

The Geography of Violence in the North Caucasus, 1999-2007

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Research supported by grants from the National Science Foundation, Human and Social Dynamics program and from the Committee on Research and Exploration, National Geographic Society



Land cover in the Caucasus derived from 30m LANDSAT satellite imagery 2001.
Source: O'Loughlin et al 2007

Ethnic Map of the Caucasus

1989-2003

Source: Artur Tsutsiev, 2004



Numbers Designating Ethnic Groups on the Map

- | | | | |
|-----------------|----------------------------|--------------------|------------------|
| 1 - Abkhaz | 17 - Aguls | 33 - Ossetians | 45 - Turkmen |
| 2 - Abazins | 18 - Tsakhurs | 34 - Kurds | 45a - Tatars |
| 3 - Adygey | 19 - Rutuls | 35 - Yezids | 45b - Turks |
| 3a - Shapsug | 20 - Archins | 36 - Tats | 46 - Kalmyks |
| 4 - Cherkess | 21 - Kryz | 37 - Mountain Jews | 47 - Estonians |
| 5 - Kabardins | 22 - Budugts | 38 - Talysh | 47a - Aysors |
| 6 - Ingush | 23 - Udins | 39 - Armenians | 48 - Meshketians |
| 7 - Chechen | 24 - Khinalugs | 39a - Khemshili | |
| 8 - Batsbiyts | 25 - Georgians | 40 - Azeris | |
| 9 - Kistins | 25a - Georgian Jews | 41 - Karachay | |
| 10 - Avars | 30 - Russians & Ukrainians | 42 - Balkars | |
| 11 - Andiskis | 30a - Czechs | 43 - Kumyks | |
| 12 - Tsezskis | 30b - Moldovans | 44 - Nogay | |
| 13 - Dargins | 31 - Germans | | |
| 14 - Laks | 32 - Greeks | | |
| 15 - Lezgins | | | |
| 16 - Tabasarans | | | |

Key Dates

- 7 Aug 1999 - Invasion of western Dagestan by Basayev-Khattab forces – withdrew late August
- 29 Aug 1999 – Federal forces attack from north on Chechnya
- 15 Oct 1999- 6 Feb, 2000, Battle of Grozny – rebels withdraw into mountains
- 20 Mar 2003 - Khattab killed
- 5 Oct 2003 - Akhmad Kadyrov elected President
- 9 May 2004 – Akhmad Kadyrov assassinated
- 21 Jun 2004 - Attack on Nazran, Ingushetia
- 1-3 Sep 2004 - Beslan school hostage siege/killings
- 8 Mar 2005 - Aslan Maskhadov killed
- 13 Oct 2005 - Attacks in Nal'chik
- 1 Mar 2006 - Ramzan Kadyrov acting prime minister
- 16 July 2006 - Shamil Basayev killed
- 15 Feb 2007 - Ramzan Kadyrov appointed president

Differences with Lyall

- All events coded by rebels, military and police, local and federal
- Events coded to precise locations, not just to the 130 *rayoni*
- Events coded to end August 2007
- Total n = 14178; Lyall's n = 1566 for rebel attacks only; 3956 for same years

Comparison of Rebel Attacks in the Three Major Republics by 17 Major Insurgent Groups (Lyall for 1999-2005)

Chechnya

98% Chechen

Targets of Insurgent Attacks

74% military

14% police

12% civilian

Targeting Strategy of Insurgents

Indiscriminate

Geographic Targeting

Widespread within Republic and border regions and some elsewhere in Russia

Ingushetia

67% Ingush

39% military

31% police

30% civilian

Mixed

Localized in Republic and some in N Ossetia

Dagestan

30 groups
(largest Avar at 28%)

55% police

27% govt official/civilns

18% military

Highly selective

Highly concentrated in certain big cities (Makhachkala, Buynaysk, Khasavyurt)

Case Study: North Caucasus of Russia (6 republics and 1 kray)

- 1st Chechen War, 1994-96 mostly confined to Chechnya
 - generally conventional warfare- frontlines, minefields, etc
- 2nd Chechen War began in August 1999
 - predominantly guerrilla warfare
- *Research Question: Has the 2nd conflict diffused from Chechnya to the surrounding republics during the course of the 1999-2007 period?*

North Caucasus Conflict Event Data 1999-2006

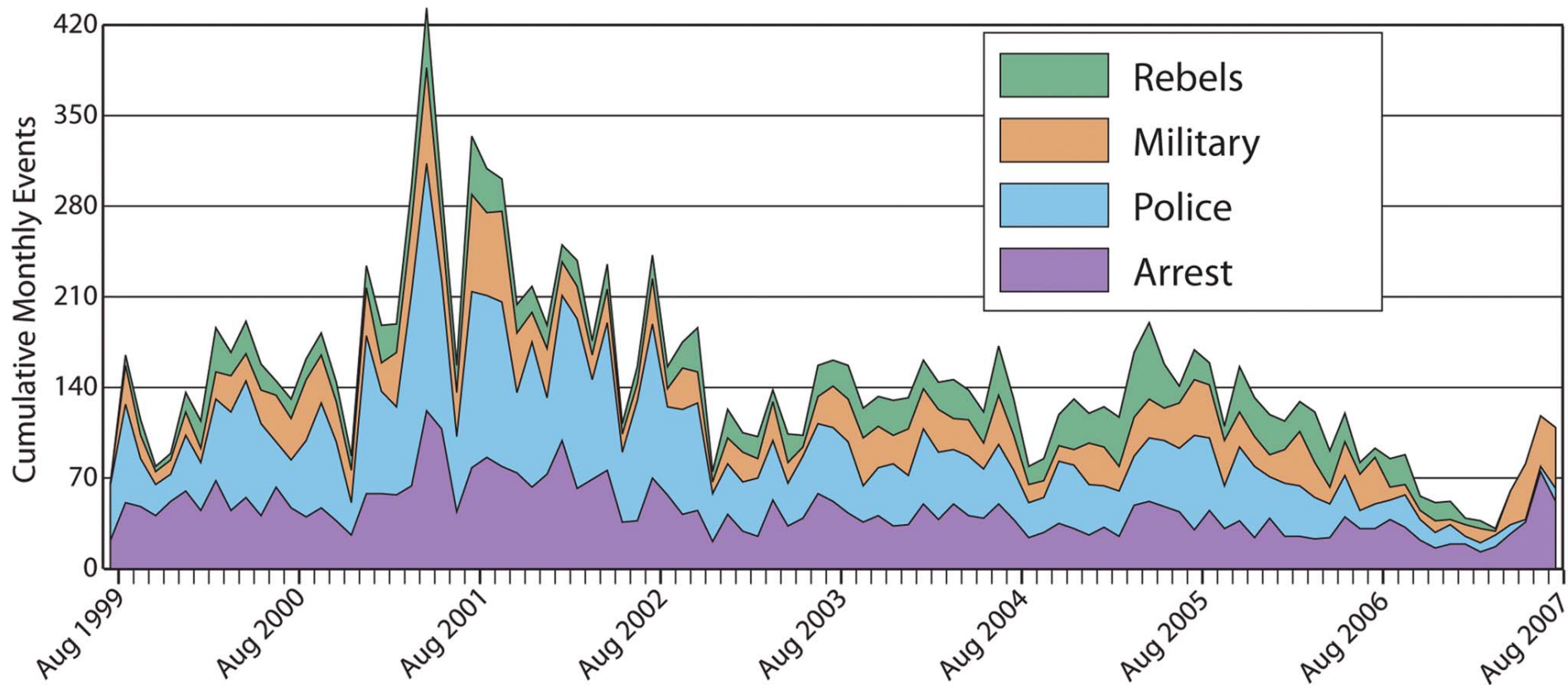
- One of the most militarized region in world (1,180 security members per 100,000 people; 300,000 troops/police *in toto*)
- Data gathered from newswire services (Lexis-Nexis)
 - e.g. AP, TASS, RIA Novosti, Deutsche Press, Russian Press Digest, AFP, Reuters
- From 1 August 1999 – 31 Aug 2007
- 14,178 events, such as . . .
 - arrests, weapons cache finds, bombings, kidnappings, assassinations, murders of security personnel, attacks on politicians, etc

EVENT_ID	s04--04--31			SEASON	Spring, 2004
MIL_POL_CI	Military			YEAR	2004
EVENT_TYPE	Military			CU_DATA_SO	LN
TOWN_VILLA	Gerzel-Aul			OTHER	
DISTRICT	Gudermesskiy Rayon			DIVIDE_NO	
REPUBLIC_K	Chechnya			T	
BEST_LOCAT	Gerzel-Aul			ACTOR	Rebels
WIRE_NEWS_	TASS			JTOWN_YE	
STORY_SOUR	Federal govt			S	
FEDS_KILLD		0		JT_ADD_IN	
FEDS_INJUR		2		F	
REBS_KILLD		0		SPOTCHEC	
REBS_INJUR		0		KN	
LOC_POL_KL		0		ARREST	other
LOC_POL_IN		0		CATEGORY	Rebels
PRO_RUS_KL		0		Y_UTM	4789221.388
PRO_RUS_IN		0		X_UTM	613856.837
CIVS_KILLD		0			
CIVS_INJUR		0			
TOT_KLL_IN		2			
CONFIRMED					
DATE_OCCUR					

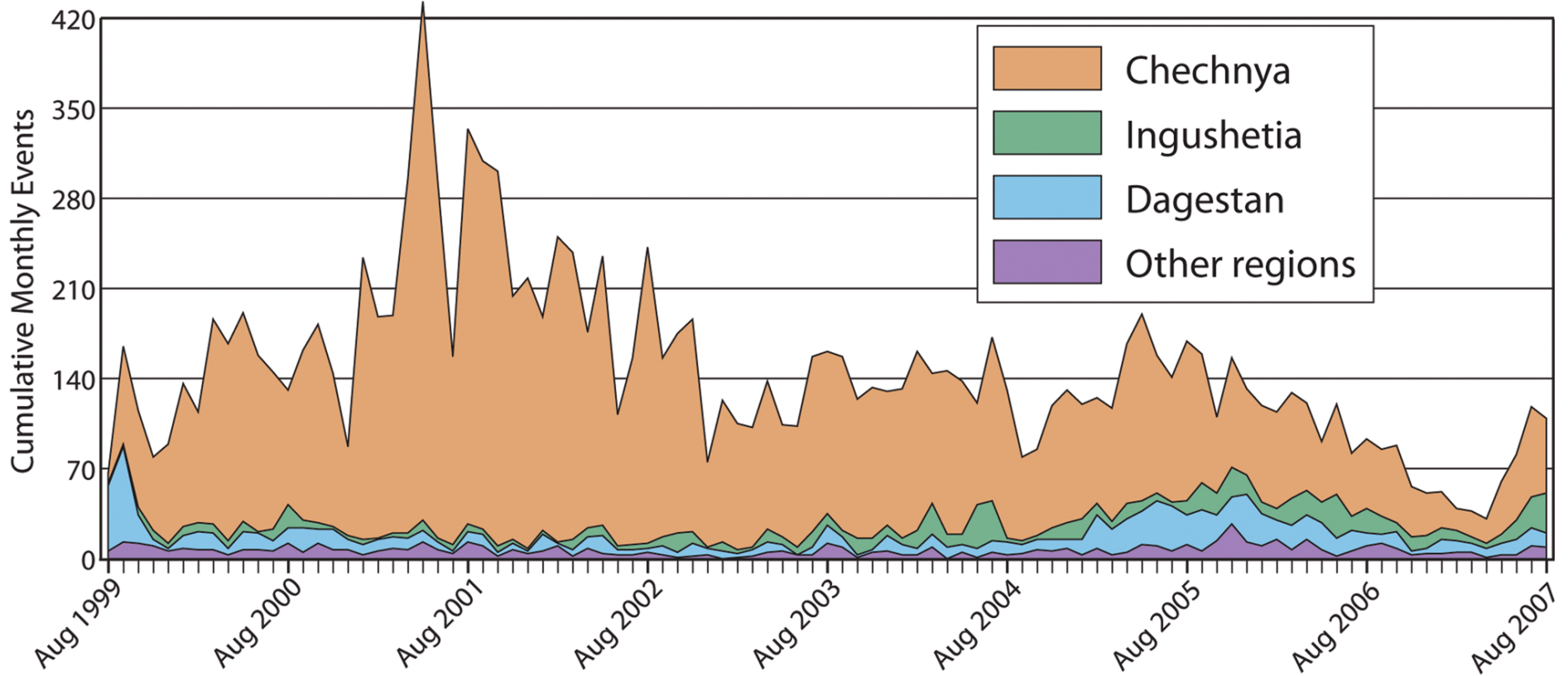
4/19/2004

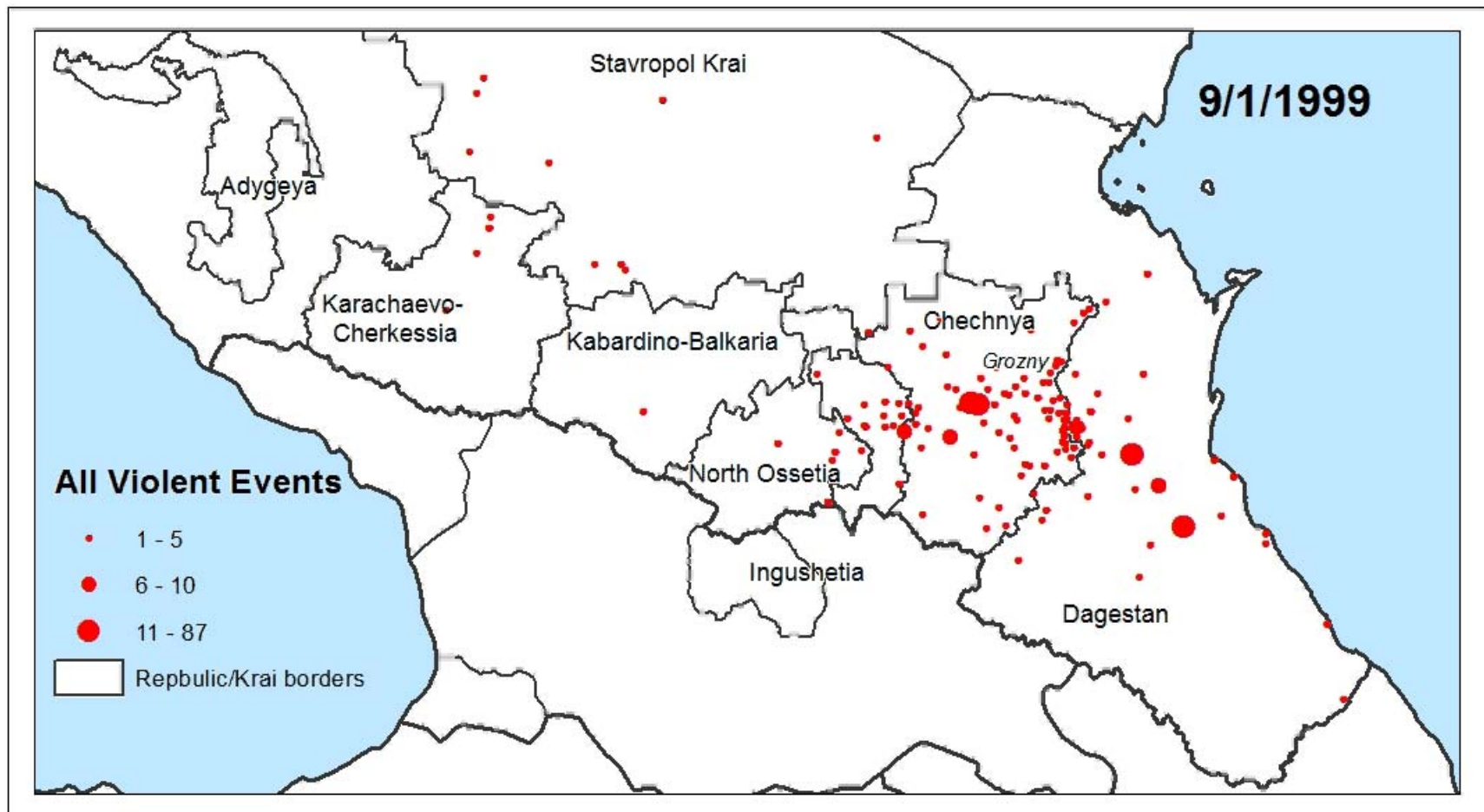
Sample entry

All Events (monthly) by Actor

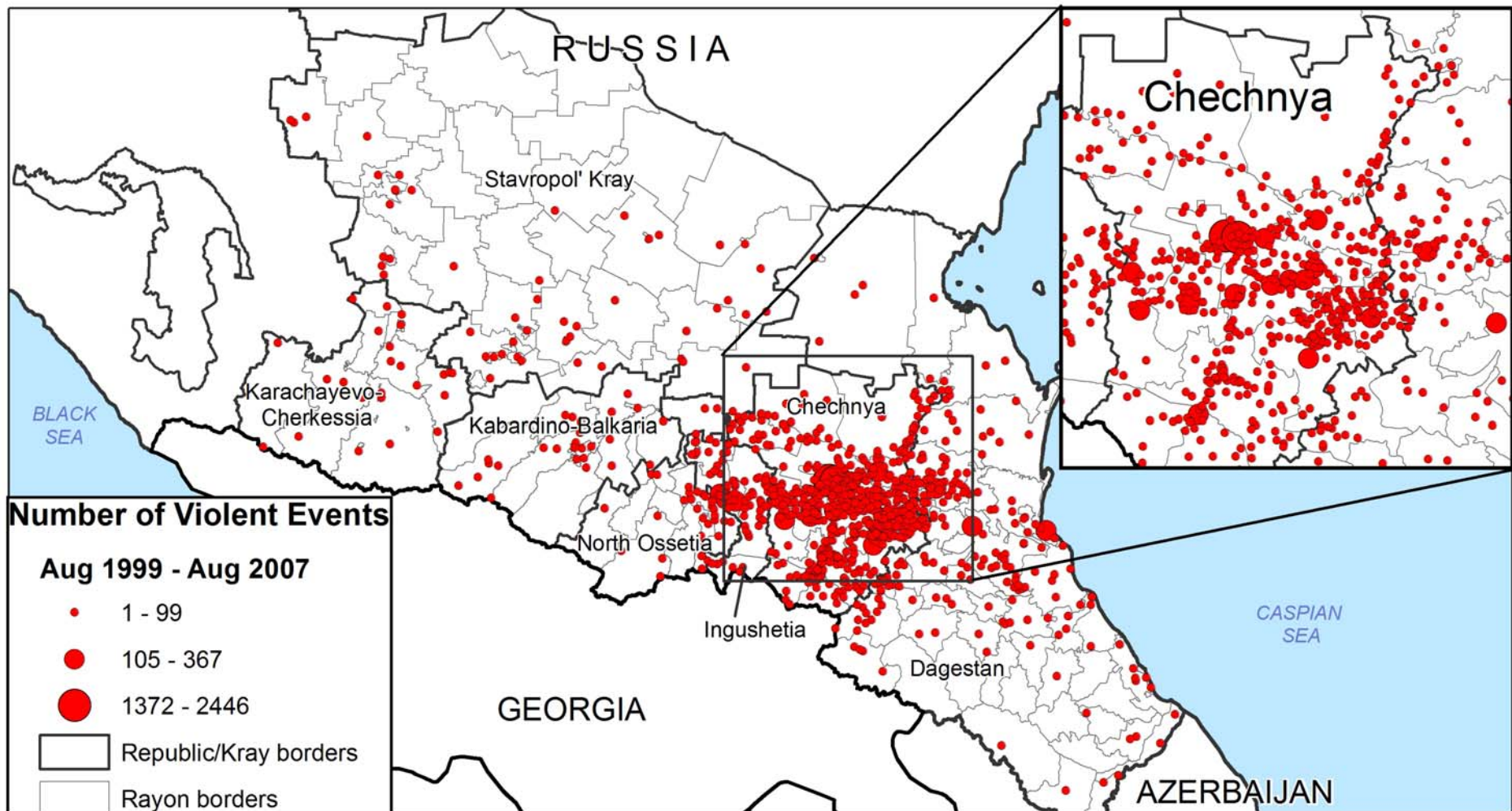


Rebel Events by Location (monthly by Republics)



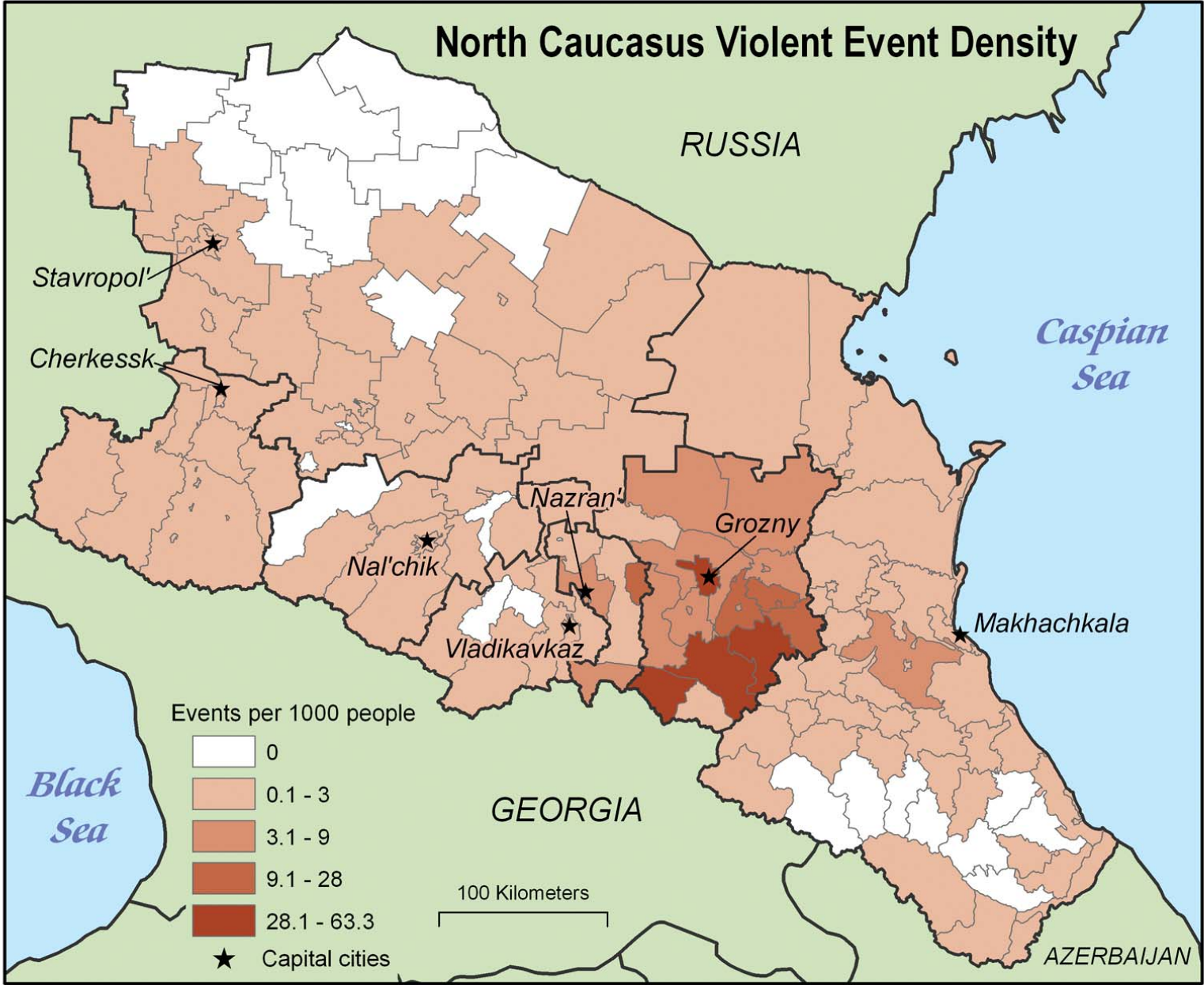


First slide of animation by season – see separate file



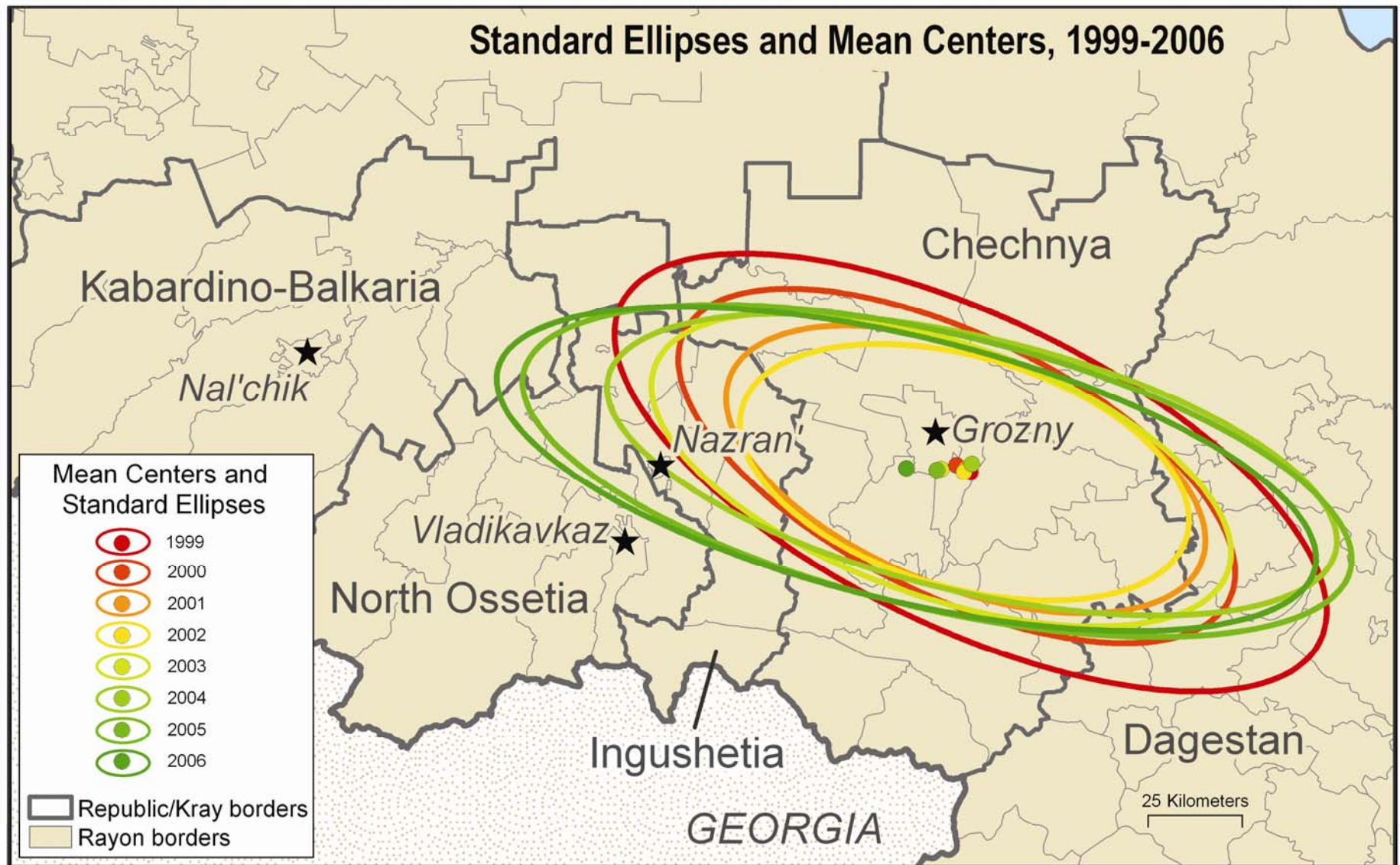
**Distribution of 14,178 violent events in the North Caucasus
1 August 1999 - 31 August 2007**

Number of Violent Events, 1 Aug 1999 - 31 Aug 2007, per 1000 population

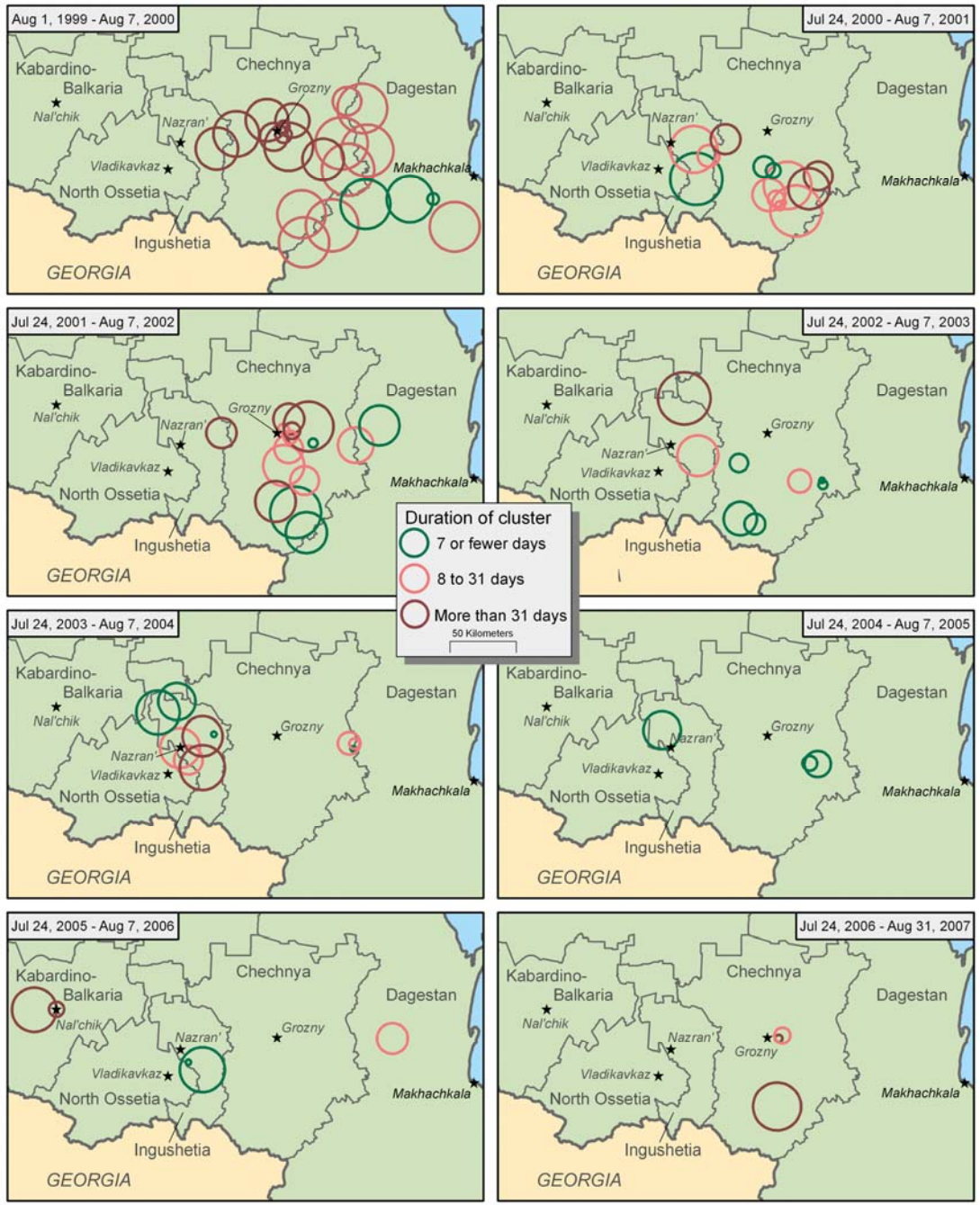


Standard Ellipses and Mean Centers by Event Category Aug 1999 - Aug 2007

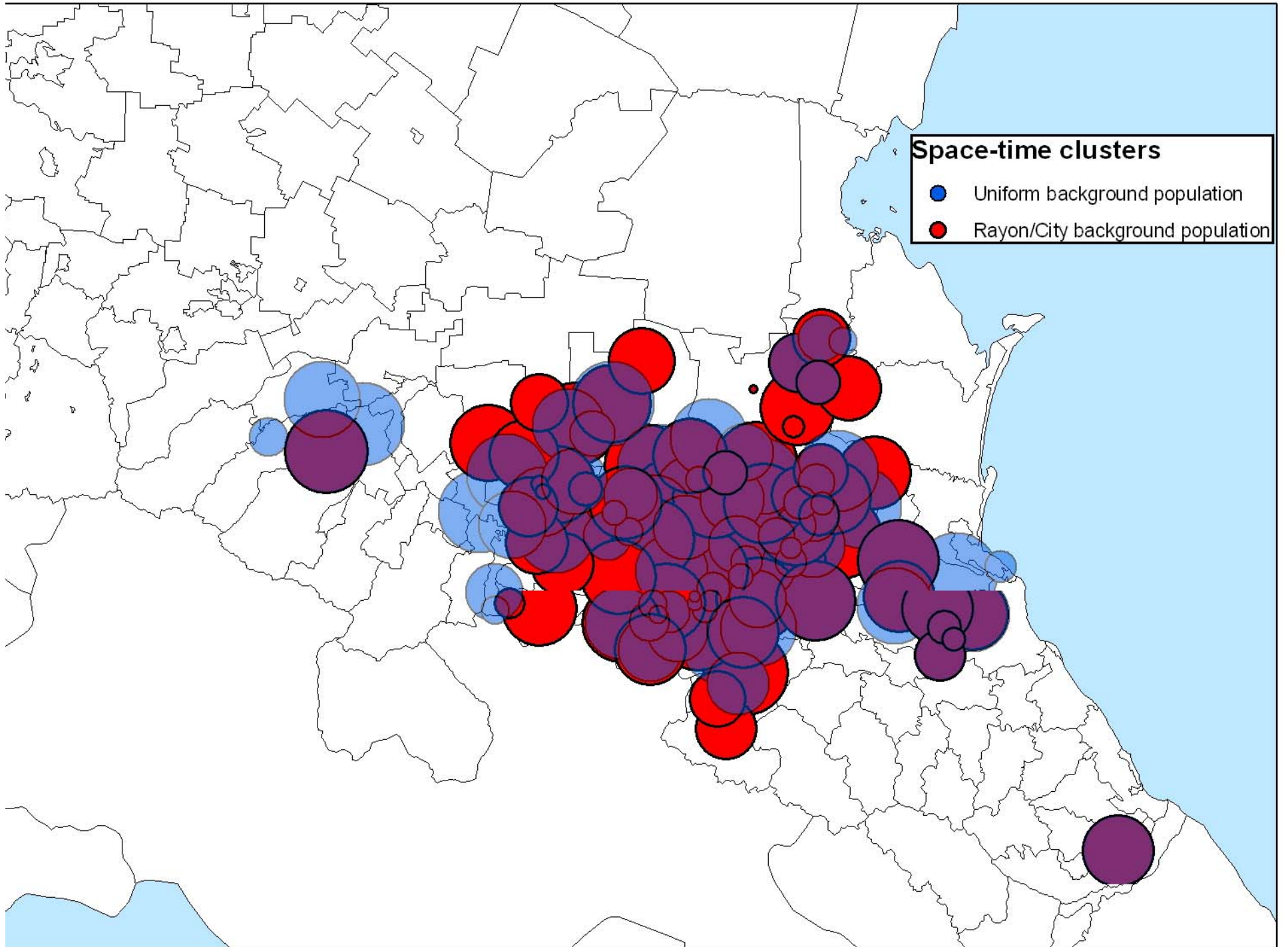




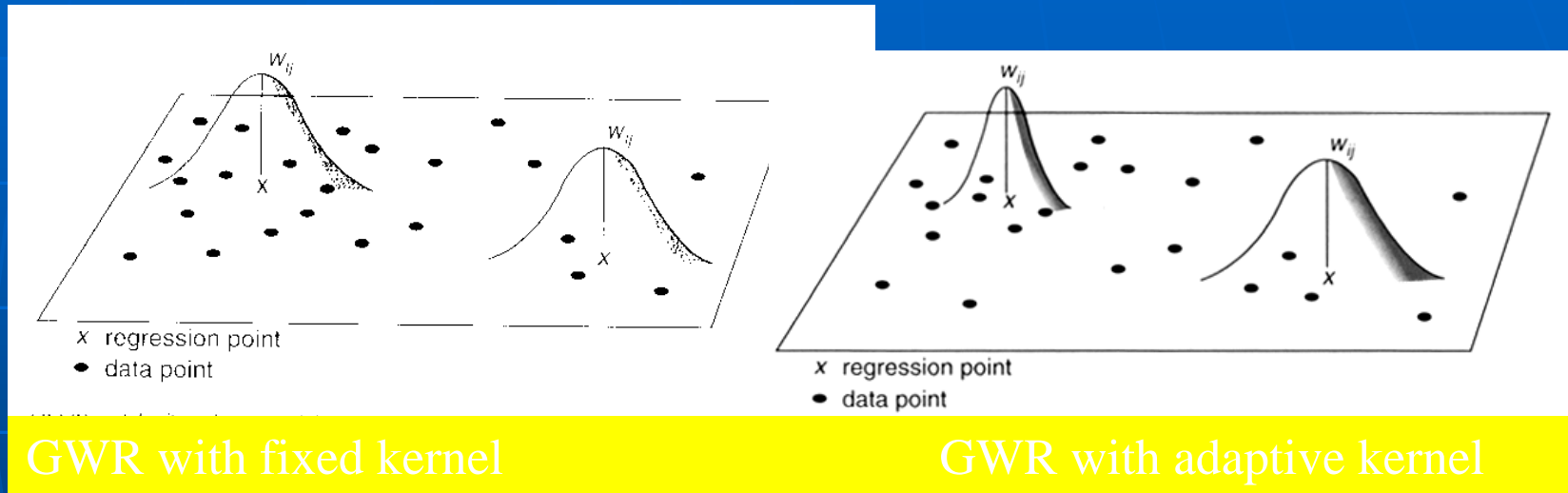
68% of all violent events each year inside the ellipse.
 Over time, the ellipses become more horizontal (less NW-SE orientation) and longer and flatter. Slight trend in mean center to the west from 1999.



Space-Time Clustering Of Violent Events –
with variable temporal windows and a spatial range (kernel) of 5 kms
For each year 1999-2007
(SatScan)



GWR kernel



From Fotheringham, Brundson and Charlton. 2002. *Geographically Weighted Regression*

Points are weighted based on distance from center of kernel
e.g. Gaussian kernel where weighting is given by:

$$w_i(\mathbf{g}) = \exp[-1/2(d_{ij}/b)^2] \text{ where } b \text{ is bandwidth}$$

OLS Model of Violence in the North Caucasus (violent events per 1000 persons, 1999-2007)

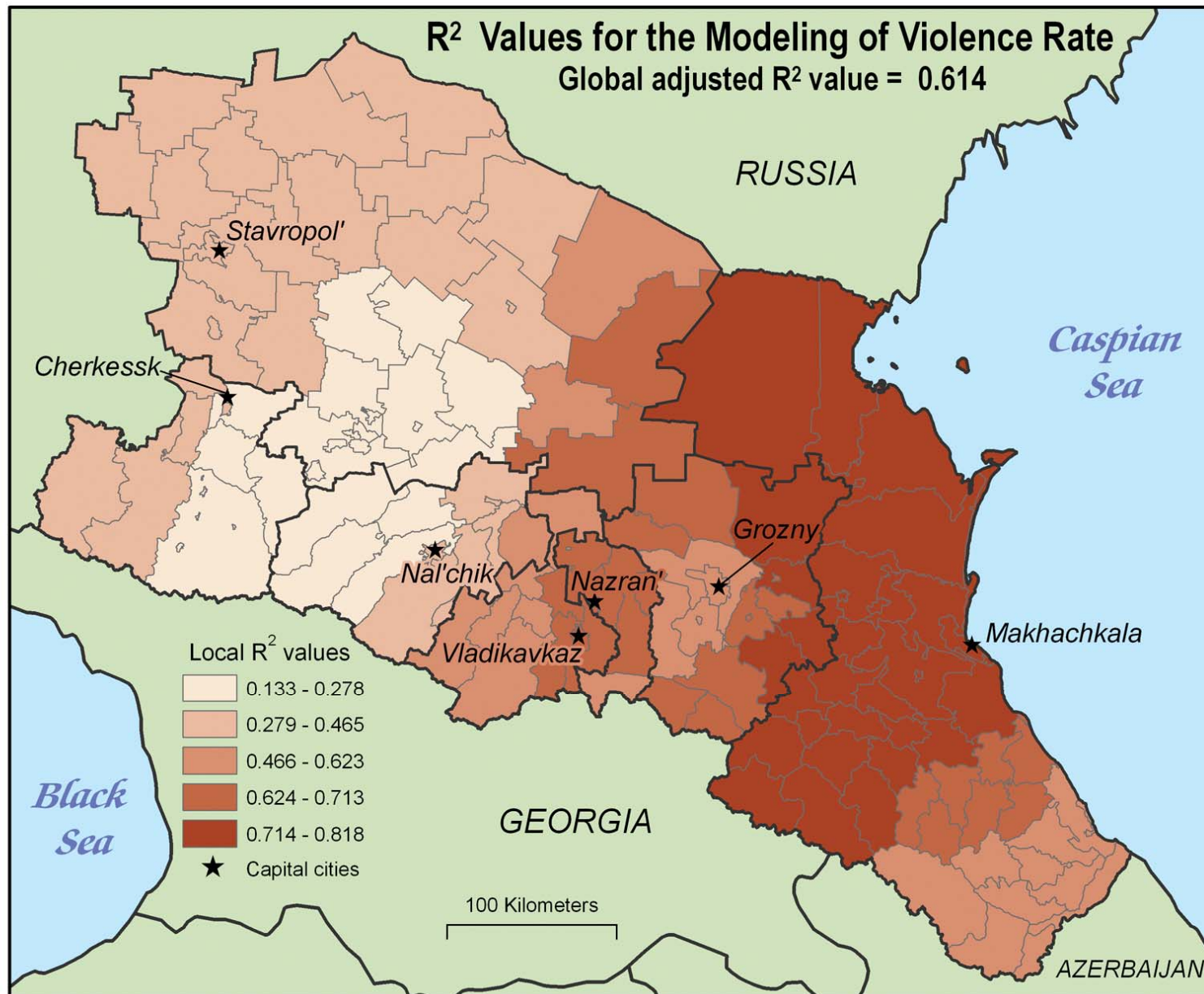
	B estimate	Standard Error	t-value
Location in Chechnya	3.838	0.385	9.96*
Percent Urban	0.0044	.0066	0.67
Mean Elevation (meters)	-0.00007	0.0002	-0.36
Distance to Caucasus Highway (meters)	-0.000009	0.000003	-3.09*
Percent Russian	-0.017	0.004	-4.36*
Constant	-1.276	0.292	-4.37*

* Significant at .001 level

Adjusted R² – global model = .611; GWR model = .703

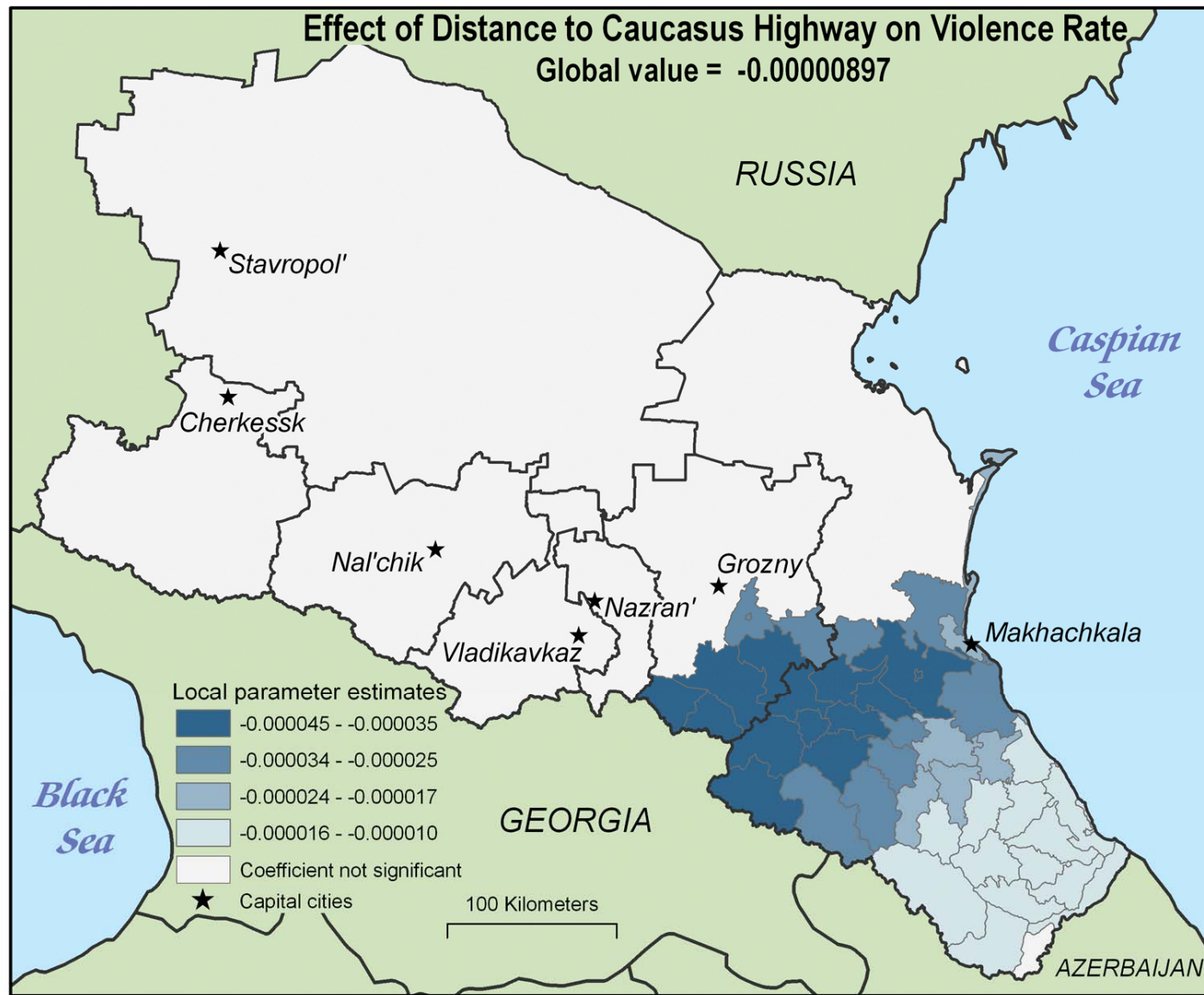
Sums of Squares - OLS Residuals = 273.4; GWR Residuals = 184.1
(Improvement = 89.2)

Test of **spatial variability of parameters** in GWR model – all significant at .001 level except for percent Urban (not significant)

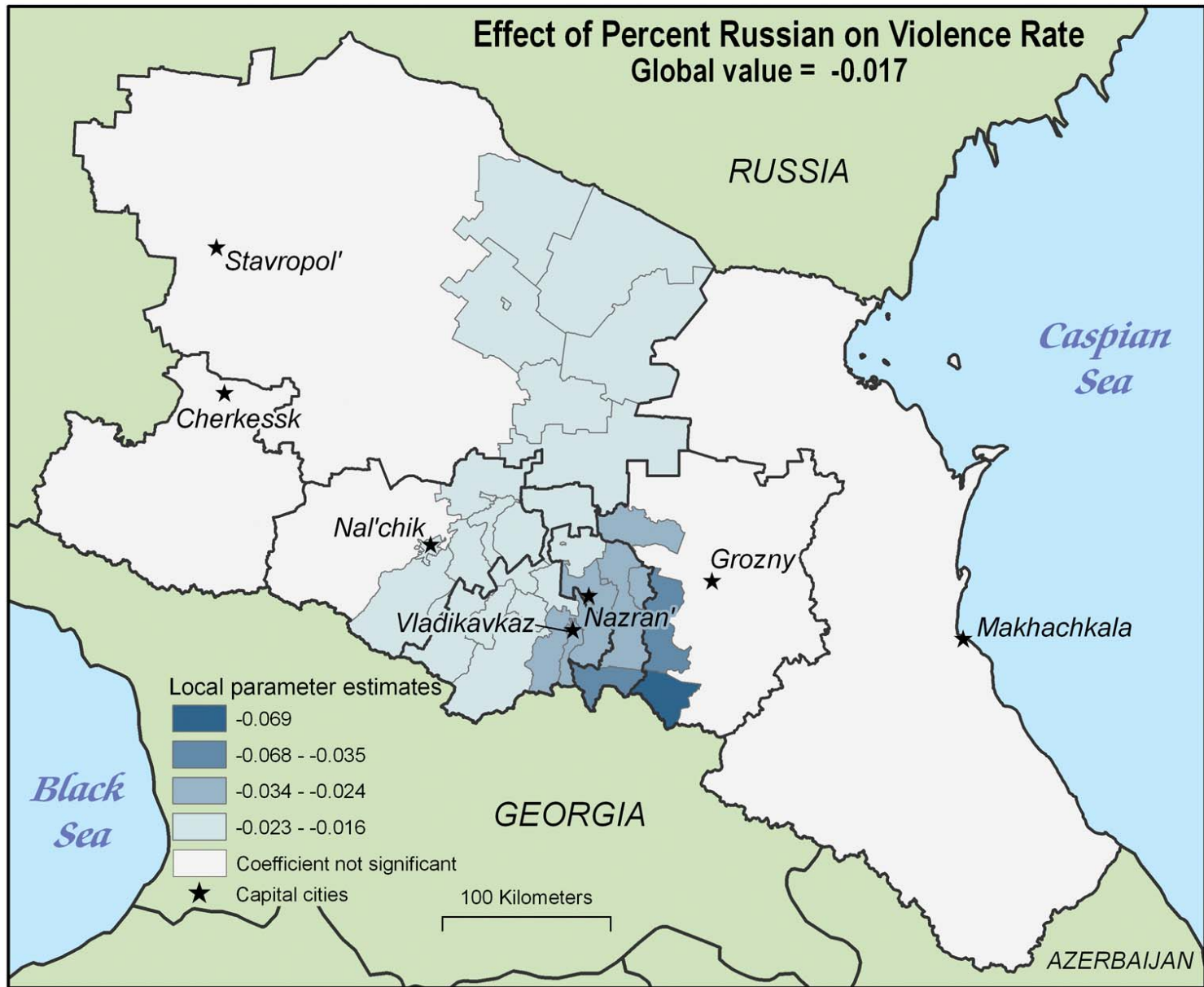


Distribution of R² estimates for model of Violent Events

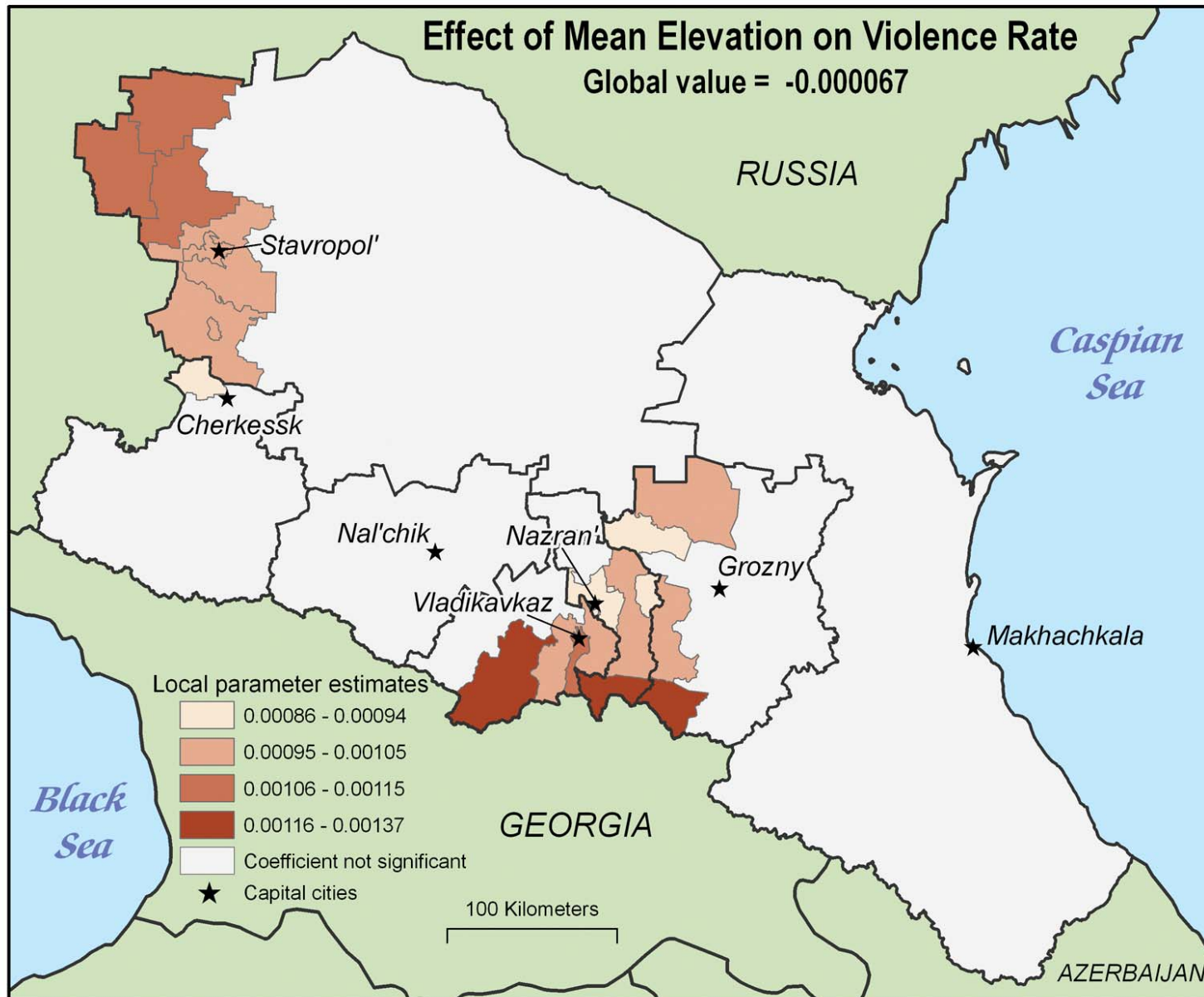
(All events Aug 1, 1999-Aug. 31, 2007 - n=14178 per 1000 people; populations from Russian 2002 census and aid agency estimates. Adaptive kernel of 57 nearest neighboring centroids of rayoni and cities)



Distribution of parameter estimates for distance to Caucasus Highway in Model of Violence (All events Aug 1, 1999-Aug. 31, 2007 - n=14178 – per 1000 people; populations from Russian 2002 census and aid agency estimates. Adaptive kernel of 57 nearest neighboring centroids of rayoni and cities)



Distribution of parameter estimates for Percent Russian in Model of Violence (All events Aug 1, 1999-Aug. 31, 2007 - n=14178 – per 1000 people; populations from Russian 2002 census and aid agency estimates. Adaptive kernel of 57 nearest neighboring centroids of rayoni and cities)



Distribution of parameter estimates for Mean Elevation in Model of Violence (All events Aug 1, 1999-Aug. 31, 2007 - n=14178 – per 1000 people; populations from Russian 2002 census and aid agency estimates. Adaptive kernel of 57 nearest neighboring centroids of rayoni and cities)

Future Research

Further analysis of the rich North Caucasus violent event data

- spatial analytical methods to quantify clustering, diffusion, and inferential pre-/post-diction from diffusion models
- Placing data into a framework to test Kalyvas' ideas about the "logic of violence in civil wars" ('controlled' versus 'contested' areas)
- spatial analysis with land use/land cover and terrain data

Complete Citations

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