13 years of Aquila dataloggers

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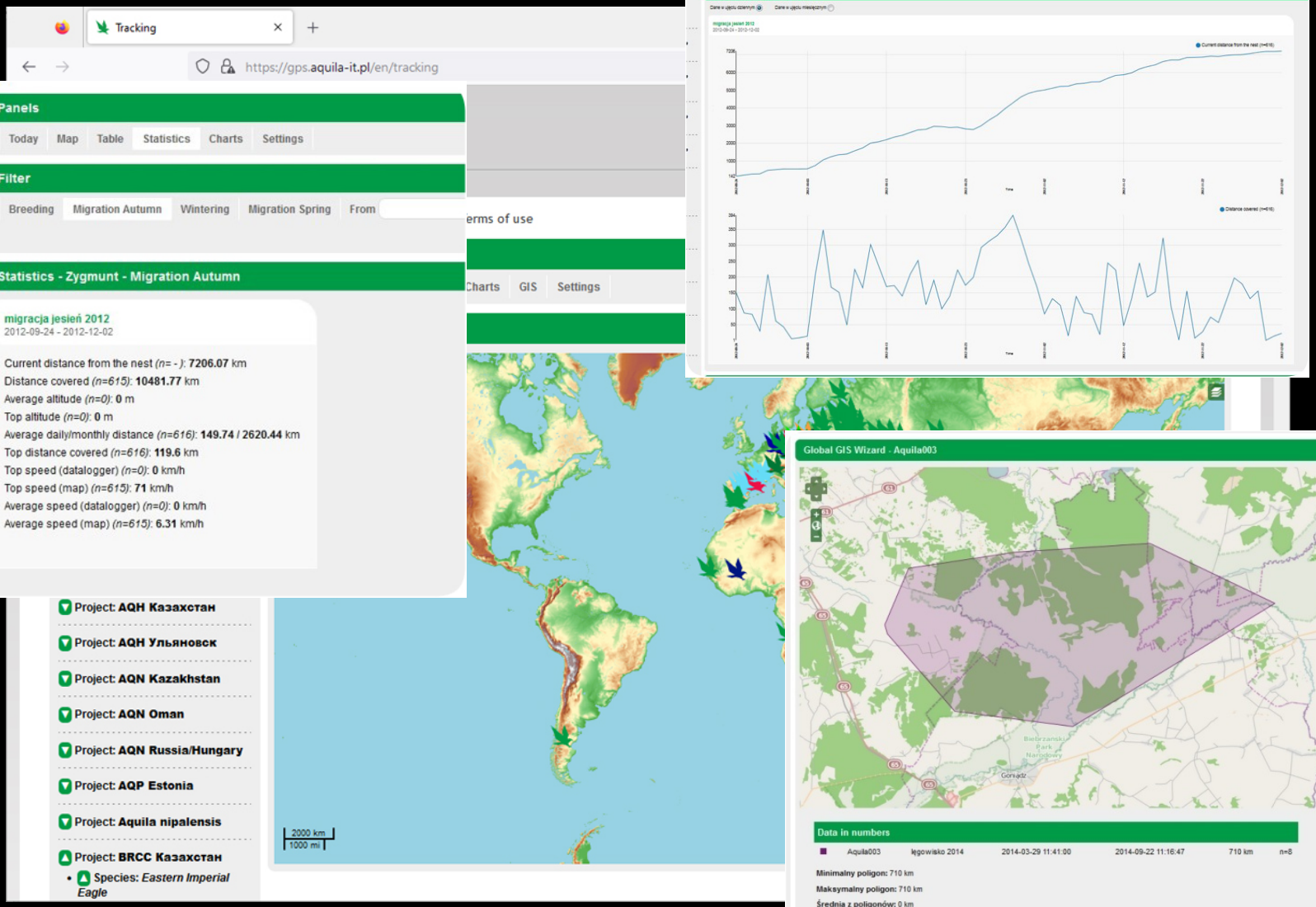
13 years of Aquila dataloggers

- Company started in 2006
- First scientific project in 2010
- First datalogger project in 2011
- First GPS/GSM datalogger in 2012
- 26 bird species tagged so far

Standard features

- Weight: from 14g
- Power: solar charged batteries
- Communication: GSM/GPRS
- Data collection type: coordinates, altitude, speed,…
- Data collection frequency: every 3 minutes during daytimes…
- Data transfer frequency: every 3 minutes
- Night mode
- Remote configuration

AquilaSystem



AquilaSystem

Benefits

- Comprehensive analysis tool
- Cost effectiveness
- Analysis based on latest data
- Individual/species comparison module
- Multilingual interface

Tagged species

Vultur gryphus	Gypaetus barbatus	*Gyps ruepelli*	*Aegypius monachus*	Neophron percnopterus	Haliaeetus albicilla
Aquila clanga	Aquila clanga x pomarina	Aquila pomarina	Aquila chrysaetos	Aquila heliaca	Aquila nipalensis
Aquila fasciata	Pandion haliaetus	Milvus milvus	Milvus migrans	Buteo buteo	Circaetus galicus
Accipiter gentilis	Bubo bubo	Pelecanus crispus	*Grus leucogeranus*	Ciconia ciconia	*Ciconia nigra*
		Anser albifrons	Tetrao tetrix		

Are Aquila loggers reliable

- Random projects from eastern Europe/Central Asia
- Loggers actively searched for within the project
- Only known cases taken into account
- Freshly fitted loggers (2022-2023) not included, as most of them operate and logger operating for 2 years is not a success anymore
- Mortality cause is not an issue

Numbers

Start	Quantity	Operate	Stopped	Death confirmed	Probable death	Logger stopped confirmed
2019	11	4	7	5	1	0
2017	38	17	21	9	6	1
2018	5	2	3	1	1	0
2019	6	2	4	0	1	0
2018	3	0	3	1	0	0
2017	4	0	4	4	0	0
2017	44	22	22	8	7	0
Total	**111**	**47**	**64**	**28**	**16**	**1**

Results

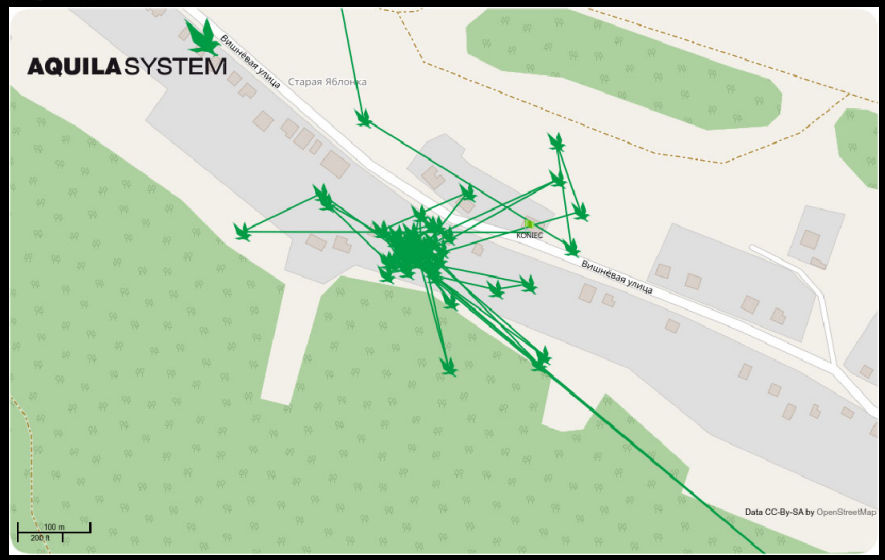
42,34% of loggers still operate
67,57% including confirmed bird death
81,98% including probable bird death
1 logger confirmed not working anymore (6 years), the bird is fine.

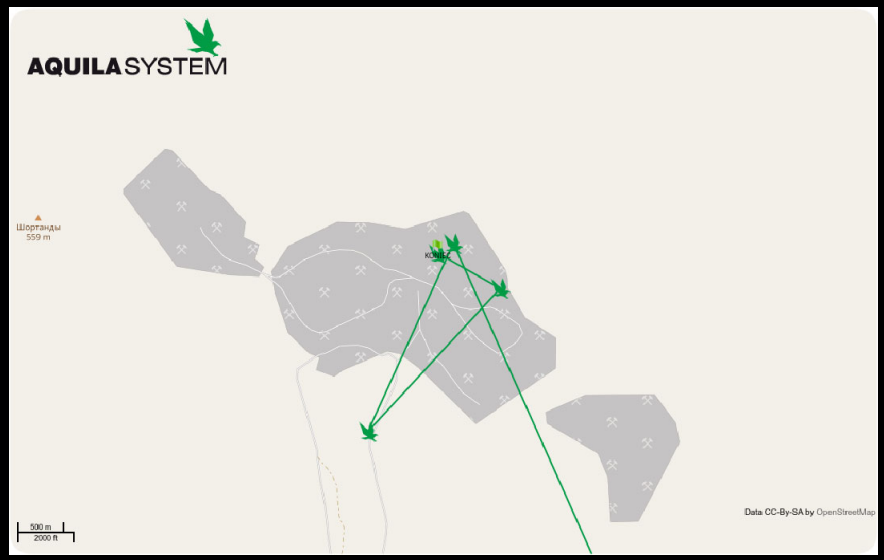
Remark 1: Loggers have no extra „mortality sensor/procedure“
Remark 2: Low density of gsm towers

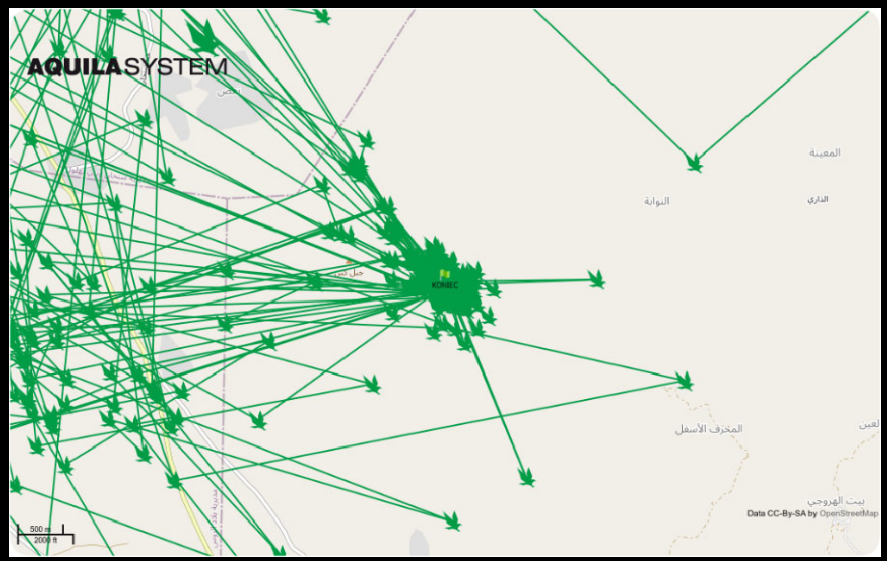
Other death signs (marked as „probable“)

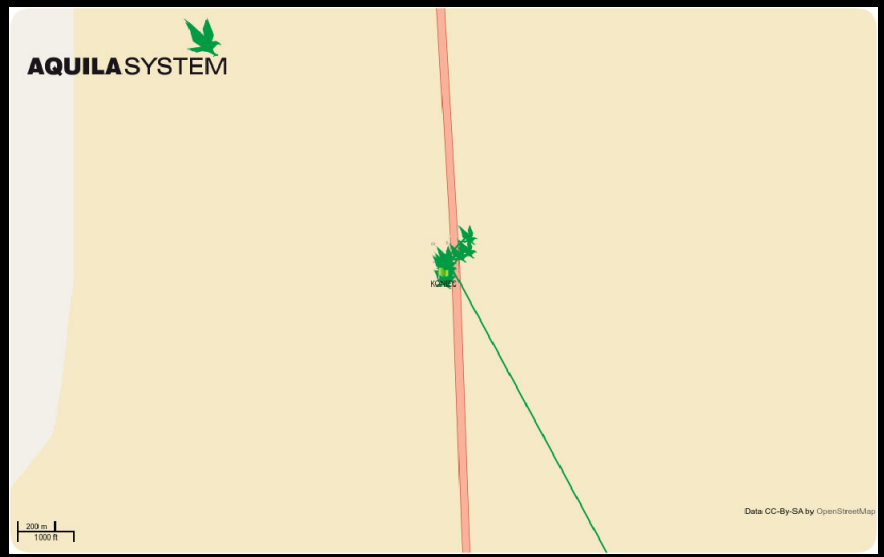
1. Multiple fixes within small area
2. Few fixes, but close to human settlements/infrastructure (roads, power lines, industry, wind farms)
3. No data from logger, but info „bird with logger/ring on the market“, „captured by CIA/FBI“, etc.

Other death signs, examples





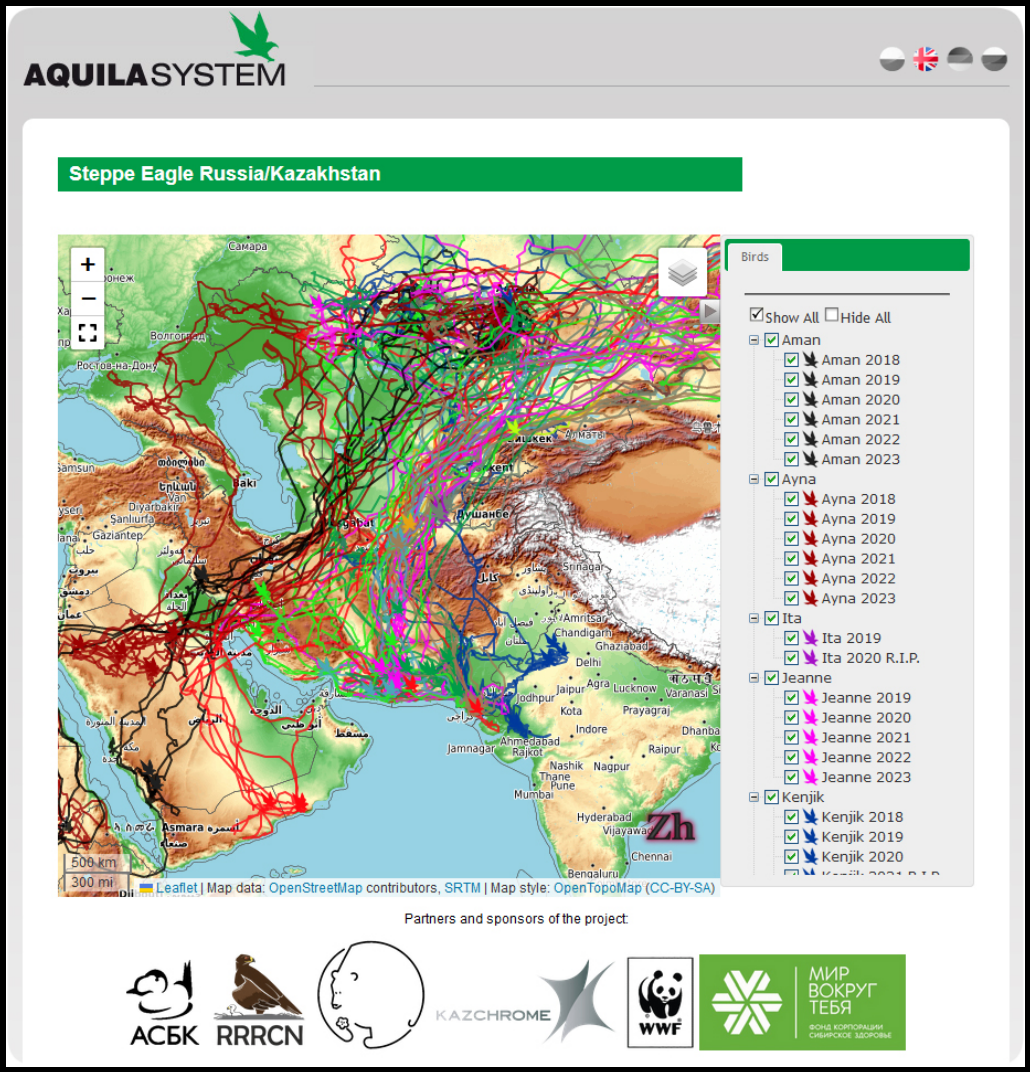




Spectacular logger recoveries

1. GSE from Biebrza
   - logger stopped working in early autumn
   - next spring found with broken chassis in a forest
   - set under the sun started working
2. Imperial Eagle in Russia:
   - logger stopped working in autumn,
   - layed whole winter under snow,
   - started transmitting in spring – bird electrocuted
3. Steppe Eagle in Kazakhstan:
   - at spring data from one location, then silence
   - next spring logger started sending data and was collected

International projects



https://gps.aquila-it.pl

https://egyptianvultureoman.blogspot.com

http://rrrcn.ru/en/migration/se2018

http://rrrcn.ru/en/migration/ev-eie2022

Live bird tracking

Aquila loggers

Benefits

Aquila loggers

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13 years of Aquila dataloggers

„Loggers of „x“ freeze.
Loggers of „y“ freeze.
„z“ loggers stop working as well.
But Aquila loggers work. I checked, it was minus 40 degrees Celsius at that time there.
How do you manage that???“

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Назарларыңызға рахмет!

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Photos: Nirav Bhatt, Urmas Sellis, Maksim Perkovskij (Astrakhanskij Biosfernij Zapovjednik), Mikhail Korepov