

Dena'ina Place Names

Importance

The Dena'ina Place Names project catalogs and graphically represents over 1,400 Native language place names (toponyms) for the region in and around Lake Clark National Park and Preserve. The database application and geospatial data layer were designed to standardize the data entry of place-name information, formalize data storage methods, and provide a mechanism for disseminating data in both a textual and spatial format. This project facilitates the systematic collection of place-name data and locations and consolidates that information in a consistent format to establish a reference product and educational tool for use by the National Park Service as well as the Native communities from which this information originally came. Maps, generated from the tabular and spatial data, can reflect patterns of settlement and exploration and help enhance the understanding of a place's relationship to its physical surroundings. The Dena'ina Place Names database is flexible and extendable and has applicability for Native languages across Alaska and the rest of North America.

Technical Details

The database application and geospatial data layer are two critical components of this project. The user interface and underlying database structure were developed in Microsoft Access. Relational databases are more sophisticated than file-based data storage systems, such as spreadsheets. They provide better data integrity by imposing rules to validate data and by eliminating the need for duplicate data entry. This ensures better consistency and accuracy among the data. The user interface built for this database conceals its underlying complexity. As a result, the user is presented with easily understood data entry and query windows. When creating a new place name, the user is required to enter several fields: Native language place name, Native language and dialect (if applicable), literal translation, description of the place location relative to other landmarks, and type of place (e.g., camp, land feature, subsistence area, village, water feature). A place name will not be saved in the database without the toponym and this supporting information. Because a single place may have multiple names or a Native language name with variant spellings, the database provides the ability to link place names together and designate them as alternate names for the same place. The database application also contains a search tool so the user is able to describe and find desired data. Users build queries by entering criteria, or like values, for one or more fields related to a place name. The query results display all place names that meet the given criteria.

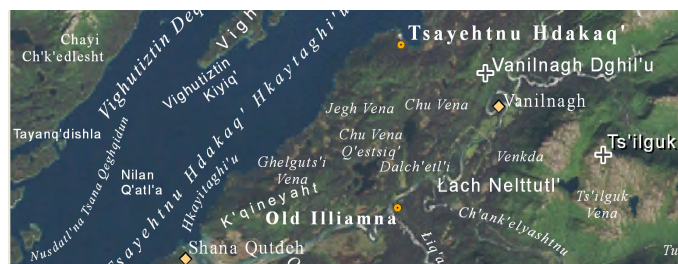
The spatial data, used to produce maps, are stored in an ESRI Geodatabase as a point feature class. Point geometries have no length or area but are used to pinpoint toponyms to geographical locations. Each unique place may be associated with more than one place name but is represented by a single point within this dataset. The placement of points was based on printed source maps and verbal guidance provided by Dr. James Kari. They were digitized using USGS digital raster graphics (DRG) as a basemap. These are raster images of scanned USGS topological maps at 1:63,360 scale. Points were created consistently for place names of a particular type. Points representing rivers were digitized at the mouth of the river. Points representing mountains were digitized at the peak of the mountain. Where a toponym was equivalent to a feature name from the USGS Geographical Names Information System (GNIS), the point was digitized coincident with the USGS designated latitude and longitude. A synchronization script populates attributes of the spatial layer from the database to eliminate manual data entry. Because each point can symbolize more than one toponym, this script summarizes the information into a primary place name with alternate place names in addition to transferring other pertinent fields. To enhance the visualization of the





spatial data, annotation was created for the primary place name at each digitized location. Annotation labels physical features on satellite imagery to provide a true color, bird's eye view of the region's topographical landscape.

The database, geospatial data layer, and annotation provide everything needed to create final products for this project. Expandability and reusability of all these data are the primary benefits of developing a relational database management system (RDBMS) and geographic information system (GIS) to manage the Native place name data. These technologies are significant in broadening the use and extending the shelf life of this project's deliverables. The data is dynamic and may be added to or improved at any time. Having access to the raw data in these formats allows current and future users of these systems to produce updated reference documentation and cartographic products or develop new products that address a specific question or management need.



Role of Technical Lead

As the technical lead for the Dena'ina Place Names project, it has been my responsibility to progress this project through the application development lifecycle. The initial planning phase is essential to the success of software development and through interviews with project stakeholders and potential end users I was able to understand the purpose of the project as well as gather specific requirements for cataloging Native language place names. From this needs analysis came the software design I used to implement the functionality of the database application. While implementation and deployment of the application are the major milestones that generally conclude a software development project, my participation continued as I worked to ensure the accuracy and reliability of the data being collected in the database and geospatial data layer.

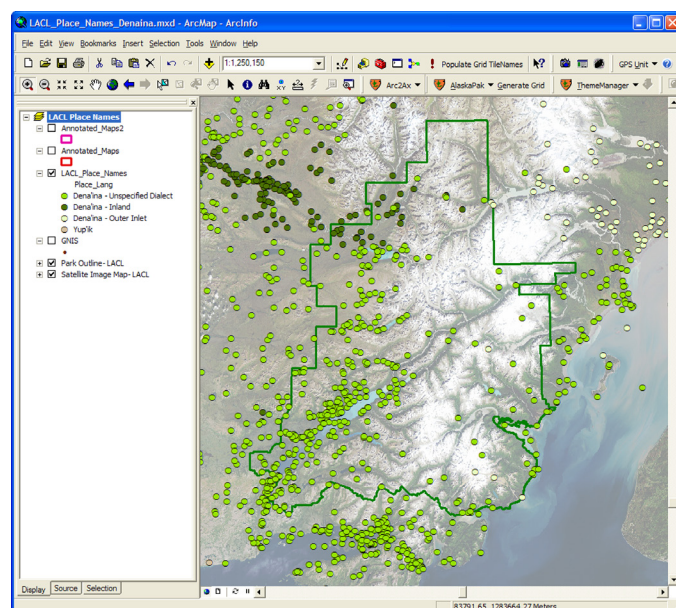
My appreciation for ethnography and linguistics greatly increased as I assumed responsibility for data management and worked closely with cultural resource specialists to evaluate and approve the quality of that data. The task of QA/QC (quality assurance/quality control) requires an utmost attention to detail and resulted in the most time consuming phase of this project. Our initial pass through the data was to authenticate the spelling of each toponym entered in the database. Although the database captures place names of several languages, the focus for initial population was

Dena'ina place names. Between the special characters of the written Dena'ina language and the similar alternate spellings of many place names, this task was complicated and required extensive consultation with Dr. James Kari and language experts from the Dena'ina community. Once we eliminated misspelled and duplicate place names and linked together place names with acceptable alternate spellings, we examined the supporting information of each toponym, such as literal translation and location description, for correctness. Our next challenge came during the review of the spatial locations. The tabular and spatial data were recorded by different members of the project team and this led to intensive reconciliation between the two datasets to make certain they were synchronized. Simultaneously, we verified the spatial accuracy and precision of each data point in the spatial data layer by comparing the digitized location against the base map, printed source maps, and toponym location description from the database. As with the non-spatial data, we relied on Dena'ina language authorities to help resolve the mistakes and inconsistencies.

During my immersion in these QA/QC tasks, I proudly began to recognize elements of the Dena'ina language. While I have extensive experience with database design, programming, and GIS, I previously had little exposure to toponymy and the Dena'ina language. As my familiarity with the language increased, so did my ability to identify potential errors within the datasets. Even this limited amount of new knowledge improved my efficiency and allowed me to work more independently without constant consultation with the cultural resource specialists.

With the accepted and current datasets at our disposal, we are now able to fully recognize the value of all the time and effort that has been dedicated to this multi-year project. The advantage of using our selected technologies and completing the application development lifecycle without compromise is that we can readily provide place name information and create custom products to meet specific needs. We worked with my GIS teammate, Stacy Deming, to develop the cartographic products found in this publication. Because of the quantity and density of place names, we felt annotation development was important to best present the data on printed maps. Once the annotation was created and map specifications were defined, Stacy was able to promptly assemble the overview and index maps using the data generated by the Lake Clark Native Place Names project. Unlike a graphic, which is static in nature, these digital maps dynamically reflect the information cataloged in our database and spatial data layers. As this data improves or expands to include more data from other Native communities in the Lake Clark area, the map files automatically reveal those changes. These digital maps are not a snapshot in time, but a current representation that evolves with the changing data.

There is potential for many more dynamic products to come out of this project. Our rich collection documents the knowledge of many contributors and catalogs Dena'ina language information that may not exist elsewhere in such an accessible and robust format. My hope is that the datasets continue to grow and that we are able to serve this information back to the Dena'ina, their neighbors and educational communities through tools that will help enhance the understanding of the Native people's history and the areas in southwest Alaska where their traditions have flourished.



National Park Service Lake Clark National Park & Preserve: Dena'ina Place Names

NATIONAL PARK SERVICE LAKE CLARK NATIONAL PARK & PRESERVE

Dena'ina Place Names

PLACE NAMES - Place Name Details

Current View: Place Name Details

#	Language	Place Name	(1970 Records)
005219	Dena'ina	Nila Vena	1012
007096	Dena'ina	Nila Vena	8731
005104	Dena'ina	Nila Vena Hkaytagh'u	1005
005231	Dena'ina	Nila Vena Qech' Tustighitun	8031
007001	Dena'ina	Nifaghaden	3892
006414	Dena'ina	Nilamna	1012
005289	Dena'ina	Nilan Q'at'a	8022
007031	Dena'ina	Nilan Q'estnu	3800
005220	Dena'ina	Nilan Q'estsiq'	8724
006413	Dena'ina	Nilanvena	1012
005869	Dena'ina	Nifagitu	3077
005870	Dena'ina	Nifagitu Ch'adanilen	3224
007088	Dena'ina	Nifagitu Ch'adaniten	
006388	Dena'ina	Nifashek'itly	
006426	Dena'ina	Nifashek'itly	1208

Place Name Details

Place Name #: 005219

Unit:

Place Type:

Language:

Place Name:

Meaning:

Description:

Comments:

Publication Description:

Section #: Kari #: Sort #:

GIS Link & ID:

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Hint: Press SHIFT+ENTER to Save immediately. Press PAGE UP/DOWN to change tabs.