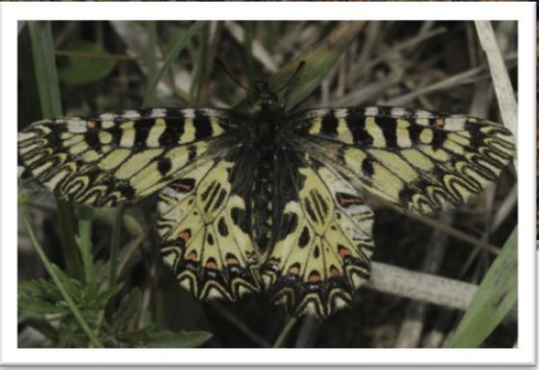


Setting up a BMS in Hungary using transect counts

- » Background
- » Tests
- » Vision
- » Start – 2016
- » Present – 2017
- » Problems, lessons learned, future plans

András Szabadfalvi



» Background

a country struck by land-based subsidies...

- An accelerating destruction of environment in the former Eastern Bloc countries
 - very few long-term datasets available to prove and visualize it for everyone;
 - underfinanced National Biodiversity Monitoring Scheme (NBmR) often with outdated and ineffective methods (e.g. triple catch for *Maculinea*);
- Butterflies are good instruments to answer this need
 - sensitive indicators;
 - attractive to the general public;

» Tests (2014-2015)

the proof of the pudding...

- studying European transect schemes (esp. UK)
 - recording protocol, frequency...
- test transects (3) for hands-on experience
 - the effect of weather, different periods of the day...;
 - handheld devices for recording (smartphones);



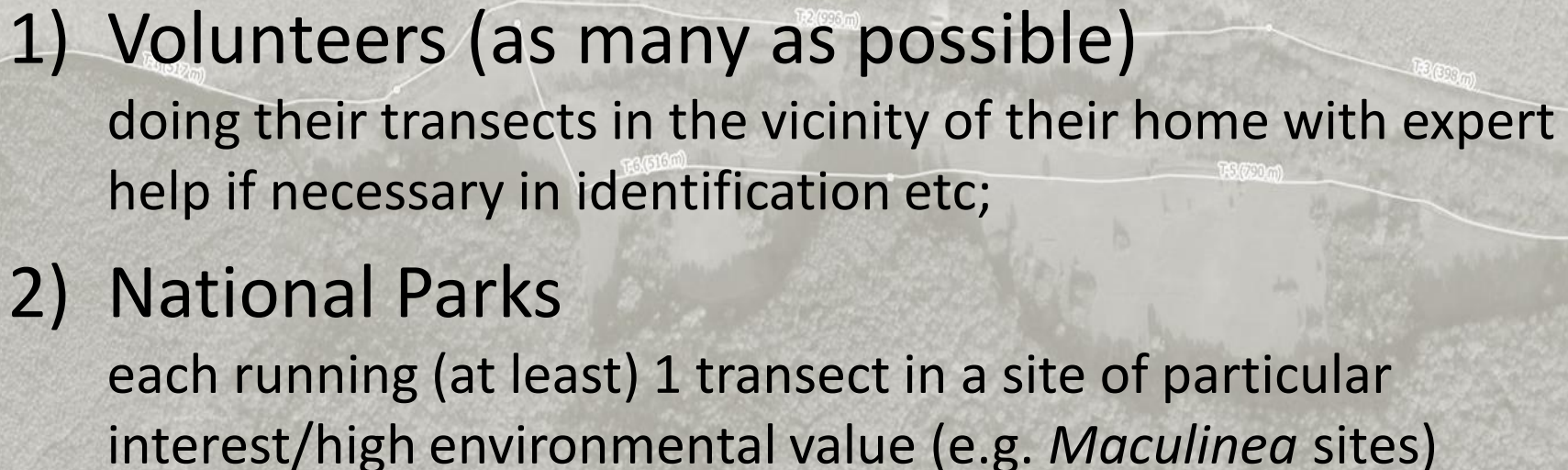
results:

- minor practical modifications to the survey protocol
(*e.g. no counts over +35C°*) >> in compliance with EBMS standards);
- the best way is still the old way (paper & pen);

» Vision

the best of both worlds...

BMS based on 2 foundations

- 
- 1) Volunteers (as many as possible)
doing their transects in the vicinity of their home with expert help if necessary in identification etc;
- 2) National Parks
each running (at least) 1 transect in a site of particular interest/high environmental value (e.g. *Maculinea* sites)

Let's put Hungary on the map...

Map 1: Countries contributing their data to the European Grassland Butterfly Indicator:

Belgium (Flanders): since 1991

Estonia: since 2004

Finland: since 1999

France: since 2005 (Doubs area 2001-2004)

Germany: since 2005 (Nordrhein-Westfalen since 2001, Pfalz-region for *P. nausithous* since 1989)

Ireland: since 2007

Lithuania: since 2009

Jersey: since 2004

Portugal: 1998-2006

Slovenia: since 2007

Spain (Catalonia, including Andorra): since 1994

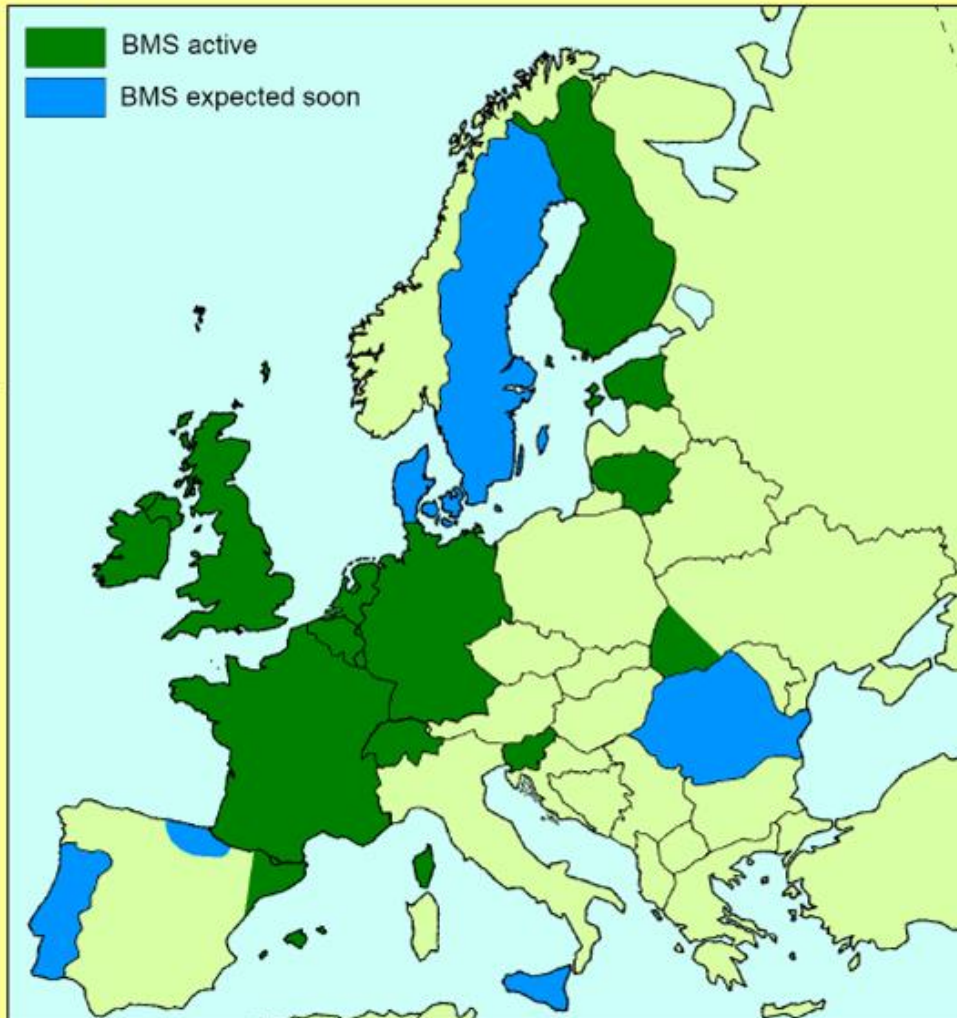
Switzerland (Aargau): since 1998

The Netherlands: since 1990

Ukraine (Transcarpathia): since 1990

United Kingdom: since 1976

In 2009 more than 3000 transects were counted.



» Start – 2016

some more pudding...



Milestones

- online database and data submission forms
- open source tools: ODK Aggregate, Enketo web forms, ONA,
- the transect scheme became part of the Hungarian Lepidopterists Society (SzJMLE);



https://ona.io/btrfly_transect_hu/13474/11

ONA B btrfly_transect_hu Butterfly Transects Hungary ▶ transect_reg_form_Hu-En

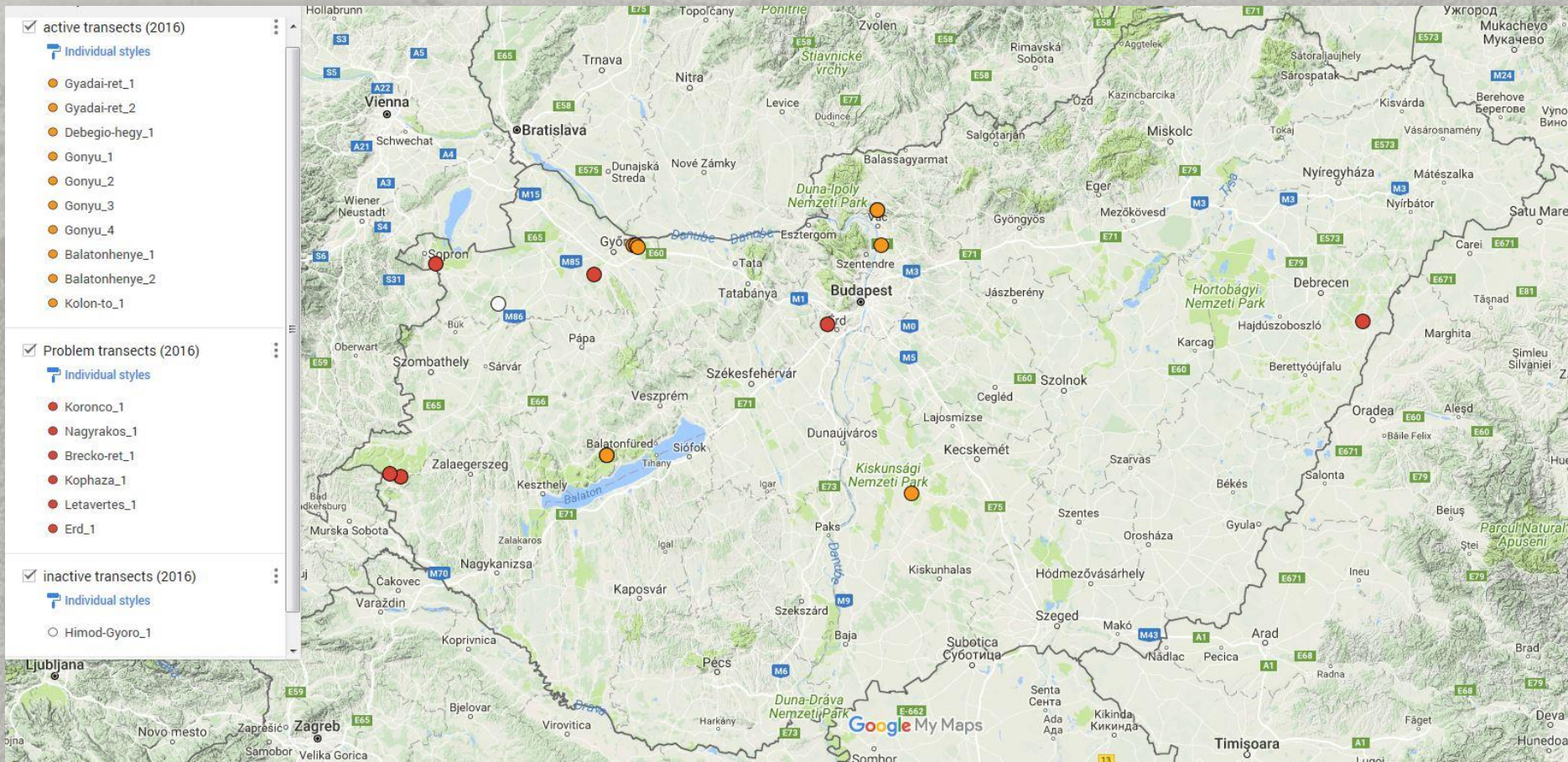
Overview Map Table Charts Dashboard Settings EN 15 Records Webform

Search Show: Label Page 1 / 1

Name of transect site	Nearest locality	Micro-region name	microreg_code	micror	Trans	Transect type	Year	date_established	transect route	Transect ID
Gyadai-rét	Szendehegy	Kosdi-dombság	6.03.11.	K...	2	F - fixed gener...	2...	2015	Transect_Gy...	Gyadai-ret_2
Gyadai-rét	Szendehegy	Kosdi-dombság	6.03.11.	K...	2	F - fixed gener...	2...	2015	Transect_Gy...	Gyadai-ret_1
Gönyűi lőtér	Győrszentiván	Győr-Tatai-teraszvidék	2.03.11.	G...	1	F - fixed gener...	2...	2015	Transect_Go...	Gonyu_1
Gönyűi lőtér	Győrszentiván	Győr-Tatai-teraszvidék	2.03.11.	G...	2	F - fixed gener...	2...	2015	Transect_Go...	Gonyu_2
Gönyűi lőtér	Győrszentiván	Győr-Tatai-teraszvidék	2.03.11.	G...	3	F - fixed gener...	2...	2015	Transect_Go...	Gonyu_3
Gönyűi lőtér	Győrszentiván	Győr-Tatai-teraszvidék	2.03.11.	G...	4	F - fixed gener...	2...	2015	Transect_Go...	Gonyu_4
Breckó-rét	Óriszentpéter	Felső-Zala-völgy	3.04.11.	F...	1	F - fixed gener...	2...	2016	Breckó-rét-1...	Brecko-ret_1
Nagy-rét	Nagyrákos	Felső-Zala-völgy	3.04.11.	F...	1	F - fixed gener...	2...	2016	Transect_Na...	Nagyraikos_1
Debég-hegy	Göd, Sződ, Sződliget	Pesti-hordalekkúpság	1.01.12.	P...	1	F - fixed gener...	2...	2016	Transect_De...	Debego-hegy_1
Létavértes	Létavértes	Dél-Nyírség	1.10.14.	D...	1	F - fixed gener...	2...	2016	Létavértes...	Letavertes_1
Balatonhenye	Balatonhenye	Balaton-felvidék és kismed...	5.01.22.	B...	1	F - fixed gener...	2...	2016	Transect_Bal...	Balatonhenye_1
Balatonhenye	Balatonhenye	Balaton-felvidék és kismed...	5.01.22.	B...	2	F - fixed gener...	2...	2016	Transect_Bal...	Balatonhenye_2
Bikatorok	Soltszentimre	Kiskunsági-homokhát	1.02.13.	Ki...	1	F - fixed gener...	2...	2016	Butterfly Tra...	

Weekly transects in 2016

10 (out of 14) finished the season (6 NP's + 4 volunteers)



Some facts

- number of transects: 10 (+2);
- total length: 8.5 km (+1.5 km);
- first count: Apr 4, 2016.;
- last count: Sep 30, 2016;
- many protected spp. recorded:
P. mnemosyne, *P. polyxena*, *L. dispar*, *L. alciphron*,
L. thersamon, *H. semele*, *H. statilinus*, *H. morpheus*
+ *Zygaena laeta*(!)
+ *Libelloides macaronius*, *Acrida ungarica*...

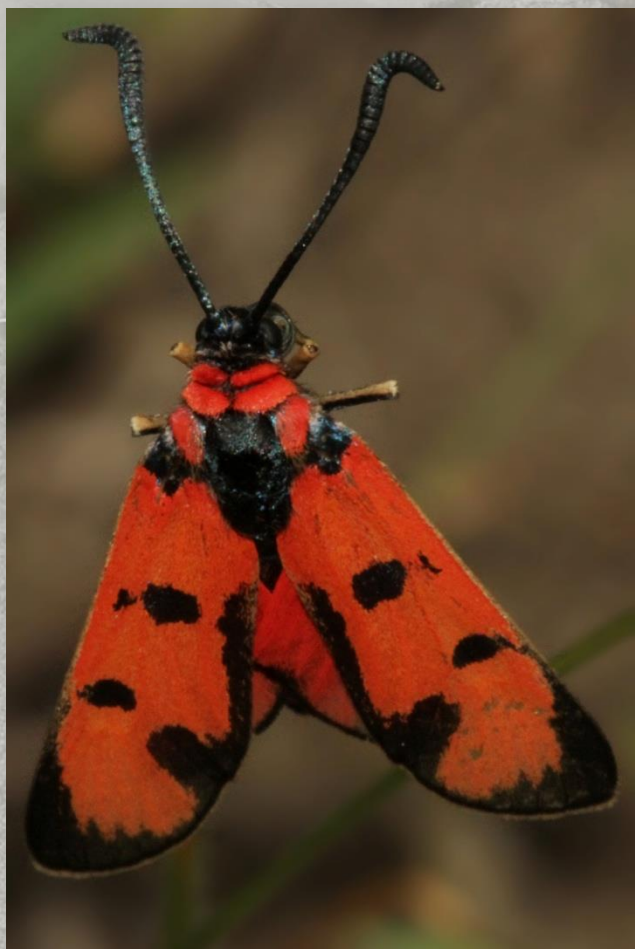


Results

- data on Natura 2000 and/or protected species



- rediscovering a highly protected moth sp. that was thought to be extinct in the region!



Bloodword Burnet (*Zygaena laeta*)
Debegió-hegy, July 2016

-
- A close-up photograph of a moth with brown and white patterned wings and long, thin antennae, resting on a bright purple flower. The background is a soft, out-of-focus green.



- collateral gains: data on other taxa



» Present – 2017

drowning by numbers...



Milestones

- data base migration (Open BioMaps),
revamped submission forms and system;
- targeted transects (4) on *Maculinea* sites,
complemented by CMR projects;

A216	A	B	C	D	E	F
	Szakasz-10					
	Section-10					
216	Volt lepkék? / Any butterflies?	1 teleius.M/		17		h13+n:4
218	Igen / yes	2				
219	Egy mástól nehezen	3 brassicae.P/	1			n:1
220	elkülöníthető fajként, ha nem	4 pamphilus.C/	1			
221	vagy biztos benne, inkább	5 rapae.P/		egy / one (1)		h:1
222	használj fajcsoportot!	6				
223		7				
224	For species extremely difficult	8				
225	to separate from each other,	9				
226	use "aggregates" instead!	10				
227		11				
228	Érvényes fajcsoportok:	12				
229	Valid aggregates:	13				
230	_aketas-decoloratus.E_agg/	14				
231	_argyrogomoni-idas.P_agg/	15				
232	_didyma-trivia.M_agg/	16				
233	_hyale-allacariensis.C_agg/	17				
234	_lineolus-sylvestris.T_agg/	18				
235	_sinapis-realis.I_agg/	19				
236	Ha nem vagy biztos egy fajban,	20				
237	ezt jelezd a megjegyzésben!	21				
238	Készíts róla fotókat és küldd el	22				
239	őket nekünk, a kitöltött	23				
240	adatlappal együtt!	24				
241	If you are unsure about a	25				
242	species, make a remark! Take	26				
243	photos of the tricky beast and	27				
244	send them to us together with	28				
245	your completed survey sheet.	29				
246		30				
247		31				
248		32				
249		33				
250		34				
251		35				

The screenshot shows the Open BioMaps web interface. The main map displays a satellite view of a rural area with a yellow transect line. The interface includes a search bar at the top, a layer menu on the left, and a query table on the right. The query table is titled "butterfly_transects_hu" and shows a list of transects with filters for "options" and "taxon filters".

QUERY TABLE
butterfly_transects_hu

TEXT FILTERS

options:
☒ transect_id

taxon filters

search string:

only for the selected name:

traverse_id:

transect_id:

Q Query

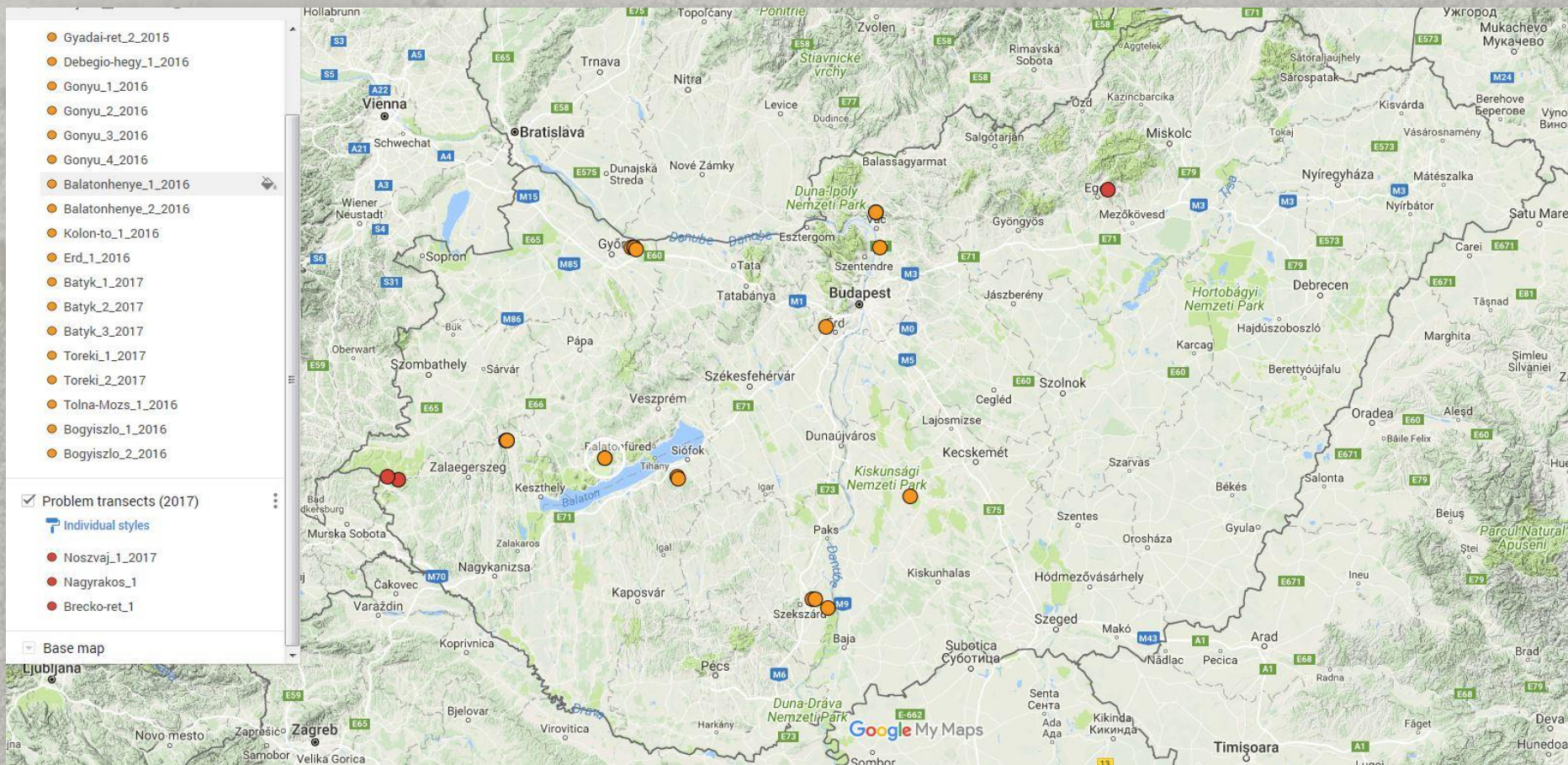
NAVIGATION:

SPATIAL QUERY:

apply recursive filters:

Weekly transects in 2017

19 (out of 20) finished the season (9 NP's + 10 volunteers)



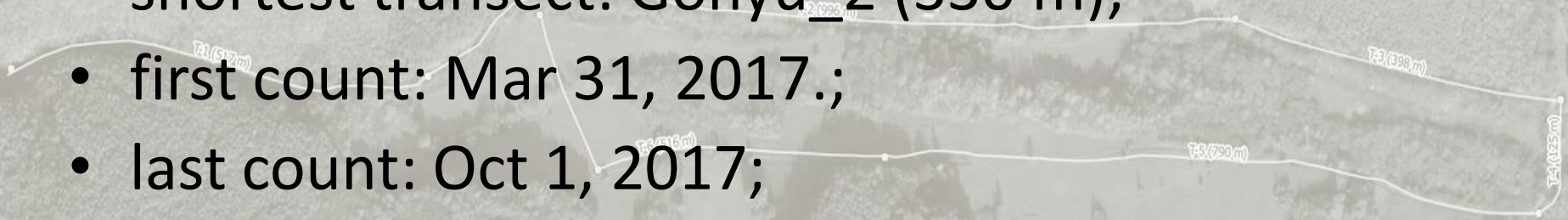
diverse range of habitats

(wet valleys, mesophilous grasslands, Pannonian sand steppes, rocky grassland on dolomite, fen meadows, mixed forests...)

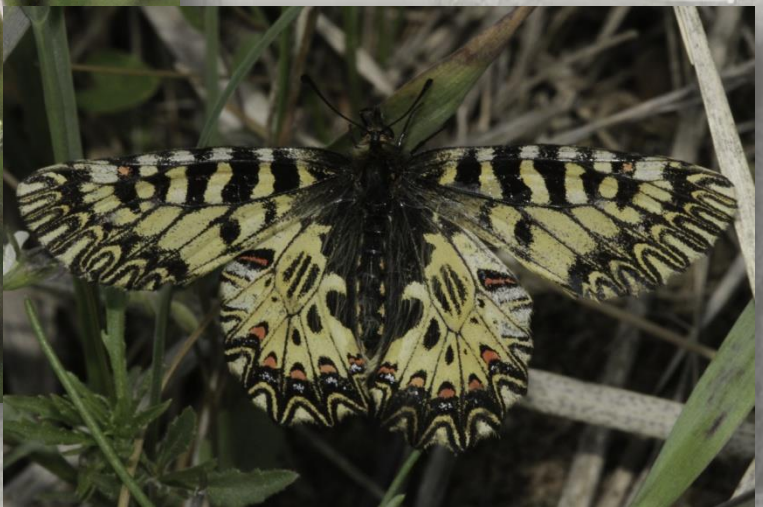


Some facts

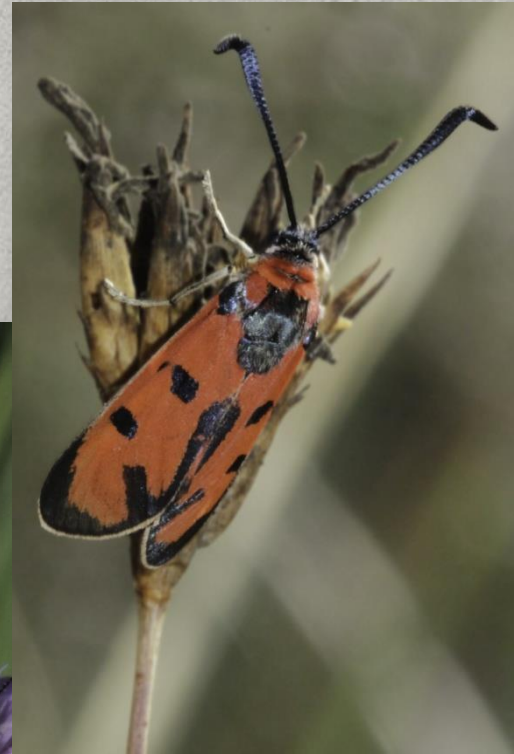
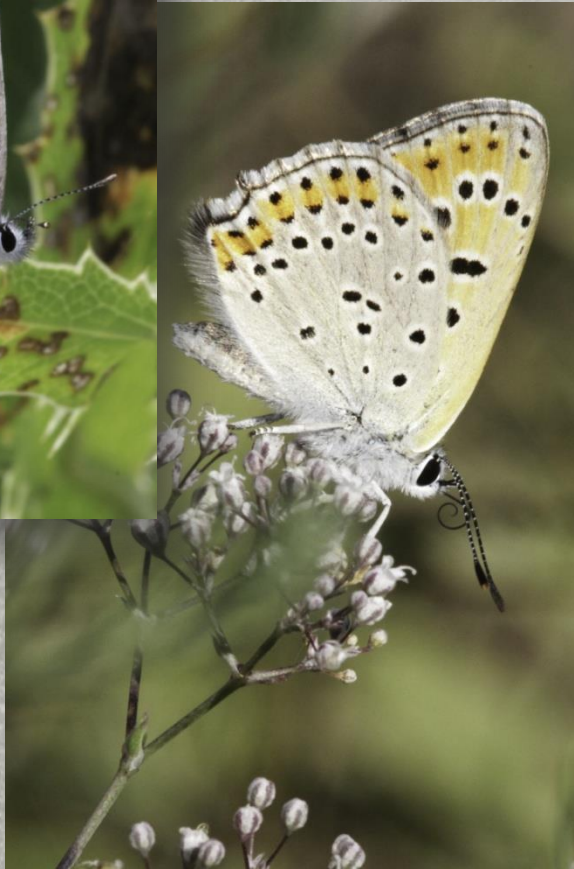
- total length: 13 km;
- longest transect: Gyadai-ret_1 (2,015 m);
- shortest transect: Gonyu_2 (330 m);
- first count: Mar 31, 2017.;
- last count: Oct 1, 2017;
- highest no. of spp. per transect: >30 spp.
(Gyadai-ret_1, Gyadai-ret_2, Balatonhenye_1);
- highest no. of spp. per section: >20 spp.
(Gyadai-ret_2, Balatonhenye_1);



Results



great success



» Problems, lessons learned, future plans

whatever you do, don't panic...

- mixed counts of butterflies and day flying moths;
→ too much burden + unreliable
- data reliability and confusion species;
(aggregates, catching every n th specimen etc.)
- the need for growth;
(mobilize volunteers + coverage of all main habitat types)
- "Citizen Science" is looked down upon
- database migration takes longer;
- **correct statistical analyses for the usability of biweekly transects (!);**
(mixed weekly-biweekly scheme, NP involvement)
- publicity and PR (fb page, website)

Thanks for your attention

butterflytransectshu@gmail.com