

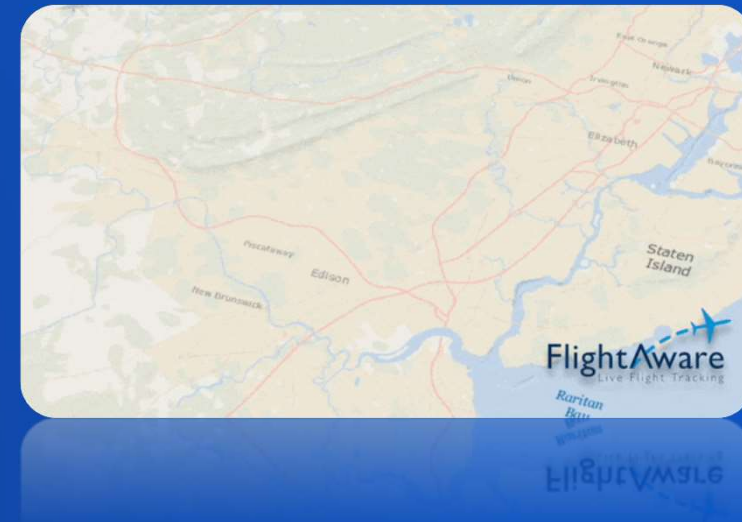
Working with real-time data using stream layers in ArcGIS Pro

Tanu Hoque & Zihan Song

SEE
WHAT
OTHERS
CAN'T

What is stream layer?

- **Visualize and analyze real-time data**
 - data source: Stream Service
- **Introduced with ArcGIS Pro 2.2**
- **It is fundamentally different from any other layer type**
 - Updates map automatically as new data arrives
- **Behaves like a feature layer**
 - Symbology
 - Geoprocessing
- **Real-time Analysis using SDK/API**
 - new in ArcGIS Pro 2.4
 - Developers can write code to listen and react as new data arrives real time.



Stream layer ≠ layer for river network

Real-time vs near real-time

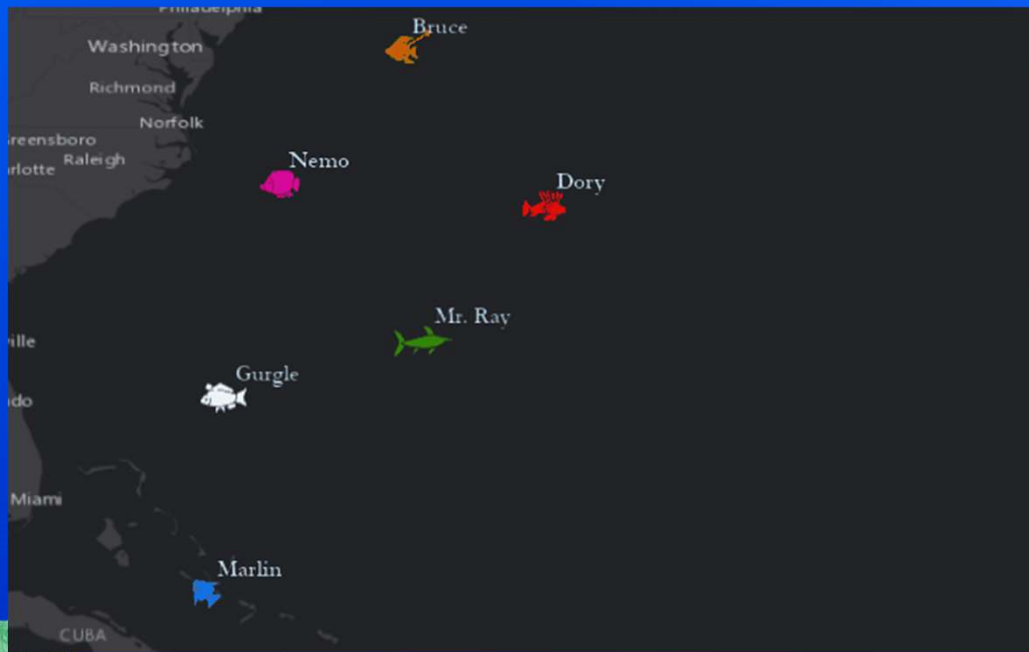
- **Real-time**

- Data comes to the client as it happens in the real world
- You only get the new updates
- No archive*

- **Near real-time**

- Client applications fetch data at regular interval e.g. 5 minutes
- Status are unknown during that interval period
- For every refresh it pulls all data from the source





Stream Layers

Zihan Song

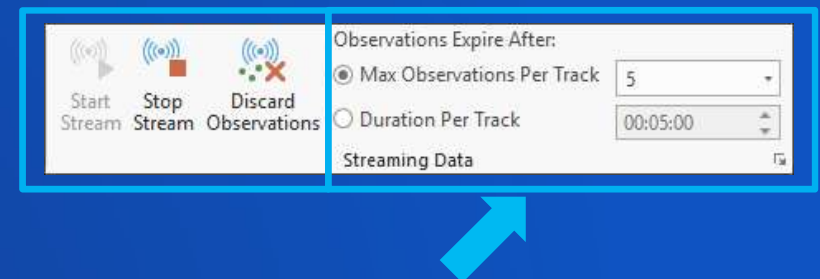


Real-time API

Tanu Hoque

Expiration

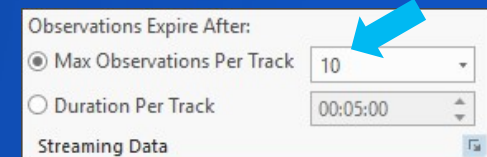
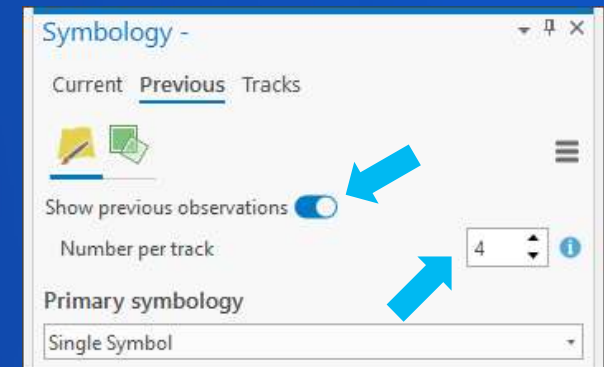
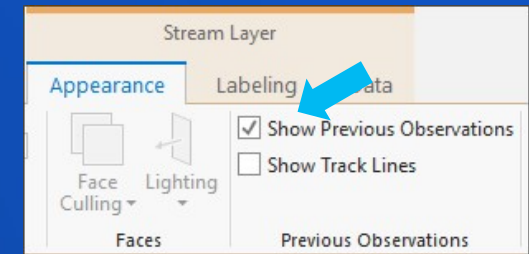
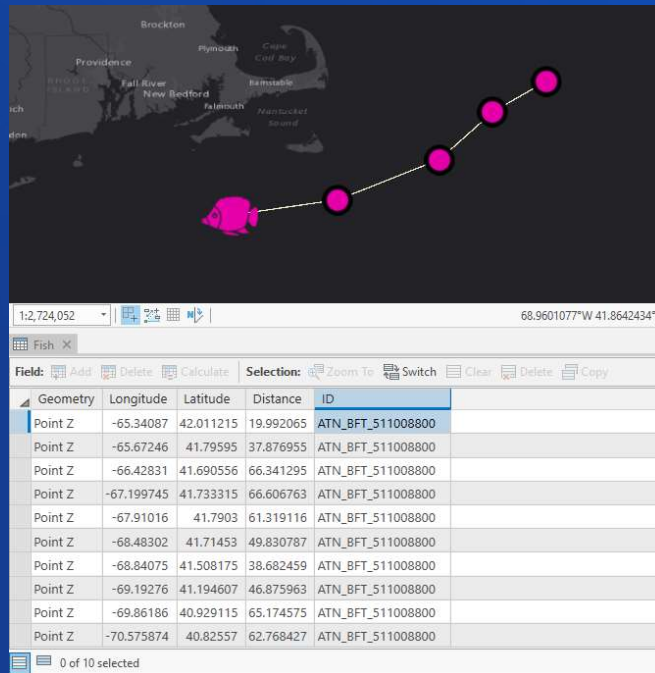
- How much data are stored in memory
 - Oldest one gets deleted first
- Expiration methods:
 - Feature count
 - Duration
- Track-aware stream layer
 - Expiration happens for each track
 - The latest observation for each track never gets deleted



Help: <http://esriurl.com/15543>

Previous observations in tracks

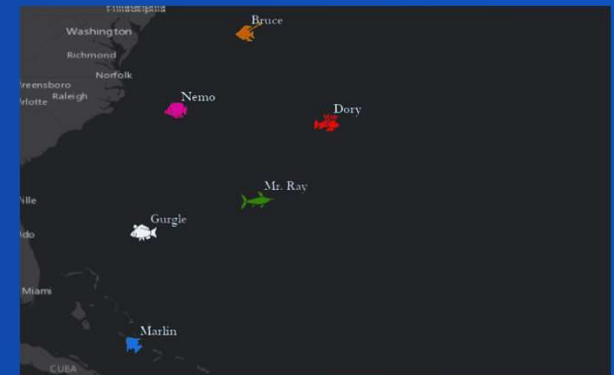
- Only for track aware stream layers
- May have more stored in memory than what displayed
- Can be used in analysis



Help: <http://esriurl.com/15544>

Recap – stream layer

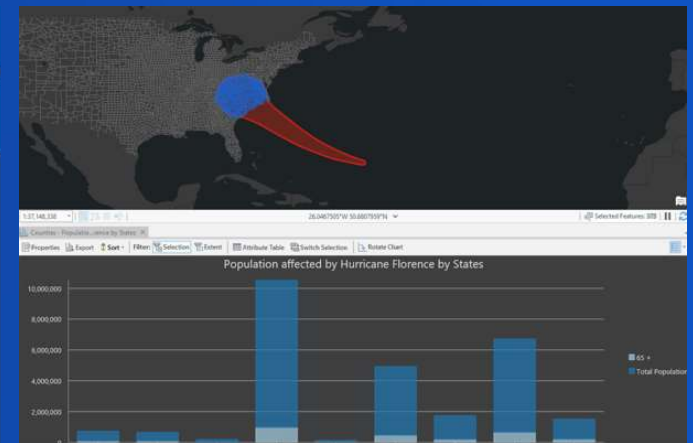
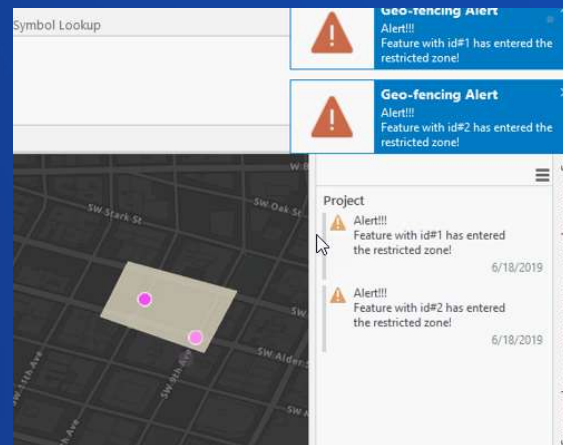
- Visualize and analyze real-time data
- Data are stored in memory
- Types:
 - Non spatial / attribute only
 - Spatial
- Data Expiration
- Track Aware
 - Previous Observations
 - Stored vs visualize
- Multiple symbology
- 3D
- Share



Help: <http://esriurl.com/15541>

Recap - Analysis

- Real-time Analysis using SDK
 - Exploratory
 - Spatial
- Real-time Notification



Blog: <http://esriurl.com/15542>

Help links

- Stream layer <http://esriurl.com/15541>
- Symbolize stream layer <http://esriurl.com/15544>
- Working with stream layer and expiration <http://esriurl.com/15543>
- Blog post on real-time API <http://esriurl.com/15542>

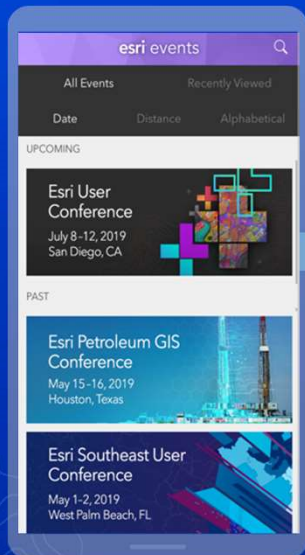
Related sessions:

- <http://esriurl.com/15545>

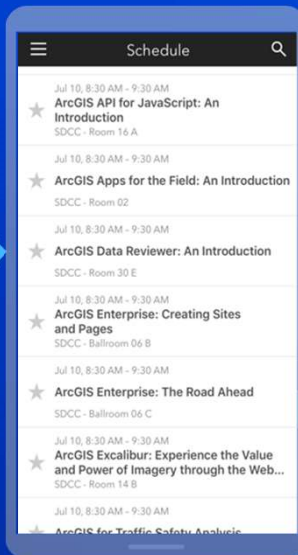


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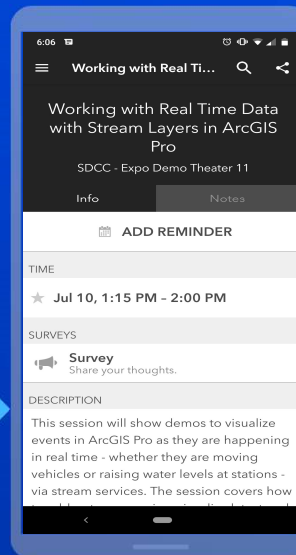
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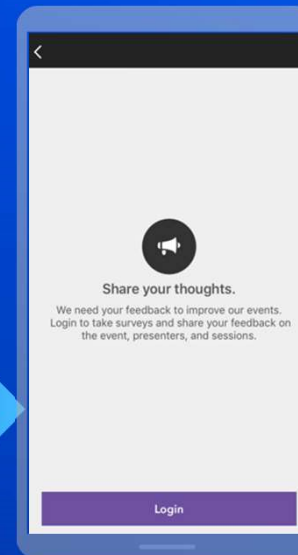
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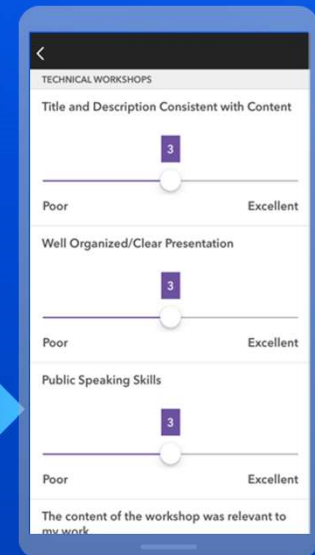
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