

Dry Rivers and Secret Rivers as Mappers of Karst Phenomena

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Abstract

Rivers are natural watercourses that, due to the inclined surface of the earth, flow constantly in the channels that they have formed. Some rivers run on the surface, but there are also rivers that flow (partly) underground as if in tunnels. This phenomenon often occurs in karst areas. Due to the variable nature of the flow of karst rivers, they are commonly given distinctive names. In Estonian such rivers have been called Dry Rivers (Est sing nom *Kuivajõgi*), because of the rivers' tendencies to fill their aboveground riverbeds only occasionally, usually leaving the riverbeds dry. Some karst rivers have also been called Secret Rivers (Est sing nom *Salajõgi*) due to their mysteriously disappearing underground streambeds.

In this paper, the Estonian place names *Kuivajõgi* (Dry River) and *Salajõgi* (Secret River) are examined. The development of the names (with the help of historical sources, if possible) and their occurrence today are also introduced. In addition, the names *Kuivajõgi* and *Salajõgi* are indicated on a map in order to make a comparison with a map of Estonian karst areas, thereby showing how nature is reflected in place names.

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Introduction

This paper examines how place names can be reflectors of nature. It could be assumed that karst, as a very clearly circumscribed phenomenon of nature, provides a good opportunity to observe this effect.

Estonian researcher Valdek Pall wrote (1977: 146) that even if some have argued that it would be possible to characterize a certain area's flora based on the names of the plants that appear in the place names, we cannot say that the greater incidence of some plant's name automatically proves that the corresponding plant has a great distribution in the flora of that area, because more common plants might not have been as effective as landmarks as rarer plants (for instance, in Northern Tartumaa, spruce is much more widespread than oak, but in that area, *oak* is much more common attribute than *spruce*). This means that although we can draw some conclusions about the nature of the referent's locality based on the nature-based words that can be found in place names, we cannot equate the incidence of these words with the incidence of the respondent natural objects.

I have chosen karst rivers and their names as possible mappers of the karst phenomena. In Estonia quite a large number of karst rivers can be found in karst areas, according to H. Potter (2008) at least fifty.

About Karst and Karst Rivers

The term *karst* is used internationally. It originates from a limestone plateau in Slovenia on the Balkan Peninsula, where karst phenomena are widespread. The area was locally called *Kras*, but in geological literature, the German adaptation *Karst* was introduced. Karst is a unique type of terrain that has developed due to the permeability and porosity of limestone, dolomite, gypsum, and salt. In Estonia, the very easily soluble salts and gypsum do not exist, but there is a bed of limestone and dolomite that is several hundred meters thick, in which the karst phenomena has spread somewhat steadily. Karst is quite widespread in Estonia, encompassing the entire Northern Estonian limestone plateau (Pirrus 2007: 3).

In the karst terrains, the groundwater and surface water constitute a single dynamic system. Therefore, one of the almost inevitable characteristics of the open streams, creeks and rivers in the karst regions is either a partial water loss along their course or the fact that they completely sink underground (Bonacci *et al.* 2013: 969). Karst rivers are underground rivers associated with karstic properties. A sinking karst river is an open stream flow that disappears underground into the karst, either at a discrete point such as a cave, into many ponors (sinkholes), or gradually along the stretch of a stream channel. It may or may not reappear on the surface (Bonacci and Andrić 2008: 186).

Because of the distinguishing features of karst rivers, they are commonly named in a distinctive way. The karst rivers in Estonia have been called Dry Rivers (Est sing nom *Kuivajõgi*), because of the rivers' tendency to fill the riverbed on the ground only occasionally, usually leaving the riverbeds dry. Some karst rivers have also been named Secret Rivers (Est sing nom *Salajõgi*) due to the streambeds that mysteriously and secretly disappear underground.

An example is **Kuivajõgi** (literally 'Dry River') – the largest tributary of the Pirita River, which flows into Tallinn Bay on the coast of Northern Estonia. In the Kuivajõe karst area, the river disappears into a sinkhole in a 100-metre wide and 4-metre deep karst basin, flows for 2 km underground and reappears above ground through large karst springs 1.5 km before its outflow. In the karst areas, the river flows above ground only during the spring floods.

Kuiv(a)- ('Dry') and *Sala-* ('Secret') Names as Markers of the Karst Phenomena

As mentioned above, the aim of this paper is to examine whether place names with the *Kuiv(a)-* and *Sala-* attributes could mark or map karst areas. To check this possibility, I initially examined the material in the Place Names Archive at the Institute of Estonian Language looking for hydronyms or settlement names based on hydronyms with the attributes *Kuiv(a)-* or *Sala-*. It also had to be considered that the stems *Kuiv* and *Sala* could have been extant quite differently in place names – the reason being that compound names have often undergone a strong irregular shortening, distinctive to old place names, that occurs more frequently than in the general vocabulary (Pall 1977: 40-41, Laansalu 2012: 174-175). The shortening of the last component of a compound name takes place most often in

secondary place names, because the name part loses its semantic load (the proper name is no longer related to a certain common noun). This means that irregular shortening is more likely to take place in secondary names (Laansalu 2014: 129-130). To illustrate, here are two examples of ancient village names (EKNR).

Kuie village in Tamsalu rural municipality, Järva-Jaani parish. The oldest records of the name:

1448 *Kuywejock*,
1525 *Kuyeck*,
1732 *Kuie*.

It appears that the name of Kuie village originated from the river name *Kuivajõgi*. When the name becomes secondary, i.e. the name starts to denote the settlement, the case also changes: *jõgi* (Est nom ‘river’) > *jõe* (Est gen ‘river’). During the use, the name has shortened even more and *Kuivajõe* has become *Kuie*. Hence the name-chain: *Kuivajõgi* > *Kuivajõe* (secondary) > *Kuie*.

Salajõe village in Lääne-Nigula rural municipality, Lääne-Nigula parish. The oldest records:

1397 *Tzalleyeke*,
1507 *Salleick*,
1689 *Sallajeggi Byy*.

This name has also become secondary, the form *Salajõgi* became *Salajõe*, so the name-chain is: *Salajõgi* > *Salajõe* (secondary).

Although both names are very old, one has become shorter over time (the irregular shortening of place names), and the other has not. There is no regularity – which is typical of this phenomenon.

Here are some examples of hydronyms or settlement names based on hydronyms with attribute *Kuiv(a)-* or *Sala-* that occurred:

- **Kuiv jõgi** (river) / **Kuivjõgi** (river) – *kuiv* (Est nom ‘dry’) + *jõgi* (Est nom ‘river’)
- **Kuiva jõgi** (river) / **Kuivajõgi** (river) – *kuiva* (Est gen ‘dry’) + *jõgi* (Est nom ‘river’)
- **Kuivajõe** (farm; village) – *kuiva* (Est gen ‘dry’) + *jõe* (Est gen ‘river’)
- **Kuijõe** (village) – *Kui-* < *kuiva* (Est gen ‘dry’) + *jõe* (Est gen ‘river’)
- **Kuie** (farm; village) – *Kui-* < *kuiva* (Est gen ‘dry’) + *-e* < *jõe* (Est gen ‘river’)

- **Kuivoja** (farm) – *kuiv* (Est nom ‘dry’) + *oja* (Est nom/gen ‘creek’)
- **Kuja** (farm) – *Ku-* < *kuiva* (Est gen ‘dry’) + *oja* (Est nom/gen ‘river’)

- **Salajõe** (village) – *sala* (Est nom/gen ‘secret’) + *jõe* (Est gen ‘river’)
- **Salaoja** (creek) – *sala* (Est nom/gen ‘secret’) + *oja* (Est nom/gen ‘creek’)

The word *kuiv*, genitive *kuiva* ‘dry’, appeared repeatedly in Estonian hydronyms.¹ The word *sala* ‘secret’ appeared as an attributive about four times less frequently.

After searching all the *Kuiv(a)*- and *Sala*-hydronyms or settlement names based on hydronyms, I composed a base map with the borders of the Estonian parishes (Fig. 1). The area that is marked in blue is the Northern Estonian karst area, the green marks the karst-free area and the beige area is the Southeast Estonian karst region. Red dots mark the parishes, where corresponding names were found.

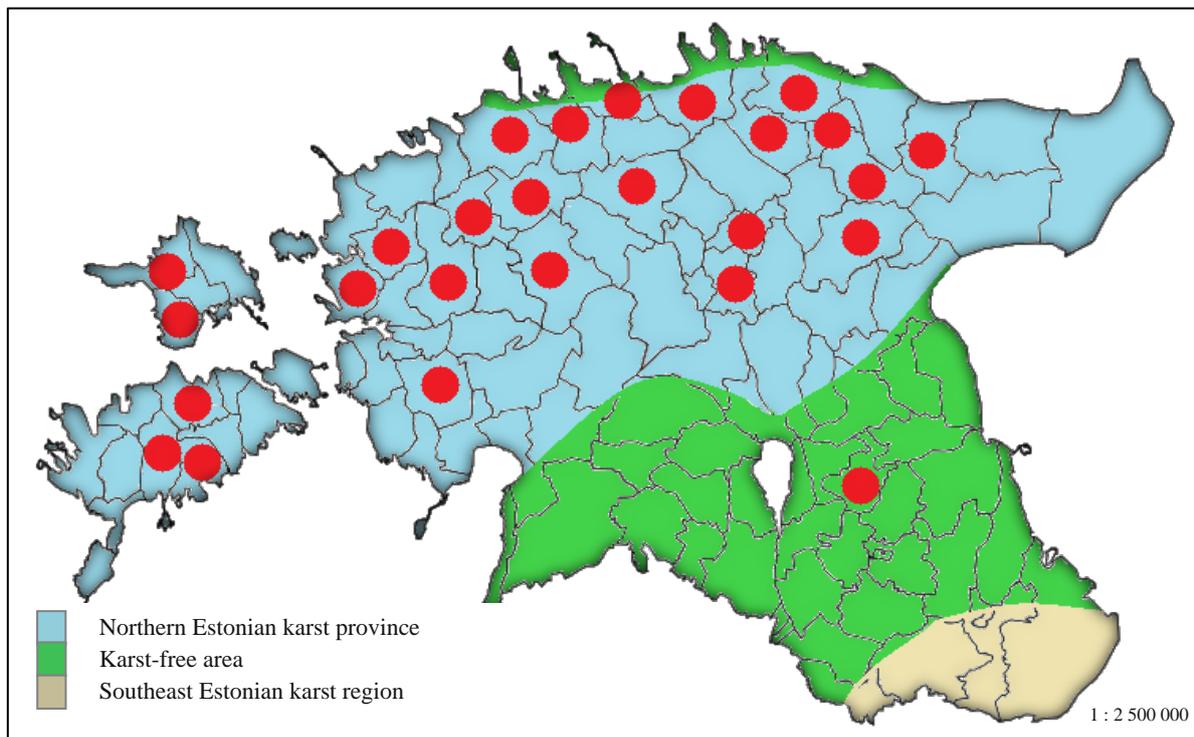


Fig. 1. *Kuiv(a)*- ‘Dry’ and *Sala*- ‘Secret’ in Estonian hydronyms or secondary settlement names (red dots mark the parishes, where corresponding names were found)

It appears that the *Kuiv(a)*- and *Sala*-names that are characteristic to karst objects, occur mainly in the karst areas. The map demonstrates the phenomenon of how nature can be very clearly reflected in place names.

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¹ Besides Estonia, the other two Baltic countries, Latvia and Lithuania, also have karst areas that have developed in both carbonate and gypsiferous rocks (Paukstys and Narbutas 1996: 279). Could some Latvian river name that includes a *kūja*-stem be derived from the Livonian (closely related to Estonian) word *kūja* ‘dry’? Other names with Balto-Finnic substrates can also be found in Northern Latvia (e.g. *Rūjiena* < *ruhi* ‘trough; dugout’).

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