude	from ***{43}*** (table above)	from ***{63}*** (table above)
[62]	Latitude degrees	***{35}***	***{55}***
[63]	Latitude degrees	***{36}***	***{56}***
[64]	Latitude minutes	***{37}***	***{57}***
[65]	Latitude minutes	***{38}***	***{58}***
[66]	Latitude seconds	0	0
[67]	Latitude seconds	0	0
[68]	Sign of longitude	from ***{43}*** (table above)	from ***{63}*** (table above)
[69]	Longitude degrees	from ***{43}*** (table above)	from ***{63}*** (table above)
[70]	Longitude degrees	***{39}***	***{59}***
[71]	Longitude degrees	***{40}***	***{60}***
[72]	Longitude minutes	***{41}***	***{61}***
[73]	Longitude minutes	***{42}***	***{62}***
[74]	Longitude seconds	0	0
[75]	Longitude seconds	0	0

Accuracy of co-ordinates [76]

For most converted records **[76]** becomes 1, accurate to about 5 km. If there are some digits of the co-ordinates missing then use values given above.

Condition [77]

For record zero: this field is always 8.

For record one: this field is a copy of ***{64}***.

Circumstances [78-79]

For record zero: this field is always either 20 or 27.

For record one: this field is a copy of previous cols. ***{65 - 66},*** except that old code 29 now takes value 80.

Circumstances presumed [80]

This field contains part of the information from ***{67}***.

For record zero: this field becomes 0.

For record one: codes A, C, E, G, 1,3,5,7 become 1; all other codes become 0.

EURING code identifier [81]

In both record zero and record one: use code 3 (translated from older codes).

Distance [82-86]

For record zero: use ----- (five hyphens).

For record one: convert from ***{71 - 74}.***

The 2000 code uses 5 digits for distance in place of 4 digits in the 1979 code.

Distances in the range 0000 to 9999 inclusive remain unchanged, but will be preceded by an extra 0. Distance above that will have codes A to L changed to 11 to 20 respectively.

Note that in many cases, records in 1979 code did not have distances or directions calculated. In such cases either give record one five hyphens (as for the record zero) or else calculate the distance according to the instructions in the EURING 2000 code manual. Distances can be calculated at EDB.

Direction [87-89]

For record zero: use --- (three hyphens).

For record one: copy from ***{75 - 77}***.

Note that the same comments apply to Direction as do to Distance **[82 – 86]**, above. Uncalculated directions in

record one must be given as three hyphens.

Elapsed time [90-94]

For record zero: use ----- (five hyphens).

For record one: recalculate the elapsed time from the dates of the original 1979 coded record, ***{24 – 29}*** and ***{44 – 49}***. It is important that the elapsed time be calculated: it must not be left as hyphens. This is one way of distinguishing a subsequent encounter record from the original ringing record (which will always have hyphens in this field).

Biometrics reserved columns [151-200]

These fields should be empty, making the record length for all records 94 characters.

Relationship between fields in 1979 and 2000 codes

EURING 1979 Code		EURING 2000 code		
Fields	**Full Record**	**Fields**	**Record Zero**	**Record One**
1 - 3	Scheme	1 -3	Scheme	
4 - 11	Ring number	6 - 15	Ring number	
12 - 16	Species	20 - 29	Species reported and concluded	
17	Verification	16		Verification
18	Factors affecting recvy.	17 18 – 19 30	Metal ring info. Other marks info.	Metal ring info. Other marks info. Manipulation
19	Sex and verification	34 - 35	Sex (reported/determined)	
20	Age	36 - 37	Age (reported/determined)	
21	Status & brood size	38, 39 - 40	Status or Brood size	
22	Moult & Pullus age	38, 41 - 42	Status or Pullus age	
23	Plumage/accuracy PA	43	Accuracy of pullus age	
24 - 29	Ringing date	44 - 51	Date	
30	Date accuracy	52	Accuracy of ringing date	
31 - 34	Ringing place code	57 - 60	Place	
35 - 42	Ringing co-ordinates	61 - 76	Co-ordinates	
43	Ringing quadrant	61 - 76	Co-ordinates	
44 - 49	Recovery date	44 - 51		Date
50	Date accuracy	52		Accuracy of ringing date
51 - 54	Recovery place code	57 - 60		Place
55 - 62	Recovery co-ordinates	61 - 76		Co-ordinates
63	Recovery quadrant	61 - 76		Co-ordinates
64	Finding condition	77		Condition
65 - 66	Finding circumstances	78 - 79		Circumstances
67	Various	31		Moved
68	Previous reports	4 - 5	Identification method	
69	Status when found	38		Status
70	Moult	38		Status
71 - 79	Derived data	82 - 94		Derived data
80	Card identifier	81	Code identifier	