



DNA Tribes® Digest May 31, 2011
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Introduction

Hello, and welcome to the May 2011 issue of DNA Tribes® Digest. This month’s article explores geographical relationships of the Athabaskan genetic region. This region characterizes indigenous Navajo and Apache peoples of the Southwestern United States, as well as linguistically related First Nations of Western Canada and Alaska.

Best regards,
Lucas Martin
DNA Tribes

The Athabaskan Region of North America

Historical Background

The Athabaskan world region characterizes indigenous peoples in two distant parts of North America: Northern Athabaskan speaking peoples of Alaska, Western Canada, and the Pacific Northwest; and Southern Athabaskan speaking Navajo (Dineh) and Apache cultures of the Desert Southwest (see **Figure 1**). Despite substantial geographical distances, these linguistically related populations share genetic characteristics that distinguish them from other indigenous populations of the Americas.



Figure 1: Map of populations affiliated with the Athabaskan genetic region. Also displayed are nearby geographical features and linguistically related Athabaskan (Na-Dene) First Nations of Western Canada.

The similarity between the Northern and Southern Athabaskan languages (named for Lake Athabasca in Canada) is usually interpreted as evidence of a migration from the north (Alaska and Western Canada) to the Desert Southwest¹. Also tending to support this view is the greater diversity of

¹ More recently, the linguist Edward Vajda has proposed a link between the Na-Dene languages of North America (including Athabaskan languages) and Yeniseian languages spoken in the interior of northern Asia. Although little discussed in Indo-European studies, indigenous pre-Kurgan traditions of Siberia continued during the Bronze Age. For instance, Afanas'ev petroglyphs depict masked, feather-headed figures linked to cultures living in northern Asia since the Paleolithic Era. See Early Contacts between Uralic and Indo-European: Linguistic and Archaeological Considerations pp. 157-163, available at <http://tiedekirja.fi/>. For Siberian genetic links to Europe, East Asia, and the Americas, see "Old Siberia" at <http://dnatribes.com/dnatribes-digest-2009-11-30.pdf>.

Athabaskan languages in the north, suggesting older cultural roots in Northwest North America. The exact dates and routes of these north-south contacts (possibly via the Rocky Mountains and/or Great Plains) are unknown; however, scholars believe the Southern Athabaskan Navajo and Apache peoples reached their present homelands of the Desert Southwest between the 11th and 14th centuries CE.

At the time of European contact, the Desert Southwest was home to multiple cultures based on two lifeways: relatively nomadic Navajo and Apache societies based on bison hunting lived alongside relatively sedentary Pueblo societies based on farming. The agricultural People Peoples lived in settled towns based on farming, possibly related to the ancient centers of maize cultivation in Mesoamerica. Although they shared similar patterns of life, the Pueblo (meaning “Town”) Peoples spoke multiple languages, keeping local cultural traditions specific to each community.

The more nomadic Athabaskan peoples living nearby traded complementary goods with the Pueblo Peoples: for instance, exchanging cotton and maize for meat, hide, and tools. In the course of these contacts, Pueblo traditions became integrated with Apache and Navajo cultures, possibly including sand painting and use of masks.² The Navajo in particular are thought to have absorbed Pueblo related farming traditions.

When Europeans arrived, Southern Athabaskan peoples integrated the horse into their cultures, giving their societies an increased freedom of movement for trade, transportation, hunting, and raiding. European settlers also introduced sheep and goats (originally domesticated in the highlands of Southwest Asia), which were integrated into new pastoral lifeways by the Dineh and other Athabaskan peoples as a source of food and textiles.

Today, the Desert Southwest of North America remains the home of multiple tribal nations that carry on the traditions of the Athabaskan peoples (still known by their own indigenous names such as Dineh and Inde), including the Navajo Nation (the second largest recognized tribe within the United States) and multiple Apache tribal nations.

Genetic Analysis of the Athabaskan World Region

Genetic contributions to the Athabaskan world region were identified based on autosomal STR data. Results are summarized in **Table 1** and illustrated in **Figure 2**.

World Region	Genetic Contribution
Mexican	45.0%
North Amerindian	34.8%
Amazonian	8.6%
Salishan	8.0%
Arctic	3.6%

Table 1: Genetic contributions to the Athabaskan world region.

² These contacts are somewhat similar to early interactions between pastoralists and farmers in South-Central Asia: Andronovan cattle ranchers migrating from Siberia are thought to have interacted with settled farming communities of the Oxus Civilization (BMAC), generating new mixed cultures that spoke IE languages of the nomads but continued cultural traditions of the pre-IE farmers (possibly including the use of sacred fire and soma). This sequence of interactions between nomads and sedentary farmers has been described as a *Kulturkugel* pattern of cultural diffusion, due to multiple shell-like layers of tradition that combine to emerge as a new migratory culture.

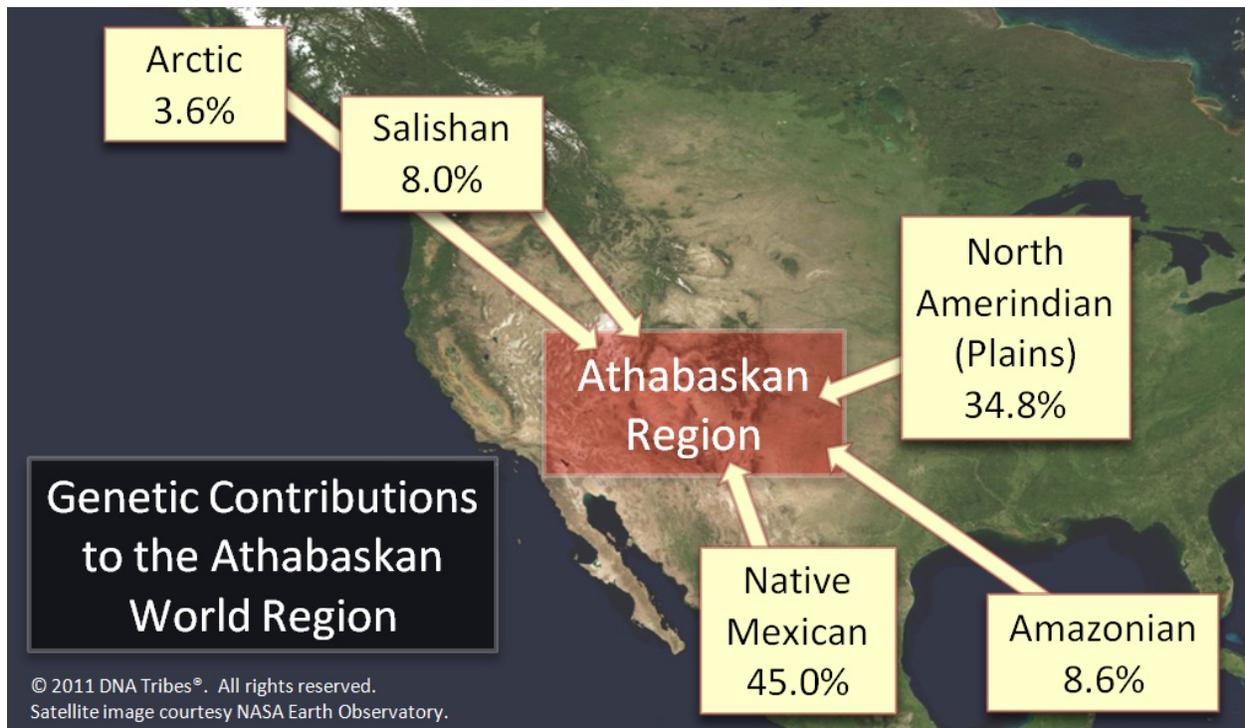


Figure 2: Genetic contributions to the Athabaskan world region.

Discussion: Results in **Table 1** indicate links with neighboring regions of North America, both to the south and to the north. Southern links include Native Mexican (45.0%), possibly related to the spread of maize growing agriculture that provided a foundation for Pueblo societies of the Desert Southwest. Genetic links with the Great Plains were indicated by the North Amerindian (34.8%) and possibly southeasterly Amazonian (8.6%) contributions, possibly expressing contacts related to nomadic bison hunting societies in the interior of North America.³

Northwestern genetic links included Salishan (8.0%) and Arctic (3.6%), possibly reflecting contacts with cultures of the Rocky Mountains and/or Pacific Coast related to the spread of the Athabaskan languages of North America. Notably, genetic links with the distant coastal northwest populations are relatively small, contrasted with larger contributions from geographically proximate indigenous populations of Mexico. This suggests that despite linguistic links with Western Canada and Alaska, Athabaskan speaking populations⁴ retain substantial connections with other peoples neighboring their traditional homelands of the Desert Southwest.

³ Genetic evidence of possible easterly north-south links between North and South America are described in “The Arctic Connection” at <http://dnatribes.com/dnatribes-digest-2008-10-25.pdf>.

⁴ Based on available autosomal STR data, the Athabaskan genetic region identified by DNA Tribes® analysis primarily characterizes Navajo and Apache populations of the Desert Southwest and to a secondary but substantial degree Athabaskan population of Alaska.



Getting the Most from Your Testing

Once your testing is complete, we offer several options to keep your report current and to customize your genetic analysis for the information you want. (*Prices are listed as of May 31, 2011 and are subject to change.*)

Updating Your Analysis:

DNA Tribes® analysis is updated on a periodic basis to include new reference data as well as refinements to our match algorithms and world regions analysis. (A map illustrating current populations and genetic regions is available at <http://dnatribes.com/populations.html>.)

After your testing is complete, your analysis can be updated at any times of your choice for \$24.99 through our secure online checkout at http://dnatribes.com/order_addons.html.

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Central Asian Panel: A listing of your DNA match scores for individual native Central Asian and Siberian populations in our database, also including Roma (European Gypsy) match scores.

East Asian Panel: A listing of your DNA match scores for East Asian populations in our database, including all individual Chinese, Japanese, Korean, and Southeast Asian populations.

Middle Eastern Panel: A listing of your DNA match scores for Middle Eastern populations in our database, including all individual Arab, Berber, Caucasus, Jewish, Persian, and Turkish populations.

Native American Panel: A listing of your DNA match scores for all individual Native American populations in our database.

South Asian Panel: A listing of your DNA match scores for South Asian populations in our database, including all individual populations of Bangladesh, India, Nepal, Pakistan, and Sri Lanka.

Extended Match Results: A comprehensive listing of your DNA match scores for all individual populations in our database.

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DNA Tribes® Europa: A Detailed Comparison to European Sub-Regions:

DNA Tribes® Europa provides the most detailed and complete analysis of European autosomal genetic structure available. DNA Tribes® Europa provides your DNA match scores for 17 genetic sub-regions of Europe, which is substantially more robust than the individual population matches in Parts B – C of reports and more detailed than the European world regions referenced in Part D of core results.

More information about DNA Tribes® Europa is available at:
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