



FISHVIEWS

A Virtual Reality Platform for Visualizing
Analyzing and Communicating Water Quality
Data

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Spatial data is used during field visits to

- Scope areas.
- Locate discharge points.
- Locate water quality measurement stations.

GIS is a reality in all water resources management activities.



Water quality monitoring and water resources management:

- Demands field surveys.
- Requires storage of spatial information.

Spatial data is used during field visits to

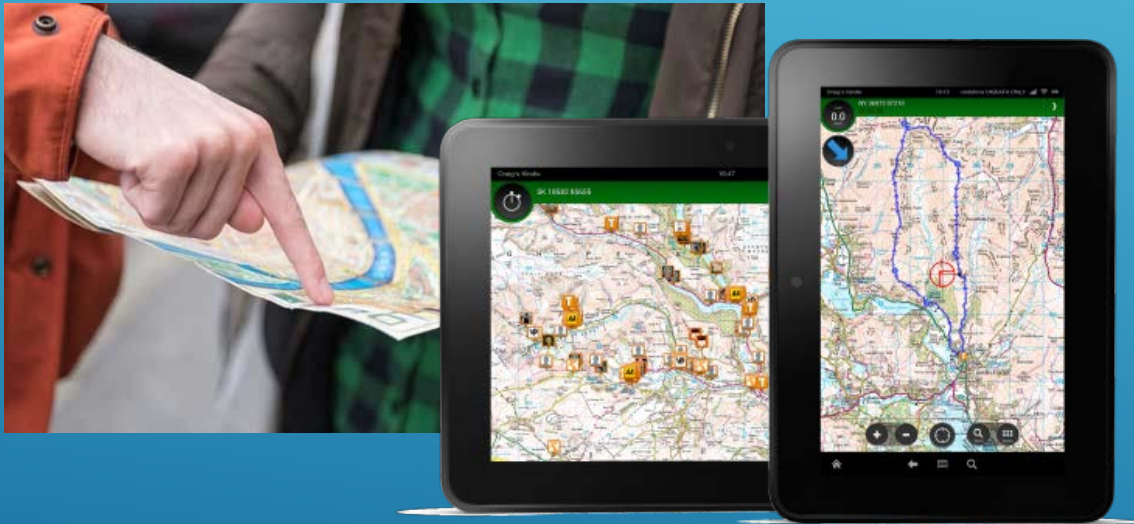
- Scope areas for monitoring.
- Locate discharge points along a waterway for monitoring.
- Locate water quality measurement stations.

Therefore today, the use of GIS is a reality in all water resources management activities.

INTRODUCTION

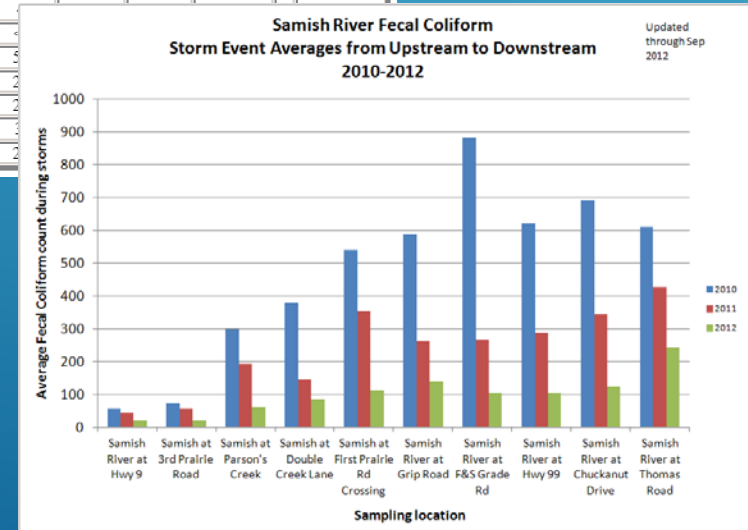
How this information is used and visualized really has not changed that much.

- ▶ Points on a map: Was on paper now is digital.



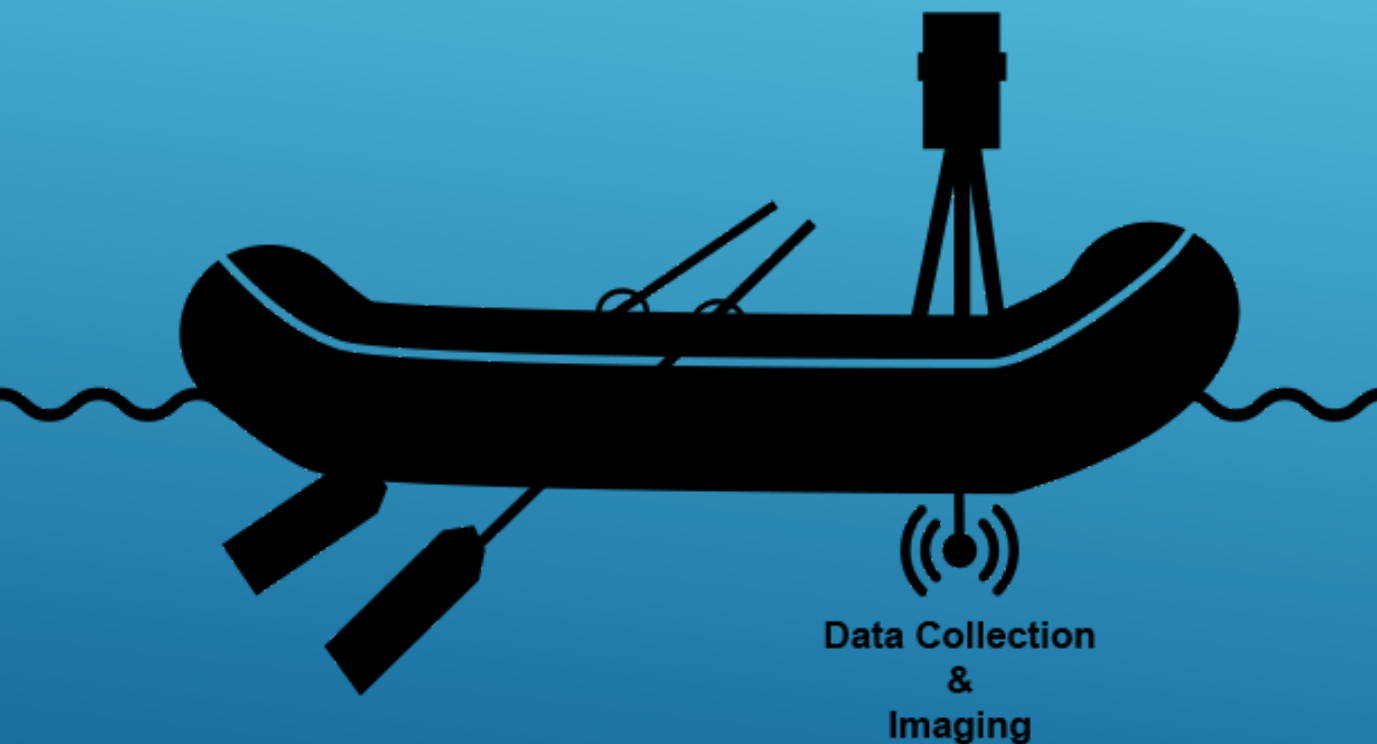
- ▶ Charts and Tables: Paper charts and graphics now digital.

Parameter	Lake Water					n	Precipitation VMA ³
	Minimum	First Quartile	Median	Third Quartile	Maximum		
Lake Stage	1,879.47	1,881.44	1,881.77	1,882.56	1,883.32	88	--
Spec. cond., field	110	110	120	120	130	81	--
pH, field	6.8	7.2	7.5	7.7	8.0	77	5.3
Calcium	320	340	350	360	500	91	4.6
Magnesium	160	210	210	220	260	91	2.0
Sodium	410	440	480	480	830	90	3.1
Potassium	36						
Ammonium	<.7						
Alkalinity, laboratory	400						
Sulfate	120						
Chloride	190						
Nitrite plus nitrate	<.7						
Silica	230						





**3D Data Collection
and 360 Imaging**



**Data Collection
&
Imaging**

BRING THE LOCATION
AND DATA TO THE USER

CREATE A VIRTUAL RIVER





A VIRTUAL VIEW OF THE WATER

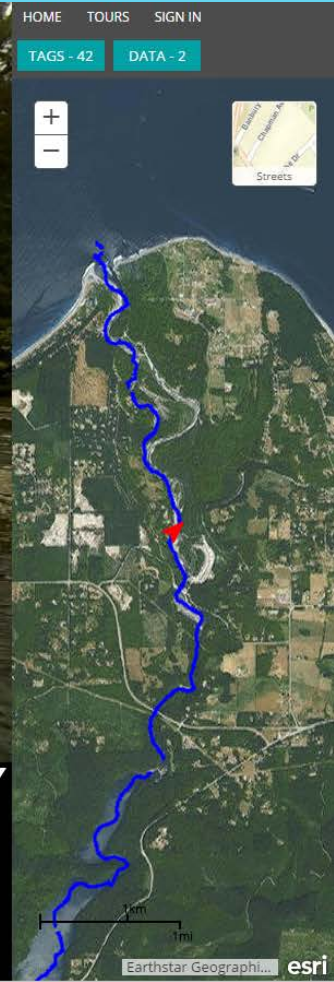


ON SITE LOCATION BASED INFORMATION



Scene Data - 914	
Timestamp	2014-08-31 10:39:00
Lat/Lng	48.074035,-123.57399
Conductivity	106 uS/cm
Dissolved Oxygen	11.62 ppm
pH	8.26 pH
Resistivity	0.0094 Mohm-cm
Salinity	0.05 ppt
Temperature	11.72 Celsius
Total Dissolved Solids	53 ppm

SPATIALLY CONTINUOUS META DATA



VISUALIZE LONGITUDINAL DATA WITH GEO-CHART



UPLOADED DATA

VISIBLE - 1 | BLOCKED - 1 | SEARCH

Me Jun 08, 2017

Set Name: Elwha Pools # Points: 5
Description: Pools over 1M deep.
Parameters: Text

Hide Data

Date/Time	Lat-Lng	Text
Jun 02, 2016 12:00	48.0543,-123.585	2.1
Jun 02, 2016 12:00	48.0652,-123.578	2.6
Jun 02, 2016 12:00	48.071,-123.577	3.2
Jun 02, 2016 12:00	48.0877,-123.562	2.5
Jun 02, 2016 12:00	48.1037,-123.552	3.6

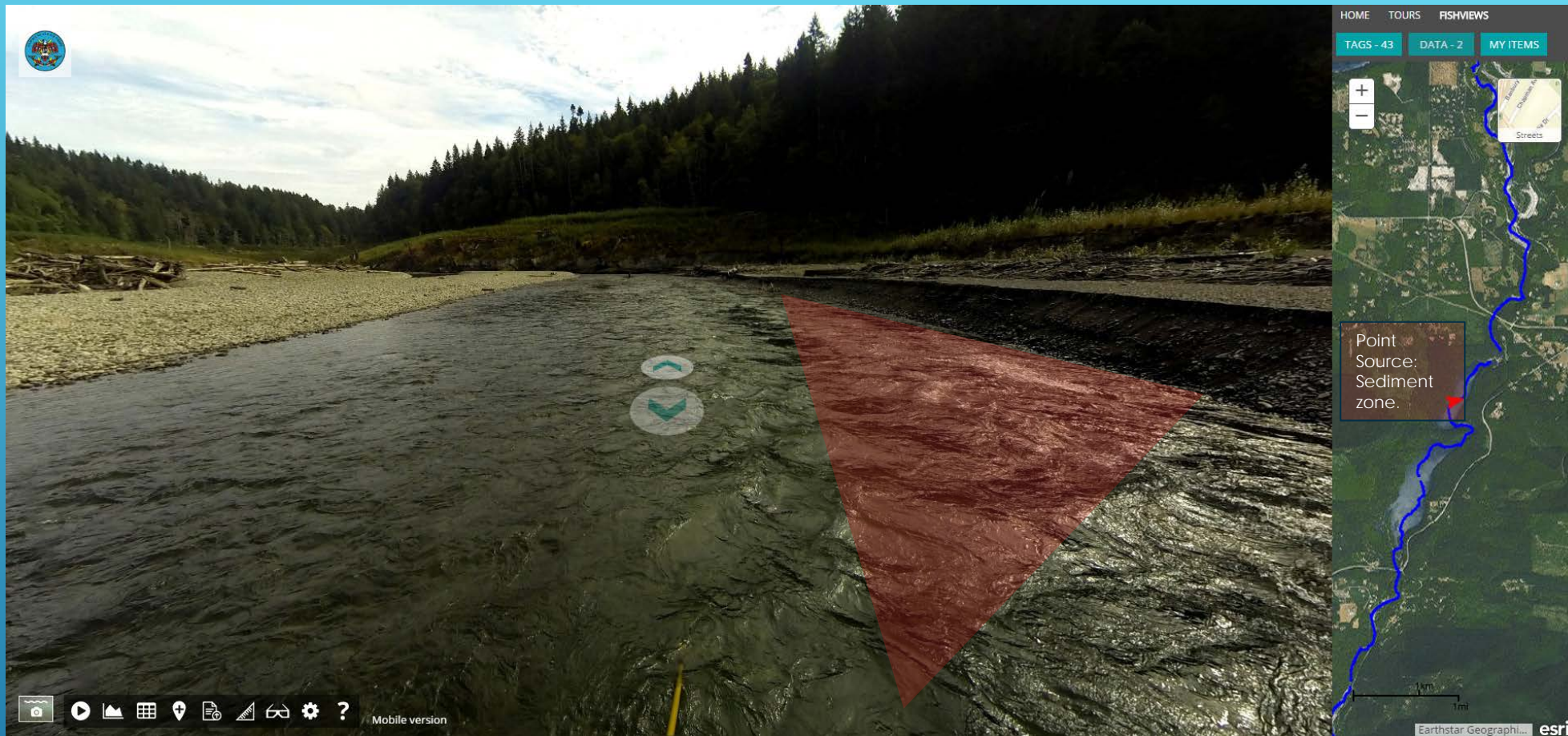
HOME TOURS FISHVIEWS

TAGS - 43 DATA - 2 MY ITEMS

Earthstar Geographi... esri

Mobile version

VISUALIZE TABULAR DATA



VISUALIZE AND ANALYZE DATA IN ARCGIS

Ask Questions



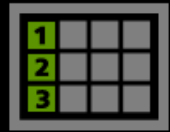
Get Answers



Make Decisions



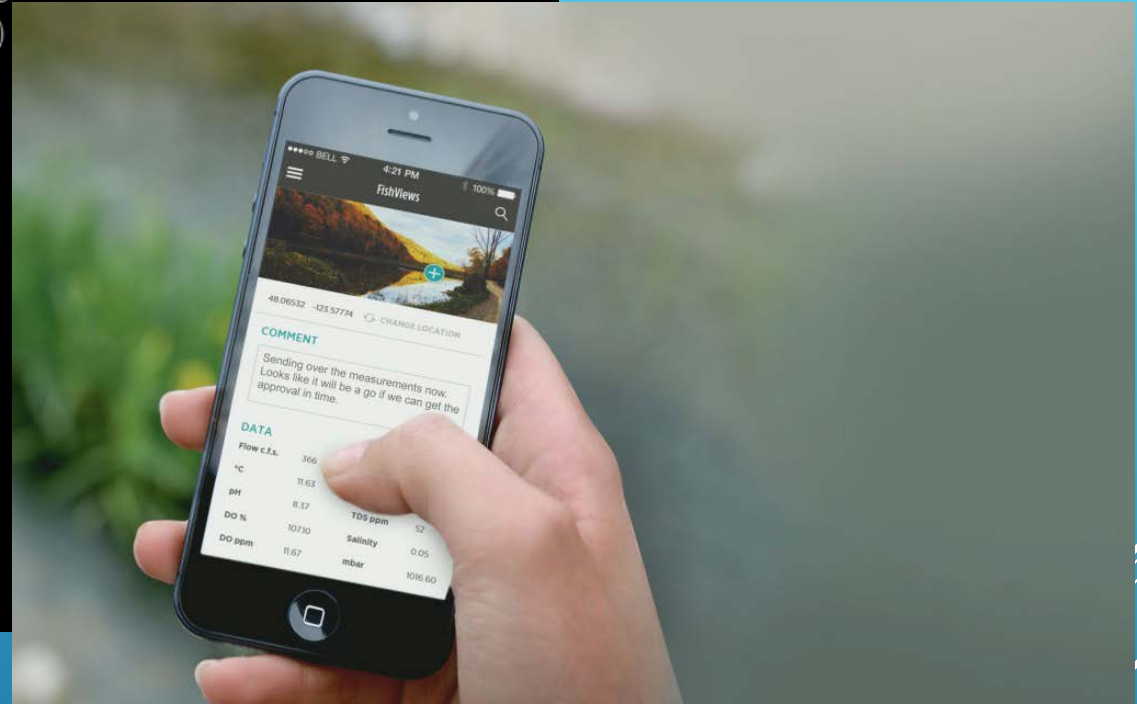
Survey 123 Web
(ArcGIS Online)



Survey 123 Connect
Microsoft Excel
(XLS Form Spec)



Survey 123
Mobile App



USE AND CREATE MOBILE APPS

- ▶ The use of virtual reality for the visualization of location based dimensional data is where the future is headed.
- ▶ Virtual solutions in the form of mobile apps can help during field surveys, especially when visiting study regions that are not well-known or where there are difficulties locating points because of the changing vegetation. Your maps are enhanced.
- ▶ The use of simple graphic elements, overlaid on the virtual location enhances the visualization of data providing additional insights into causality. Context improves understanding.
- ▶ Visualizing on geo-charts dense longitudinal measurements at landscape scales help discover anomalies in the data.
- ▶ Continued advancements in hardware and software will allow for Virtual GIS work to be done with VR and AR both at your desk and in the field.

CONCLUSIONS

The way we relate to information is increasingly being done in a virtual environment.





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