

Annex 13: Mapping of suitable structures in the current home range of Aesculapian Snake in Poohří

1. Division of the territory to regions

The territory was divided to 18 regions that are shown in the map 1.

Left-hand bank of the river Ohře

Region A – the right-hand bank of the lower section of the Plavenský creek to its confluence with Ohře towards Vojkovice. In the region, there is one only finding Aesculapian Snake as if the Plavenský creek was the boundary of the distribution. In the region, there are remnants of abandoned ways and stonewalls.

Region B – the left-hand bank of the lower section of the Plavenský creek and the right-hand bank the lower section of Hornohradský creek. The region is delimited at its Northern side by the road Stráž-Damice and at the Western side by the road Damice-Vojkovice. In the region, there are horizontal morphological structures inhabited by the species only in the area of the cottage settlements, most area of the region converted to an integral meadow with one only recorded migration of the species.

Region C – meadows and pastures on the Eastern slope of the Šibeniční hill along the Central section of the Hornohradský creek South off Horní Hrad. Aesculapian Snake occurrence recorded in the region in the past (Medek, Haleš, Hejtík in verb.), currently one single finding recorded. In the section below the castle, along the road 13 on the left bank of the creek, there are numerous stonewalls that are fully overgrown by vegetation. Meadows between the forest and road 13 are again fully integrated, however, heaps of stones have been preserved and they are currently covered by naturally propagating shrubs.

Region D – the South-East slopes of the Dubový hill, limited at the Western side by the Eastern boundary of the cottage settlement Rafanda on the left bank of the Hornohradský creek, at the North-West side by the blue hiking trail from the school at Stráž n. O. to the Dubový hill, and by a forest at the Northern side. There is a number stonewalls that are fully covered by vegetation. The region also includes the Western part of Stráž n. O. with abundance of snakes.

Region E – the right-hand bank of the lower section of the Pekelský creek to the cow house in Stráž n. O., meadows above the school in Stráži n. O., delimited at the South-West by the blue hiking trail to the Dubový hill. The nature of the region is similar to that of the region D.

Region F – meadows along the Central section of the Pekelský creek. In the Southern part of the region, there are intensively managed pastures and lack of morphological diversity. Such diversity increases upstream the creek and are accompanied by buildings of the settlement Peklo. The region with the documented northernmost occurrence of snakes (also the highest elevation).

Region G – the hill Himlštejn with the largest detritus field in the isolated home range of snakes in Poohří. Snakes were observed at the edges of the detritus fields and reported by local residents.

Region H – a part of the municipality of Stráž n. O. on the left-hand bank of the lower section of the Pekelský creek to its confluence with the Ohře river, farming building in Stráž n. O., Hrachová, the cottage settlement Býčí meadow and the farm „Rájov“ including its environs. The region shows the most abundant occurrence of snakes with numerous small detritus fields and morphological diversity, partly covered by trees and bushes. Private farmers operate in the area although their activities are beneficial for snakes.

Region I – meadows South off the Pekelská rock. The access to the region is rather difficult. The occurrence of snakes was documented up to the 90s of the previous century. Currently, the region has not been subject to any detailed survey. The region includes a number of springs, ruins of farms and wall covered by naturally propagating trees.

Region J – a forest clearance below a high voltage electrical line in the forest between Boč and Stráž n. O.

In the region, there is a number of stone heaps and small detritus fields. The occurrence of the species confirmed by Bušek (in verb.) in 2005.

Region K – meadows and pastures between Boč and Stráž n. O. between the right-hand bank of the lower section of the Bočský creek and the river Ohře. Although the South-East part of the region was subject to pasture integration by the 80s of the previous century, it is still an abundant snake occurrence place with a diverse structure of landscape. Some overgrown stonewalls were cleaned in 2005-2007.

Region L – the left-hand bank of the lower section of the Bočský creek with a cottage settlement and small rocks above it. No recent occurrence has been confirmed and there are no snakes in this region according to opinion of some residents.

Right-hand bank of the river Ohře

Region M – Northern slopes of the Jakubovský hill (meadows and pastures from the house of I. Tuč in Stráž n. O. towards Jakubov). This is the most neglected part from the point of view of management (that means the most overgrown one) in combination with integrated meadows without any shelter. Still, Aesculapian Snakes observed sporadically in here (close to human settlements).

Region N – North-West slopes of Velká Jehličná to the East up to the stone quarry in Stráži n. O. The region includes the Southern edge of Stráž n. O. where the species occurs.

Region O – a section on the left-hand bank of the lower section of the Korunní creek delimited at the West by a bridge and stone quarry in Stráž n.O. A region of abundant occurrence of the concerned species.

Region P – the medium section of the Korunní creek between the mineral water filling plant and horse stable in the MEA Hradiště. The region is heavily overgrown, although occurrence of snakes is rather abundant and obviously in close relation to human settlements. Building in the military exercise area has been continuously demolished since the 50s of the last century. In 2007, the remaining part of buildings in the MEA was demolished again and such demolition works will go on (only the keepers house and forest cottage will be preserved). The morphological diversity of demolished buildings has to be replaced.

Region Q – environs of Korunní, delimited at the West by a North-West oriented wall at the railway Boč – Stráž n. O. by afforested hill below the last houses in Korunní towards Kamenec. The area of snakes abundance. The morphology of almost region is levelled by a private farmer (e.g. old ways with stonewalls are being demolished). Other ways keep being covered by vegetation.

Region R – environs of Kamenec and North-West slope of the Boží stolec hill, Stoličná. A region of a rare occurrence of the species. It partly overlaps to the MEA Hradiště. Abundance of old ways and walls. Walls are mostly overgrown, some of them cleaned in 2005-2007.

2. Survey of mapped structures

The following databases were created based on the ground mapping:

1. Existing or potential biotopes of Aesculapian Snake (walls, stone ramparts, detritus fields, shelters, ruins, stone heaps, etc.) (GIS – **zp.shp**)
2. Old ways (corridors) (GIS – **starecesty.shp**)

2.1 Database of existing or potential biotopes of Aesculapian Snake

The following 11 biotope types were mapped, the total number of such biotopes being 267. For a survey of the biotopes relative to regions see the table 1.

1 – walls

2 – stone ramparts

3 – ruins of buildings

4 – heaps of stones

5 – composts, manure, wood and sawdust heaps/piles, etc.

6 – detritus fields

7 – other shelters (wood, conveyor belts, etc.)

8 – rocks

9 – buildings (sheds, hay sheds, farming buildings)

10 – hedgerows

11 – hollow trees

Tab. 3: Survey of potential or existing biotopes broken down based on nature and region

Region Biotope	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	Total number
1	2	9	8	18	2	14	1	3	2	3	25	2	3	13	5	6	15	17	148
2			1			1		1			2		2				1	8	16
3									3							1		3	7
4	1			4		1		3		3	2	1	1	2	1			3	22
5	1	2	1	1	1	3		2			2			2		1	2	6	24
6				2			1	2		4	2			4					15
7								1					1		1			1	4
8		1										1					1	2	5
9				2	1	2		3								2	2		12
10		2	3		1	1					4								11
11												1			1			1	3
Grand total	4	14	13	27	5	22	2	15	5	10	37	5	7	21	8	10	21	41	267

The most abundant biotopes are walls. 184 such walls have been mapped, total length being **5887 m**. The most abundant regions are R – environs of Kamenec (41 biotopes) and K – meadows and pastures between Bočí and Stráž n. O. (37 biotopes).

2.1.1 Division of biotopes based on interventions

Type of intervention was evaluated for every biotope based on the following criteria. For the survey see the table 2, graphic representation map 1.

✓ **0 – there has been and will be no need for intervention** (maintained by owners, e.g. walls in gardens or the biotope does not need any intervention with regard to its character, e.g. detritus fields)

✓ **1 – maintenance intervention** (no major intervention necessary, just regular annual removal of vegetation)

✓ **2 – primary intervention + follow up maintenance** (the biotope requires a major primary intervention, i.e. removal of naturally propagating trees, repair of wall, etc. and, thereafter only regular maintenance)

- ✓ **X – other type of intervention** (this includes some heaps of stones that may be used for the erection of walls in the environs, which means that it is not a direct intervention at the given place in order to create the biotope of Aesculapian Snake)

Tab. 4: Division of biotopes based on the type of intervention

Biotope/Type of intervention	0	1	2	X	Grand total
1 – walls	43	21	84		148
2 – stone ramparts	5	1	10		16
3 – ruins of buildings	3		4		7
4 – stone heaps	3		17	2	22
5 – composts, manure heaps, branches, sawdust piles, etc.	16	2	6		24
6 – detritus fields	14		1		15
7 – other shelters (wood, conveyor belts, etc.)	1	1	2		4
8 – rocks	5				5
9 – buildings (sheds, hay sheds, farming houses)	11		1		12
10 – hedgerows			11		11
11 – hollow trees	2	1			3
Grand total	103	26	136	2	267
%	38.577	9.738	50.94	0.749	100

The table 2 indicates that approx. 40% of mapped biotopes do not need any intervention, some 10% need just a maintenance intervention and approx. 50% (**136 biotopes**) need a major primary intervention. In the course of the implementation of the Action Plan as under preparation, the category 2 will drop and the category will grow as biotopes after the implementation of the intervention will be moved to the category that requires only the maintenance. Most interventions will focus on walls that feature centres of activity of Aesculapian Snake.

2.1.1.1 Division of biotopes as subject to planned intervention (intervention type 2) based on urgency level

136 biotopes as subject to planned intervention (see the chapter above) were divided to the three following categories based on the level of their urgency:

- ✓ **1 – very acute** (biotopes designated to interconnect localities, very promising biotopes subject to the highest priority of implementation)
- ✓ **2 – requiring intervention to be implemented within 5 years** (relatively promising biotopes of medium priority)
- ✓ **3 – requiring intervention to be implemented within 10 years** (less promising and hard to implement biotopes)

Tab. 3: Survey of biotopes based on urgency of intervention

Biotope/Level of urgency	1	2	3	Total number
1 – walls	55	24	5	84
2 – stone ramparts	3	6	1	10
3 – ruins of buildings	2	2		4
4 – stone heaps	6	10	1	17
5 – composts, manure heapes, branches, sawdust piles, etc.	3	3		6
6 – detritus fields	1			1
7 – other shelters (wood, conveyor belts, etc.)	2			2
8 – rocks				0
9 – buildings (sheds, hay sheds, farming houses)	1			1
10 – hedgerows	5	6		11

<i>11 – hollow trees</i>				0
Grand total	78	51	7	136
%	57.35	37.50	5.15	100

This intervention is considered urgent for more than one half of biotopes where such intervention was proposed. They include mainly walls (the first phase of maintenance should include 252 6 m of walls!), secondary heaps of stones or hedgerows and other biotopes. The objective of this intervention is to stabilise boundaries of the current home range, see map 2.

2.1.1.2 Division of biotopes as subject to planned intervention (intervention type 2) based on the type of intervention

The interventions are divided based on the type of intervention to the following categories:

- ✓ **1 – clean and cut** vegetation, naturally propagating trees and bushes
- ✓ **2 – repair damaged walls**
- ✓ **3 – newly erect walls**
- ✓ **4 – found hatching place**
- ✓ **5 – develop pool**
- ✓ **combination** (e.g. 124 – clean and repair a wall and develop a at it)

Tab. 4: Survey of biotopes based on the type of planned intervention

Biotope/Intervention type	1	2	3	4	12	13	14	123	134	135	Celk.
<i>1 – walls</i>	65	2	1	1	8	4	1		1	1	84
<i>2 – stone ramparts</i>	7		1	1		1					10
<i>3 – ruins of buildings</i>						1	1		2		4
<i>4 – stone heaps</i>	9		2			4	1	1			17
<i>5 – composts, manure heapes, branches, sawdust piles, etc.</i>				6							6
<i>6 – detritus fields</i>	1										1
<i>7 – other shelters (wood, conveyor belts, etc.)</i>				2							2
<i>8 – rocks</i>											0
<i>9 – buildings (sheds, hay sheds, farming houses)</i>				1							1
<i>10 – hedgerows</i>			7			4					11
<i>11 – hollow trees</i>											0
Grand total	82	2	11	11	8	13	4	1	3	1	136

The most common planned intervention is the cleaning and cutting of vegetation including but not limited to existing walls, development of walls in combination with exposure of the biotope to sunshine and creation of a hatching place.

2.2. Database of original ways (corridors)

6 ways were chosen in the concerned area that could serve after renovation as migration corridors, total length 3686 m. For details see the following table, ways are shown in the map 2.

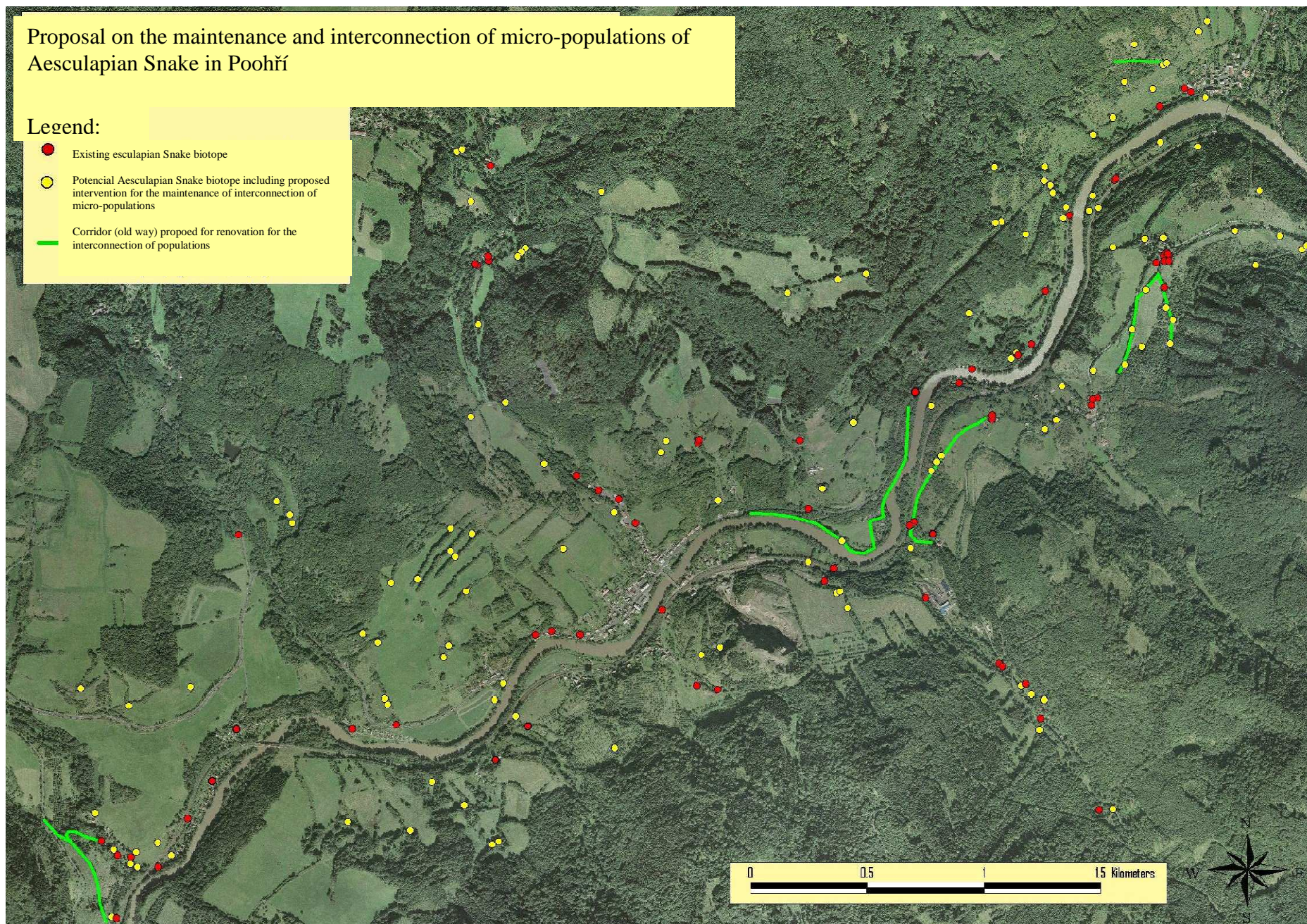
Tab. X: Survey of old ways to be renovated

Region	No. of ways	Length (m)
A	1	717
H	1	1,255
Q	1	722
K	1	225
R	1	767
Total	5	3,686

Proposal on the maintenance and interconnection of micro-populations of Aesculapian Snake in Poohří

Legend:

- Existing Aesculapian Snake biotope
- Potential Aesculapian Snake biotope including proposed intervention for the maintenance of interconnection of micro-populations
- Corridor (old way) proposed for renovation for the interconnection of populations



Aesculapian Snake – the current home range and proposed home range in the framework of the rescue programme

