Kart

Practical Geospatial Data Versioning

kartproject.org

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Koordinates

A geospatial data management platform inspired by cracking GIS data out of vendor silos. You can host, manage, share, publish, access, and build, alongside thousands of others worldwide.

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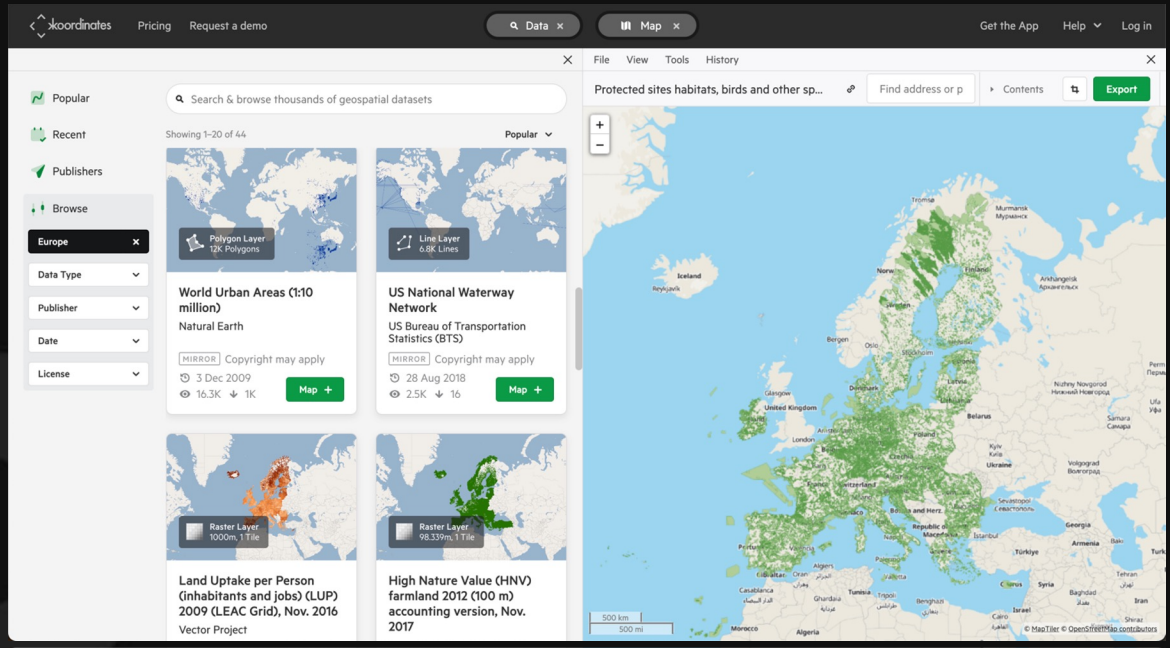

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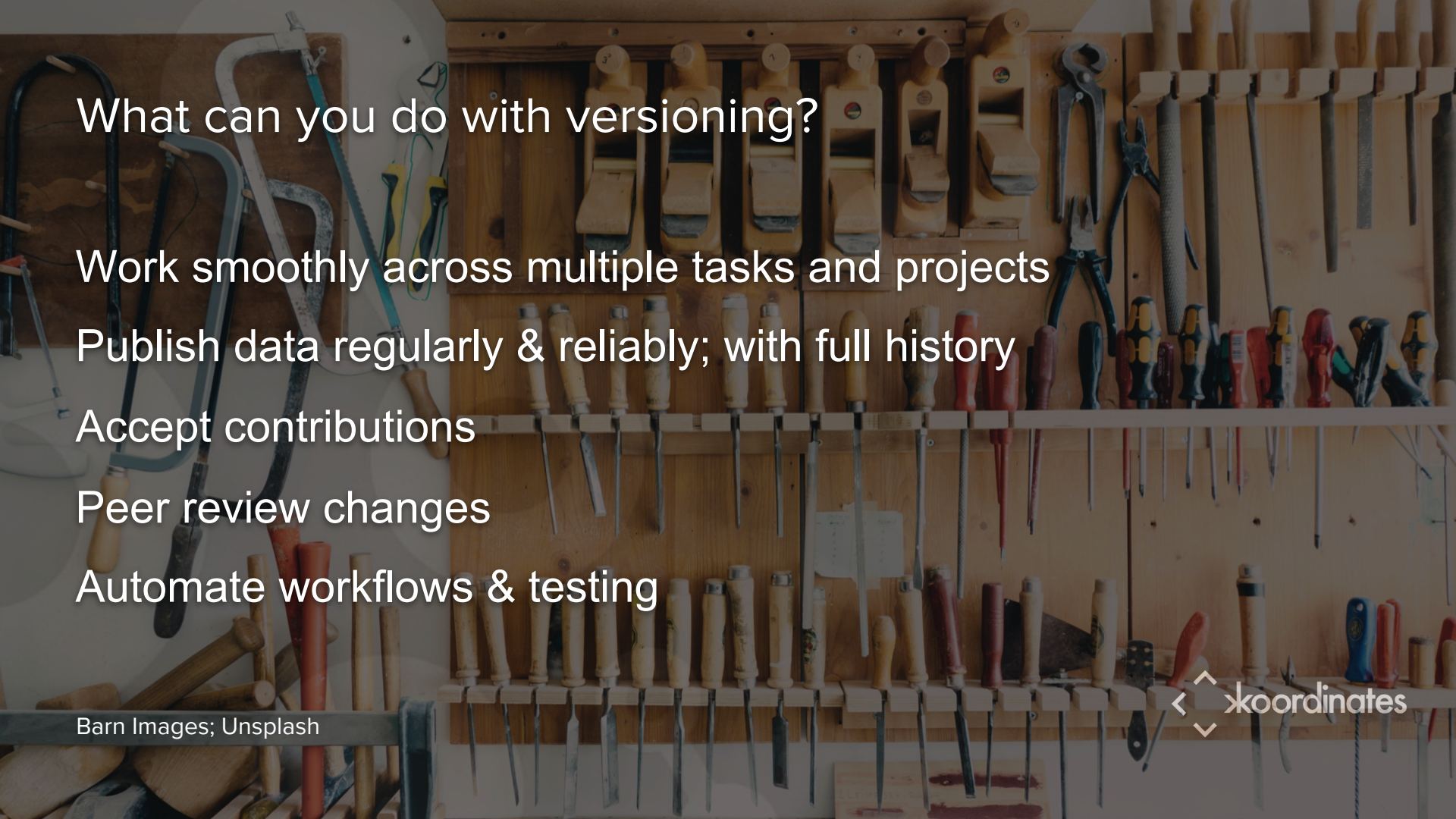

What can you do with versioning?

Work smoothly across multiple tasks and projects

Publish data regularly & reliably; with full history

Accept contributions

Peer review changes

Automate workflows & testing

Barn Images; Unsplash

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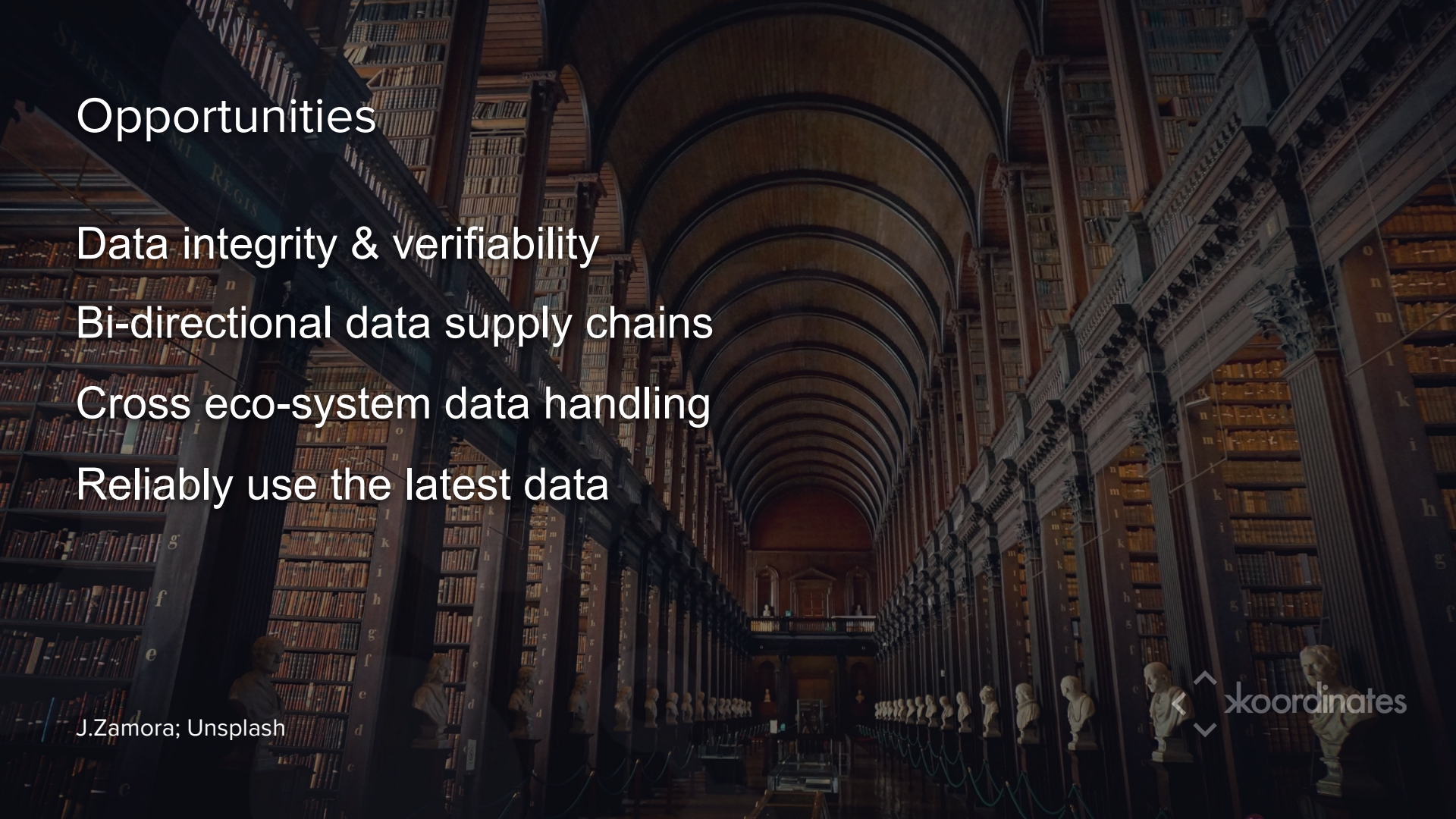
Opportunities

Data integrity & verifiability

Bi-directional data supply chains

Cross eco-system data handling

Reliably use the latest data



J.Zamora; Unsplash

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All data is versioned

what changed?
who changed it?
when did it change?
why did it change?

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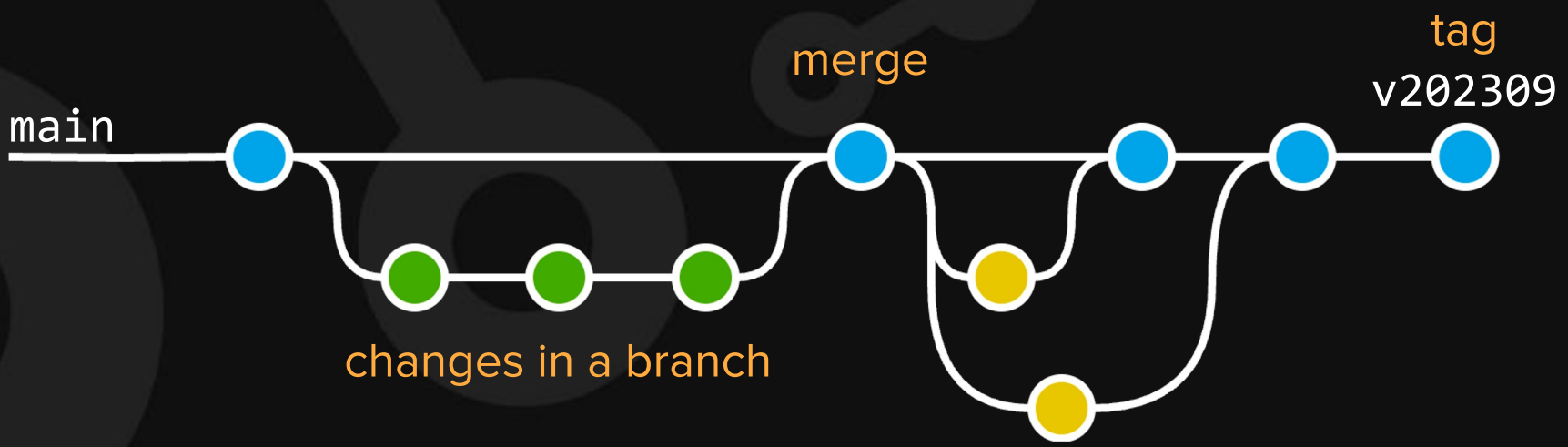
What does real versioning look like?



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Kart Principles

Open & free; ecosystem agnostic

Easy to install and **batteries included** 

For practical day to day use

Built on Git

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Photo by James Sullivan on Unsplash

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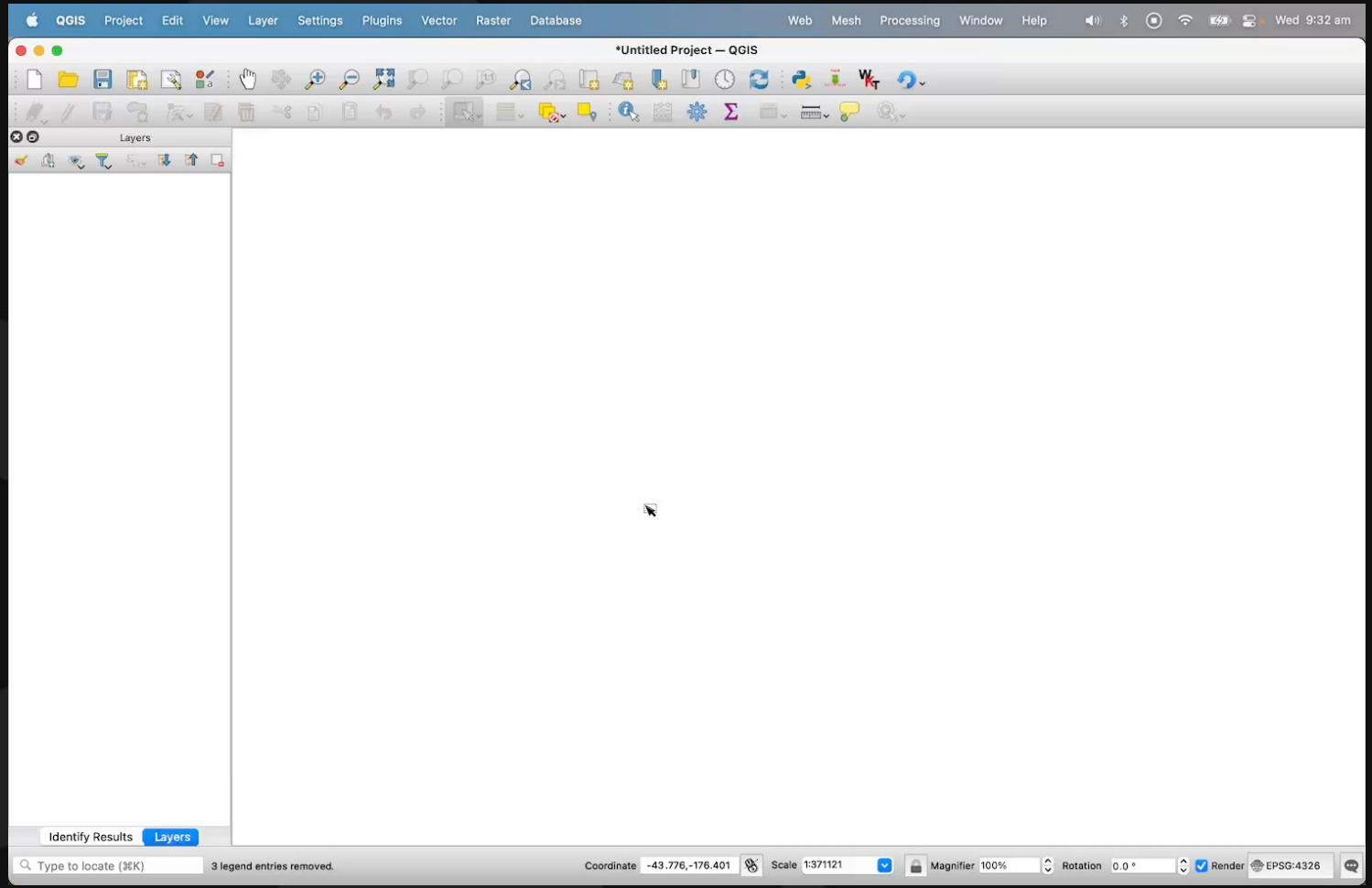

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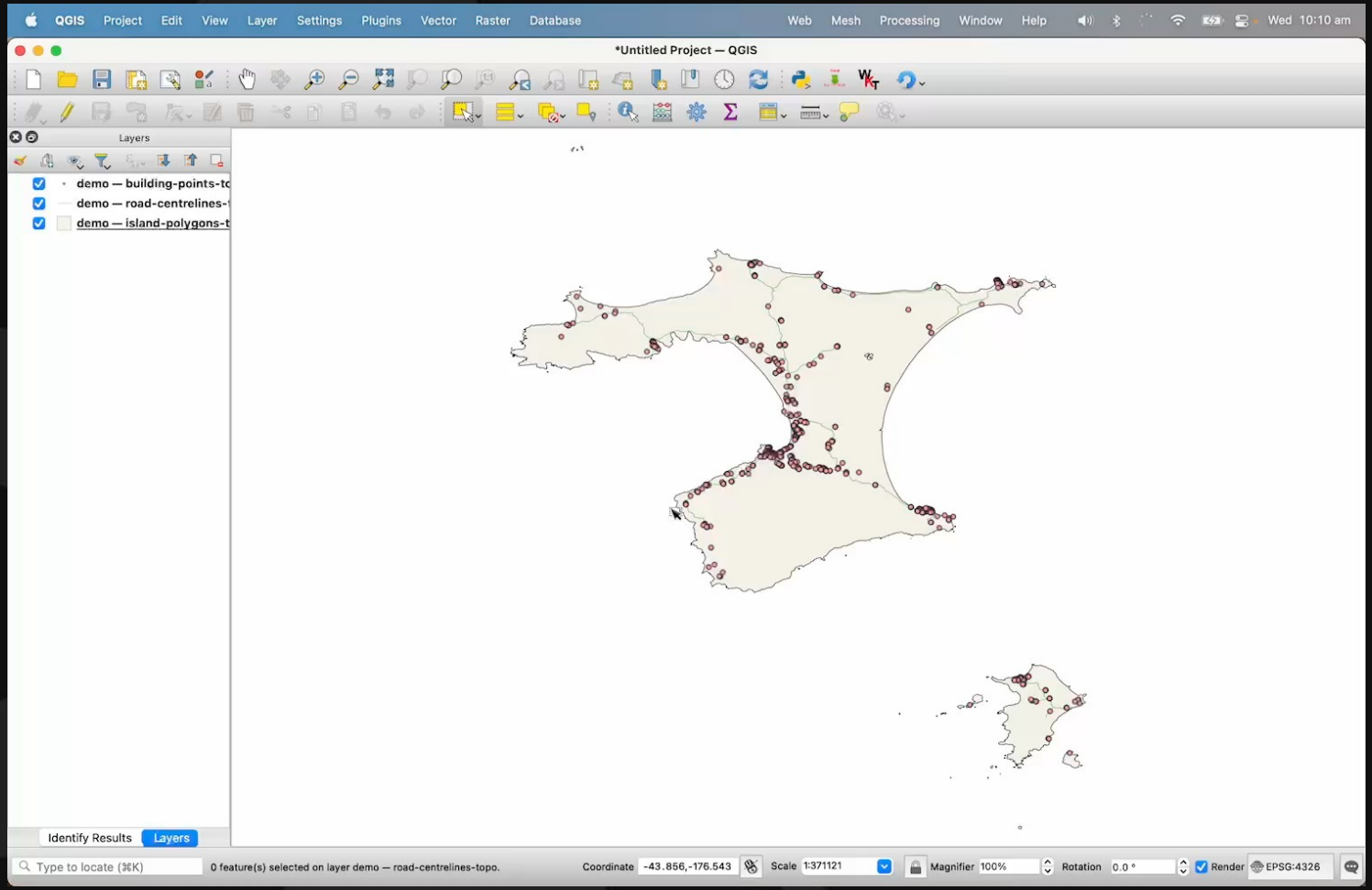

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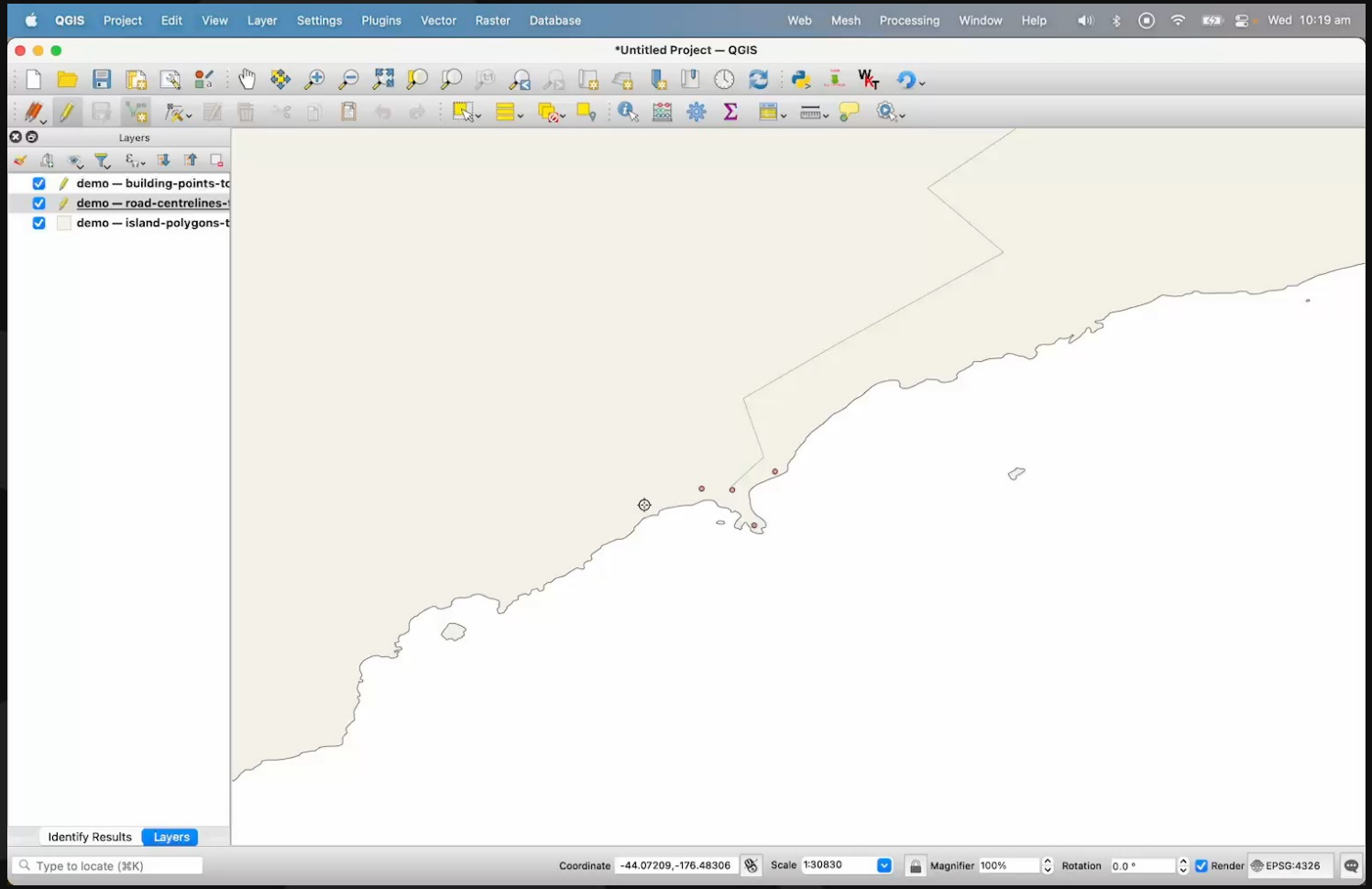

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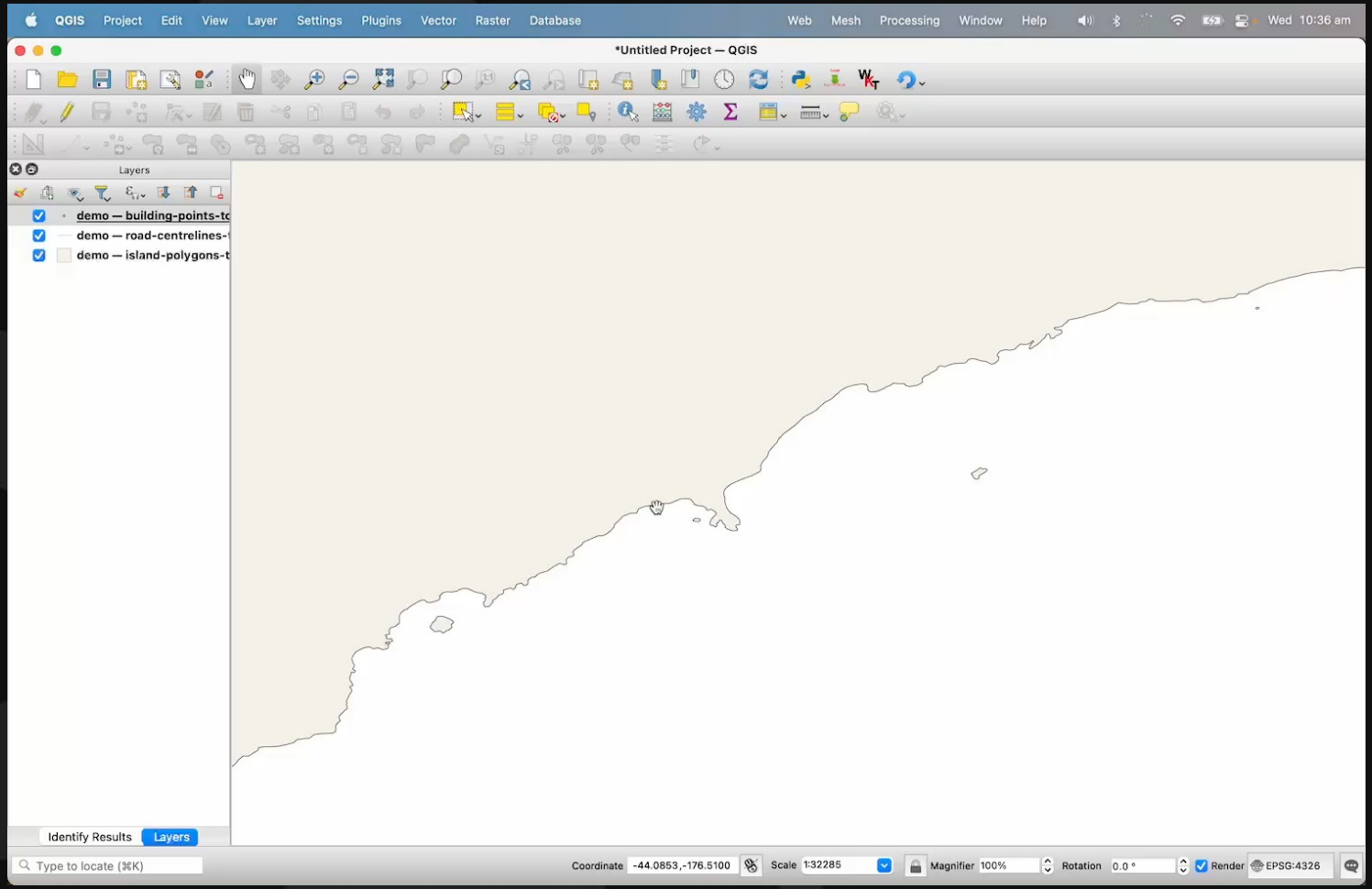

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Working Copies

Where you work with and edit your data

Different repository users can use different working copies

- Vector & Tables: GeoPackage, PostGIS, MSSQL & MySQL

  Roadmap: ESRI File GeoDatabases
- Point Clouds: LAZ & LAS
- Rasters & Grids: native & GeoTIFFs
- Cloud Optimised

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Spatially Filtered Clones

Work with only your area of interest

Smaller working copies for better performance in your tools

Reduces the network transfer for clones & fetches

💡 Fetch from & push relevant updates to the full dataset

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Spatial Filtering

```
$ kart clone example.org:mydata
    --spatial-filter="EPSG:4326;POLYGON((-4 55.7,
    -4 56, -4.5 56, -4.5 55.7, -4 55.7))"

$ kart clone example.org:mydata
    --spatial-filter=@myextent.txt

$ kart fetch
```

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Vector & Table Datasets

0→100GB sized datasets

Data types follow a SQL model

✓ CRS support ✓ Schema changes ✓ Conflict resolution

Import from many OGR formats

💡 Can "re-import" from a snapshot dataset into a new commit, and Kart will figure out the change.

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Point Cloud Datasets

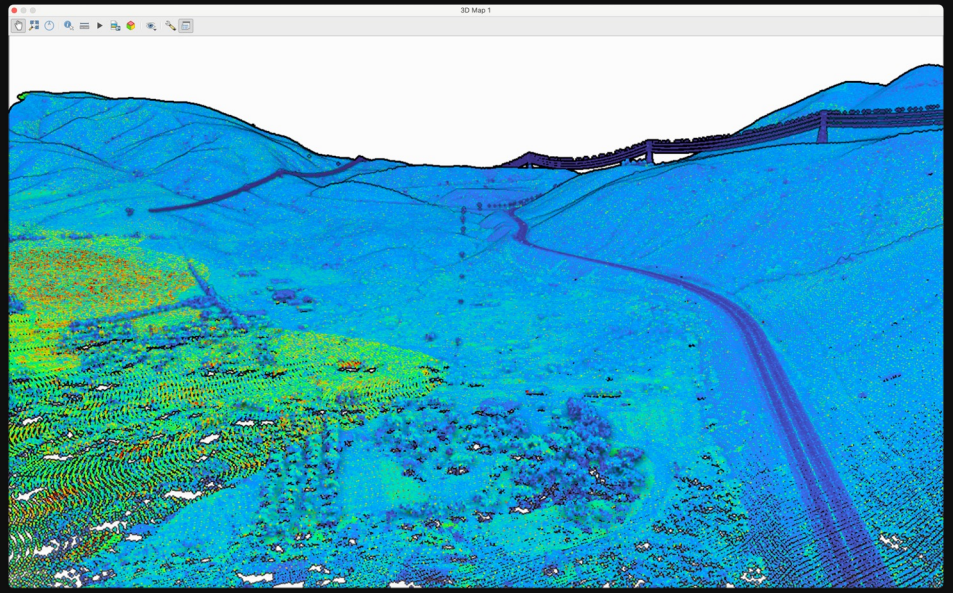
Built on Cloud Optimised Point Clouds (COPC) — see copc.io

Supports LAS/LAZ

0→TB sized datasets

S3/object storage support

Automatic Virtual Point Cloud (VPC) creation for QGIS



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Raster Datasets

Built on Cloud Optimised GeoTIFFs

0➔TB sized datasets

S3/object storage support

Automatic Virtual Raster (VRT) creation

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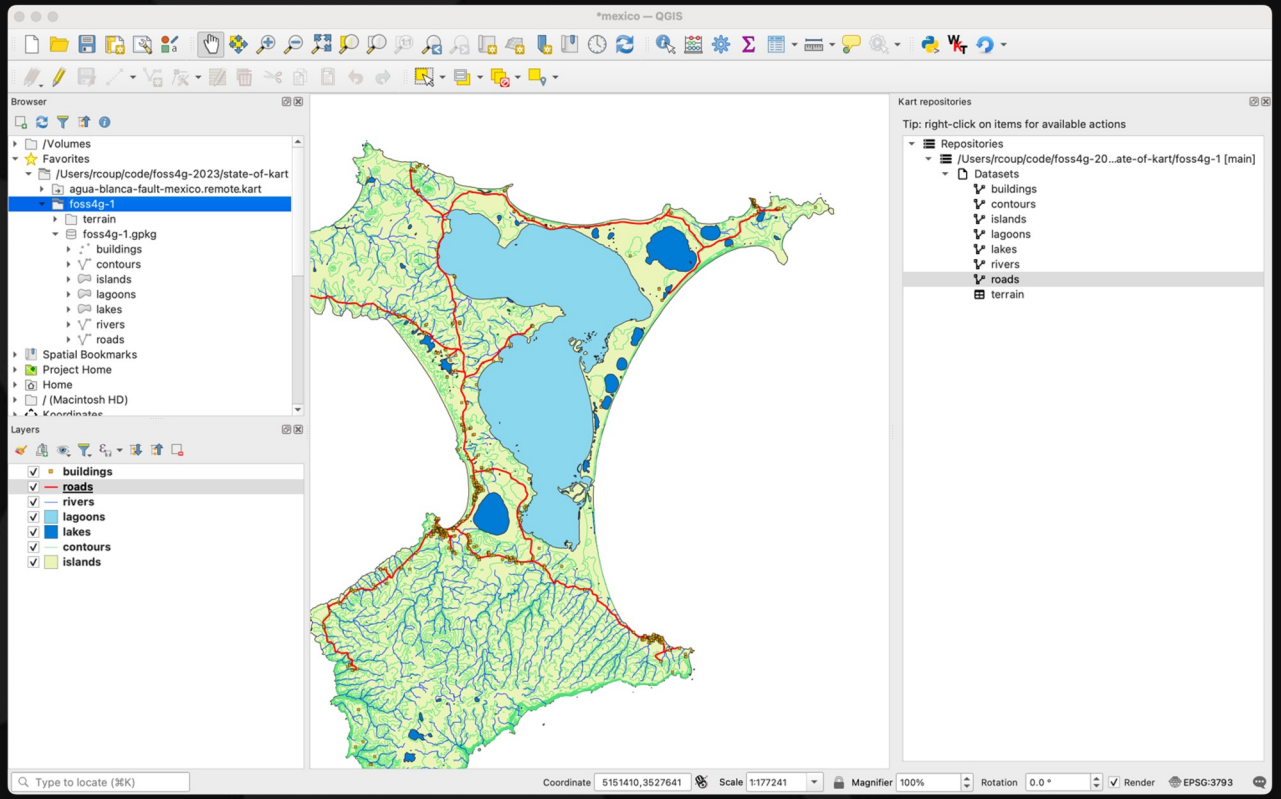
QGIS Plugin



Install via the QGIS plugin manager

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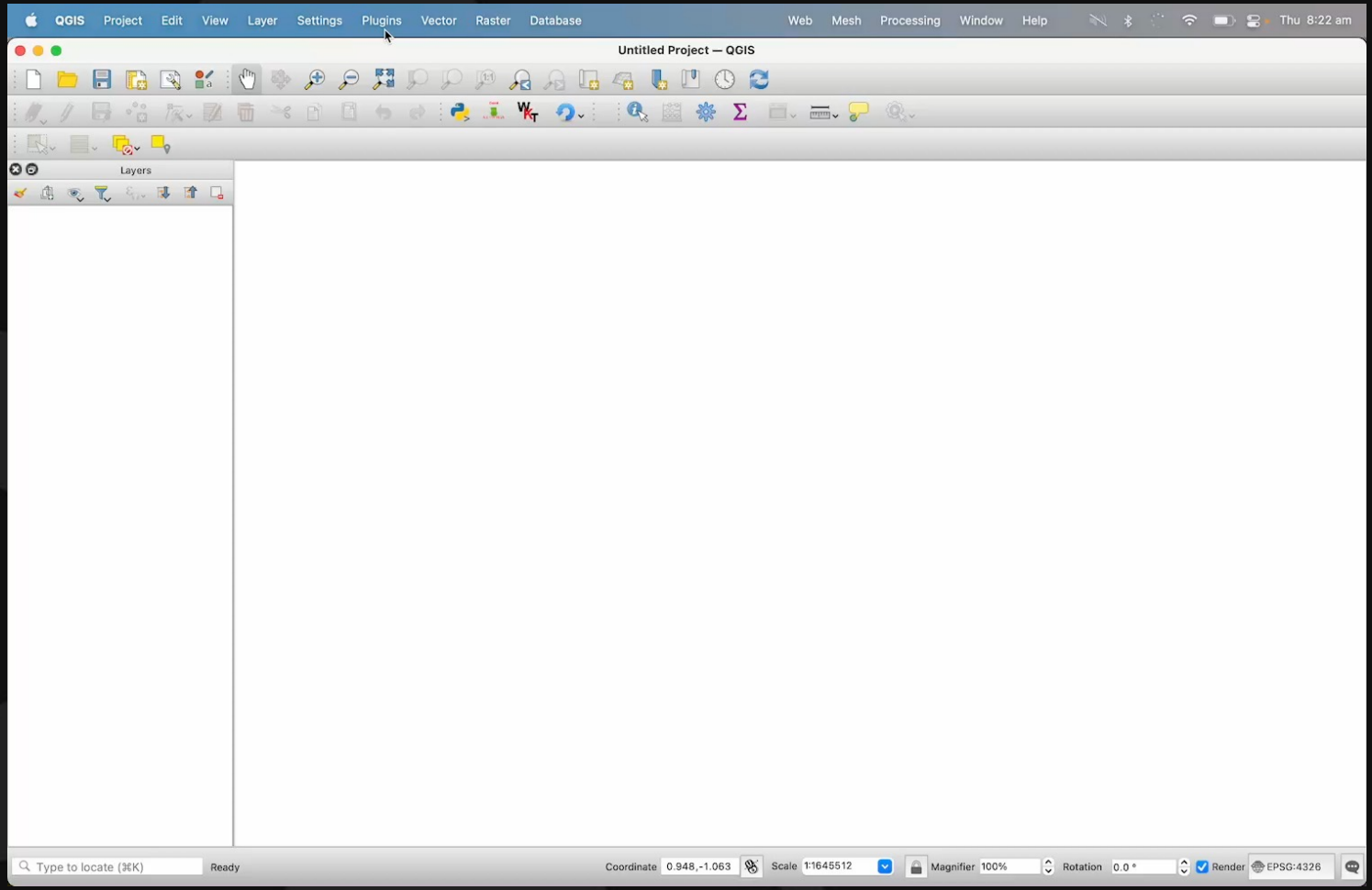

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Roadmap

- Referencing data from *existing* S3 buckets without copying
- File GeoDatabase working copy
- Blend local & remote Raster & Point Cloud datasets
- Inter-linking datasets for projects
- Serving tiles & APIs (like STAC) directly from repos
- Extended CRS support

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