

## Участь Назара Рибка у міжнародній конференції молодих вчених «GeoTerrace-2023» (Conference of Young Professionals «GeoTerrace-2023», 2-4 October 2023; Scopus).

Магістр Назар Рибак прийняв участь у міжнародній конференції молодих вчених «GeoTerrace-2023» (Conference of Young Professionals «GeoTerrace-2023», 2-4 October 2023; Scopus), де у співавторстві з Лідією Дубіс виголосив доповідь «River bed and floodplain of the Dnipro within the Kakhovka reservoir: before its construction and after the dam blow up in 2023». Матеріали доповіді отримала позитивні рецензії <https://openreviewhub.org/geoterrace/paper-2023/river-bed-and-floodplain-dnieper-within-kakhovka-reservoir-its-construction> і будуть офіційно опубліковані на платформі, що індексується в Scopus.

The screenshot shows a Zoom meeting window with a slide titled "Introduction". The slide contains a bulleted list of text and two satellite images of the Kakhovka Reservoir. The top image is dated "5 June" and shows a large reservoir. The bottom image is dated "20 June" and shows the reservoir almost completely dry. The slide footer includes the logos for "GeoTerrace 2023 Conference" and "EAGE", and text indicating the "International Conference of Young Professionals «GeoTerrace-2023» 2-4 October 2023, Lviv, Ukraine". A video thumbnail of Nazar Rybak is visible on the right side of the slide.

### Introduction

- The blowing up of the Kakhovka Reservoir dam on 6 of June at 2:35 and 2:54 became the cause of one of the largest technogenic environmental disasters of the 20th and 21st centuries, resulting in billions of damages to Ukraine's economy, loss of human lives, and destruction of unique ecosystems.
- The Kakhovka Reservoir was the sixth in a cascade of reservoirs downstream on the Dnipro River, stretching from Nova Kakhovka to Zaporizhzhia. Its water surface area was 2,155 km<sup>2</sup>, with an 18.19 billion cubic meters volume. The maximum width was 28 km, and the depth reached 36 meters.
- The reservoir completely drained on June 23, and the water level on the submerged territories below the dam finally decreased on June 18.
- Following the blowing up of the Kakhovka dam and the rapid lowering of water levels in the reservoir, the relief of the Dnipro valley bottom was exposed.

Kakhovka Reservoir almost completely dry

5 June

20 June

Source: Copernicus Sentinel-2

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Zoom Meeting controls: Unmute, Start Video, Participants (15), Chat, Share Screen, Record, Reactions, Apps, Whiteboards.

The screenshot shows a Zoom meeting window with a slide titled "Methodological Framework". The slide contains a bulleted list of text and three images showing satellite imagery, a topographic map, and a QGIS software interface. The slide footer includes the logos for "GeoTerrace 2023 Conference" and "EAGE", and text indicating the "International Conference of Young Professionals «GeoTerrace-2023» 2-4 October 2023, Lviv, Ukraine". A video thumbnail of Nazar Rybak is visible on the right side of the slide.

### Methodological Framework






- satellite images from Google Earth
- satellite images of Sentinel-2 L2A with a resolution of 8 m/pixel
- German topographic maps at a scale of 1:300,000 from 1943
- processing was carried out using the QGIS software

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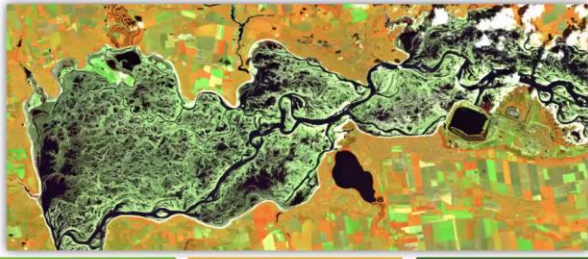
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## Results






- There are two sections with different types of the Dnipro riverbed that existed prior to Kakhovka dam creation
- The first section exhibits an anastomosing riverbed type, typical for the narrower part of the Dnipro valley, from Kakhovka to Enerhodar. Its length spans over 145 km.
- Characteristic features of this riverbed include multiple channels, and a significant number of islands within the floodplain area.



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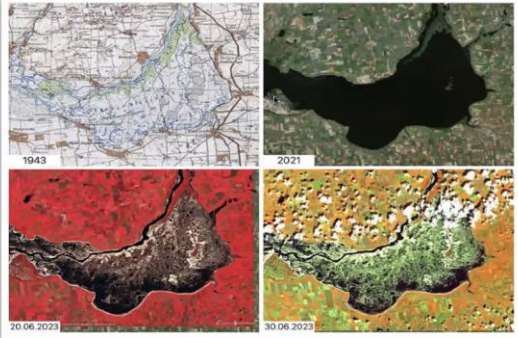
  
Nazariy Rybak


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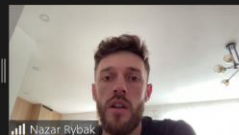
## Results

- The second type of the Dnipro riverbed within the Kakhovka Reservoir area is distinguished in the most expanded section of the valley bottom – from Enerhodar upstream to the southern part of Zaporizhzhia



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- This section is characterized by a single-channel, meandering riverbed with isolated islands that locally divide the river into branches.
- The floodplain on the left bank is well-developed with pronounced micro-relief, featuring numerous oxbow lakes and temporary streams that function as permanent watercourses during higher water levels.



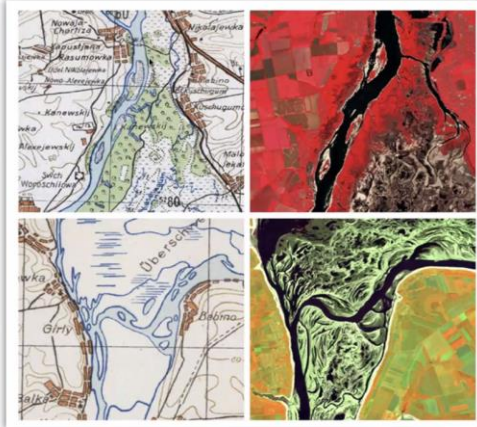
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The Dnipro riverbed before and after the formation of the reservoir

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Nazar Rybak



# What's next?



Sentinel satellite image dated August 19, 2023, depicting a section of the Dnipro River floodplain displaying active meandering processes and plant grows on the floodplain.



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