Persian Leopard Monitoring in Armenia

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- The start from the summer 2002, in Khosrov Forest State Reserve and Arevik National Park (the Meghri Forestry then).

- The first 4 trail cameras placed in 2003 near Nrnadzor (Arevik NP)

- The first photograph of a living leopard from Armenia in March 2005 (Arevik NP)

- Starting from 2006, 20 trail cameras deployed (all in Arevik NP)

- The second photograph, a different leopard in February 2007

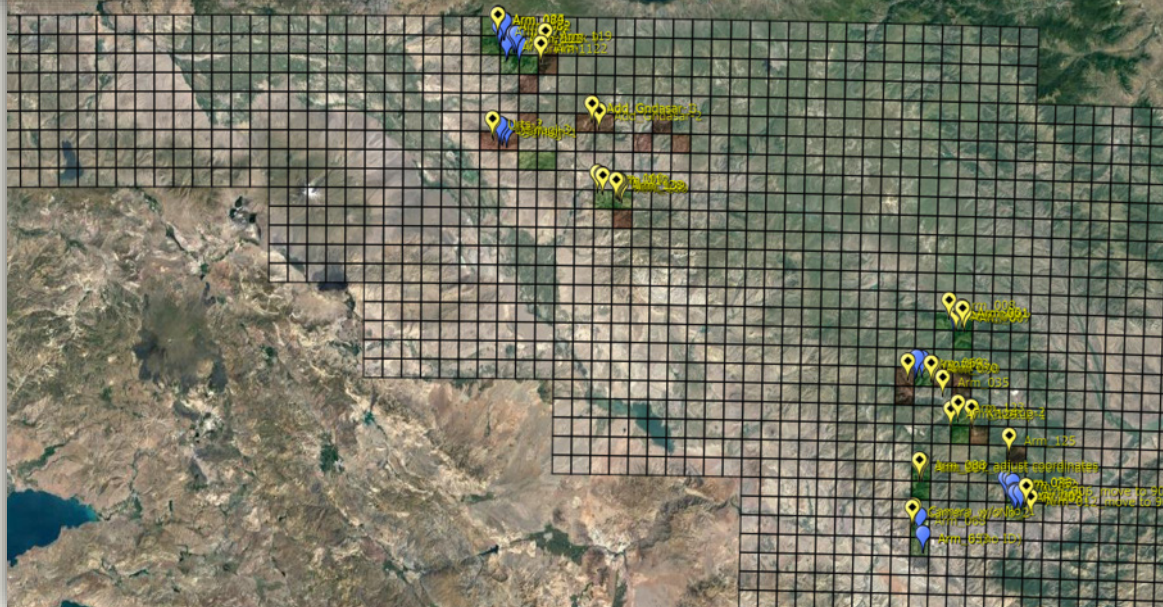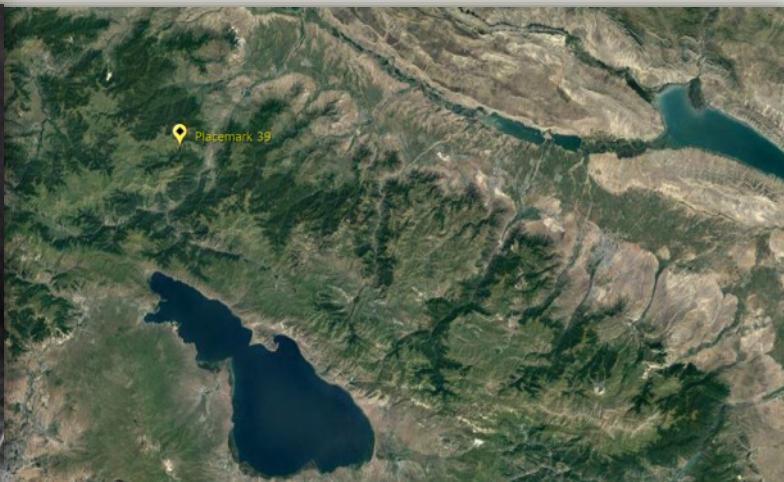- Leopard and prey species *Presence/Absence* type of monitoring until 2019

2017 – 2018 Armenia/Iran border
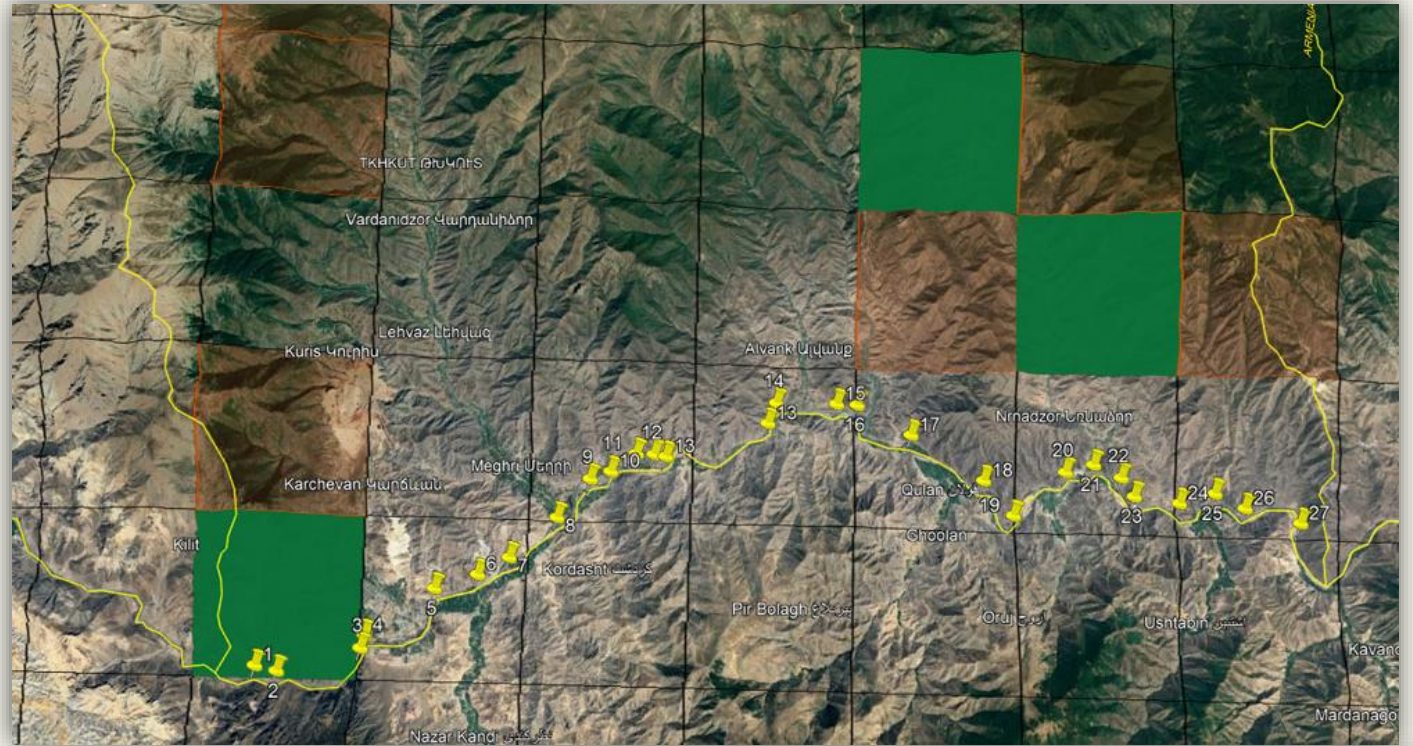
2019 – 2021 Yenokavan (Tavush)

2020-2024
camera coverage.

Currently:
41 – Monitoring cells
105 – Survey cells

*2011 – 6 cameras in
Jermuk gorge for 7-8
months; 4 cameras were
stolen

*2019 – 4 cameras were
installed and all stolen from
Katarasar Ridge (adjacent to
Zangezur SS)

Grid significance

- Monitoring
- Survey
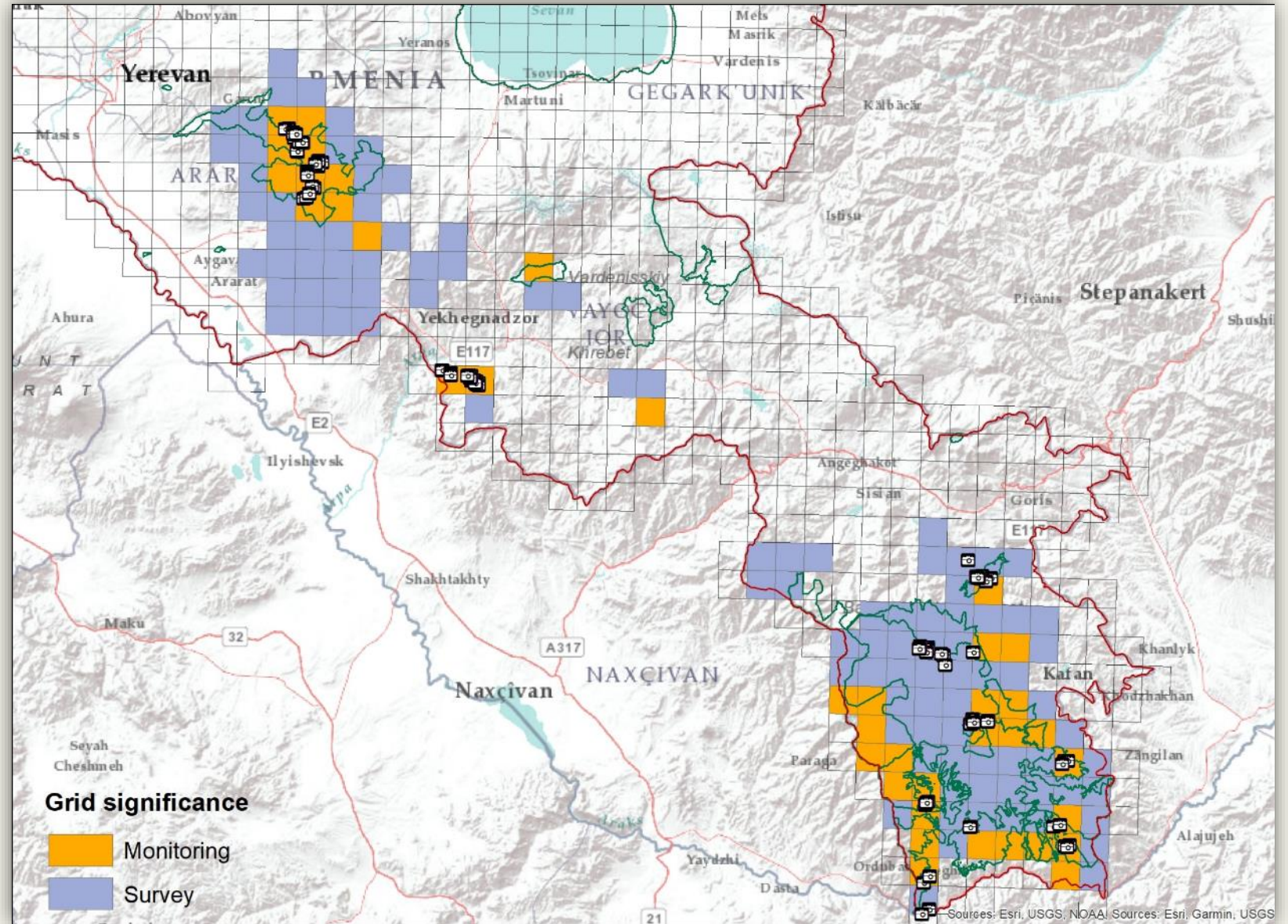
(2023) 2024 – 2027 target PAs

- Khosrov Forest State Reserve
- Arpa Protected Landscape
- Tatev National Park (planned PA)
- Zangezur State Sanctuary
- Khustup State Sanctuary
- Kapan Forestry
- Shikahogh State Reserve
- Boghakar State Sanctuary
- Arevik National Park

WWF leopard conservation project's target protected areas
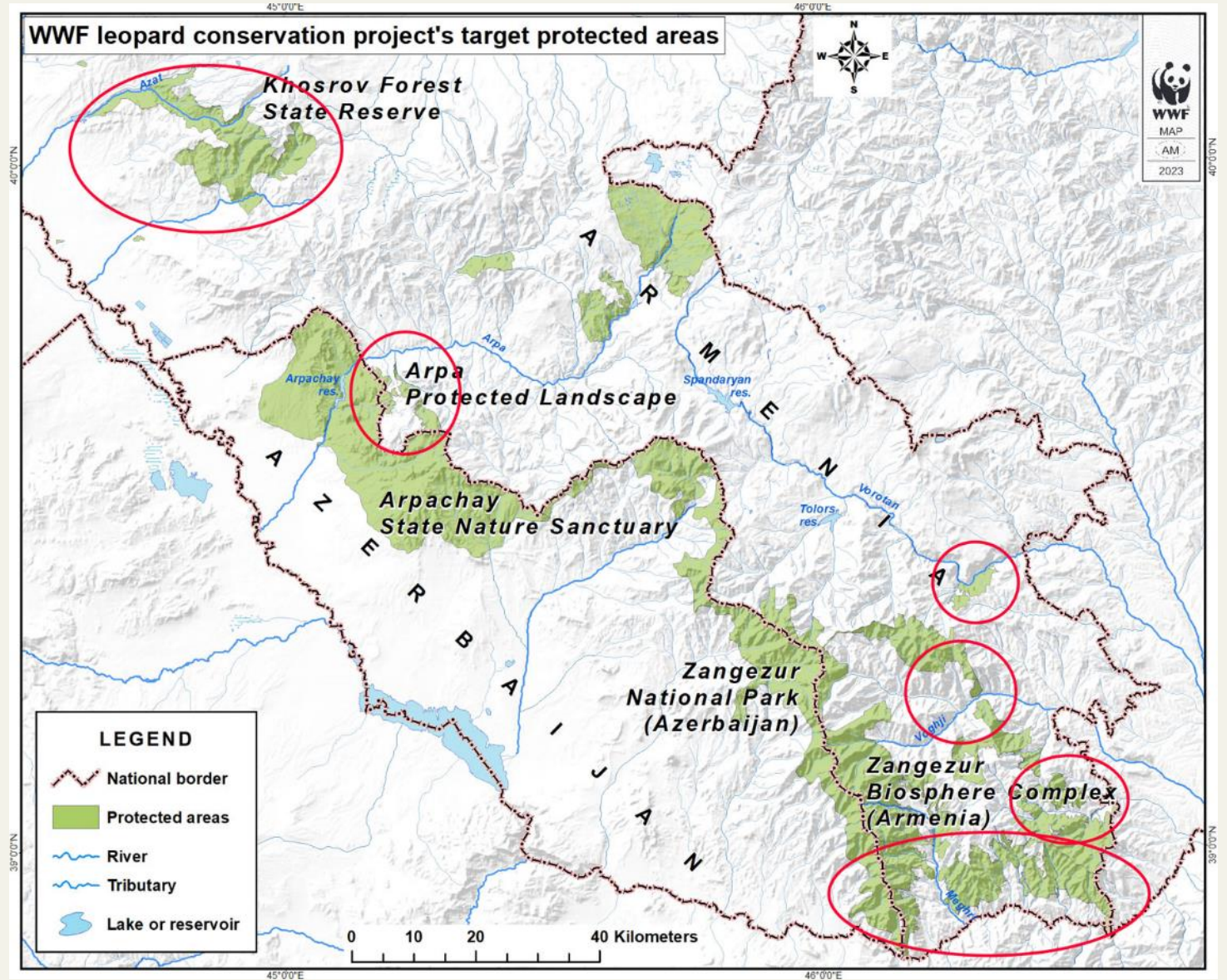
Trail Camera distribution per target Protected Areas in Armenia

Target PA	2018-2019	2020 - 2021	2022	2023	2024
Khosrov Forest SR	21	31	31	36	31
Arpa PL	9	15	16	14	12
Tatev NP (planned)	6	10	13	10	10
Kapan Forestry	9	12	13	7	4
Shikahogh SR	1	6	7	5	4
Arevik NP	24	13	19	11	8
Yenokavan (Tavush)*	-	17	14	10	10
Total	**70**	**104**	**113**	**93**	**79**

* - outside of Monitoring grid

Cameras currently outside of Monitoring Scheme – 24 (15 broken, 2 stolen, 2 at border guard, 5 at other WWF's projects sites)

Persian Leopard individuals recorded in Armenia during 2005 - 2023

Code	Sex	Protected Area	2005	2007	2008-2012	2013-2016	2017	2018	2019	2020	2021	2022	2023
"Leo9" (SC_017)	♀?	Arevik NP	x										
"Leo10" (SC_018)	♂	Arevik NP		x									
"Araz" (SC_003)	♂	Arevik NP				x							
"Eve" (SC_002)	♀	Arevik NP				x							
"Leo2" (SC_006)	♂	Arevik NP				x							
"Neo" (SC_007)	♂	Khosrov Forest SR, Caucasus WR, Arpa PL						x	x	x	x	x	x
"Arman" (SC_033)	♂	Caucasus WR, Ijevan SS						x	x	x			
"Areni" (SC_031)	♂	Arpa PL							x	x	x	x	
"Nrnadzor" (SC_032)	♂	Arevik NP							x	x	x		
"Basat" (SC_019)	♂	Arevik NP							x	x	x		
"Meghri"	?	Arevik NP											x
"Boghakar" (SC_026)	♂	Arevik NP									x	x	x
"Burla" (SC_008)	♀	Arevik NP									x (with 2 cubs)		
"Boran" (SC_025)	♂	Caucasus WR, Arpa PL, Khosrov Forest SR									x	x	x
Total	**14**		**1**	**1**	**0**	**3**	**0**	**2**	**5**	**5**	**7 (with cubs)**	**4**	**4**

Challenges...

- Periodical deficit of trail cameras (no repair is usually available locally)
- Resources for covering all suitable habitats: Monitoring and Survey cell full coverage (including ungulate counts; 2-3(4) cameras check per field day
- Insufficient human resources: local ranger and caretakers in most cases unable to adjust camera settings and properly install a camera
- Trail camera monitoring is possible only in Protected Areas, as chances of camera theft are increased outside of PAs
- In some areas (e.g. Khosrov Forest SR) trail cameras are demounted during herb collection season (April-May)
- Frequent replacements in the administrations of some of the target PAs
- Work limitations near the national borders and access to some key Leopard habitats
- Poaching (snares, shooting..)
- Lack of quality trail cameras and optical equipment locally (particularly, binoculars, spotting scopes, tripods)
- Camelot: lack of a permanent capable operator, hence the data entrance inconsistency
- EarthBeat: app stability issues, irregular development updates

- Trained Camelot operator(s) works with Camelot and assists in scientific work
- A secure regional server/database for Camelot
- Standardized field techniques (trail camera management, prey species counts)
- Available material on Persian Leopard and other target species is published, relevant adaptations to monitoring and conservation recommendations are made
- Train selected PA rangers and caretakers in trail camera settings and installation
- Train caretakers in EarthBeat data collection (improve knowledge and effectiveness)
- More attention to EarthBeat development and bug fixes
- More effective exchange of info about Persian Leopard and other target species within WWF-Caucasus network
- Compile a "Leopard Passport" database for WWF-Caucasus network
- Try available AI software for Leopard and other species ID and data processing

Thank you