## IndianaView PROJECT FACT SHEET

http://www.indianaview.org

## Documenting Impact of LHD Removal in Indiana using UAS Technology

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Content: Low-head dams (LHDs) are not only a threat to fresh water and healthy habitats but also a "drowning machine" that takes away human lives every year. In addition, the LHDs also serve as physical barriers for fish and cause significant issues in ecosystem sustainability to rivers. Although LHDs were built for specific purposes at the time of the construction, most LHDs are no longer in use. For these reasons, recently, LHDs are proposed to be removed in some locations. For example, Two LHDs located in the Eel River, Logansport, Indiana, were removed between October and December 2021. However, there still remain questions: What happens when you take out the LHD? How would the stream respond to the removal? The main objective of this project is to collect ultra-fine spatial resolution geospatial data products over the recently removed LHD area (Eel River, Logansport, IN) at a regular time interval.

- Collected RGB and LiDAR data over the low head dam removal site **before** the removal
- Collected RGB and LiDAR data 5 times over the load head dam remove site **after** the removal
- Providing web services to visualize the UAS data (orthomosaic, DSM, and 3D point cloud)
- A full year-long monitoring of the low head dam removal site for potential study on the impact of low head dam removal to surrounding area

## FOR FURTHER READING:

- News report on the Logansport low head dam removal (<u>https://www.casscountyonline.com/2021/11/eel-river-</u>dam-removal-underway-in-logansport/)
- First UAV data collection before the low head dam removal (<u>https://gdslab.org/2021/07/15/logansport-low-head-dam-uas-data-collection/</u>)
- Comparing orthomosaic images before and after the low head dam removal (<u>https://gdslab.org/2022/01/24/low-head-dam-removal/</u>)
- Fine resolution UAV orthomosaic images (<u>https://hub.digitalforestry.org/lowheaddam/2021\_lowheaddam logansport.html</u>)
- 3D point cloud before the removal (<u>https://hub.digitalforestry.org/potree/logansport\_lhd\_20</u> 210715.html)
- 3D point cloud after the removal (<u>https://hub.digitalforestry.org/potree/20211217\_Logans</u> port\_l1.html)



**Figure 1**. Orthomosaic images over the low head dam removal site: (a) July 15, 2021, (b) Dec 17, 2021, (c) Jan 28, 2022, (d) Mar 9, 2022, (e) June 29, 2022



Figure 2. LiDAR 3D point cloud data before (above) and after (below) the low head dam removal