California Indians: Prehistory and Material Culture

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Paisley Caves: 14,500 Years of Human Occupations in the Northern Great Basin

Earliest, well-stratified site in western North America
(Jenkins et al. 2013)

Paisley Cave 5

Human coprolites, containing Native American DNA

Western Stemmed Points, discovered at Cooper’s Ferry, Idaho.
Stemmed points may precede Clovis fluted points in Western N. America.

Late Pleistocene and Early Holocene Coastal Sites

Sea Level Curve Following the Last Glacial Maximum
Paleoshorelines of Santarosae, about 12,500 years ago
(courtesy of Jon Erlandson)

Daisy Cave, San Miguel Island, earliest occupation at 11,700 BP.

Channel Island Barbed Points and Crescents from SRI-521W, Santa Rosa Island, Dating to perhaps as old as 12,000 years ago. (Erlandson et al. 2012)

Circum-Pacific Distribution of Stemmed Points at the End of the Pleistocene

Deep Shell Midden, Santa Cruz Island

Sea levels stabilize around 7,000 years ago, so coastal sites from that time forward are more likely to be preserved.
Santa Barbara Channel Region
Prehistoric Cultural Sequence

<table>
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<tr>
<th>Period</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Late Period</td>
<td>800-200 BP</td>
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<tr>
<td>Middle Period</td>
<td>3,000-800 BP</td>
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<tr>
<td>Terminal Early Period</td>
<td>5,000-3,000 BP</td>
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<td>Altithermal</td>
<td>6,500-5,000 BP</td>
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<tr>
<td>Initial Early Period (Millingstone Horizon)</td>
<td>9,000-6,500 BP</td>
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<td>Paleocoastal Period</td>
<td>13,000-9,000 BP</td>
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**Initial Early Period**

Hallmarks of the Millingstone Horizon:
Basin Metate & Mano

**Sea Temperature Curve**

Correlation of Sea Temperature Changes with Early and Middle Holocene Cultural Periods

**Cooler Sea Temperatures during the Altithermal**

Red Abalone Layer excavated on Santa Rosa Island,
Dates between 5,000 to 6,500 BP

**Terminal Early Period**

Advent of Mortar and Pestle Technology, about 5,000 B.P.

Appearance of Mortar and Pestle May Correlate with Beginnings of Acorn Intensification
Side-Notched Projectile Points, about 5,000 B.P.

Use of Atlatl (Spear-Thrower)

Basket Hoppers & Pestle

“Donut” Stones

Elbow Pipes, Santa Rosa Island, about 4000 BP

Bone Gorges
Used to catch fish prior to about 2,000 years ago (preceded fishhooks).
Sardine Fishery became important by the Middle Period.
Small fish vertebrae in archaeological sites indicates use of fishnets.

First Fishhooks, about 2500 BP

Fishhook Manufacture

Intensification in use of marine resources during the Middle Period (after 3000 BP) led to higher population density and permanence in coastal settlements.
Eroding Shell Midden on San Miguel Island full of marine mammal bone, fish bone, & shellfish remains.

Chumash House Floor, Santa Rosa Island

Use of Asphaltum as an Adhesive and for Water-Proofing
Chumash Tomol (Plank Canoe)
In use by at least A.D. 500

Canoe Plank and Drill

The fish caught from each tomol fed forty people.

Harpoon Barbs and Sharpened Bone Bi-Points

Harpoon Foreshaft from Midden on Santa Cruz Island

Compound fishhook

Harpoon with foreshaft
Swordfish remains begin to appear in the archaeological record by A.D. 500.

Swordfish Vertebrae "Cups"

Swordfish swords were used as digging implements (left) & headdress ornaments (right).

Swordfish Dancer's Headdress: Abalone Ornaments Dated to About A.D. 500

Swordfish Pictograph, Vandenberg AFB

Advent of Bow and Arrow, about A.D. 500

Arrowshaft Straightener
Craft Specialization: Finely-Made Stone Mortars

Chumash Shell Ornaments

Medieval Climatic Anomaly

Indications of Extreme Drought in Lakes in the Sierra Nevada Region

Exposed Tree Stumps in Lake Tenaya

Increased Warfare during Middle-Late Transition

Climatic instability fostered trade between regions with different resource bases.
Olivella Shell Bead Production

During the Middle-Late Transition, Olivella beads manufactured on the Channel Islands became a standard medium of exchange throughout much of the southern part of the California Culture Area.

Olivella Bead Manufacture Intensified during Middle-Late Transition

Use of Beads as Currency Begins during Middle-Late Transition

Specialization in Technologies Associated with Bead Production: Bladelet Cores and Micro-Drills

Chert Quarry on Santa Cruz Island

Steatite Comal, Olla, and Canoe Effigies
Exported from Santa Catalina Island to other groups in Southern California
Theories of Chumash Sociopolitical Evolution

- Social Ranking developed during the Terminal Early Period (Chester King).
- Social Ranking developed during the Middle-Late Transition as a result of elite control over resources (Jeanne Arnold).
- Warfare during Middle-Late Transition necessitated political leadership (Mark Raab).
- Centrality in economic exchange networks led to hierarchical differentiation among chiefs (see Johnson, “Social Responses to Climate Change,” in Course Reader).

Steatite Quarry on Santa Catalina Island

Scars from Removal of Ollas at Steatite Quarry

Inland Chumash towns specialized in procuring and trading other resources.

Harvesting Wild Seed Crops

Soaproot Brush
Chumash Wooden Bowl and Baskets with Wild Seeds

Chumash Serpentine Bowls

Chumash Serpentine Pipes

Observations by Spanish observers (e.g., Fr. Pedro Font, February 1776)

- “The Indians are great fishermen and very ingenious. . . . they build launches with which they navigate. . . . in each launch, . . . ordinarily not more than two Indians ride in each end.”
- “The implements with which they fish are very large nets, and hooks which they make of shells, and . . . an occasional small net made of a very strong thread like hemp.” (Fr. Pedro Font, 17 Feb. 1776)

Chumash Net Making

Dogbane (“Indian Hemp”) Apocynum cannabium

Five plant stalks were required for one foot of string.

Some Types of Chumash Fishnets

A 3-foot diameter dip net (xoy) would require ~ 200 stalks.

A 20-foot gill net would require ~ 17,500 plant stalks.

A 40-foot seine net (shut’nyuy) would require ~ 35,000 plant stalks.

“He who makes . . . nets has money . . .” [Coyote, in “Coyote and His Sons”]
Hierarchical Ranking among Chumash Towns

Chumash chiefs derived wealth and authority from canoe ownership.

Predicted Optimal Locations for Ranking Towns

Some Lessons from the Study of Santa Barbara Regional Prehistory

- Environmental changes were often linked to cultural changes.
- Demographic changes resulted in economic changes.
- Periods of population increase led to a shift from "efficient" resources (wild foods that provided greatest nutritional value for least effort) to subsistence resources that required greater expenditure of effort to acquire (e.g., processing acorns).
- Greater sedentism and increasingly fishing technology came with intensification of maritime subsistence.
- The Medieval Climatic Anomaly (two extended periods of drought between A.D. 900 - 1300) occurred during the Middle-Late Transition when the Chumash bead money economy arose, also perhaps increased warfare.
- The Chumash economic exchange system appears to have resulted in hierarchical relations among towns because chiefs in centrally located settlements were in the best position to regulate trade.