



TECHNOLOGY SERVICES

# GeoOptix® Software Platform

Simplify Data Collection and  
Management in the Cloud

GeoOptix provides a complete solution for data collection and management that is tailored for environmental work and optimized for compatibility in today's technology landscape. With an integrated mobile app, GeoOptix improves the accuracy and efficiency of data gathering. Then this platform provides secure cloud storage for your data with API-based accessibility across a limitless range of technologies and applications. GeoOptix enables users to automate and streamline activities for data collection, quality control (QC), metrics generation, and sharing data via the web.

GeoOptix is designed to support a wide variety of research, monitoring, and compliance programs, putting your team in control of everything from form design to data formatting, quality control to publishing, visualizations to analysis. Built for scalability and extensibility, GeoOptix supports integrations with other platforms, enabling your team to expand its capabilities to suit their program goals. Because it's based on advanced cloud technologies, you can spend less time on data preparation, data entry, and data cleaning, giving you more time for higher-order activities like analysis and synthesis. GeoOptix is a perfect fit for project managers and program administrators involved in natural resource management and environmental compliance.



## Benefits



### 1. Improve Efficiency

Quickly move from form design through data collection, analysis, and publication

### 2. Increase Accuracy

Leverage automated QC features to minimize errors

### 3. Simplify Workflows

Automate analyses, models, and notifications with a robust API

### 4. Access Anywhere

Keep your data centralized, safe, secure, and accessible as long as you need it

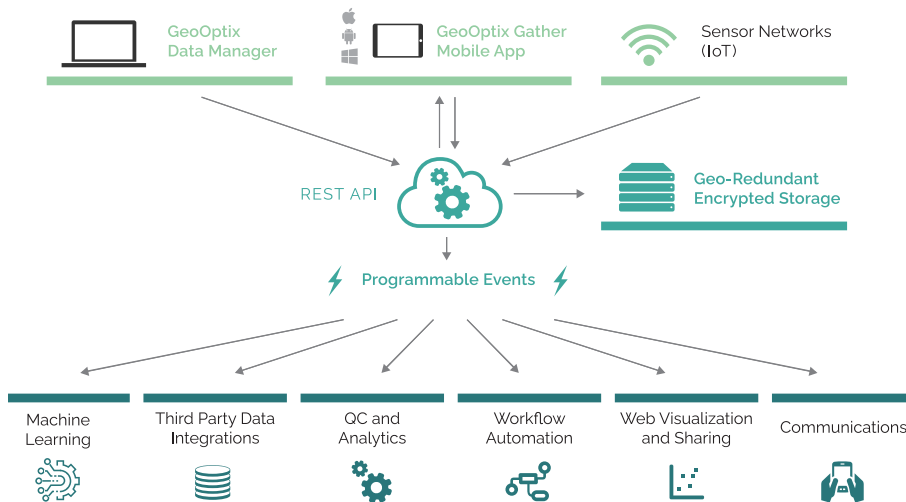
*"With GeoOptix, our program has so much more control over our data, our workflows, and our schedule."*

Kaylyn Costi | Confederated Tribes of Umatilla Indian Reservation

# Accuracy and Efficiency

## A Specialized Tool to Manage Project Data

GeoOptix was specifically designed to meet the needs of project managers and program administrators. It can integrate a wide range of data inputs via user upload, sensor networks, or field data collection using the integrated mobile app. QC capabilities, reporting features, and analytical functions are available within the application. GeoOptix provides centralized secure data storage that can then be accessed by hundreds of commercially available analysis, visualization, and workflow automation tools.



## Key Platform Functionality

### DESIGN COLLECT ANALYZE INTEGRATE

- Customize data entry forms for a wide variety of collection or sampling activities using the flexible schema editor
- Support tabular, geospatial, and image data
- Leverage GPS tracking mode for in-field delineations of geographic features like asset footprints, wetlands, or areas of interest
- Support offline data collection, including downloaded imagery
- Deliver current site information and documentation to remote field crews
- Improve quality control with range checking, required field enforcement, uniqueness checks, action buttons, and custom validation logic
- Leverage versioning to maintain metadata and track changes over time
- Integrate with existing data pipelines and ETL jobs to automate data transformation and distribution across the enterprise
- Enable API-based integration with data visualization products including PowerBI, Tableau, R (ggplot), matplotlib, Vega, and d3
- Connect to your data directly using open-source data science tools and machine learning libraries like R, Python, Pandas, scikit-learn, and keras

## Key Clients



Los Angeles  
World Airports



Colville Confederated Tribes



Confederated Tribes of the  
Umatilla Reservation



Twin Platte  
Natural Resource District



Oregon City  
Watershed Council

# Workflow Features in GeoOptix

**Form Design Interface**

Program Home > Plan > Collect > Methods

Method Details show more

Invertebrates V4

Designer Code Graph

Back to Method "Invertebrates V4"

Fields in Recordset "Multi Habitat Benthic Type"

Field/Group Name	Data Type	Allow Null?	Description	Summary #
Percent of Site Length	Integer			
Cobble and Gravel	Integer			
Snags and Submerged Wood	Integer			
Vegetated and Overhanging Banks	Integer			
Sand and Fines	Integer			
Bedrock or Hardpan	Integer			
Organic Detritus	Integer			
Aquatic Vegetation	Integer			

ADD FIELD ADD GROUP

Field Properties - Snags and Submerged ...

Main properties

Integer Specific Properties

Unit of Measure

Percent

Minimum Value

Maximum Value

Auto Number?

No

Unique Values?

No

**Schema Design Interface**

Plan > Collect > Method Schemas

Method Schema Details show less

Channel Units V4

3 RecordSets, Referenced by 3 Protocols

Status	Canonical Name	Is Mobile Method?	Created On	Updated On	Sample Count
Active	Channel Units V4	Yes	Jan 1, 2018		84

Referenced by Protocols

AEM Floodplain and ChMMP (V1)

ChMMP 2014 (V1)

CTUIR Biological Effectiveness and Evaluation Plan (V1)

Name

Channel Units V4

Description

ChMMP 2014 Channel Units

Method Schema relationship graph

Channel Units V4 (V1)

ChMMP 2014 (V1)

CTUIR Biological Effectiveness and Evaluation Plan (V1)

AEM Floodplain and ChMMP (V1)

**Data Input Form Example**

12:07 PM Fri Apr 19

GeoOptix

Estuary Monitoring Protocols - Sample 329 > Fish Abundance V4 > Snorkel Setup - Snorkel Setup 1

Internal System Key: 4c5c1b14-5e77-218d-47d9-74c3b6910453

Partial Fish Passage Barriers Projects

- Fish Abundance V4
- Barriers
- Layout V3
- Survey Setup V3
- Thalweg
- Transects V7

Water Temp (°C)

13

Viability

Moderate

Start Date

4/12/2019 9:07 AM

Time Zone

Pacific

No Fish Observed

No Yes

Field Notes

**Assignments Queue**

SAMPLES

Each of the cards in this view is a sample that is assigned to you for data collection.

Projects

CTUIR Biological...

Locations

AEM001-McCa...

Field Assignments

2016 Sampling...

Status

Clear ALL Filters

4 SAMPLES ASSIGNED TO YOU

Biological Effectiveness - 00120

- AEM001-Wujek\_Control
- CTUIR Biological Effectiveness and Evaluation Plan (V1)
- 2016 Sampling Activity

Biological Effectiveness - 00128

- AEM001-SFToucherRM2\_Treatment
- CTUIR Biological Effectiveness and Evaluation Plan (V1)
- 2016 Sampling Activity

Biological Effectiveness - 00131

- AEM001-McCaw\_Control
- CTUIR Biological Effectiveness and Evaluation Plan (V1)
- 2016 Sampling Activity

Biological Effectiveness - 00133

- AEM001-McCaw\_Treatment
- CTUIR Biological Effectiveness and Evaluation Plan (V1)
- 2016 Sampling Activity

## Workflow Phase 1: Design

### Key Benefits

- Easily create your own custom forms, or import forms designed by others
- GeoOptix can take you from design to field collection in minutes!

### Features

- Quickly import your data collection locations from a spreadsheet or add them via a map
- Build your own data structures and electronic form layouts to support any field data collection need
- Rich set of supported data types including strings, integers, Booleans, decimals, pick lists, geometries (of any type), date/time, photos, and documents
- Multiple geometry columns supported per record, including points, lines, polygons, and multi-variants
- Range checking, required field enforcement, uniqueness checks, action buttons, and custom validation logic

## Workflow Phase 2: Collect

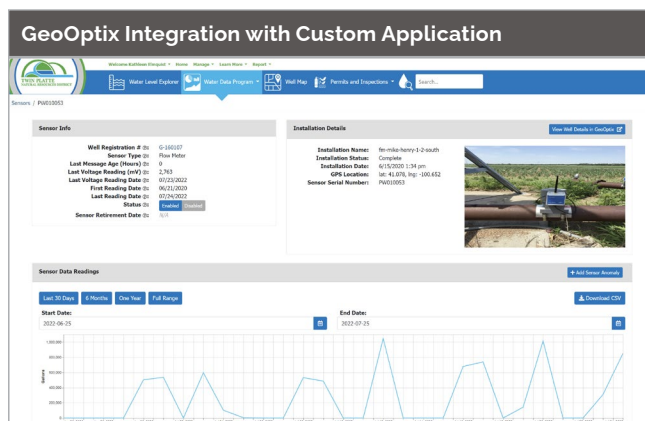
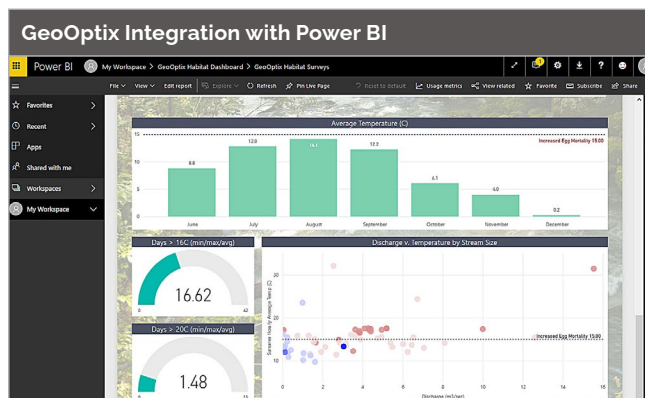
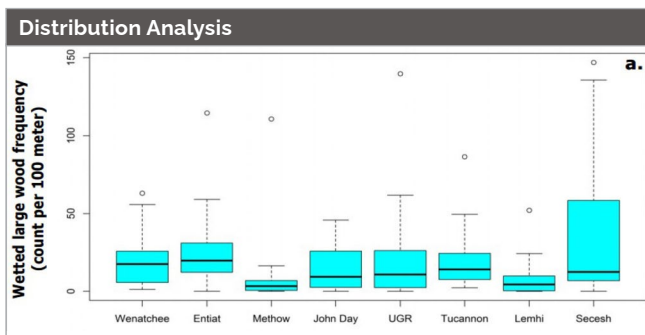
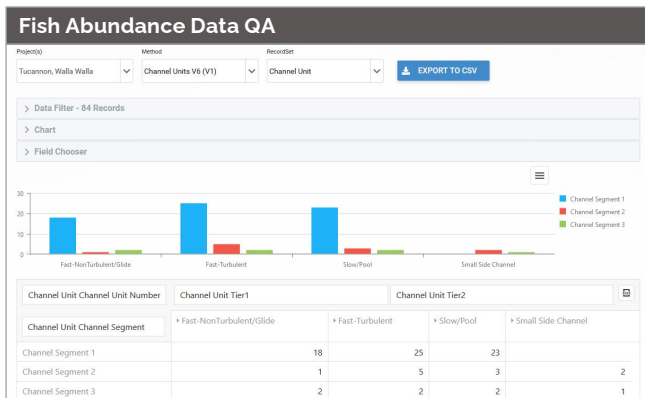
### Key Benefits

- Intuitive, familiar form design – refined over years of use in the field across thousands of surveys
- Real-time automated data quality control in the field

### Features

- Assign data collection tasks to your team members and track the status
- Automatically push current site information, manuals, support material, and forms to field crews
- Barcode reading support for logging sample jars
- Automatically generated metadata for every field
- Once validated in the field, a simple click of a button initiates an upload to the cloud for secure post-processing and metric generation
- Upon data synchronization, completed data collection events are uploaded, and newly assigned tasks are downloaded

# Workflow Features in GeoOptix



## Workflow Phase 3: Analyze

### Key Benefits

- Instantly access cloud-based sample and survey data, analyses, visualizations, and more, all in one place
- Store, analyze, and synthesize even the most complex datasets

### Features

- FISMA/NIST 800-53 security controls with annual audits
- Role-based security and user defined content management
- Integrate customer-developed rules for calculating metrics or statistical summaries
- In addition to field measurements, metrics, and photos, the platform allows you to push new events and organize other documents that support your program, your field crews, and your users

## Workflow Phase 4: Integrate

### Key Benefits

- Work with your preferred tools — the GeoOptix RESTful Web API makes it easy to integrate with modern web-based tools

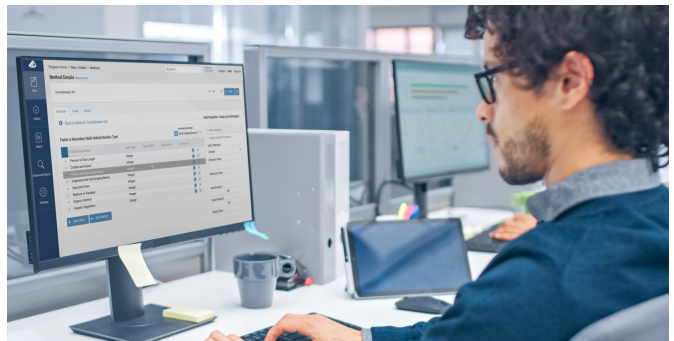
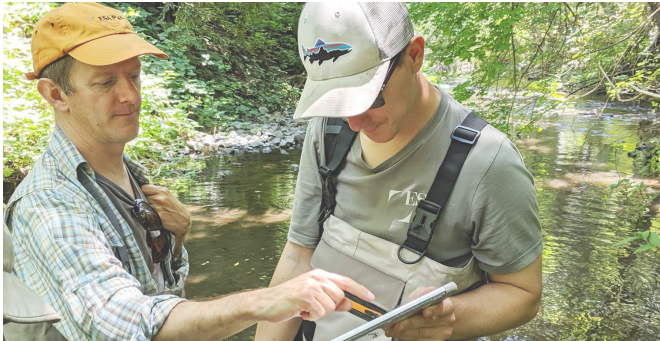
### Features

- Flexible download formats and transactional data access via RESTful API
- Build data pipelines and train machine learning models using data in GeoOptix
- Compatible with metadata exchange standards to facilitate discovery and collaboration
- Automatically push real-time analysis results to websites for compliance and public transparency
- Connect directly to your data using data science tools like Tableau, PowerBI, Excel, R, and Python
- RESTful API facilitates integration with cutting-edge visualization products and business intelligence tools, such as Microsoft Power BI



# A Flexible Turnkey SaaS Solution

GeoOptix is quick to deploy, inexpensive to maintain, and easy to learn and use. Based on our decades of experience with local, state, and federal government agencies along with tribes and conservation organizations, we designed GeoOptix to be highly intuitive and "right-sized" for public sector and non-profit clients. Many GeoOptix deployments can be field ready in a matter of days rather than months. Based on cloud infrastructure, GeoOptix can scale to trillions of files and enormous computing power as your program's storage and processing needs grow.



## Learn More

### Case Study of GeoOptix Deployment: Data Management for Salmon Habitat Monitoring Program

[esassoc.com/projects/data-management-for-salmon-habitat-monitoring-program](https://esassoc.com/projects/data-management-for-salmon-habitat-monitoring-program)

### Schedule a Demo

Send a request to: [techservicesmarketing@esassoc.com](mailto:techservicesmarketing@esassoc.com)

## Connect with us:

[techservicesmarketing@esassoc.com](mailto:techservicesmarketing@esassoc.com)

[esassoc.com/services/technology](https://esassoc.com/services/technology)

