



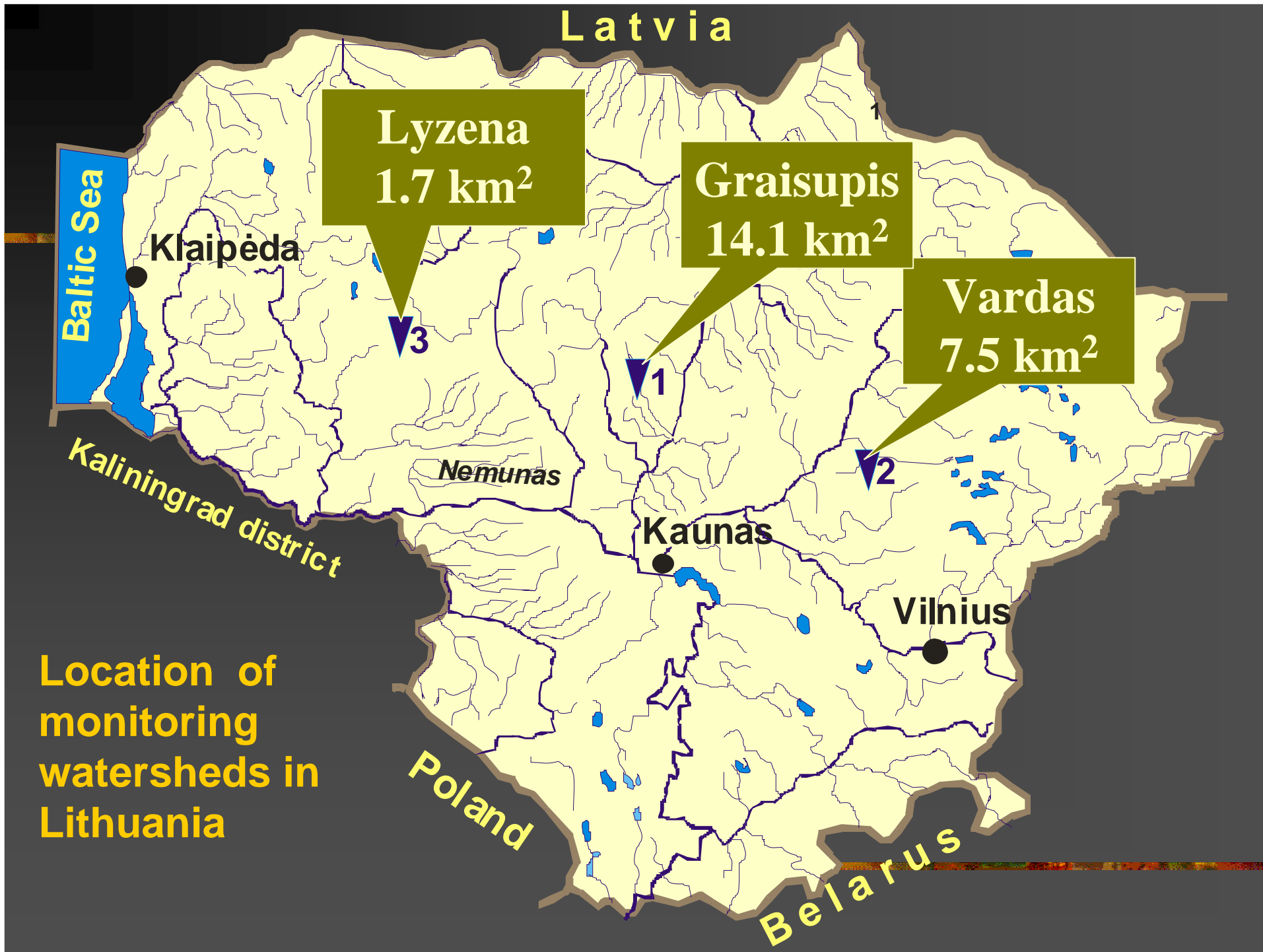
# **INFLUENCE OF NATURAL AND HUMAN FACTORS ON NITROGEN LEACHING IN AGRICULTURAL CATCHMENTS**

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**2008/05/20**

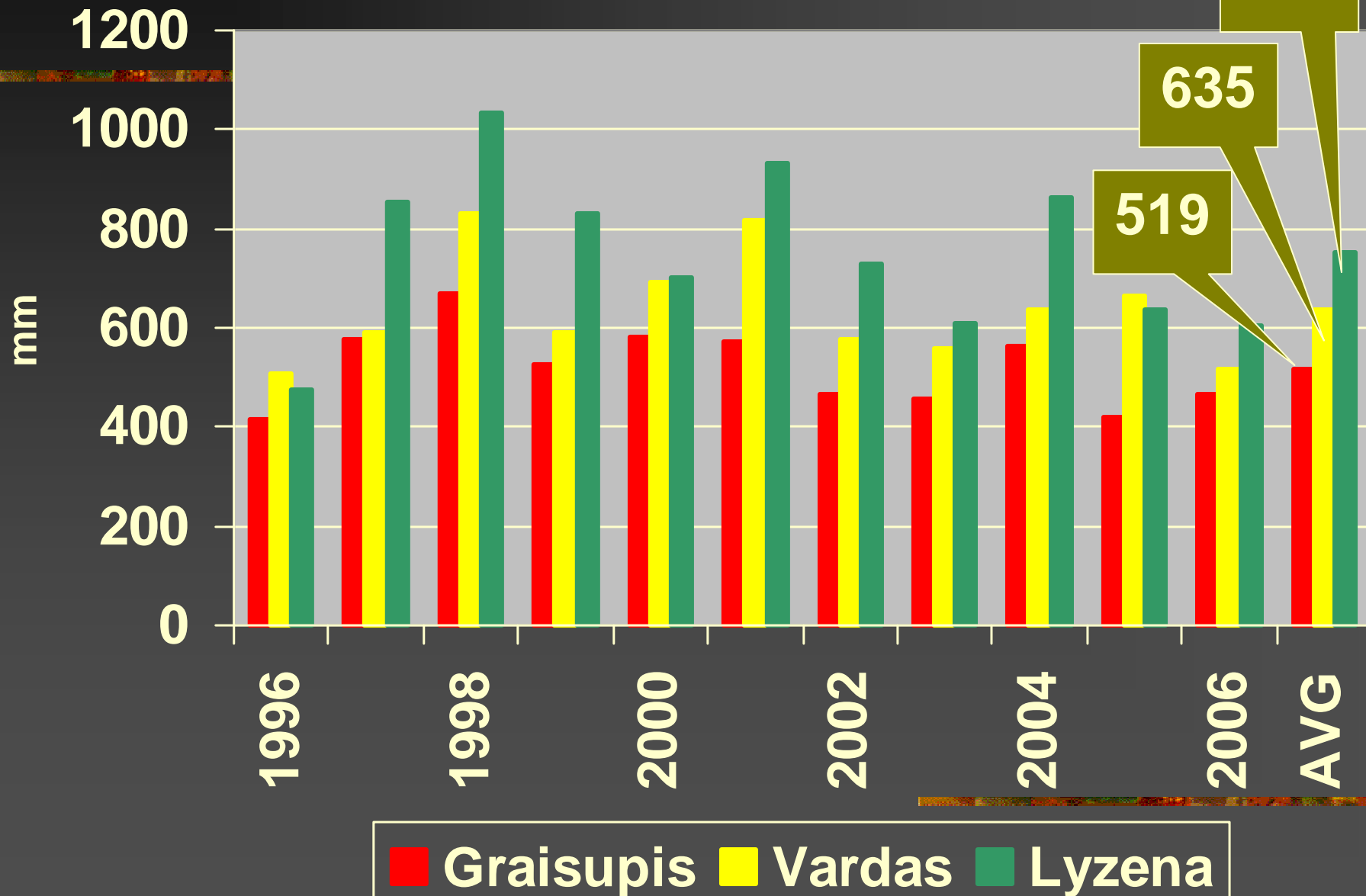


Location of monitoring watersheds in Lithuania

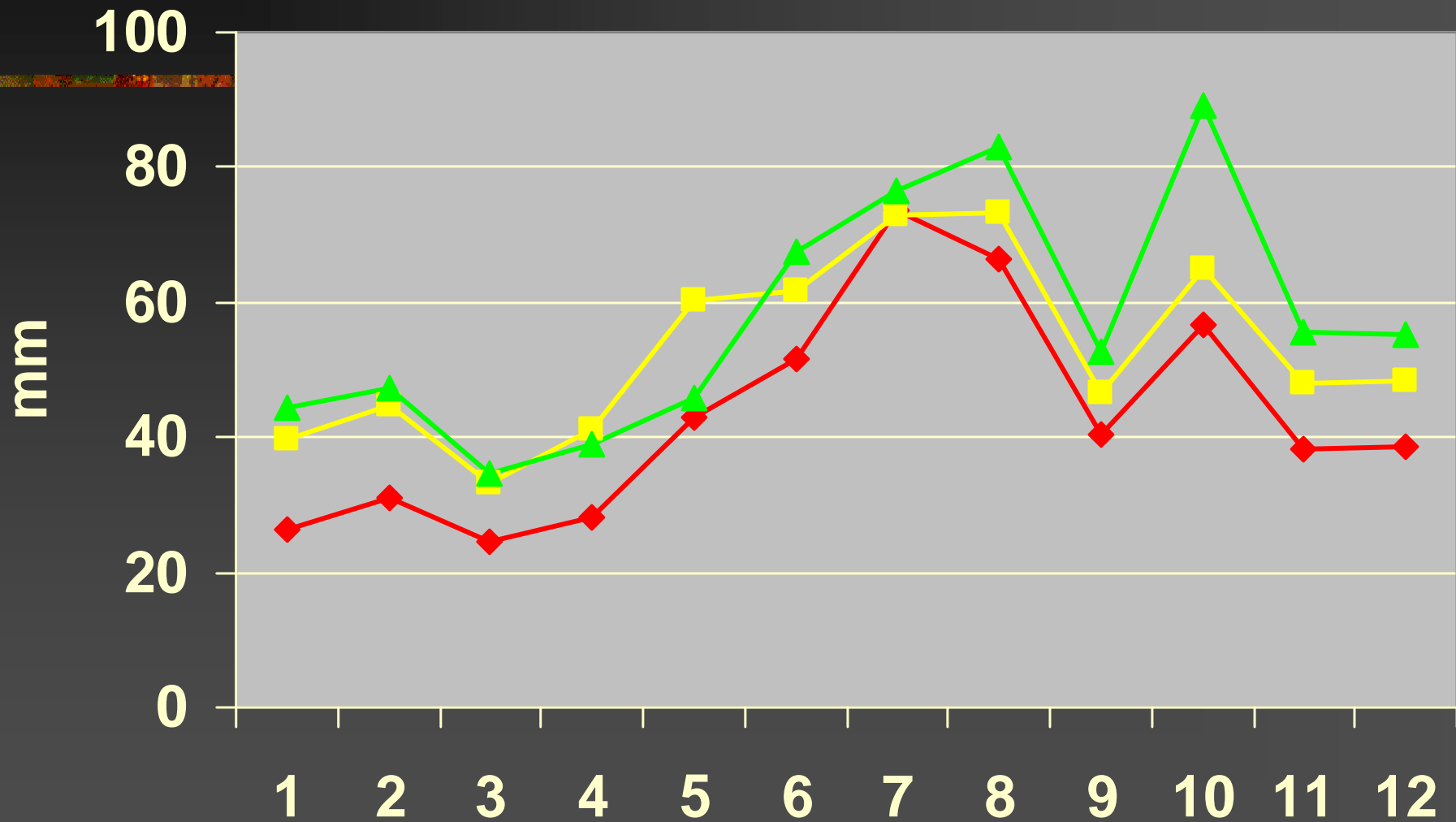
# Land Use in Studied Catchments

	<b>Arable, %</b>	<b>Pasture, %</b>	<b>Forest' %</b>	<b>N, kg ha<sup>-1</sup></b>	<b>AU, ha<sup>-1</sup></b>
<b>Graisupis</b>	<b>54</b>	<b>15</b>	<b>29</b>	<b>71,5</b>	<b>0.87</b>
<b>Vardas</b>	<b>26</b>	<b>47</b>	<b>25</b>	<b>39,4</b>	<b>0.44</b>
<b>Lyzena</b>	<b>32</b>	<b>65</b>	<b>1.6</b>	<b>32,9</b>	<b>0.58</b>

# Yearly precipitation in Graisupis, Vardas and Lyzena catchments

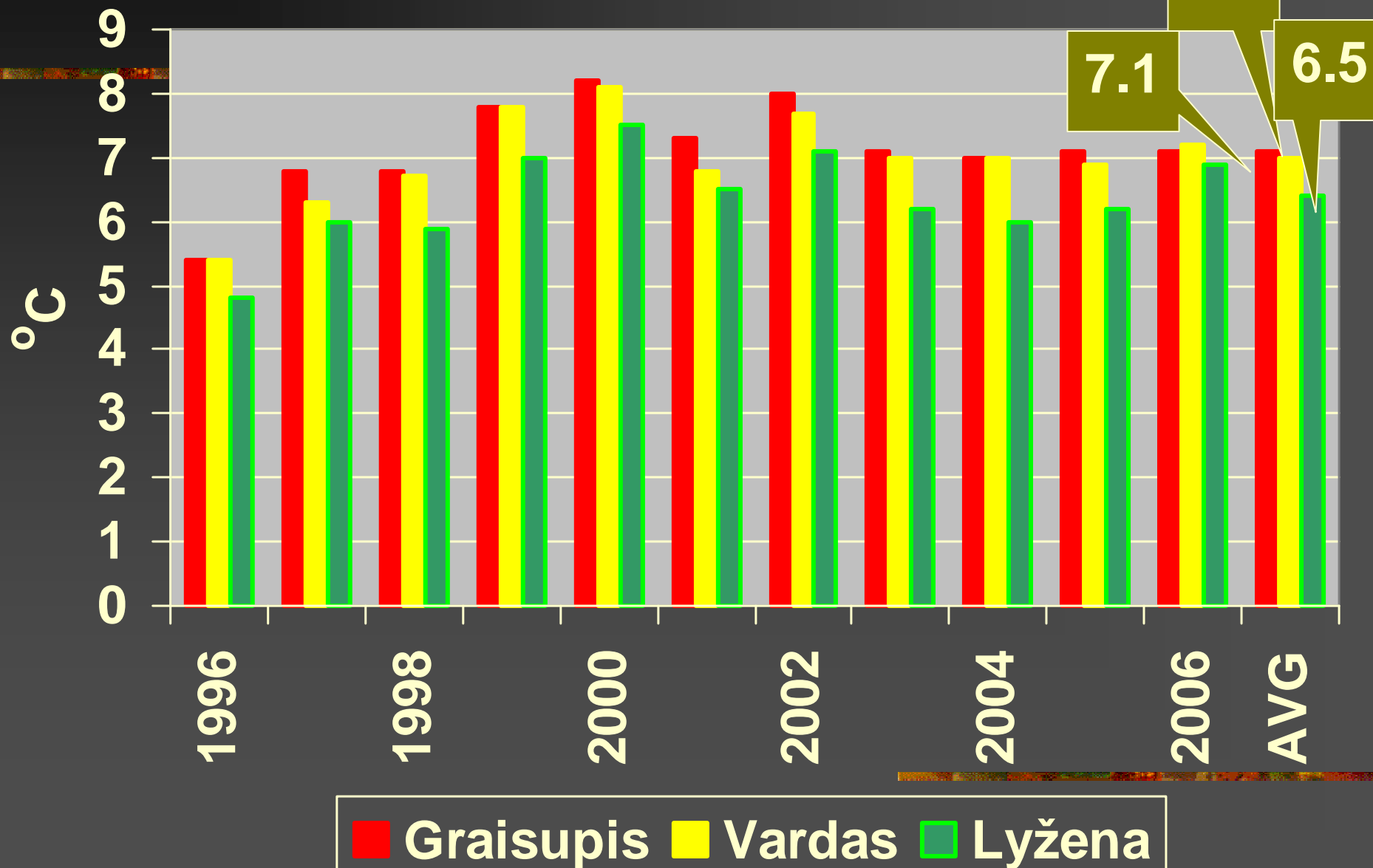


# Monthly precipitation in Graisupis, Vardas and Lyzena catchments

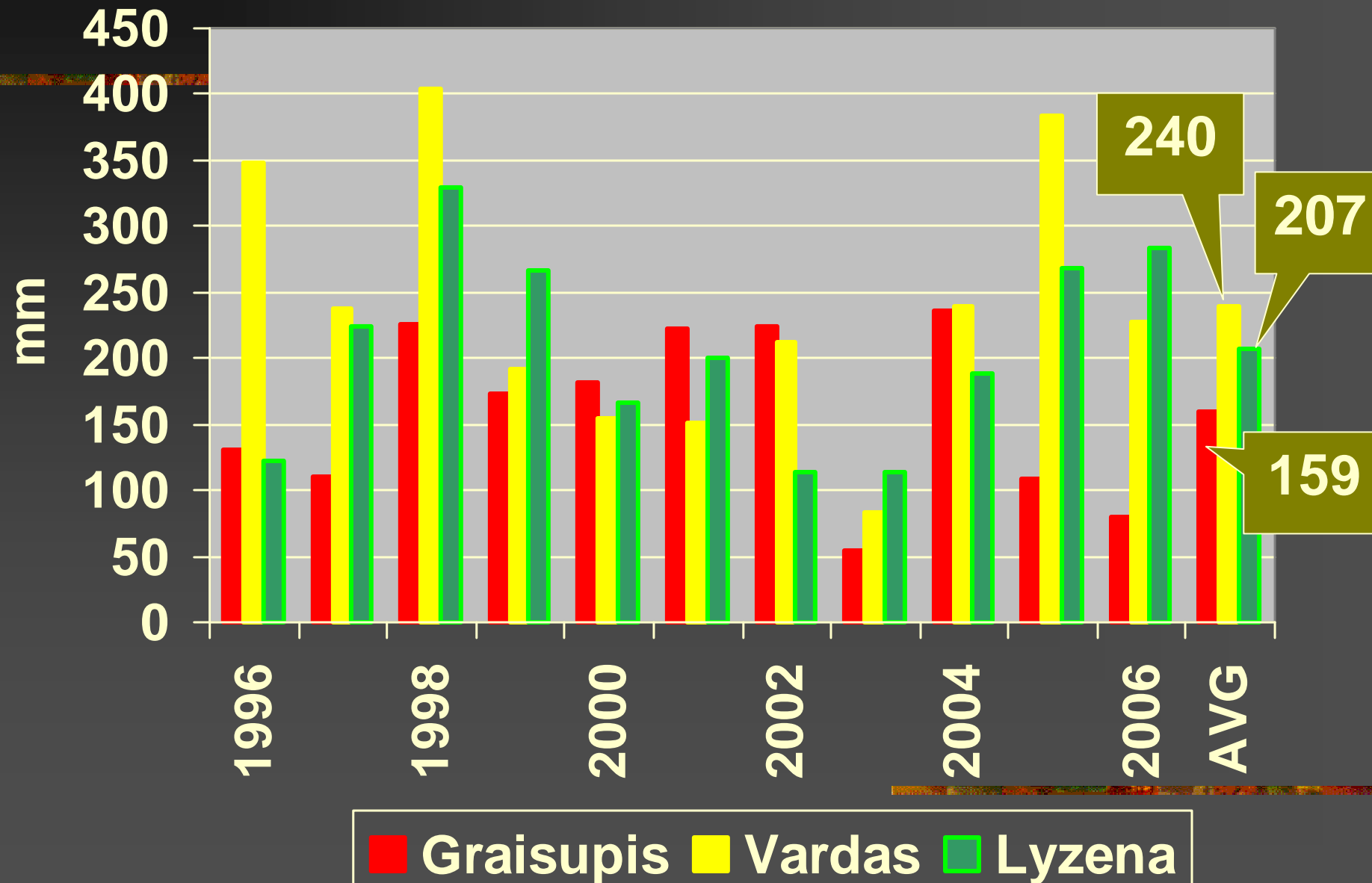


◆ Graisupis    ■ Vardas    ▲ Lyzena

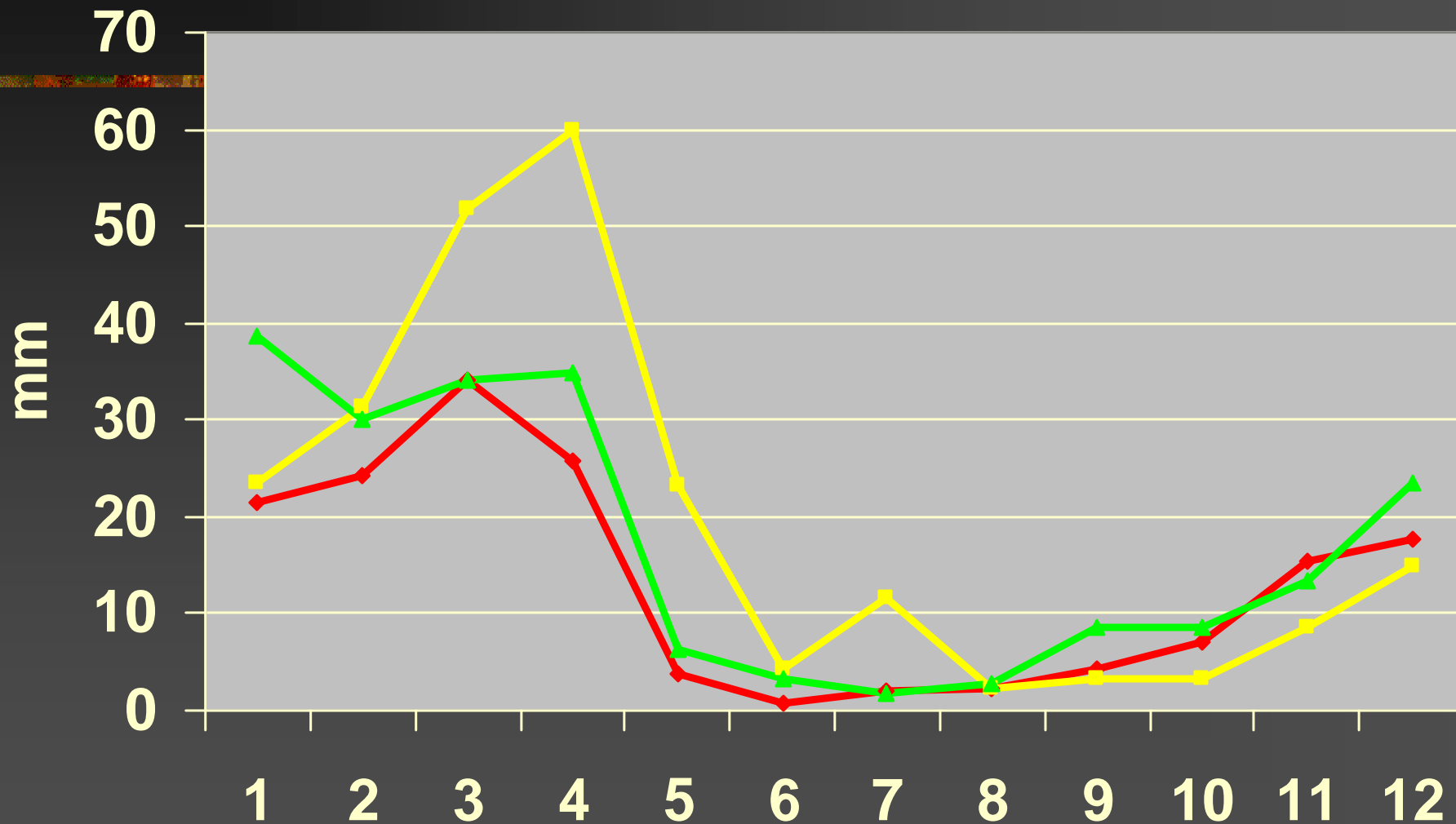
# Yearly air temperature in Graisupis, Vardas and Lyžena catchments



# Yearly water runoff in Graisupis, Vardas and Lyzena streams



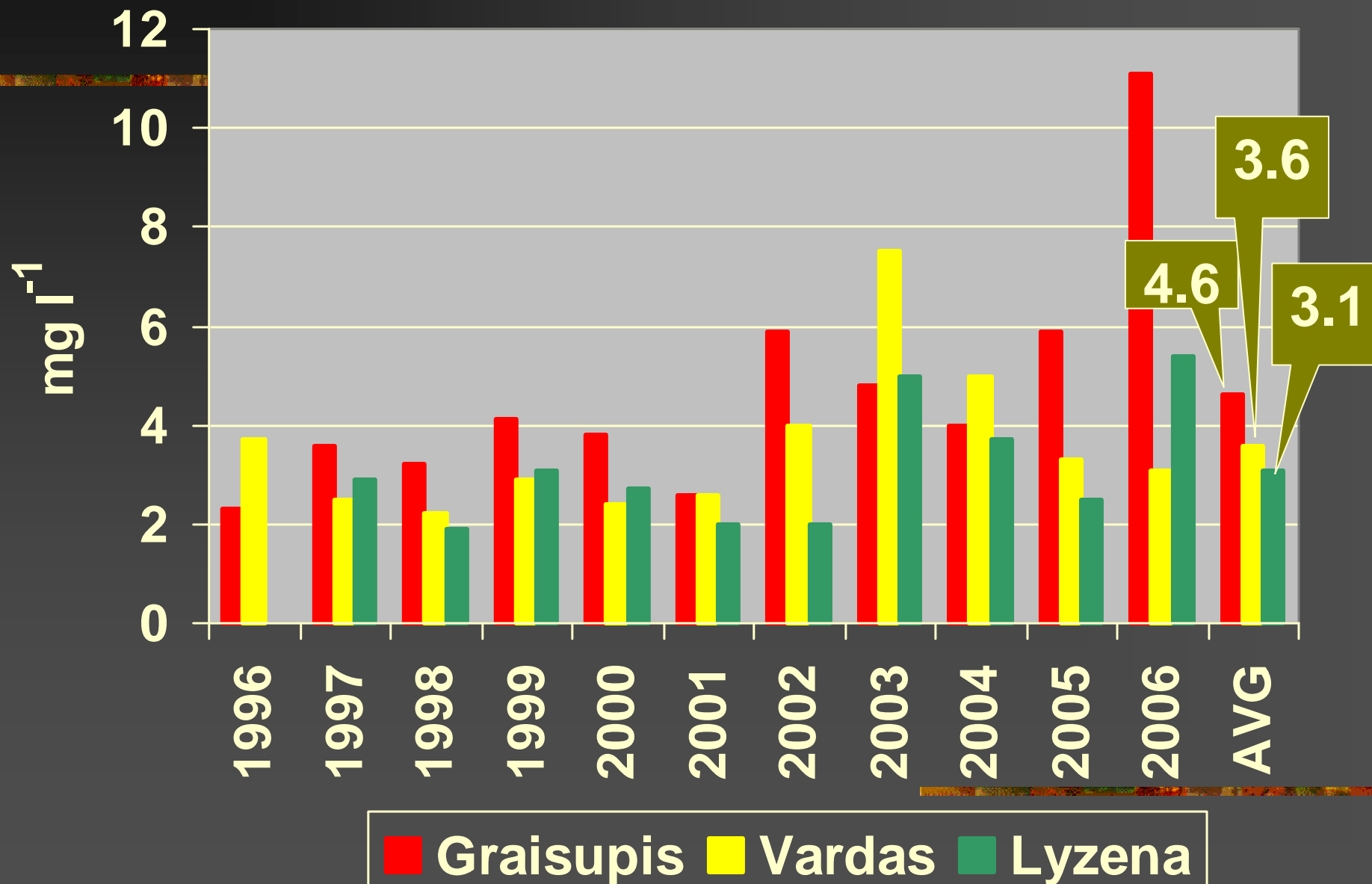
# Monthly water runoff in Graisupis, Vardas and Lyzena streams



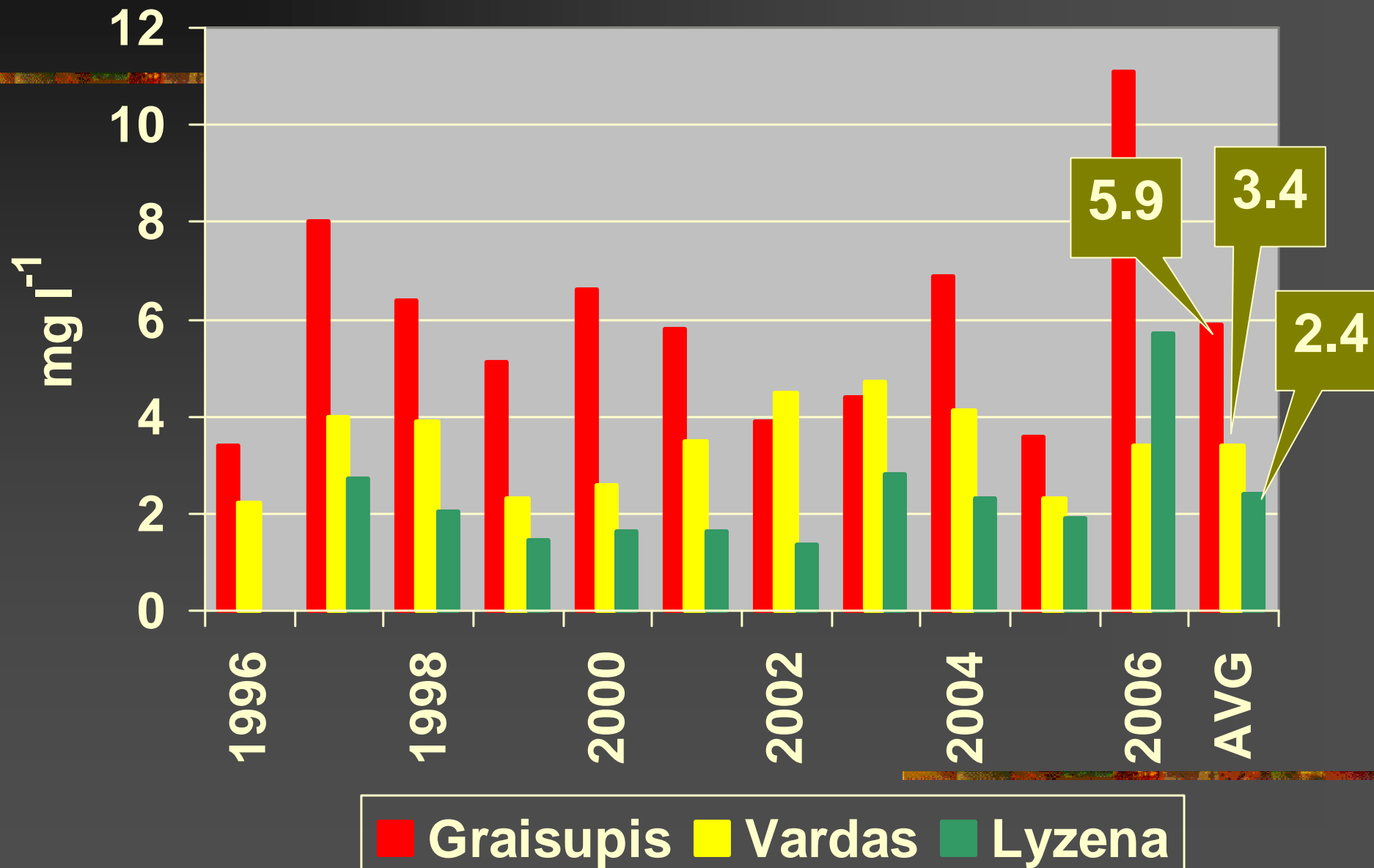
—◆— Graisupis —■— Vardas —▲— Lyzena



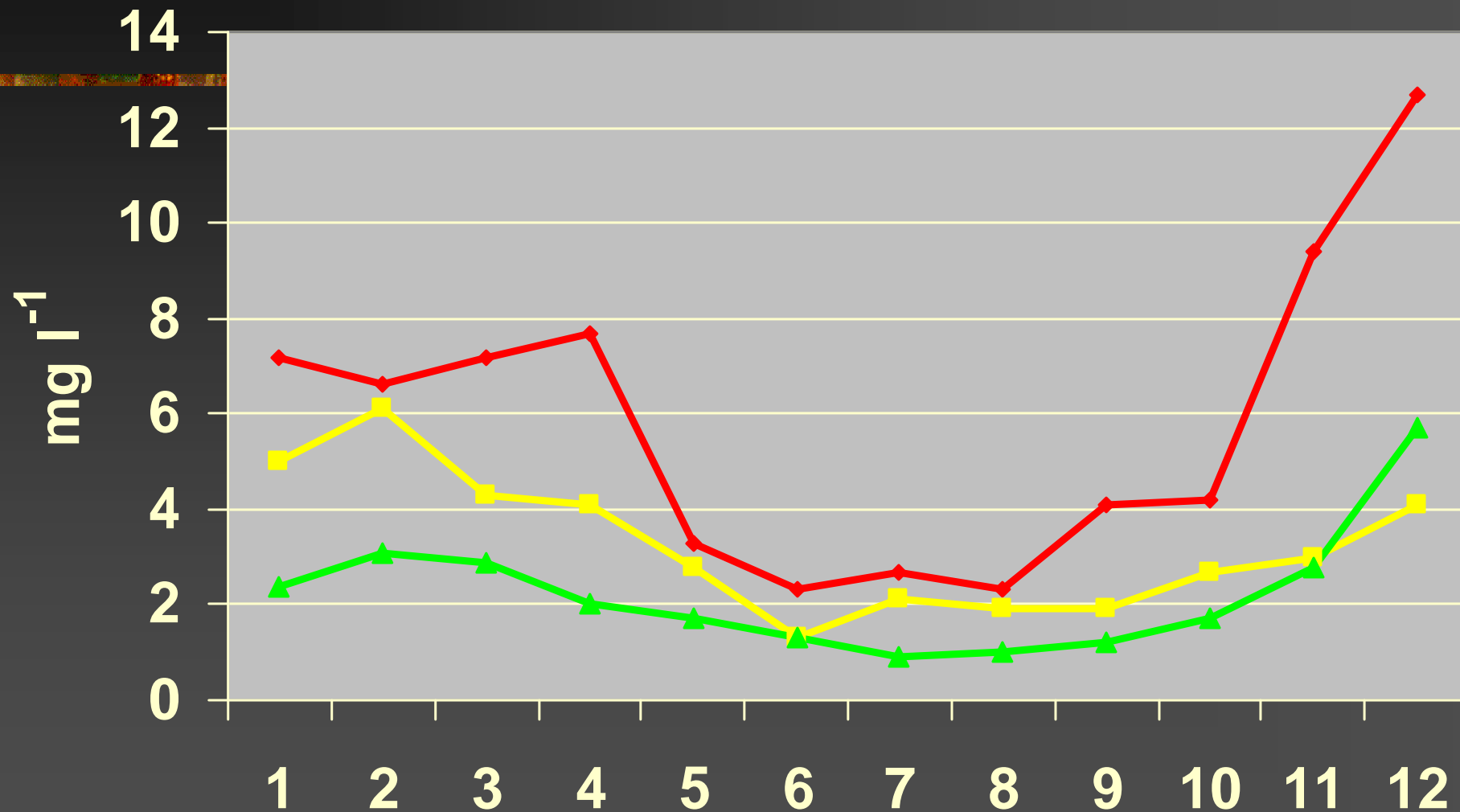
# Yearly N concentration in Graisupis, Vardas and Lyzena precipitation



# Yearly N concentration in Graisupis, Vardas and Lyzena stream water

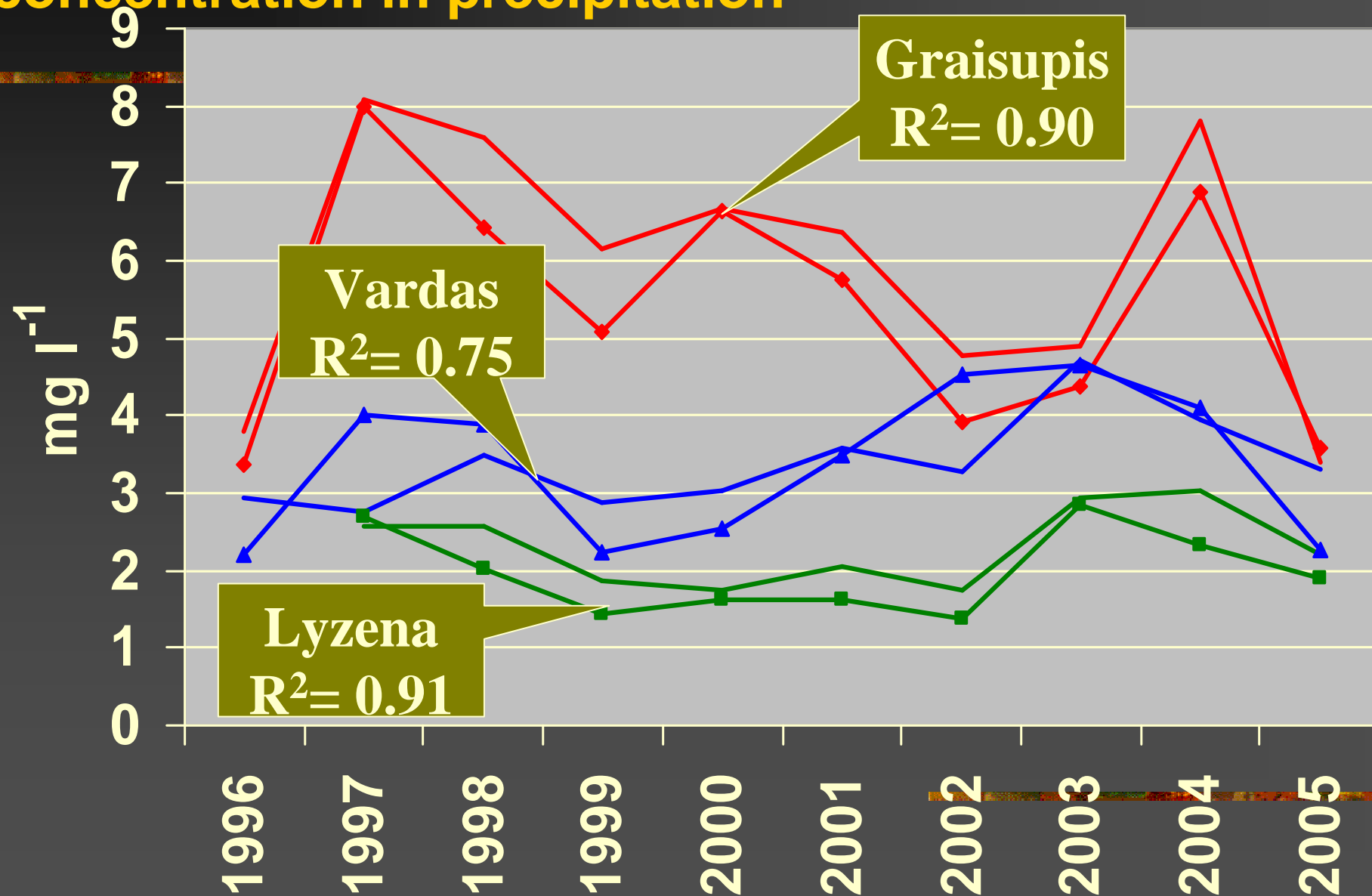


# Monthly N concentrations in Graisupis, Vardas and Lyzena streams water



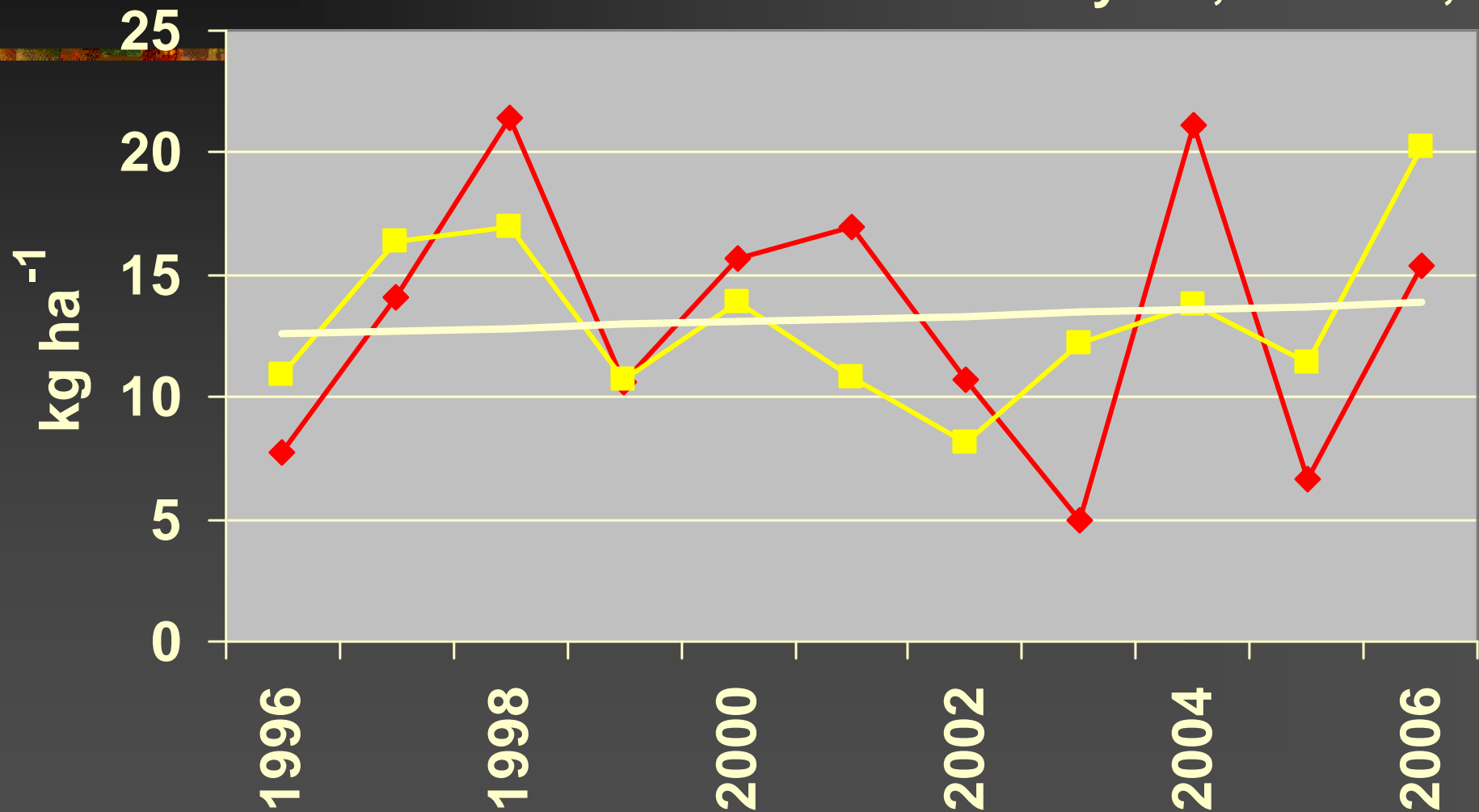
—◆— Graisupis —■— Vardas —▲— Lyzena

# Observed and model N concentration in streams relation on precipitation, air temperature and N concentration in precipitation



# Observed and flow normalized N load in Graisupis stream water

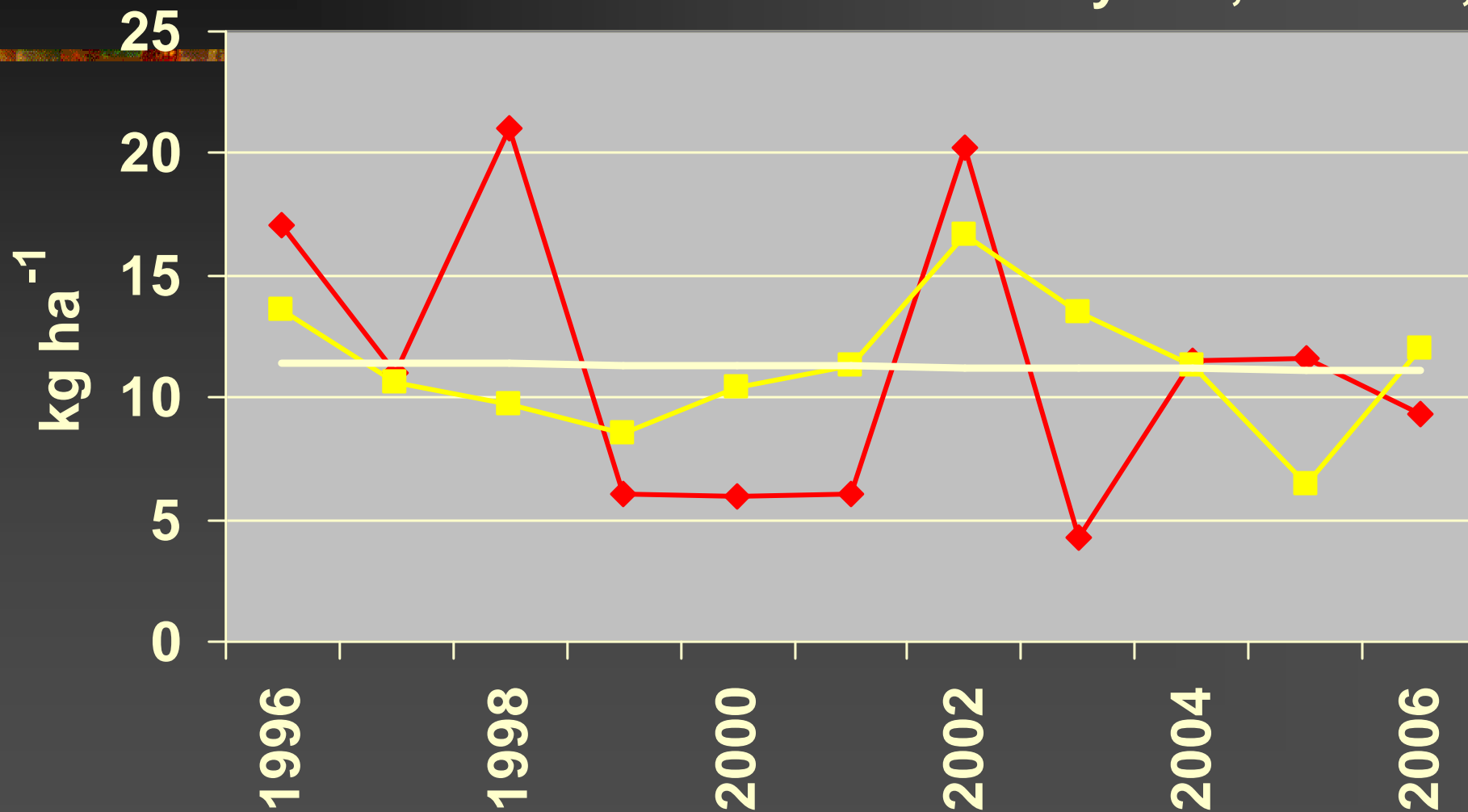
$$y = 0,13x + 12,4$$



◆ Observed    ■ Normalized    — Linear (Normalized)

# Observed and flow normalized N load in Vardas stream water

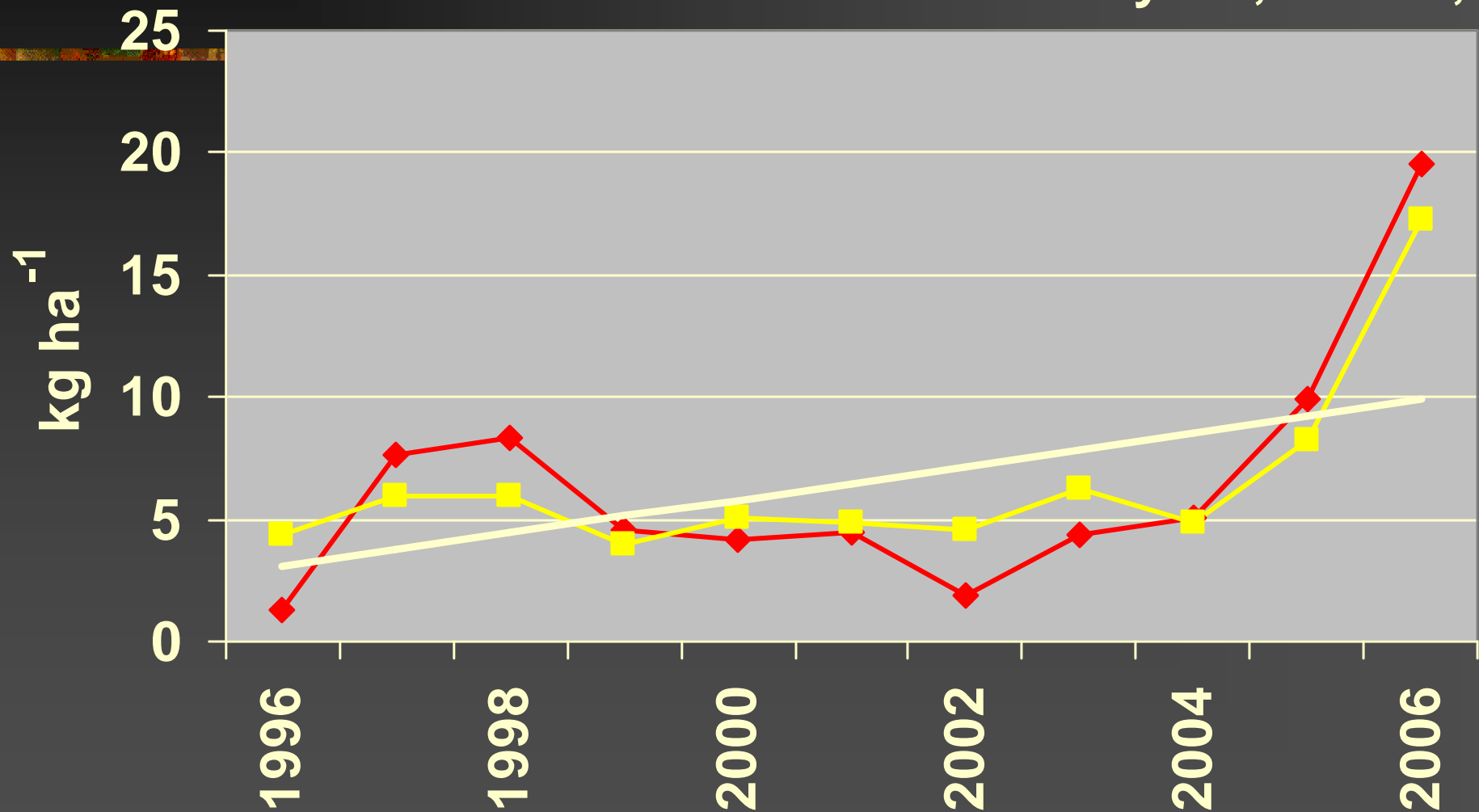
$$y = -0,03x + 11,5$$



◆ Observed    ■ Normalized    — Linear (Normalized)

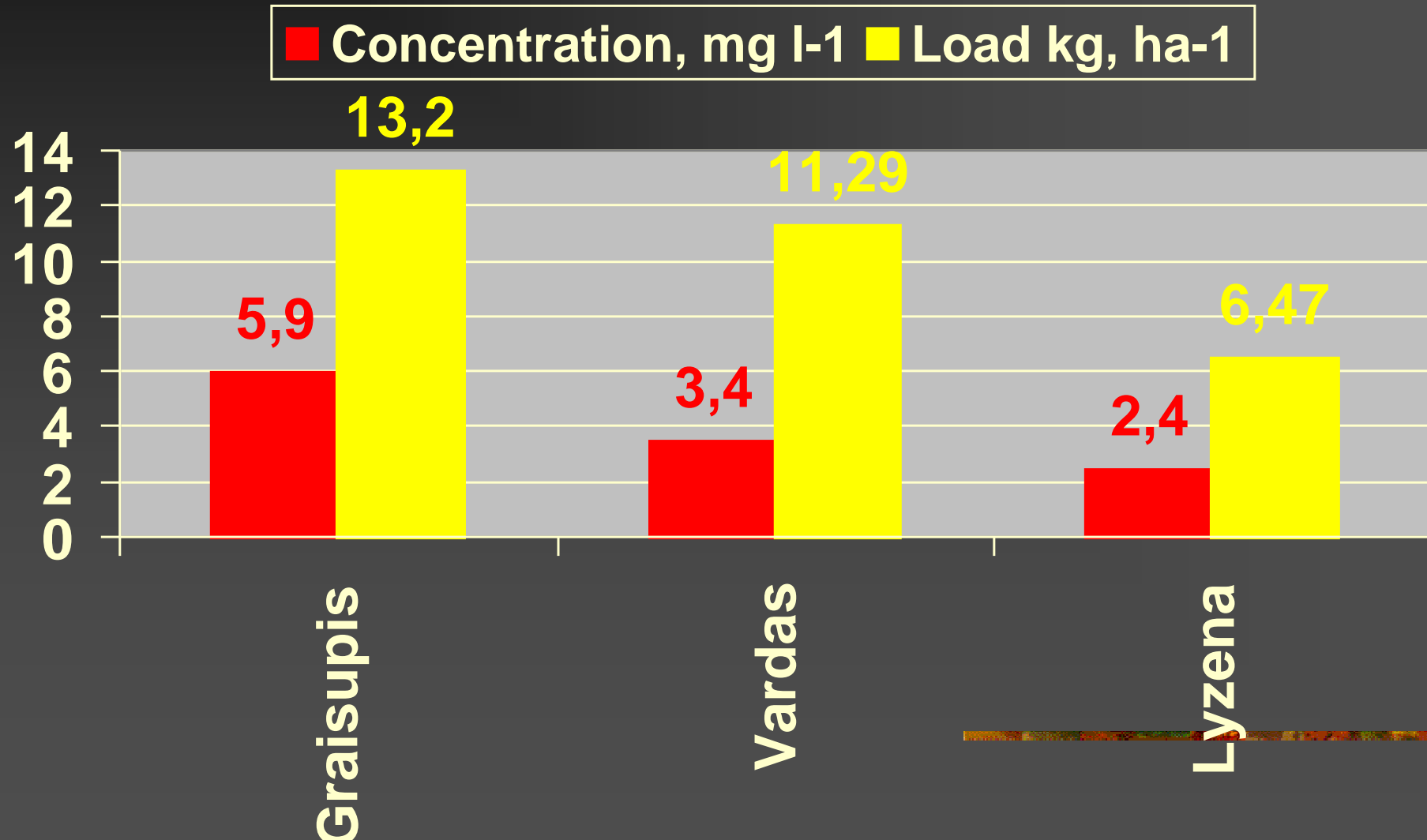
# Observed and flow normalized N load in Lyzena stream water

$$y = 0,68x + 2,4$$



◆ Observed    ■ Normalized    — Linear (Normalized)

# Observed (1996-2006) average N concentration and load in streams





# Conclusions

- Annual N concentration in streams depends on variation of precipitation, weather temperature and N concentration in precipitation.
- Relation of monthly observation data between natural variables and N concentration in streams is weak.
- Flow normalisation rectifies to some extent N load in streams water.
- Streams water quality mainly depends on land use intensity in catchments. Increase of low fertilised and little grazed pasture area in catchment can decrease N concentration in stream significantly.