RealtyNet

Using ASP.NET and ArcGIS to manage native allotments in Bristol Bay

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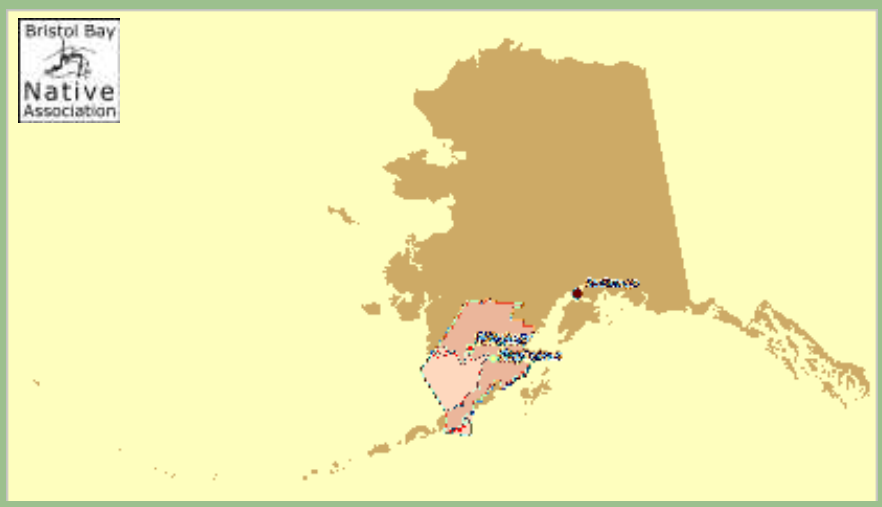
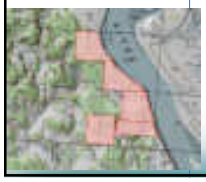


What is a native allotment?

- Parcel of land up to 160 acres *(1/4 section)* in size that could be claimed by Alaska natives based on "use history" – Alaska Native Allotment Act of 1906
- New allotment claims were stopped in 1971 – Written into ANCSA
- Individual allotments are "restricted" (non-taxable).
- Managed by BIA or tribal realty offices



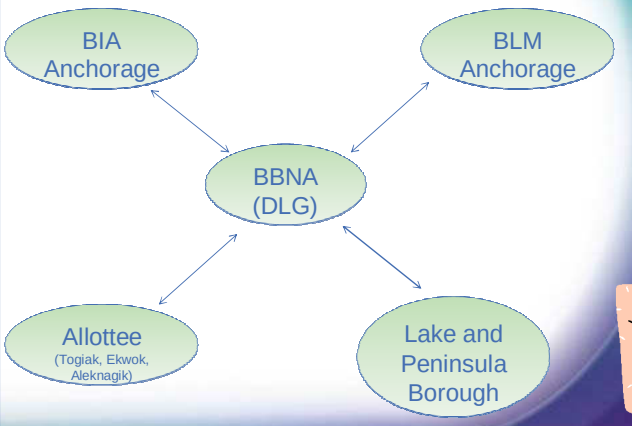
Managing Allotments in Bristol Bay

- The Bristol Bay Native Association (BBNA) manages over 1500 native allotments
- BBNA has approximately 15 realty staff members
- Had tried to migrate away from hardcopy files
  - Attempts at creating an "allotment database" had not worked

Bristol Bay Native Association

The Hurdles

- Why the need to use digital maps/documents?



The Hurdles

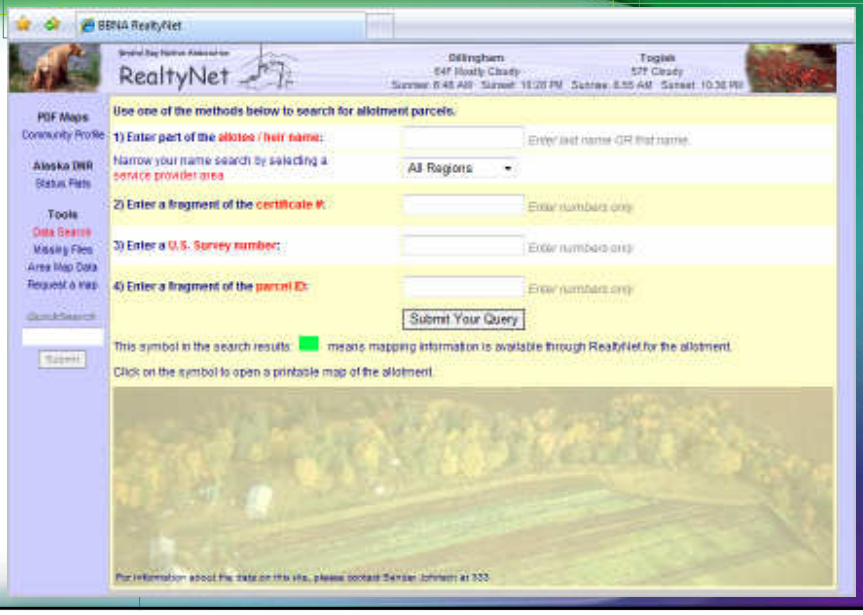
- Mapping (the old way)
  - Through 2004, there was no onsite capability for printing allotment maps
  - Relied on TopoZone.com and Landrecords.info

With SLOW connection speed

The Hurdles

- Need to update allotee/heir information
  - Name/address changes
  - Deaths
  - Probate changes
  - Creating reports (for BIA, State, internal reporting, or for mailings)

RealtyNet Demo



Project Considerations

- Staffing a full-time (or even part-time) GIS person in Dillingham is difficult

- Keep GIS software costs to a minimum

- A desire to scan allotment files on-site using local hire.

The solution

- Revive an abandoned MS Access database, but using ASP.NET (and) to query the MDB file.
- Use allotment IDs as a unique identifier
  - This helps create links to mapping and scanned documents

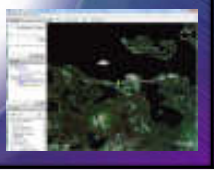
The solution

- Document scanning
  - Into PDF format
  - Name scanned files with the allotment ID in the filename,
    - Allows the ASP.NET application to search for allotment specific files

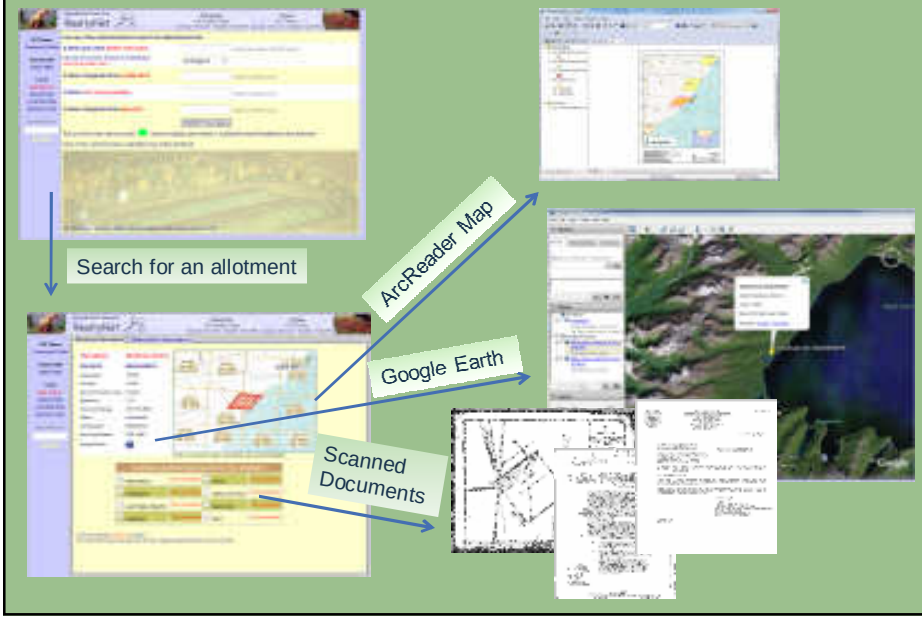
Microsoft ASP.net

The solution

- Mapping
  - Provide access to individual allotment maps via ArcReader
    - PMF files keep the advanced formatting of the MXD layout view
  - Provide access to KML files for each allotment parcel for viewing in Google Earth
    - For those folks who won't use ArcMap / ArcReader



Rough RealtyNet outline



Programming Hurdles

- Creating 1500 ArcReader maps
- Creating 1500 KML files for Google Earth
- ASP.NET Tasks
  - *Query MDB database for allotment info*
  - *Return the results in an onscreen "report"*
  - *Search for scanned documents, KML files, and PMF files by allotment ID*
  - *Add/edit information in the MDB database*

Creating 1500 ArcReader Documents

- **ArcObjects VBA**
  1. **Select all allotments via select tool**
     a. **Zoom to each allotment at a preset scale (etc. 1:24,000)**
     b. **Create a graphic for each selected allotment**
     c. **Add custom text to the layout view**
     d. **Create a bookmark**
     e. **Create the PMF from the bookmark**
        a. **Name the PMF file using the allotment ID**
     f. **Delete the graphic and custom text**
     g. **Move on to the next selected allotment**

Creating 1500 KML files

- **ArcObjects VBA**
  1. **Select each allotment via select tool**
     a. **Create new text file (with *.KML extenstion) and add header information**
     b. **Cycle through each allotment polygon part and write the coordinates to the KML file**
     c. **Add the label information**
     d. **Add the closing text information to the KML file**

(use the allotment ID in the filename)

(tricky for multi-part polygons)

Summary of hardware, software needs

1. Server to store GIS data (KML, PMF, source datasets, scanned documents) and to run the IIS webserver
2. .NET runtime
3. Document scanner
4. ArcGIS (1 ArcView license)
5. ArcPublisher Extension
6. ArcReader, Internet Explorer, and Google Earth on client computers
7. 1 license MS Access
8. ASP.NET files created on Notepad