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Opening

[00:00:16] male narrator: CALIFORNIA'S PHYSICAL GEOGRAPHY IS DOMINATED
[00:00:19] BY NORTH-SOUTH-RUNNING MOUNTAIN RANGES
[00:00:24] SEPARATED BY VALLEYS OR LOW AREAS.
[00:00:30] CALIFORNIA IS 158,693 SQUARE MILES IN AREA
[00:00:37] AND IS THE THIRD LARGEST STATE IN THE NATION.
[00:00:42] IT IS BOUNDED BY THE PACIFIC OCEAN ON THE WEST,
[00:00:47] THE STATE OF OREGON ON THE NORTH,
[00:00:50] AND THE STATES OF NEVADA AND ARIZONA ON THE EAST.
[00:00:56] CALIFORNIA IS ONE OF FOUR STATES TO SHARE ITS SOUTHERN BORDER
[00:00:59] WITH THE SPANISH-SPEAKING COUNTRY OF MEXICO.
[00:01:05] GEOGRAPHICALLY CALIFORNIA IS OFTEN DIVIDED
[00:01:08] INTO NORTHERN CALIFORNIA AND SOUTHERN CALIFORNIA
[00:01:12] AT A POINT ABOVE THE CITY OF SAN FRANCISCO,
[00:01:15] WHERE THE SAN ANDREAS FAULT LINE PASSES INTO THE PACIFIC OCEAN.
[00:01:20] MOST OF CALIFORNIA'S MAJOR LANDFORMS
[00:01:24] ARE A PRODUCT OF FAIRLY RECENT TECTONIC ACTIVITY:
[00:01:28] VOLCANIC ACTION, WHICH PRODUCED PEAKS SUCH AS MOUNT SHASTA;
[00:01:34] AND THE COLLISION OF TECTONIC PLATES,
[00:01:37] CREATING MOUNTAIN RANGES AND LARGE VALLEYS.
[00:01:43] IN THIS PROGRAM, WE LOOK AT THESE TWO MAJOR FEATURES
[00:01:48] OF CALIFORNIA'S GEOGRAPHY AND THEIR RELATED ECOSYSTEMS.

Oceanic Coastline

[00:02:15] CALIFORNIA HAS OVER 1,200 MILES OF COASTLINE.
[00:02:21] OVER THIS GREAT DISTANCE, THE PACIFIC OCEAN'S POWERFUL
[00:02:25] AND UNCEASING WAVE ACTION HAS CARVED OUT MANY LANDFORMS
[00:02:29] FROM THE STATE'S COASTAL MOUNTAINS:
[00:02:33] STEEP VERTICAL CLIFFS,
[00:02:36] TERRACES,
[00:02:39] AND NUMEROUS BLUFFS.
[00:02:45] ALONG CALIFORNIA'S NORTHERN COAST,
[00:02:47] DRAMATIC HAYSTACK FORMATIONS
[00:02:49] EXTEND OUT INTO THE OCEAN WATERS.
[00:02:54] COMPOSED OF RESISTANT GRANITIC ROCK,
[00:02:57] THESE STACKS ARE BREEDING AND ROOSTING SANCTUARIES
[00:03:00] FOR MANY SEABIRDS.
[00:03:04] FURTHER OFFSHORE ARE TWO ISLAND CLUSTERS.
[00:03:09] IN THE NORTH, THESE ARE THE FARALLON ISLANDS,
[00:03:14] REMNANTS OF THE FARALLON OCEANIC PLATE
[00:03:17] THAT WAS SUBDUCTED, OR OVERRIDDEN,
[00:03:19] BY THE NORTH AMERICAN PLATE.
[00:03:23] A SECOND CLUSTER OF FOUR ISLANDS,
[00:03:25] KNOWN AS THE CHANNEL ISLANDS,
[00:03:27] RESTS OFF THE SOUTHERN CALIFORNIA COASTLINE.
[00:03:33] THEY ARE THE WESTERNMOST PORTION
[00:03:35] OF THE SANTA MONICA MOUNTAINS.
[00:03:39] THE PACIFIC OCEAN WATERS ALONG THE COAST OF CALIFORNIA
[00:03:43] ARE KEPT RELATIVELY COLD
[00:03:45] BY THE CONSTANT UPWELLING OF DEEP WATERS.
[00:03:50] WHILE COLD, THE WATERS ARE RICH IN NUTRIENTS
[00:03:53] AND SUPPORT ABUNDANT FISHERIES
[00:03:57] AND ARE HOME TO SOME LARGE SEA MAMMALS, SUCH AS SEA LIONS,
[00:04:03] LARGE PODS OF DOLPHINS,
[00:04:07] AND THE GRAY WHALE,
[00:04:09] WHICH MIGRATES TWICE A YEAR ALONG CALIFORNIA'S COASTLINE.
[00:04:15] BELOW THE CLIFFS AND SLOPES OF CALIFORNIA'S COAST
[00:04:18] ARE SOME OF THE FINEST BEACHES IN THE WORLD.
[00:04:22] BEACHES ARE EVER-SHIFTING ACTIVE AREAS OF EROSION
[00:04:26] AND ARE COMPOSED OF SAND, GRAVEL, AND COBBLE FRAGMENTS.
[00:04:32] IN ADDITION TO STORM EROSION, TWICE A DAY,
[00:04:36] TIDES REMOVE AND ADD NEW MATERIAL TO THE BEACHES.
[00:04:41] IN BETWEEN THE BEACHES ARE NUMEROUS
[00:04:44] ROCKY INTERTIDAL REGIONS.
[00:04:47] HERE, PORTIONS OF THE SHORE
[00:04:50] ARE REGULARLY COVERED AND UNCOVERED BY THE ADVANCE
[00:04:53] AND RETREAT OF TIDAL SEAWATER.
[00:04:59] THE COMPLEX ECOSYSTEM THAT OCCUPIES THIS NICHE
[00:05:02] CONTAINS MANY PLANTS AND ANIMALS,
[00:05:04] SUCH AS ANEMONES,
[00:05:07] BARNACLES,
[00:05:09] CLAMS,
[00:05:12] KELP,
[00:05:15] AND OTHER SEA PLANTS.
[00:05:20] CALIFORNIA'S COAST CONTAINS TWO OF THE WORLD'S GREAT HARBORS:
[00:05:25] SAN FRANCISCO BAY,
[00:05:27] ALONG WITH ITS REMARKABLE ESTUARY IN THE NORTH;
[00:05:32] AND SAN DIEGO HARBOR IN THE SOUTH.
[00:05:36] IT IS ALONG THIS FABULOUS 1,200-MILE COASTLINE
[00:05:40] THAT THE MAJORITY OF CALIFORNIANS LIVE
[00:05:43] AND ENJOY LIFE.

Cascades and Klamath Mountain Ranges

[00:05:57] CALIFORNIA HAS A COMPLEX NETWORK
[00:06:00] OF DISTINCT MOUNTAIN RANGES
[00:06:02] THAT MAKE UP THE BACKBONE OF THE STATE:
[00:06:06] A MOUNTAIN COMPLEX THAT GREATLY AFFECTS
[00:06:09] CALIFORNIA'S REGIONAL WEATHER
[00:06:13] SUPPLIES WATER TO THE STATE'S THRIVING AGRICULTURE
[00:06:16] AND ITS BOOMING URBAN POPULATIONS;
[00:06:20] AND FINALLY, THESE MOUNTAIN RANGES
[00:06:23] CREATE ECOLOGICALLY UNIQUE HABITATS,
[00:06:27] GREAT AESTHETIC BEAUTY,
[00:06:31] AND RECREATIONAL OPPORTUNITIES FOR CALIFORNIA'S CITIZENS.
[00:06:40] THE NORTHERN PART OF CALIFORNIA
[00:06:42] IS MADE UP OF TWO GEOLOGICALLY DISTINCT MOUNTAIN REGIONS:
[00:06:47] THE CASCADES AND THE KLAMATH MOUNTAINS.
[00:06:52] FOUND IN THE NORTHWEST CORNER OF CALIFORNIA,
[00:06:55] THE KLAMATH MOUNTAINS ARE MADE UP OF METAMORPHIC ROCKS
[00:06:59] OF SERPENTINE AND MARBLE.
[00:07:02] THE NORTHERN PART OF THIS RANGE,
[00:07:05] WITH PEAKS RANGING FROM 7,000 TO 9,000 FEET,
[00:07:08] IS OFTEN CALLED THE SISKIYOUS.
[00:07:13] THESE HEAVILY DISSECTED AND RUGGED MOUNTAINS SUPPORT
[00:07:17] AN UNUSUAL FOREST ECOSYSTEM OF PORT ORFORD CEDAR
[00:07:21] AND SPRUCE TREES.
[00:07:24] BECAUSE THE TERRAIN IS OFTEN TOO RUGGED FOR LOGGING,
[00:07:28] OLD-GROWTH FORESTS CAN STILL BE FOUND IN THE KLAMATH MOUNTAINS.
[00:07:35] TO THE EAST OF THE KLAMATH MOUNTAINS
[00:07:37] LIE THE SOUTHERN REACHES OF THE CASCADE MOUNTAIN RANGE,
[00:07:41] WITH ITS DRAMATIC SNOWCAPPED VOLCANIC PEAKS.
[00:07:46] THIS MOUNTAIN RANGE IS OVER 700 MILES LONG,
[00:07:50] AND EXTENDS FROM SOUTHERN BRITISH COLUMBIA, CANADA,
[00:07:53] TO NORTHERN CALIFORNIA.
[00:07:57] ON AVERAGE IT IS 50 MILES WIDE AND IS TYPICALLY
[00:08:01] AROUND 5,000 FEET HIGH.
[00:08:05] BUT AS ANYONE WHO LIVES IN THE REGION KNOWS,
[00:08:08] IT IS PUNCTUATED BY A SERIES OF TALL VOLCANIC PEAKS,
[00:08:13] SOME RISING UP OVER TWO MILES.
[00:08:18] HERE IS A MAP OF THESE VOLCANIC PEAKS
[00:08:21] SUPERIMPOSED ON THE CASCADE RANGE.
[00:08:25] THE BEST KNOWN OF THESE VOLCANOES IN CALIFORNIA ARE
[00:08:28] MOUNT SHASTA AND LASSEN PEAK, WHICH LAST ERUPTED IN 1915.
[00:08:36] THIS RANGE'S ORIGIN IS COMPLEX.
[00:08:41] >> THE CASCADE RANGE IS, MORE OR LESS,
[00:08:44] TWO DIFFERENT THINGS AT THE SAME TIME.
[00:08:46] IT'S A STRUCTURAL UPLIFT--
[00:08:48] THAT IS TO SAY THAT IT HAS BEEN UPLIFTED OVER TIME,
[00:08:53] AND PROBABLY THAT TIME STARTED AT THE END OF THE MIOCENE
[00:08:58] 6 MILLION, 7 MILLION, 8 MILLION YEARS AGO,
[00:09:00] AND IT WAS UPLIFTED BY TECTONIC FORCES.
[00:09:03] BUT SUPERIMPOSED ON THE CASCADE RANGE
[00:09:05] ARE THE CASCADE VOLCANOES:
[00:09:08] MOUNT ST. HELENS, MOUNT RAINIER,
[00:09:10] MOUNT BAKER, MOUNT GARIBALDI, MOUNT SHASTA--
[00:09:14] AND THESE ARE ALL ALSO CAUSED BY TECTONIC FORCES,
[00:09:16] BUT IN A DIFFERENT WAY.
[00:09:18] THESE ARE CAUSED BY SUBDUCTION, AND WHEN THE SUBDUCTING SLAB--
[00:09:22] WHICH IS BASALTIC ROCK THAT DIVES
[00:09:24] UNDER THE NORTH AMERICAN CONTINENT, IN THIS CASE--
[00:09:27] GETS TO A DEPTH OF ABOUT 100 KILOMETERS,

[00:09:30] THE TEMPERATURES GET HIGH ENOUGH THAT IT BEGINS TO MELT
[00:09:34] THE LOWER PART OF THE CRUST ABOVE IT,
[00:09:36] OR SOMETIMES EVEN THE UPPER PART OF THE SINKING SLAB.
[00:09:40] AND THAT MELTING CAUSES MAGMA TO RISE UP THROUGH CRACKS
[00:09:44] AND BECOME THE CASCADE VOLCANOES THAT WE SEE TODAY.
[00:09:47] SO THE PRESENT CASCADE RANGE VOLCANOES ARE ALL YOUNGER
[00:09:52] THAN ABOUT A MILLION YEARS,
[00:09:53] SOME OF THEM MUCH YOUNGER THAN THAT,
[00:09:55] AND THAT'S SUPERIMPOSED ON THE OLDER CASCADE RANGE.

California's Coastal Mountain Ranges

[00:09:59] narrator: RELATIVELY LOW IN HEIGHT,
[00:10:02] CALIFORNIA'S COASTAL MOUNTAIN RANGES ALONG THE PACIFIC OCEAN
[00:10:05] EXTEND IN A NORTH-SOUTH DIRECTION
[00:10:08] BETWEEN THE KLAMATH MOUNTAINS TO THE NORTH
[00:10:10] AND THE TRANSVERSE MOUNTAINS NEAR SANTA BARBARA TO THE SOUTH.
[00:10:16] OVER THIS 600-MILE DISTANCE,
[00:10:19] THE ROCKS THAT COMPRISE THESE MOUNTAINS
[00:10:22] ARE OF A GREAT VARIETY
[00:10:24] AND WIDELY VARYING GEOLOGIC AGES.
[00:10:27] RANGING FROM RECENT TO THE JURASSIC PERIOD
[00:10:31] OVER 100 MILLION YEARS AGO,
[00:10:33] THE ROCKS WERE FIRST DEPOSITED ON THE SEA BOTTOM AS SEDIMENTS.
[00:10:38] THEY EVENTUALLY BECAME SEDIMENTARY DOLOMITES
[00:10:41] AND LIMESTONE.
[00:10:44] BUT IN MANY PLACES, CRACKS, CREVICES AND OTHER GAPS FORMED
[00:10:49] AND WERE INFUSED WITH MOLTEN LAVA
[00:10:52] OR OTHER MASSES OF IGNEOUS ROCK.
[00:10:56] ALL OF THESE RANGES HAVE BEEN FOLDED AND FAULTED OVER TIME
[00:11:00] BY TECTONIC ACTIVITY AND THEN ERODED,
[00:11:03] GIVING CALIFORNIA'S NORTHERN COASTAL MOUNTAIN RANGES
[00:11:07] THEIR CURRENT HILLY APPEARANCE,
[00:11:09] WHICH CAN BE EXPERIENCED BY DRIVING
[00:11:12] THE STREETS OF SAN FRANCISCO.

California's Mediterranean Climate

[00:11:16] SAN FRANCISCO'S CLIMATE IS CHARACTERISTIC
[00:11:20] OF CALIFORNIA'S MEDITERRANEAN CLIMATE
[00:11:22] ALONG THE COASTAL RANGES.
[00:11:26] IT IS MARKED BY MILD, WET WINTERS
[00:11:29] AND DRY SUMMERS.
[00:11:32] OFTEN SHROUDED IN DENSE FOG, THESE MOUNTAIN RANGES
[00:11:36] ARE HOME TO THE TALLEST TREES ON EARTH.
[00:11:42] THE SPECTACULAR COASTAL REDWOOD FORESTS THRIVE HERE
[00:11:46] BECAUSE THE FOG ALLOWS PRECIOUS WATER TO MAKE ITS WAY DOWN
[00:11:50] TO THE ROOTS DURING THE OTHERWISE DRY SUMMERS.
[00:11:54] THE UNDERSTORY OF THE REDWOOD FOREST SUPPORTS
[00:11:57] A RICH VARIETY OF MOSSES AND FERNS.
[00:12:02] NESTLED AMONG THE FALLEN NEEDLES, TIMBER, AND LEAVES
[00:12:06] LIVES THE SECOND-LARGEST SLUG IN THE WORLD, THE BANANA SLUG.
[00:12:13] IT IS A SHELLESS GASTROPOD THAT LIVES ON ROTTING MATERIAL
[00:12:17] ON THE FOREST FLOOR.
[00:12:21] ONCE HUNTED TO NEAR EXTINCTION, CALIFORNIA'S TULE ELK,
[00:12:26] AFTER EXTENSIVE CONSERVATION EFFORTS,
[00:12:28] CAN NOW BE SEEN IN AND AROUND THE OPEN AREAS
[00:12:31] OF THE REDWOOD FORESTS.

Sierra Nevada Mountain Range

[00:12:35] APPROXIMATELY 150 MILES TO THE EAST OF THE COASTAL RANGES
[00:12:40] IS THE SIERRA NEVADA MOUNTAIN RANGE,
[00:12:44] A SPECTACULAR MOUNTAIN RANGE EXTENDING FOR OVER 400 MILES
[00:12:48] AND DIVIDING THE CENTRAL VALLEY FROM THE GREAT BASIN.
[00:12:54] SOMETIMES CALLED THE SIERRA, THE HIGH SIERRA, OR THE SIERRAS,
[00:12:59] THIS RANGE IS WHERE GOLD WAS DISCOVERED
[00:13:02] AT SUTTER'S MILL IN 1848,
[00:13:05] RESULTING IN THE GREATEST GOLD RUSH
[00:13:07] IN THE NATION'S HISTORY.
[00:13:11] THE SIERRAS WERE FORMED BY THE SAME TECTONIC FORCES
[00:13:14] THAT CREATED THE CASCADE MOUNTAINS.
[00:13:20] THE WELL-KNOWN GRANITE THAT MAKES UP THE CORE OF THE SIERRAS
[00:13:23] STARTED TO FORM HUNDREDS OF MILLIONS OF YEARS AGO.
[00:13:29] AT THAT TIME, WHERE THE SIERRAS ARE TODAY
[00:13:32] WAS THE EDGE OF THE CONTINENT.
[00:13:36] HERE, A MOUNTAIN RANGE OF VOLCANOES AND LAVA FLOWS
[00:13:40] BEGAN TO RISE UP.
[00:13:45] UNDERNEATH THESE VOLCANOES, A GIANT MASS OF MAGMA COOLED,
[00:13:49] FORMING THE MASSIVE GRANITIC SALINAS BLOCK.
[00:13:54] EVENTUALLY THESE EARLY SIERRAS ERODED AWAY,
[00:13:58] AND THEN THIS GRANITIC BLOCK BEGAN RISING UP AGAIN
[00:14:02] AROUND 20 MILLION YEARS AGO.
[00:14:07] ABOUT 4 MILLION YEARS AGO,
[00:14:09] THE SIERRA NEVADA STARTED TO FURTHER UPLIFT
[00:14:12] AND TILT TO THE WEST
[00:14:14] AS SHOWN BY THIS DEMONSTRATION USING TISSUE PAPER.
[00:14:19] LATER, EROSIONAL PROCESSES BEGAN
[00:14:22] AS RIVERS STARTED CUTTING DEEP CANYONS
[00:14:25] ON BOTH SIDES OF THE RANGE.
[00:14:28] THE EARTH'S CLIMATE COOLED, AND THE LAST ICE AGE STARTED
[00:14:32] ABOUT 2.5 MILLION YEARS AGO.
[00:14:37] MOUNTAIN GLACIERS CARVED OUT CHARACTERISTIC U-SHAPED CANYONS
[00:14:42] AND SHARPLY JAGGED PEAKS THROUGHOUT THE SIERRAS.
[00:14:47] AS A RESULT, THE SIERRAS ARE FILLED WITH DRAMATIC FEATURES
[00:14:51] SUCH AS WATERFALLS,
[00:14:53] DOMES,
[00:14:56] SWIFTLY MOVING RIVERS THROUGH STEEP CANYONS,
[00:15:00] AND SNOWCAPPED PEAKS.
[00:15:05] THESE SNOW-PACKED PEAKS ARE THE PRIMARY WATER RESERVOIR
[00:15:09] FOR THE PEOPLE AND AGRICULTURE OF NORTHERN CALIFORNIA.
[00:15:14] DURING THE WINTER,
[00:15:16] HUGE AMOUNTS OF PRECIPITATION FALL IN THE FORM OF SNOW.
[00:15:21] THIS PRODUCES THE SNOWPACK,
[00:15:24] WHICH GRADUALLY MELTS OVER THE SUMMER AND FALL,
[00:15:27] SENDING ITS PRECIOUS WATER WEST INTO THE CENTRAL VALLEY.
[00:15:33] THE SIERRAS CONTAIN YOSEMITE NATIONAL PARK,
[00:15:36] WITH ITS SPECTACULAR GRANITE MONOLITHS
[00:15:39] HALF DOME
[00:15:43] AND EL CAPITAN.
[00:15:47] THE SIERRAS ARE POPULATED
[00:15:49] BY A VARIETY OF OLD-GROWTH FOREST ECOSYSTEMS.
[00:15:54] THESE INCLUDE THE GIANT SEQUOIA FORESTS,
[00:15:59] FORESTS THAT CONTAIN THE LARGEST TREE BY VOLUME,
[00:16:03] NAMED GENERAL SHERMAN.
[00:16:07] LIVING IN THESE FORESTS IS A WIDE VARIETY OF BIRD LIFE.
[00:16:13] THE FORESTS ARE ALSO HOME TO THE BLACK BEAR.
[00:16:19] THE SIERRAS CREATE A RAIN SHADOW RESULTING IN THE DRY
[00:16:23] AND ARID DESERTS TO THE EAST,

[00:16:26] ISOLATING CALIFORNIA FROM THE REST OF THE COUNTRY.

Transverse Mountain Ranges

[00:16:31] IN SOUTHERN CALIFORNIA, MOUNTAIN RANGES CHANGE
[00:16:35] FROM A NORTH-SOUTH DIRECTION TO EAST-WEST.
[00:16:40] CALIFORNIA'S TRANSVERSE MOUNTAIN RANGES ARE A GEOGRAPHIC FEATURE
[00:16:44] OF SOUTHERN CALIFORNIA.
[00:16:49] THEIR EAST-WEST DIRECTION IS A RESULT OF A BEND
[00:16:51] IN THE SAN ANDREAS FAULT.
[00:16:55] THEY BEGIN AT POINT CONCEPTION IN SANTA BARBARA COUNTY,
[00:16:59] AND INCLUDE THE SANTA YNEZ MOUNTAINS THAT RUN PARALLEL
[00:17:02] TO THE COAST BEHIND THE CITY OF SANTA BARBARA.
[00:17:08] THE TRANSVERSE RANGES INCLUDE THE SAN RAFAEL MOUNTAINS;
[00:17:13] THE SIERRA MADRE MOUNTAINS;
[00:17:17] THE SIMI HILLS;
[00:17:20] THE SANTA MONICA MOUNTAINS, WHOSE EASTERN PORTION
[00:17:23] IS KNOWN AS THE HOLLYWOOD HILLS AND WHICH RUN ALONG
[00:17:26] THE PACIFIC COAST BEHIND MALIBU;
[00:17:30] THE STEEP SAN GABRIEL MOUNTAINS NORTHEAST OF LOS ANGELES;
[00:17:34] AND THE SAN BERNARDINO MOUNTAINS.
[00:17:40] THESE RANGES ARE PART OF THE CALIFORNIA CHAPARRAL
[00:17:44] AND WOODLANDS ECOSYSTEM.
[00:17:48] PLANT TYPES INCLUDE COASTAL SAGE SCRUB,
[00:17:52] THREE TYPES OF CHAPARRAL--
[00:17:55] LOWER CHAPARRAL, UPPER CHAPARRAL,
[00:17:58] AND DESERT CHAPARRAL--
[00:18:02] AND OAK SAVANNA.
[00:18:06] HIGHER UP, PINION PINE,
[00:18:08] AND PONDEROSA PINE FORESTS ARE FOUND.
[00:18:13] THESE TRANSVERSE RANGE ECOSYSTEMS ARE SUBJECT
[00:18:16] TO FREQUENT FIRES DURING THE LATE SUMMER
[00:18:19] AND FALL DRY SEASONS OF THIS MEDITERRANEAN CLIMATE.

California's Peninsular Mountain Ranges

[00:18:26] TO THE SOUTH OF THE TRANSVERSE MOUNTAIN RANGES
[00:18:29] LIE THE PENINSULAR RANGES.
[00:18:33] THEY ARE A GROUP OF MOUNTAIN RANGES WHICH STRETCH 900 MILES
[00:18:37] FROM SOUTHERN CALIFORNIA
[00:18:39] TO THE SOUTHERN TIP OF MEXICO'S BAJA CALIFORNIA PENINSULA.
[00:18:45] ROCKS IN THE RANGES ARE DOMINATED
[00:18:47] BY MESOZOIC GRANITIC ROCKS
[00:18:49] DERIVED FROM THE SAME MASSIVE BATHOLITH
[00:18:52] WHICH FORMED THE CORE OF THE SIERRA NEVADA MOUNTAINS.
[00:18:59] THEY ARE PART OF A GEOLOGIC PROVINCE
[00:19:01] KNOWN AS THE SALINIAN BLOCK, WHICH BROKE OFF
[00:19:04] FROM THE NORTH AMERICAN PLATE AT THE SAME TIME
[00:19:06] THE SAN ANDREAS FAULT AND THE GULF OF CALIFORNIA
[00:19:09] CAME INTO BEING.
[00:19:13] THE HIGHER PORTIONS OF THE PENINSULAR MOUNTAINS,
[00:19:15] ESPECIALLY THE WEST-FACING SLOPES,
[00:19:18] ARE HOME TO CONIFEROUS AND MIXED FORESTS.
[00:19:23] ON THE COASTAL SIDE OF THE RANGES,
[00:19:26] ECOSYSTEMS OF CALIFORNIA CHAPARRAL
[00:19:29] OAK-PINE FORESTS CAN BE FOUND.
[00:19:34] SAN DIEGO, CALIFORNIA'S SECOND LARGEST CITY,
[00:19:37] IS LOCATED ON THE WESTERN EDGE
[00:19:40] OF THE PENINSULAR MOUNTAIN RANGE.
[00:19:43] SAN DIEGO'S NATURAL HARBOR IS THE BASE
[00:19:47] FOR AMERICA'S LARGEST NAVAL FLEET,
[00:19:50] AND IT HAS THE GREATEST CONCENTRATION
[00:19:52] OF NAVAL FACILITIES IN THE WORLD.

Modoc Plateau

[00:19:57] JUST AS IMPORTANT AS THE MOUNTAIN RANGES
[00:19:59] TO UNDERSTANDING CALIFORNIA'S GEOGRAPHY ARE ITS VALLEYS.
[00:20:16] EXPANSIVE LAVA FLOWS,
[00:20:20] OLD CINDER CONES,
[00:20:25] AND ANCIENT LAKES ARE CHARACTERISTICS
[00:20:28] OF THE MODOC PLATEAU,
[00:20:30] NAMED FOR ONE OF THE AMERICAN-INDIAN TRIBES
[00:20:33] THAT OCCUPIED THIS REGION.
[00:20:37] RESTING IN THE NORTHEASTERN CORNER OF CALIFORNIA,
[00:20:41] THE MODOC PLATEAU IS A MILE HIGH IN ELEVATION.
[00:20:46] LOCATED ON THIS PLATEAU IS THE MEDICINE LAKE VOLCANO,
[00:20:52] BY VOLUME AND IN SURFACE AREA,
[00:20:55] THE LARGEST VOLCANO IN THE ENTIRE CASCADE RANGE.
[00:21:01] MOSTLY FLAT, IT COVERS OVER 700 SQUARE MILES
[00:21:05] WITH AN ESTIMATED VOLUME OF AROUND 130 CUBIC MILES.
[00:21:11] THE MEDICINE LAKE VOLCANO AND ITS LAVA FLOWS
[00:21:15] ARE INDEPENDENT OF OTHER CASCADE VOLCANOES.
[00:21:20] THAT IS, NEITHER MOUNT SHASTA NOR ANY OTHER NEARBY VOLCANO
[00:21:25] PRODUCED ANY OF THE LAVA FLOWS IN THIS AREA.
[00:21:31] GEOLOGICALLY SPEAKING,
[00:21:33] THIS REGION IS AN "EXTENSIONAL ENVIRONMENT."
[00:21:38] HERE, TECTONIC FORCES ARE SLOWLY STRETCHING THE EARTH'S CRUST,
[00:21:43] A PROCESS WHICH CONTINUES TODAY.
[00:21:49] HOT AND DRY IN THE SUMMER AND COLD IN THE WINTER,
[00:21:53] THE MODOC PLATEAU IS DOMINATED BY SAGEBRUSH
[00:21:57] AND JUNIPERS IN THE LOW, FLAT AREAS
[00:21:59] AND PINE FORESTS ON THE UPPER ELEVATED RIDGES AND HILLS.
[00:22:05] THE MODOC PLATEAU SUPPORTS LARGE HERDS OF MULE DEER
[00:22:10] AND IS ONE OF THE FEW PLACES IN CALIFORNIA
[00:22:12] WHERE THE AMERICAN PRONGHORN IS FOUND IN ABUNDANCE.
[00:22:18] ITS LAKES ARE FAVORITE STOPOVER SPOTS FOR MIGRATING WATERFOWL
[00:22:22] IN THE SPRING AND FALL.
[00:22:26] THE LARGEST AND MOST DOMINANT GEOGRAPHIC FEATURE

Central Valley

[00:22:29] IN CALIFORNIA IS THE CENTRAL VALLEY.
[00:22:34] BOUNDED BY THE COASTAL MOUNTAINS ON THE WEST
[00:22:37] AND THE SIERRA NEVADAS ON THE EAST,
[00:22:40] THE VALLEY STRETCHES NEARLY 400 MILES FROM NORTH TO SOUTH.
[00:22:46] ITS NORTHERN HALF IS REFERRED TO AS THE SACRAMENTO VALLEY,
[00:22:50] AND ITS SOUTHERN HALF AS THE SAN JOAQUIN VALLEY.
[00:22:56] THE TWO HALVES MEET AT THE SHARED DELTA
[00:22:58] OF THE SACRAMENTO AND SAN JOAQUIN RIVERS,
[00:23:02] A LARGE EXPANSE OF INTERCONNECTED CANALS,
[00:23:06] SLOUGHS,
[00:23:10] MARSHES,
[00:23:13] AND PEAT ISLANDS.
[00:23:18] THE CENTRAL VALLEY IS AROUND 42,000 SQUARE MILES,
[00:23:22] MAKING IT ROUGHLY THE SAME SIZE AS THE STATE OF PENNSYLVANIA.
[00:23:28] IT IS ANCHORED BY CALIFORNIA'S CAPITAL, SACRAMENTO,
[00:23:33] A CITY OF 1/2 MILLION PEOPLE.
[00:23:37] GEOLOGICALLY, THE CENTRAL VALLEY LIES
[00:23:40] WITHIN THE CALIFORNIA TROUGH,
[00:23:43] AND ITS EXTRAORDINARY FLATNESS IS A RESULT
[00:23:46] OF FILLING THE TROUGH WITH EROSIONAL SEDIMENTS
[00:23:49] FROM BOTH THE COASTAL MOUNTAIN RANGES AND THE SIERRA NEVADAS.
[00:23:55] THE CLIMATE IN THE VALLEY RANGES FROM MEDITERRANEAN IN THE NORTH
[00:23:59] TO NEAR DESERT IN THE SOUTH.
[00:24:03] 200 YEARS AGO, THE CENTRAL VALLEY WAS DOMINATED
[00:24:07] BY AN ECOSYSTEM CONSISTING OF GRASSLANDS
[00:24:10] AND OAK SAVANNAS IN THE NORTH
[00:24:12] AND CHAPARRAL TO THE SOUTH.
[00:24:17] TODAY THESE ECOSYSTEMS ARE ALL BUT GONE,
[00:24:20] REPLACED BY AGRICULTURE.
[00:24:25] INDEED, THE VALLEY'S TWO GREAT RIVER SYSTEMS--
[00:24:28] THE SACRAMENTO AND THE SAN JOAQUIN--
[00:24:31] HAVE BEEN TRANSFORMED IN THE 20TH CENTURY
[00:24:33] BY A SERIES OF DAMS, RESERVOIRS, AND CANALS.
[00:24:39] NOW NEARLY ALL OF THE WATER IN THESE RIVERS
[00:24:42] HAS BEEN DIVERTED FOR CROPS.
[00:24:46] THE CENTRAL VALLEY IS ONE OF THE MOST PRODUCTIVE
[00:24:49] AGRICULTURAL REGIONS IN THE WORLD.
[00:24:53] VIRTUALLY ALL NONTROPICAL CROPS ARE GROWN IN THE CENTRAL VALLEY,
[00:24:58] AND IT IS THE PRIMARY SOURCE FOR A NUMBER
[00:25:01] OF FOOD PRODUCTS THROUGHOUT THE UNITED STATES,
[00:25:03] INCLUDING RICE,
[00:25:06] NUTS,
[00:25:08] AND OLIVES.
[00:25:11] OVERALL, IN THE CENTRAL VALLEY OF CALIFORNIA,
[00:25:14] THERE ARE 7 MILLION ACRES OF IRRIGATED LAND
[00:25:18] SUPPORTED BY 20,000 MILES OF IRRIGATION CHANNELS,
[00:25:22] PRODUCING VEGETABLE AND FRUIT CROPS
[00:25:24] WORTH $20 BILLION ANNUALLY.
[00:25:29] TRULY, IT EARNS ITS NICKNAME AS "THE FRUIT BASKET OF THE WORLD."

The Sonoma and Napa Valleys

[00:25:37] LOCATED BOTH NORTH AND SOUTH OF SAN FRANCISCO
[00:25:40] IN THE COASTAL MOUNTAIN RANGES
[00:25:42] ARE TWO OTHER SIGNIFICANT AGRICULTURAL VALLEY SYSTEMS.
[00:25:47] PERHAPS BEST KNOWN OF ALL CALIFORNIA'S VALLEYS
[00:25:51] IS THE SONOMA AND NAPA VALLEY COMPLEX.
[00:25:56] SONOMA VALLEY IS THE BIRTHPLACE OF CALIFORNIA'S WINE INDUSTRY.
[00:26:03] THE GENTLE HILLS SURROUNDING THE FLAT VALLEY FLOORS
[00:26:06] WHERE THE VINEYARDS RESIDE
[00:26:08] ARE A PRODUCT OF EARLIER VOLCANOES
[00:26:11] AND THE SLIPPING OF THE LAND NORTHWARD
[00:26:13] ALONG THE SAN ANDREAS FAULT.
[00:26:17] THE CLIMATE AND SOIL MAKE IT A PERFECT PLACE FOR GROWING
[00:26:20] THE GRAPES THAT PRODUCE A WIDE VARIETY OF WINES.
[00:26:26] RUNNING PARALLEL ALONG
[00:26:28] THE EASTERN EDGE OF SONOMA VALLEY IS NAPA VALLEY.
[00:26:32] IT, TOO, IS ONE OF THE PRIME WINE-GROWING REGIONS
[00:26:35] IN THE WORLD.
[00:26:39] GEOGRAPHICALLY, IT IS ALSO VOLCANIC IN ORIGIN
[00:26:43] AND RISES OVER 300 FEET IN A SOUTH-TO-NORTH DIRECTION
[00:26:47] FROM ITS BASE NEAR SAN FRANCISCO.
[00:26:52] IN 1976, THE NAPA VALLEY WINE INDUSTRY GOT A BOOST
[00:26:56] FROM AN INTERNATIONAL WINE-TASTING COMPETITION,
[00:27:00] WHEN A CALIFORNIA CHARDONNAY AND CABERNET SAUVIGNON
[00:27:03] BEAT SEVERAL FAMOUS FRENCH WINES IN A BLIND TASTE TEST
[00:27:07] KNOWN AS "THE JUDGMENT OF PARIS."
[00:27:12] THE WINNING RESULTS SOLIDIFIED THE REGION'S REPUTATION
[00:27:16] FOR PRODUCING WORLD-CLASS WINES.

Salinas Valley

[00:27:22] TO THE SOUTH OF SAN FRANCISCO
[00:27:24] IS ANOTHER AGRICULTURALLY SIGNIFICANT VALLEY.
[00:27:29] KNOWN AS THE "SALAD BOWL" OF THE NATION
[00:27:31] FOR ITS PRODUCTION OF LETTUCE,
[00:27:34] THE SALINAS VALLEY RUNS GENERALLY NORTH-SOUTH
[00:27:37] BETWEEN TWO COASTAL MOUNTAIN RANGES.
[00:27:42] EXTENDING FOR 90 MILES,
[00:27:44] THE VALLEY IS OFTEN SHROUDED IN FOG.
[00:27:49] LIKE THE CENTRAL VALLEY, THE SALINAS VALLEY'S AGRICULTURE
[00:27:53] IS DEPENDENT UPON EXTENSIVE IRRIGATION.
[00:27:58] ISOLATED GEOGRAPHICALLY FROM THE REST OF THE CONTINENT,
[00:28:02] CALIFORNIA'S MOUNTAINS AND VALLEYS
[00:28:05] ARE SOME OF THE MOST SPECTACULAR LANDFORMS IN THE NATION
[00:28:11] AND CONTAIN ECOSYSTEMS FOUND NOWHERE ELSE ON THE PLANET.