

PostFlightStudio

User Guide 2.4

PostFlightStudio

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Welcome to PostFlightStudio

PostFlightStudio helps you turn drone video and telemetry into environmental survey outputs, including annotated flight records, mapping assets, Google Earth overlays, PDF reports and editable PowerPoint presentations.

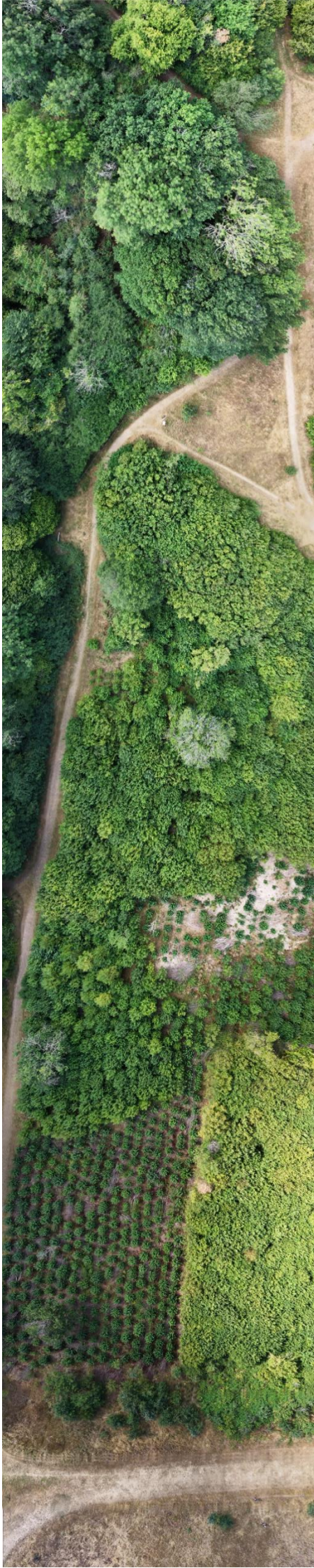
The platform processes your flight data locally in your browser, allowing you to review your footage, capture points of interest and explore the available outputs before deciding whether to export your work.

***Getting started is straightforward:** open PostFlightStudio, load your flight video and its accompanying telemetry file, then review the footage and capture the frames you want to document.*

PostFlightStudio is designed to support environmental monitoring, habitat assessment, site documentation and repeat surveys. Its outputs can help organise and communicate observations, but should be interpreted in light of the limitations of the source footage, drone telemetry and processing methods.

This guide explains how to prepare your flight data, use the platform and work with the files it produces.

Georgia Rutherford
Founder, PostFlightStudio



Section 1: Quick Start Guide

Step 1: Capture Your Flight (Video & SRT Required)

To ensure PostFlightStudio can extract precise telemetry and construct your spatial baseline, follow these field capture guidelines:

- **Record Video, Not Photographs:** Do not take individual photographs during your flight. Instead, record a continuous video of your survey area.
- **Save Both Files:** Ensure you retain **both** the MP4 video file of your flight and its corresponding .srt subtitle/telemetry file generated by your drone. PostFlightStudio requires both files to sync positioning and build the spatial framework.
- **Resolution & Performance:** PostFlightStudio has been extensively tested with high-resolution **4K video recordings** and processes them remarkably fast. Lower resolution recordings can also be used.

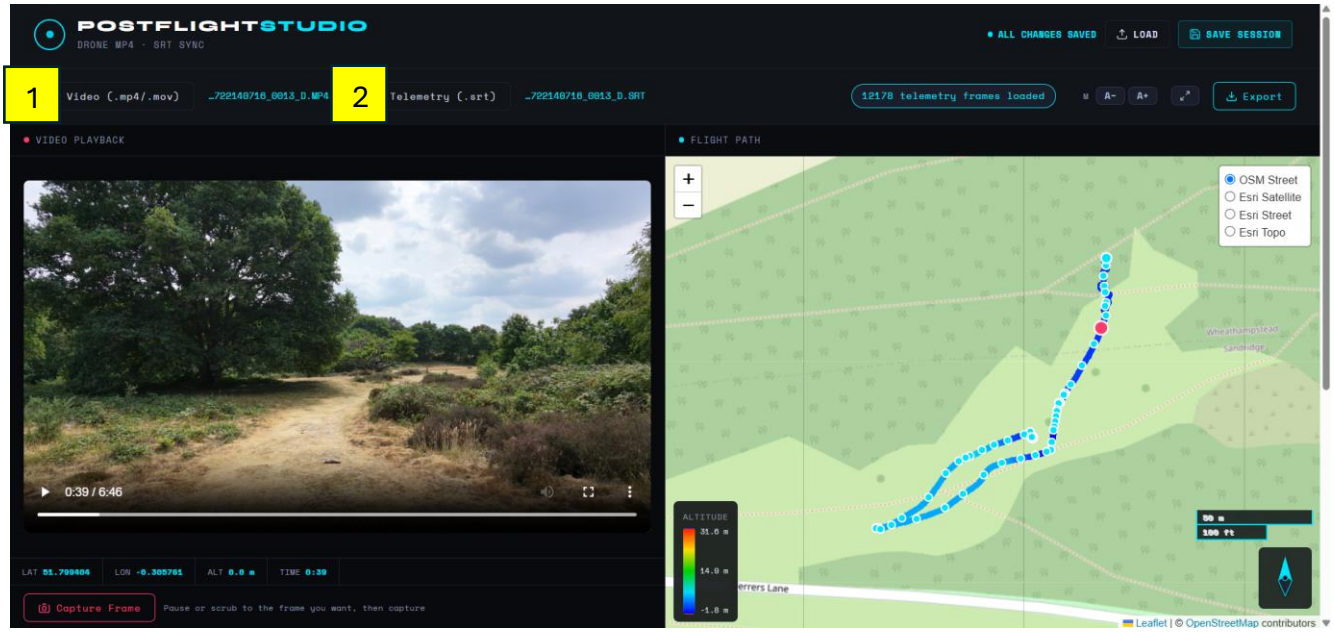
Note: If you are planning to create **orthomosaic maps**, please see the detailed guidance on the specific input requirements on pages 11-12.

Step 2: Access PFS

- Access PostFlightStudio at www.postflightstudio.com
- Please note: you can import and analyse your flight video and telemetry data in PostFlightStudio without a subscription. A subscription is required to export the deliverables detailed in Section 2.

Step 3: Import your flight video (MP4) and telemetry (SRT)

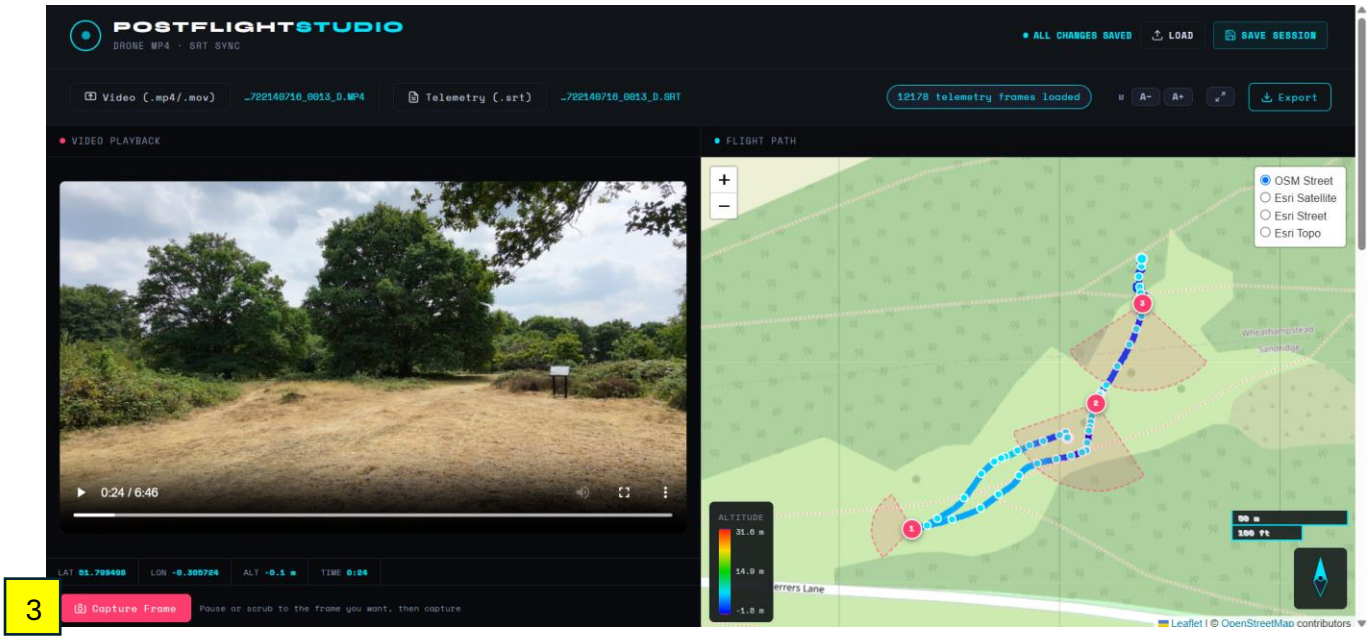
- Use the Video (1) and Telemetry buttons (2) to select the MP4 and SRT files from your drone or SD card. The flight video and visual representation of the telemetry data will be displayed in the interface.



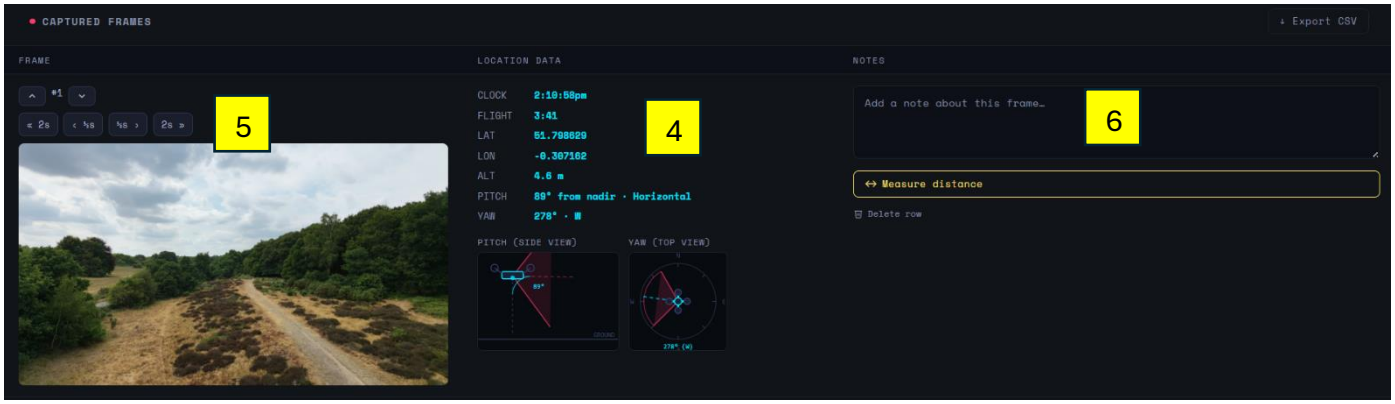
Step 4: Import and annotate your flight video (MP4) and telemetry (SRT)

Once your video and .srt telemetry files are successfully loaded into PostFlightStudio:

1. **Scrub the Timeline:** Use the interactive video player timeline to move through your flight recording. As you move through the video, the corresponding telemetry points update on the map display. The red circle on the flight path indicates the drone's position. You can click anywhere on the flight path to jump to that point in the video.
2. **Isolate Keyframes:** Pinpoint critical environmental features, habitat markers, or points of interest along your flight path. Click the Capture Frames button (3) to log high-definition keyframes directly into your survey record. Each captured frame is automatically mapped with precision Field-of-View (FOV) cones - visualising the exact camera pitch, yaw, and orientation to provide undeniable spatial context for your stakeholder reports and evidence packs.



3. **Examine Telemetry Overlays:** Scroll down below the video and map to view snapshots and details of the selected keyframes. Review real-time telemetry metrics, such as GPS coordinates, altitude, pitch, roll, and yaw, displayed alongside your footage to verify survey accuracy (4). You can nudge the timeline for any keyframe forward or backward to ensure you capture the ideal frame (5).
4. **Record Observations:** Type specific field notes, ecological observations, or remedial actions directly into the project log (e.g., noting riverbank erosion extent, invasive species presence, or specific infrastructure clearances).



Section 2: Deliverables

PostFlightStudio is designed to instantly bridge the gap between raw flight data and stakeholder-ready assets. To access these deliverables, press the ‘Export’ button. Below is a breakdown of the key deliverables generated by your survey and how to utilize them:

2.1: Export to Presentation (PPTX)

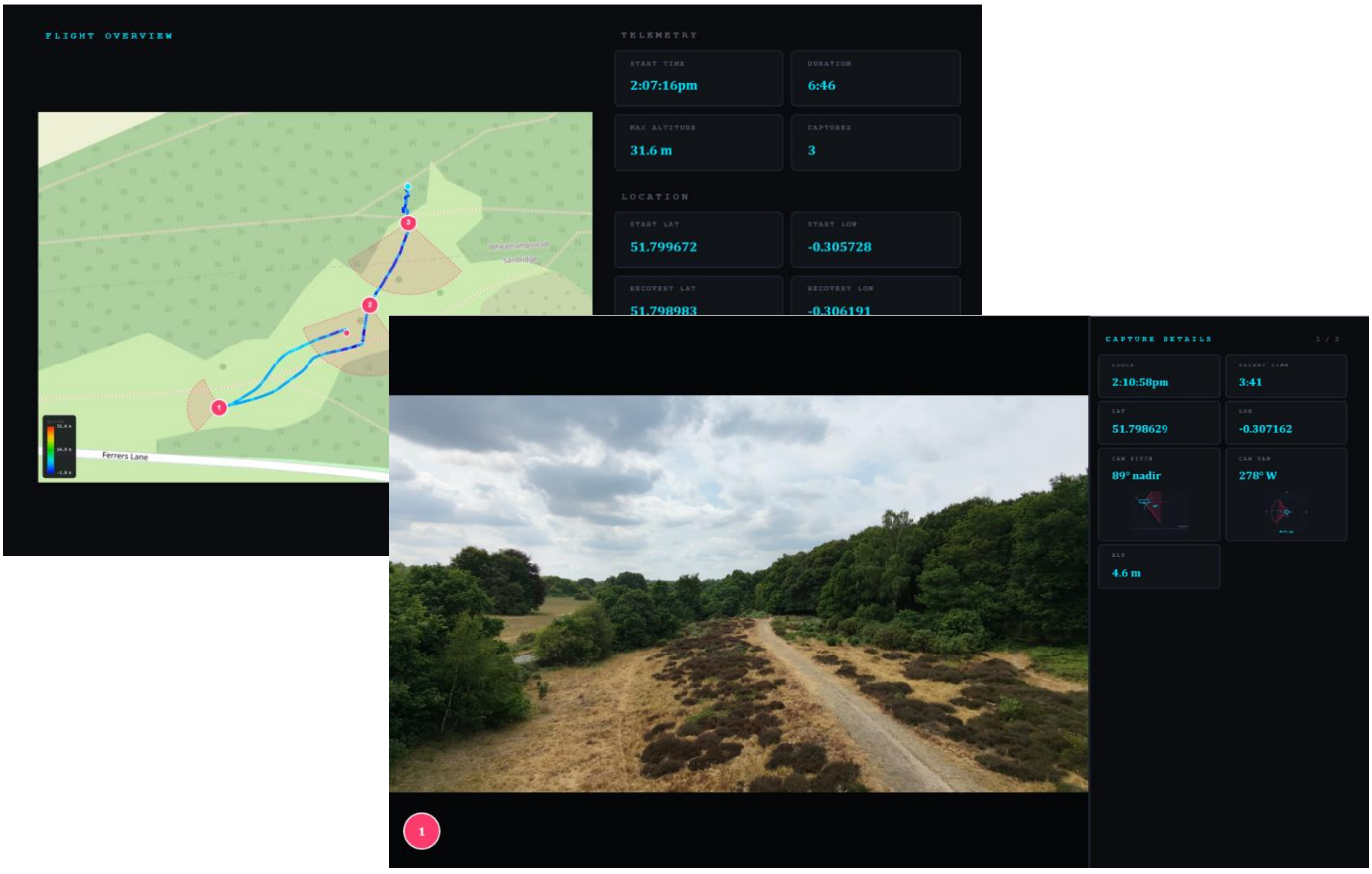
Transform your flight survey data and isolated keyframes into a high-quality, professional, editable PowerPoint presentation deck instantly.

Prerequisites

Before exporting your presentation, ensure you have successfully completed the quick start workflow by **adding and capturing keyframes** along your flight path (as detailed in Step 4). The presentation generator relies directly on these captured keyframes, timestamps, and telemetry points to structure your slides.

How to Export

1. Open the project export menu within PostFlightStudio.
2. Select the **Presentation (.pptx)** export option.
3. Follow the on-screen prompts to input your project **Title** and **Subtitle** (e.g., specifying the site name, location, and survey date).
4. Click Generate to download your fully formatted slide deck.



2.2: Export to PDF Flight Report

Generate a formal, multi-page survey evidence pack in PDF format to document your findings for clients, compliance folders, and stakeholder briefings.

Prerequisites

Like the presentation deck, the PDF Flight Report relies directly on your captured keyframes, telemetry logs, and spatial markers. Ensure you have completed the keyframe capture workflow (Step 4) and added any necessary field notes before exporting.

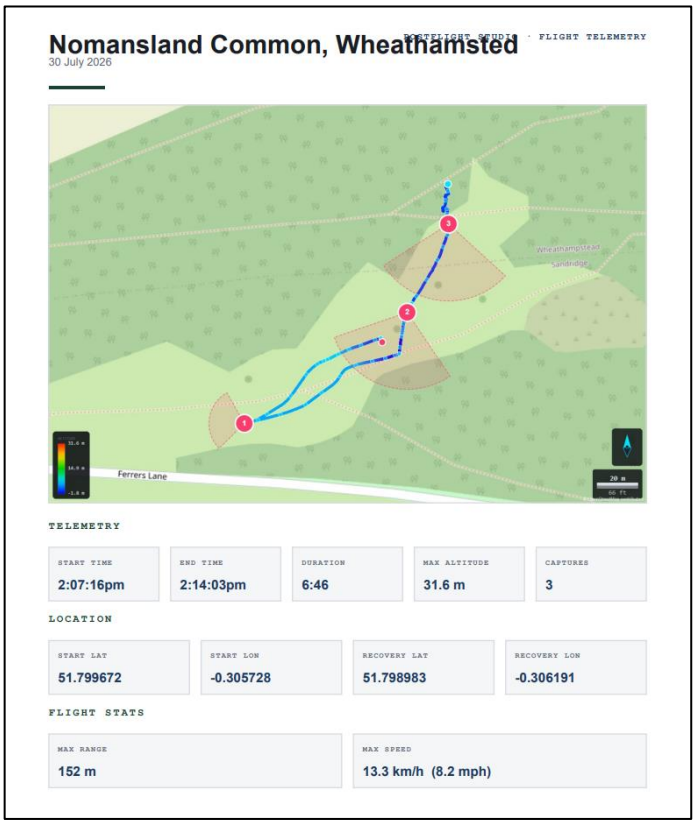
How to Export

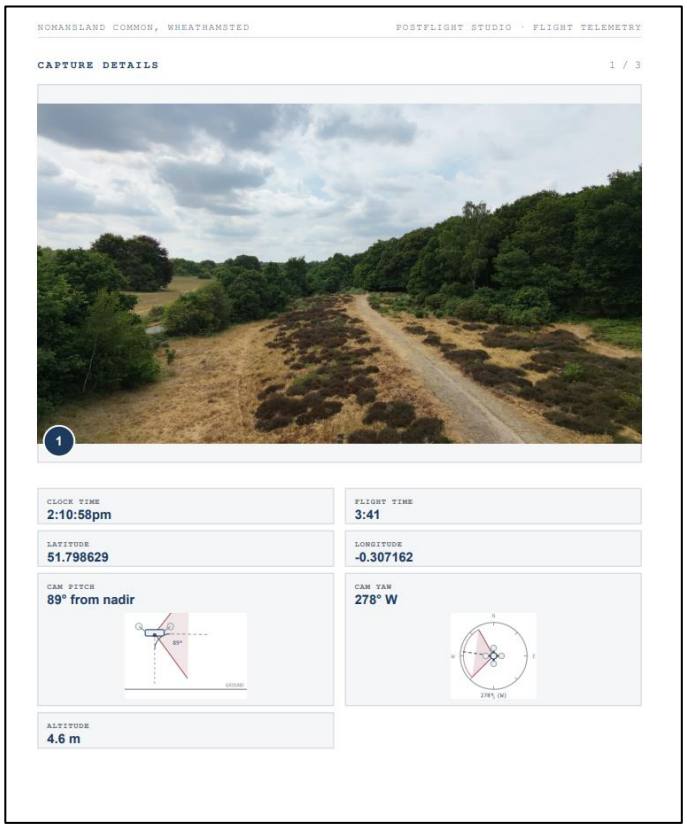
1. Open the project export menu within PostFlightStudio.
2. Select the **PDF Flight Report** export option.
3. Complete the prompt fields to provide your project title, location, and metadata details.
4. Click Generate to compile and download your formatted PDF document.

Key Features & Report Structure

The generated PDF report provides a comprehensive, professional breakdown of your survey. Features the survey title, date, a visual overview map of the flight path, and core telemetry metrics.

Each isolated point of interest gets a dedicated breakdown page containing high-resolution keyframe imagery, telemetry data and additional notes.





2.3: Export to Compiled Video Clip

Instantly merge survey highlights into a single .mp4 reel without third-party video editors.

Prerequisites

This export builds a video file directly from your captured keyframes and timeline markers. Ensure you have completed the keyframe capture workflow (Step 4) before navigating to the export menu.

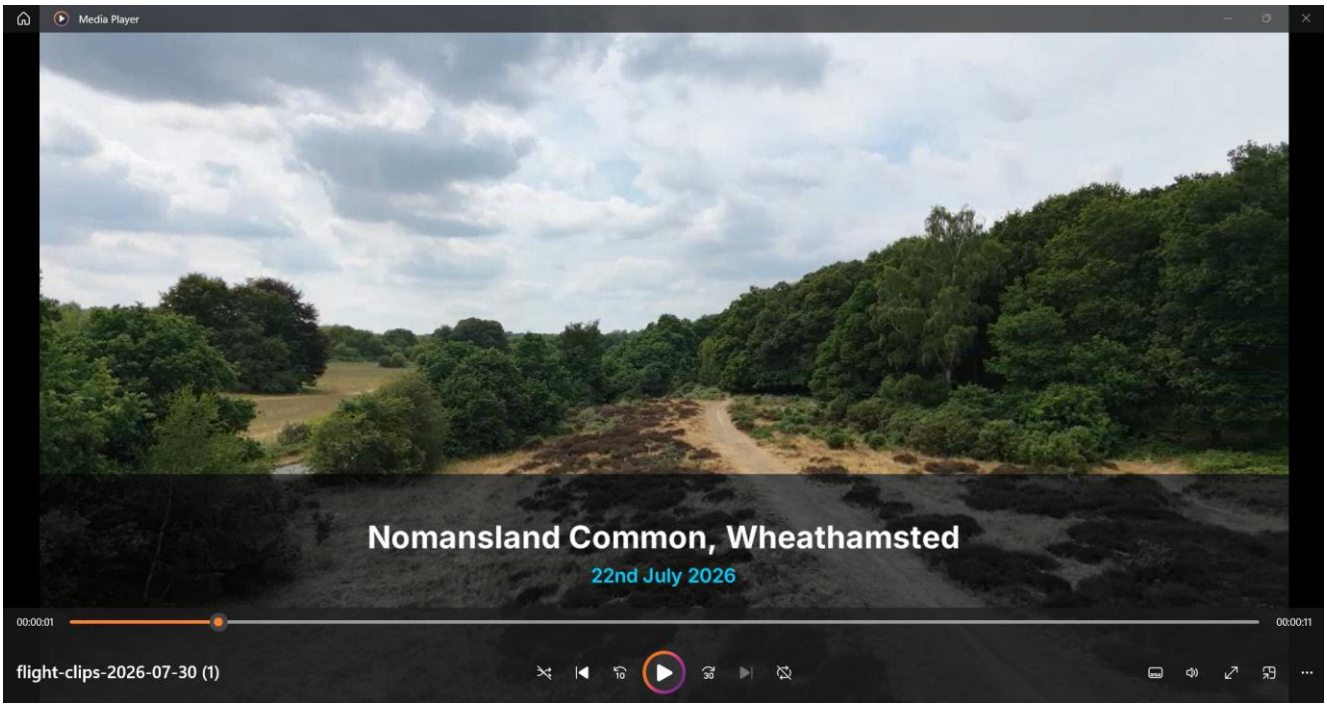
How It Works

PostFlightStudio extracts a short video clip for every captured keyframe, using the keyframe as the exact centre point. The duration of each clip is set by the user in the video export options. All clips are then seamlessly spliced together. **Update 30/07/26:** Select the checkbox during the export settings process to include the notes you added for each keyframe.

How to Export & Configure

1. Select Video Clips from the project export menu.
2. Choose Resolution: Select Original for full native quality, or 1080p / 720p to speed up in-browser processing (running entirely client-side without hardware acceleration).
3. Configure Audio & Titles: Original audio is removed. Optionally add a background music track (trimmed with a 2-second fade-out) or set a Title and Subtitle to display in the lower third for the first 4 seconds.
4. Compile: On first use, FFmpeg is fetched from the CDN (~10 MB) and cached locally by your browser. Click Generate to download your final reel.

Export duration reflects the number, duration and resolution of clips built into the final render. The system keeps you informed of progress throughout.



2.4: Export Raw Assets Bundle

Export a complete, self-contained package of your raw survey files and extracted elements for archival or custom offline processing.

Prerequisites

This export aggregates all core source inputs and generated artifacts from your current workspace session. Ensure your flight is fully loaded and processed before exporting.

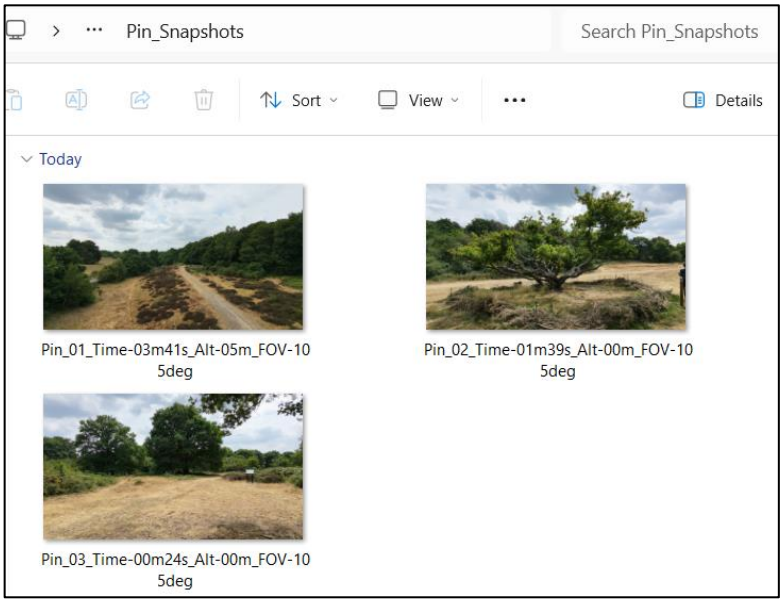
How to Export

1. Open the project export menu within PostFlightStudio.
2. Select the **Raw Assets Bundle** option.
3. Choose your destination directory to download the compressed archive containing your core survey data.

Key Features & Bundle Contents

The exported bundle packages everything you need to archive a project or transfer raw components to other specialized workstations:

- **Source Media:** Includes your original flight video (.mp4) and companion telemetry subtitle file (.srt).
- **Extracted Artifacts:** Packages all high-definition keyframe captures and associated geospatial metadata markers generated during your review session.
- **Project Logs:** Bundles timestamp logs, user notes, and telemetry data tables for independent analysis or offline compliance archiving.



	A	B	C	D	E	F	G	H	I	J	K
1	Pin Numbe	Video Time	Latitude	Longitude	Altitude (m	FOV Selec	Target Image Filename				
2	1	221.359	51.79863	-0.30716	4.6	105Â°	Pin_01_Time-03m41s_Alt-05m_FOV-105deg.jpg				
3	2	99.148	51.79911	-0.30602	-0.4	105Â°	Pin_02_Time-01m39s_Alt-00m_FOV-105deg.jpg				
4	3	24.965	51.7995	-0.30572	-0.1	105Â°	Pin_03_Time-00m24s_Alt-00m_FOV-105deg.jpg				
5											

2.5: Export to Google Earth Pro (KMZ)

Package your survey keyframes into an interactive geospatial file designed for Google Earth Pro, allowing stakeholders to explore your flight path and inspection points in a rich 3D globe environment. Pins display the direction the camera is facing within Google Earth Pro with 3D perspective. Where direction arrows reach the ground, the end is changed from an arrow to a circle. During export, select a colour for the pins and provide a name for the group to allow layering of multiple groups of data points for comparison.

Prerequisites

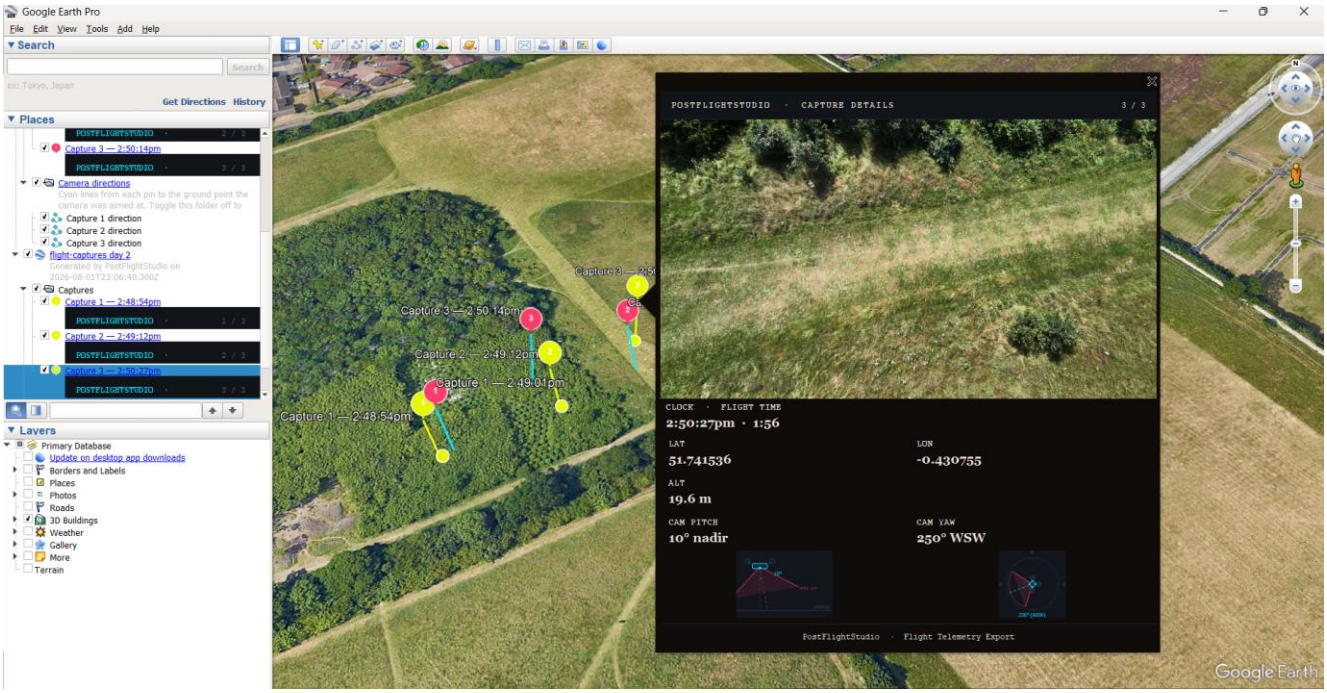
This export compiles geographic pushpins directly from your captured keyframes and timeline markers. Ensure you have completed the keyframe capture workflow and added your field notes (as detailed in Steps 4 and 5) before navigating to the export menu.

How It Works

- **Interactive Survey Pins:** The export generates a .kmz file containing geographically located pins for every captured keyframe along your flight route. *(Note: This export focuses specifically on your selected keyframes and flight telemetry points rather than rendering the full orthomosaic map).*
- **Rich Pop-Up Windows:** When a stakeholder clicks any pin in Google Earth Pro, a detailed pop-up window opens instantly to display the high-definition snapshot, precise telemetry data, and your recorded field notes.

How to Export

1. Open the project export menu within PostFlightStudio.
2. Select the **Google Earth Pro (.kmz)** export option.
3. Choose your save location to download the compiled .kmz archive package.
4. Double-click the downloaded file to launch it directly inside Google Earth Pro (which needs to be installed separately).



2.6: 2D Orthomosaic Map

Generate a seamless, top-down 2D site map from your drone footage for detailed habitat analysis, boundary mapping, and spatial tracking.

Critical Field Capture Guidelines

The quality of outputs produced is dependent on the quality of your inputs. Please read all the guidance below before flying your first flight to create an orhomosaic.

1. Camera Position

The camera must be locked looking straight down (nadir) throughout the recording for an orthomosaic map.

2. Flight Speed

Fly at normal speeds. PostFlightStudio has been thoroughly tested at 15mph. Flying at faster speeds might risk blurring of ground features and a reduction in map quality.

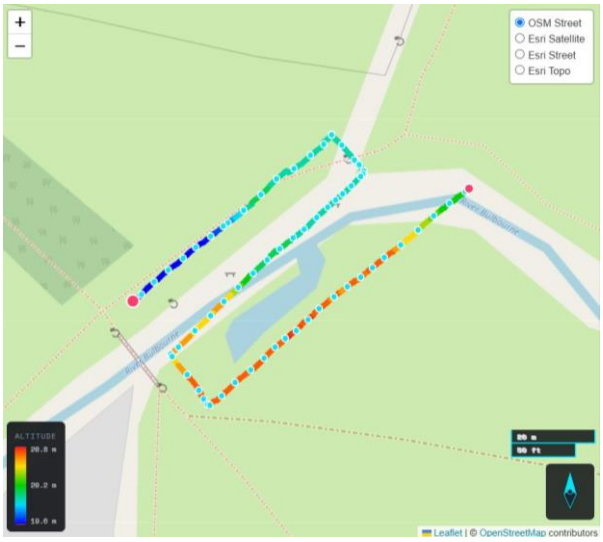
3. Flight Pattern

Flying in a single straight line (transect) often produces the best orthomosaic maps. However, if you want to map a larger / wider area you will need to follow this guidance,.
Unlike standard video recording, creating an accurate orthomosaic requires a disciplined flight pattern:

i. **The "Mow-the-Lawn" Pattern:** Fly a systematic, parallel grid pattern over your survey area while maintaining a strict, consistent flight height throughout.

ii. **Consistent Camera Orientation & Piloting:** Keep the drone facing the exact same direction (looking straight forward). To execute the pattern manually, use the right joystick to fly forward, strafe right, fly backward, and strafe right again in a continuous loop. The camera must be locked looking straight down (nadir).

iii. **Optimised Strafe Distance:** Aim for a strafe width of approximately **50% of the screen width** between passes to ensure adequate frame overlap for clean stitching.



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4. Flight Altitude

Altitude needs depend on whether your survey area is one consistent height or mixes heights.

RULE 1: UNIFORM-HEIGHT TERRAIN



Where the environment is relatively flat, maintaining a vertical clearance of 15 to 20 metres above the surface of the target feature is effective.
You can slightly decrease this height to gain more finer detail in the image, but will need to fly slower. Increasing the height will allow you to capture a greater area, but will lose some finer details.

Tree canopy shown as an example - the same clearance applies to any consistent-height terrain.

RULE 2: MIXED TERRAIN & THE PARALLAX BUFFER

The parallax effect is where objects closer to the drone will appear to move faster across your footage than objects further away. This causes problems for the creation of orthomosaic maps where there are substantial differences in the heights of objects within the survey area, e.g. where woodlands meet open areas.



To combat this, apply Rule 1 to the highest feature in your survey area, and then add an additional 50% to your drone altitude to reduce the impact of parallax.

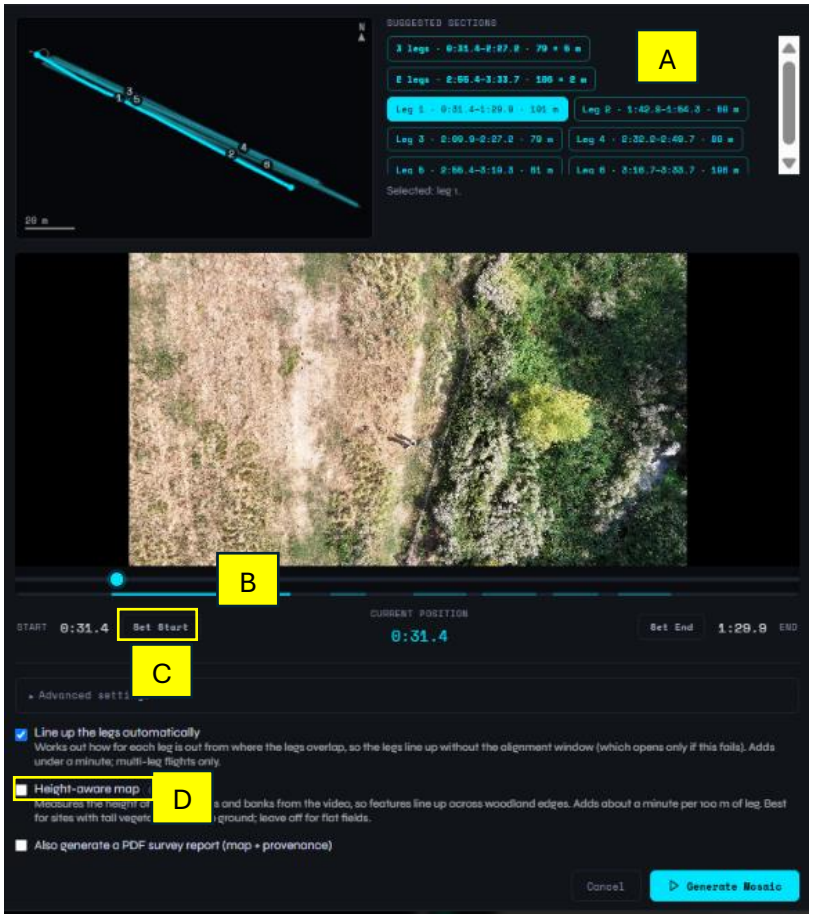
QUICK-REFERENCE GUIDE: FLIGHT HEIGHT BASED ON CANOPY MEASUREMENTS

CANOPY HEIGHT	RULE 1: UNIFORM TERRAIN	RULE 2: MIXED/BOUNDARY
5m	20–25m AGL	30–38m AGL
12m	27–32m AGL	40–48m AGL
20m	35–40m AGL	53–60m AGL

Important:
Remember to stay below local altitude limits for drone flights (120m AGL in the UK).

How to Export & Utilise

1. With appropriate MP4 and SRT files loaded, open the project export menu within PostFlightStudio and select the 2D Orthomosaic Map export option.
2. Select the section of your flight that you want to use to build your model. The interface will identify suitable paths that you can select from (A). Alternatively, you can scrub the timeline (B) and indicate your own start and end points (C).
3. Recommendation: If your surveyed environment has changes in height (e.g. open grass and tree canopy), then select the 'Height Aware Map' option (D) as this will reduce the negative impact of parallax on the final map.

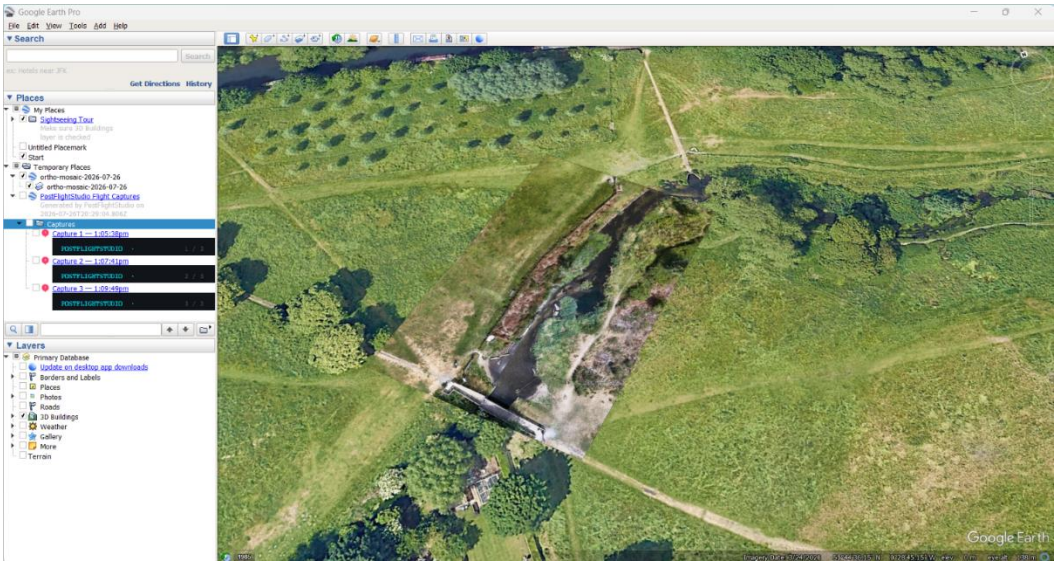


Outputs Included

Once processing and fine-tuning are complete, the export package provides three essential mapping assets:

- **High-Resolution PNG:** A detailed visual raster map of your survey site.
- **World File (.pgw):** Provides the spatial referencing data required to drop your orthomosaic directly into professional GIS software (such as QGIS or ArcGIS).
- **Google Earth KMZ Package (.kmz):** A georeferenced overlay compiled specifically for spatial visualization in Google Earth.

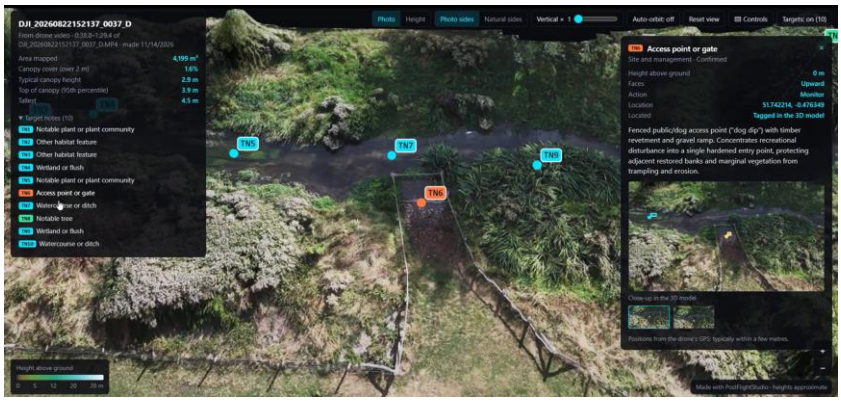
Note: the GPS of lower-cost drones can be less accurate. You can fine-tune the position of an orthomosaic map (GMZ) within Google Earth Pro by right-clicking on the name of the map in the side bar and selecting 'Properties'.



2.8: 3D Habitat Model

Generate a visual 3D habitat model from your top-down drone video footage, using parallax calculations to provide spatial and height perspective of your survey area from an overhead view.





Prerequisites

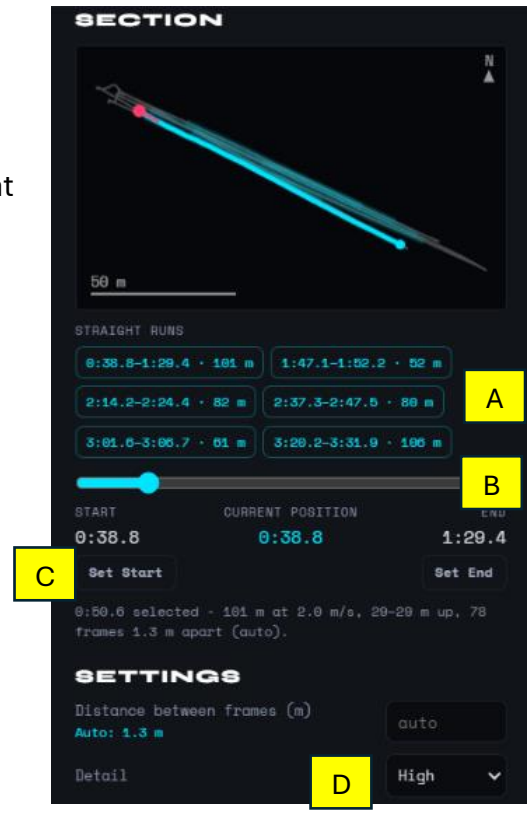
- Top-Down Video Capture: Ensure your drone video was recorded looking straight down (nadir) to capture consistent overhead imagery. A matching .srt telemetry file is required.

How It Works

- Parallax-Based Perspective: This tool analyses the parallax effect from top-down video recordings to generate a visual 3D representation of the site as seen from above.
- Overhead Visualization: While not a true 3D point cloud or volumetric model, it provides a valuable top-down perspective to help visualise site features, structural variation, and habitat layouts directly in your browser. Stated heights are estimates.

How to Export & Utilize

1. With appropriate MP4 and SRT files loaded, open the project export menu within PostFlightStudio and select the 3D Habitat Map export option.
2. Select the section of your flight that you want to use to build your model. The interface will identify suitable paths that you can select from (A). Alternatively, you can scrub the timeline (B) and indicate your own start and end points (C).
3. Select the level of detail / resolution for your map. Higher resolutions will take slightly longer to produce and result in larger file sizes.



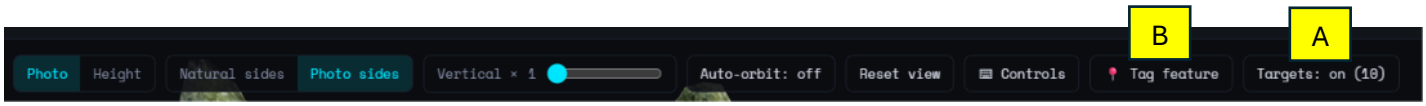
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Exploring your 3D model

You have full control over your movement and perspective with your 3D model, involving the use of the arrow keys, and mouse-keyboard combinations. These follow standard controls for 3D environments. Click the ‘Controls’ button in the interface to see the full list of controls available.

Target Notes

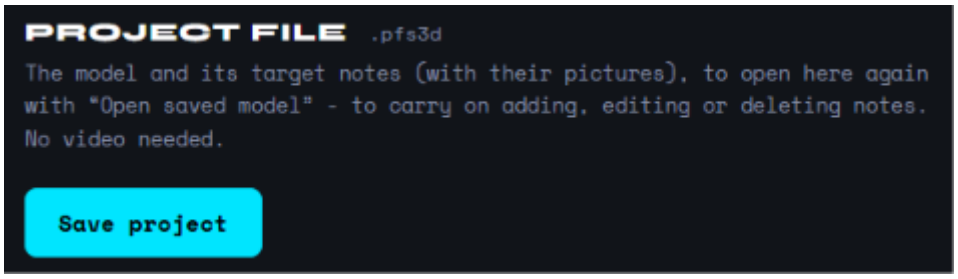
PostflightStudio allows ecologists and other environmental professionals are able to add georeferenced target notes to the 3D model to record points of interest. To do this, ensure targets are on (A) and then select to ‘Tag Feature’ (B).



With ‘Tag Feature’ on, press on a feature in your 3D to create the target node.

A pop-up window will be shown with the fields you need to complete to create the target note.

Saving your model



To save your model so that you can edit or add to it later, press **Save/Share Model** and select **Save Project**. This will save your project as a .pfs3d file. To reload your file, from the main PFS dashboard, select **Export >> 3d Model,** then use the load button to reload your model.

Exporting your model

You have multiple one-click export options for your 3D habitat model:

Shareable 3D model HTML file >> One file with everything in it - anyone can double-click it and explore the model in their web browser, with no internet or software needed.

Height map for GIS GeoTIFF >> Height above ground in metres (trees, scrub, hedges, reed beds, buildings), 0.5 m pixels, for QGIS, ArcGIS and other mapping software. Coordinates: WGS 84 / UTM - your GIS can show it on British National Grid. Unmeasured areas are left as "no data".

KMZ file >> To display your completed habitat map (including interactive Target Notes’) in Google Earth Pro. Depending on the accuracy of your drone’s GPS, you may need to make minor adjustments to the models positioning inside Google Earth Pro.

PowerPoint presentation >> A formatted slide deck of the flight, a site plan with numbered pins, captured frames, then the target notes

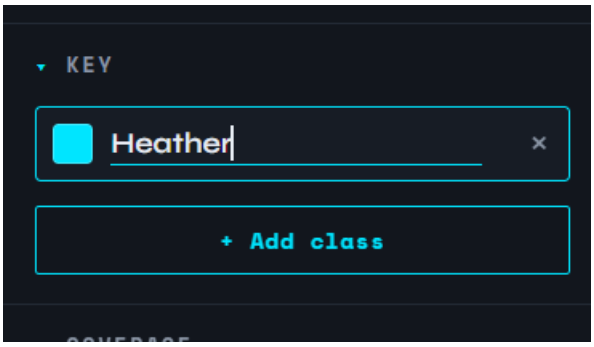
PDF report >> A flight summary and captured frames and target notes.

Orbit video MP4 >> an animated circular flight around your 3D model

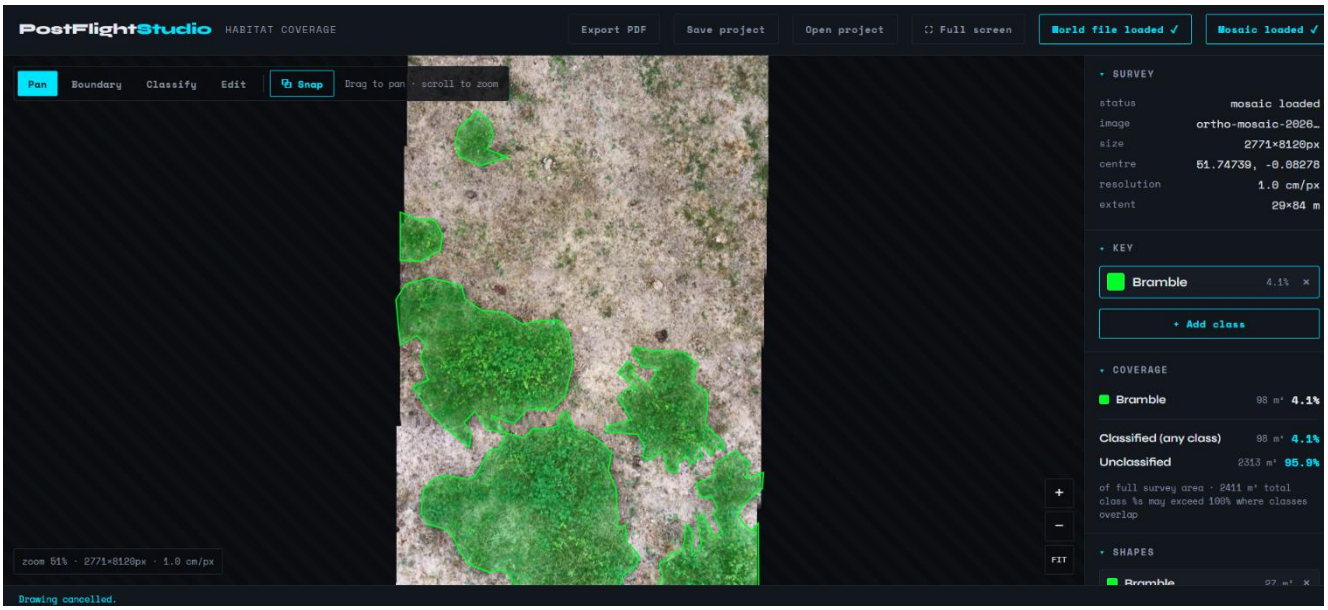
2.9: Spatial Coverage Mapping

Note: An orthomosaic map created in PFS is required for the spatial coverage mapping tool. You will be asked to select the orthomosaic PNG and the world file.

In the side menu, press ‘Add class’ to create the classes you need to map. In addition to stating the class name, you can also select a colour by clicking on the coloured square. You can create and map multiple classes.



Pressing + to zoom in is recommended. Use the pan tool to move around your map. Pressing classify allows you to start pressing on your map to mark the nodes at the edge of your target areas. Click back to where you started to complete a shape.



The areas covered by each class will be automatically calculated and displayed in the toolbar.

Final reports can be exported as a PDF.

Section 3: Shaping the Future

PostFlightStudio was built to eliminate the lag between capturing site footage and presenting findings - and as an early user, your real-world feedback is vital to shaping the roadmap ahead.

How You Can Help PFS

We would love to hear how the platform performs in the field. Whenever possible, share:

- **Bug Reports:** Let us know immediately if something breaks or behaves unexpectedly.
- **Screenshots & Deliverables:** Show us how your presentation decks, PDF reports, and maps look.
- **Case Studies & Projects:** Share before-and-after monitoring projects or habitat mapping case studies.
- **Testimonials & Time Savings:** Tell us how much time PostFlightStudio saved you compared to legacy workflows.
- **Feature Requests:** Tell us what features you wish existed or what would make your surveys even easier.

