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Open

[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
[00:01:00] 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.
[00:01:21] 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;
[00:01:35] AND THE COLLISION OF TECTONIC PLATES,
[00:01:37] CREATING MOUNTAIN RANGES AND LARGE VALLEYS;
[00:01:44] AND EXPLORE ITS GEOGRAPHIC REGIONS
[00:01:47] NOT FORMED BY GEOLOGICALLY RECENT TECTONIC ACTIVITY
[00:01:50] AND THEIR RELATED ECOSYSTEMS.

Basin and Range

[00:02:17] TO THE EAST OF CALIFORNIA'S SIERRA MOUNTAINS
[00:02:20] LIES A VAST GEOGRAPHIC PROVINCE KNOWN AS THE BASIN AND RANGE.
[00:02:27] IT CONSISTS OF A SERIES OF ISOLATED MOUNTAIN RANGES
[00:02:30] AND INTERVENING VALLEYS
[00:02:33] PRODUCED BY A PROCESS OF STRETCHING AND CRACKING
[00:02:35] THE REGION'S CRUST.
[00:02:38] AS A RESULT, THE CRUST HERE IS ACTUALLY RELATIVELY THIN
[00:02:42] AND GETTING THINNER.
[00:02:46] ALONG THE NORTH-SOUTH TRENDING FAULTS,
[00:02:49] MOUNTAINS WERE UPLIFTED
[00:02:51] AND VALLEYS DOWN-DROPPED,
[00:02:53] PRODUCING THE DISTINCTIVE ALTERNATING PATTERN
[00:02:55] OF LINEAR MOUNTAIN RANGES AND VALLEYS
[00:02:58] OF THE BASIN AND RANGE.
[00:03:00] FROM THE AIR,
[00:03:01] MANY OLD, DRY LAKES CAN BE SEEN IN THIS PROVINCE.
[00:03:06] IN NORTHEASTERN CALIFORNIA, THE BASIN AND RANGE'S CLIMATE
[00:03:11] IS ONE OF VERY HOT, DRY SUMMERS
[00:03:14] AND COLD WINTERS.
[00:03:18] THE LAND HERE IS OCCUPIED BY AN ECOSYSTEM
[00:03:22] KNOWN AS SAGEBRUSH STEPPES.
[00:03:26] THE DOMINANT PLANTS ARE SAGES AND JUNIPERS.
[00:03:33] AMONG THE LOW-LYING VEGETATION, BLACK-TAILED JACKRABBITS,
[00:03:38] MULE DEER,
[00:03:42] AND PRONGHORNS CAN BE SEEN.
[00:03:48] THIS PART OF THE BASIN AND RANGE IS RICH IN MINERALS,
[00:03:51] SUCH AS SILVER AND GOLD.
[00:03:56] IT IS WHERE BODIE, CALIFORNIA'S MOST FAMOUS GHOST TOWN,
[00:04:00] IS NESTLED ON THE EDGE OF A LOW-LYING MOUNTAIN RANGE.
[00:04:06] IN 1878,
[00:04:08] A GOLD STRIKE HERE TURNED BODIE
[00:04:11] INTO THE SECOND MOST POPULOUS CITY IN THE STATE.
[00:04:17] ALSO TO THE EAST OF THE SIERRA MOUNTAINS,
[00:04:20] THE BASIN AND RANGE ENCOMPASSES ANOTHER GEOGRAPHICAL PROVINCE
[00:04:24] KNOWN AS THE GREAT BASIN.
[00:04:28] THE GREAT BASIN IS A REGION THAT IS DEFINED AS A WATERSHED
[00:04:32] WITH NO OUTLETS TO THE OCEAN.
[00:04:35] BELOW THE GREAT BASIN
[00:04:37] AND STILL WITHIN THE BASIN AND RANGE PROVINCE
[00:04:40] LIE THREE DESERT ECOSYSTEM COMPLEXES.

Mojave Desert

[00:04:45] THE MOJAVE DESERT IS A COLD WINTER DESERT
[00:04:48] DEFINED GEOGRAPHICALLY BY THE PRESENCE OF A PLANT SPECIES:
[00:04:53] THE JOSHUA TREE.
[00:04:56] GROWING UP TO 40 FEET IN HEIGHT,
[00:04:59] JOSHUA TREES ARE NEITHER TREES NOR CACTI
[00:05:03] BUT A MEMBER OF THE YUCCA FAMILY.
[00:05:07] SPECTACULAR STANDS OF JOSHUA TREES ARE FOUND
[00:05:11] IN CALIFORNIA'S JOSHUA TREE NATIONAL PARK.
[00:05:17] ANOTHER OF CALIFORNIA'S NATIONAL PARKS
[00:05:19] LOCATED IN THE MOJAVE DESERT
[00:05:21] IS DEATH VALLEY NATIONAL PARK.
[00:05:27] THIS AND OTHER PARTS OF THE MOJAVE
[00:05:29] HAVE PERHAPS THE MOST EXTREME TEMPERATURE RANGE
[00:05:32] THROUGHOUT THE YEAR OF ANY PLACE IN THE NATION.
[00:05:36] SUMMER WEATHER IS DOMINATED BY HEAT.
[00:05:42] TEMPERATURES ON VALLEY FLOORS CAN SOAR
[00:05:45] ABOVE 120 DEGREES FAHRENHEIT
[00:05:48] AND ABOVE 130 DEGREES FAHRENHEIT IN DEATH VALLEY,
[00:05:51] WHICH, AT 282 FEET BELOW SEA LEVEL,
[00:05:55] IS THE LOWEST PLACE IN NORTH AMERICA
[00:05:58] AND OFTEN THE HOTTEST PLACE IN THE COUNTRY.
[00:06:03] WINTER TEMPERATURES CAN DROP BELOW 20 DEGREES.
[00:06:09] IN ADDITION TO NEVADA'S LAS VEGAS,
[00:06:12] THE MOJAVE DESERT IS POPULATED
[00:06:13] BY A NUMBER OF MEDIUM-SIZED CALIFORNIA CITIES,
[00:06:17] INCLUDING BARSTOW AND PALMDALE.

The Sonoran Desert:

[00:06:25] BELOW THE MOJAVE DESERT IS ANOTHER HUGE DESERT ECOSYSTEM:
[00:06:29] THE SONORAN DESERT.
[00:06:33] THE SONORAN DESERT OCCUPIES THE SOUTHEASTERN CORNER
[00:06:37] OF CALIFORNIA.
[00:06:40] IT INCLUDES MUCH OF ARIZONA
[00:06:42] AND VAST STRETCHES OF LAND INTO MEXICO.
[00:06:48] IT IS ONE OF THE MOST SPECTACULAR DESERTS
[00:06:50] ON THE PLANET.
[00:06:54] THE SONORAN DESERT IS CONSIDERED THE WETTEST DESERT IN THE WORLD.
[00:07:00] AS A RESULT,
[00:07:02] MANY PLANTS SPECIES NOT ONLY SURVIVE
[00:07:06] THE HARSH CONDITIONS OF THE SONORAN DESERT,
[00:07:07] BUT THEY ACTUALLY THRIVE.
[00:07:12] MANY HAVE EVOLVED TO HAVE SPECIALIZED ADAPTATIONS
[00:07:15] TO THE DESERT CLIMATE.
[00:07:19] THE SONORAN DESERT INCLUDES PLANTS FROM THE AGAVE FAMILY,
[00:07:25] PALM FAMILY,
[00:07:28] CACTUS FAMILY,
[00:07:32] AND MANY OTHERS.
[00:07:36] THIS DESERT IS THE ONLY PLACE IN THE WORLD
[00:07:40] WHERE THE FAMOUS SAGUARO CACTUS GROWS.
[00:07:45] IN THE SPRING, AFTER A RAINFALL, THE DESERT COMES ALIVE
[00:07:48] WITH SPECTACULAR FLORAL BLOOMS.

The Colorado Desert

[00:07:54] AN IMPORTANT SUBREGION OF THE SONORAN DESERT
[00:07:57] IN CALIFORNIA
[00:07:58] IS THE COLORADO DESERT.
[00:08:02] IT CONTAINS ONE OF CALIFORNIA'S GREAT AGRICULTURAL REGIONS:
[00:08:07] THE IMPERIAL VALLEY,
[00:08:09] LOCATED IN THE EXTREME SOUTHEASTERN CORNER
[00:08:11] OF THE STATE.
[00:08:15] ALTHOUGH THIS REGION IS CLIMATICALLY A DESERT,
[00:08:18] WITH HIGH TEMPERATURES AND LOW AVERAGE RAINFALL YEAR-ROUND,
[00:08:22] THE ECONOMY IS AGRICULTURAL.
[00:08:26] DUE TO THE AVAILABILITY OF IRRIGATION WATER--
[00:08:30] WHICH IS SUPPLIED WHOLLY FROM THE COLORADO RIVER
[00:08:32] VIA THE ALL-AMERICAN CANAL--
[00:08:35] VEGETABLE CROPS GROW AT A FANTASTIC RATE.
[00:08:41] THIS IMPORTED WATER,
[00:08:43] COUPLED WITH A LONG GROWING SEASON,
[00:08:46] ALLOWS FOR TWO CROP CYCLES EACH YEAR.
[00:08:48] TODAY THE IMPERIAL VALLEY HAS BECOME THE MAJOR SOURCE
[00:08:52] OF WINTER FRUITS AND VEGETABLES,
[00:08:55] COTTON, AND GRAIN FOR THE U.S. AND INTERNATIONAL MARKETS.
[00:09:00] TWO REMARKABLE GEOGRAPHIC FEATURES ARE FOUND
[00:09:03] IN THE COLORADO DESERT:
[00:09:05] THE SALTON SEA--
[00:09:06] CALIFORNIA'S LARGEST SALTWATER LAKE--
[00:09:10] AND THE IMPERIAL DUNES,
[00:09:13] ONE OF THE LARGEST DUNE FIELDS IN AMERICA.

The Los Angeles Basin

[00:09:19] THE LOS ANGELES BASIN IS PERHAPS
[00:09:22] THE MOST UNUSUAL GEOGRAPHIC FORMATION IN CALIFORNIA.
[00:09:27] 15 MILLION YEARS AGO, THE AREA WAS UNDER THE OCEAN.
[00:09:34] GRADUALLY, OVER THE INTERVENING YEARS,
[00:09:37] SEDIMENTS FROM THE OCEAN AND THE NEARBY MOUNTAIN RANGES
[00:09:40] ACCUMULATED ON THE PACIFIC PLATE
[00:09:43] TO THE PRESENT-DAY DEPTH OF OVER SIX MILES.
[00:09:48] THE RELATIVELY LOOSE SEDIMENTS
[00:09:50] THAT UNDERLIE THE LOS ANGELES BASIN
[00:09:53] CAN BE COMPARED GEOLOGICALLY TO A BOWL OF JELLY
[00:09:56] THAT SHAKES FROM TECTONIC ACTIVITY
[00:09:59] ALONG THE NEARBY SAN ANDREAS FAULT.
[00:10:03] THE ABUNDANT ORGANIC MATERIAL
[00:10:05] THAT WAS DEPOSITED ALONG WITH THE SEDIMENTS
[00:10:08] HAS RESULTED IN RICH OIL DEPOSITS,
[00:10:11] MAKING THE L.A. BASIN'S OIL FIELDS
[00:10:13] ONE OF THE MOST PRODUCTIVE IN THE COUNTRY.
[00:10:18] RESIDING IN THE L.A. BASIN IS THE GREATER LOS ANGELES AREA,
[00:10:23] ENCOMPASSING OVER 33,000 SQUARE MILES.
[00:10:28] WITH A POPULATION OF OVER 18 MILLION INHABITANTS,
[00:10:32] IT IS THE SECOND LARGEST POPULATION CENTER
[00:10:34] IN THE COUNTRY.
[00:10:38] THE AREA IS OFTEN VIEWED AS ONE LARGE, SPRAWLING CITY
[00:10:43] WITH NO SINGLE CITY CENTER,
[00:10:46] NO ONE MAJOR CONCENTRATION OF TALL BUILDINGS,
[00:10:52] AND ALL OF IT INTERCONNECTED BY A VAST NETWORK
[00:10:55] OF MULTILANE HIGHWAYS.
[00:10:59] THE LOS ANGELES BASIN IS ALSO HOME
[00:11:02] TO THE TWO LARGEST SEAPORTS IN THE NATION:
[00:11:06] AMERICA'S SECOND BUSIEST, THE PORT OF LONG BEACH;
[00:11:11] AND THE PORT OF LOS ANGELES,
[00:11:14] THE LARGEST SHIPPING
[00:11:15] AND CRUISE SHIP HARBOR IN THE COUNTRY.
[00:11:20] THE GREATER LOS ANGELES AREA IS AN ECONOMIC POWERHOUSE,
[00:11:24] RANKING AS THE THIRD LARGEST METROPOLITAN ECONOMY
[00:11:28] IN THE WORLD,
[00:11:30] AND IT IS THE ENTERTAINMENT CAPITAL OF THE WORLD AS WELL,
[00:11:35] CONTAINING THE SEVEN LARGEST MOVIE STUDIOS IN THE NATION.
[00:11:40] WHILE CONTAINING NO STUDIOS ITSELF,
[00:11:43] HOLLYWOOD, A DISTRICT OF LOS ANGELES,
[00:11:45] SYMBOLIZES THE GLITZ AND GLITTER OF THE ENTERTAINMENT INDUSTRY.
[00:11:52] IT IS ALSO HOME TO THE FAMOUS GRAUMAN'S CHINESE THEATER,
[00:11:57] WHERE HOLLYWOOD STARS HAVE MADE HANDPRINTS OVER THE YEARS,
[00:12:03] AND THE EQUALLY FAMOUS HOLLYWOOD WALK OF FAME
[00:12:05] ALONG HOLLYWOOD BOULEVARD.
[00:12:09] LOS ANGELES' BEACHFRONT COMMUNITIES OF MALIBU,
[00:12:14] SANTA MONICA,
[00:12:18] AND VENICE BEACH
[00:12:20] ARE THE MOST POPULAR IN THE STATE.

The San Joaquin and Sacramento River System

[00:12:33] >> SO THIS RIVER HAS SORT OF AN UNUSUAL COURSE.
[00:12:36] RIGHT NOW IT'S FLOWING SOUTH-SOUTHWEST,
[00:12:39] TOWARDS FRESNO AND THE CENTRAL VALLEY.
[00:12:41] BUT ONCE IT REACHES-- ONCE IT GETS CLOSE TO FRESNO,
[00:12:44] IT STARTS TO MAKE A BROAD U-TURN,
[00:12:46] AND IT STARTS FLOWING NORTH,
[00:12:47] UP THE CENTRAL VALLEY OF CALIFORNIA,
[00:12:49] TOWARD STOCKTON AND SACRAMENTO.
[00:12:52] IT MEETS UP WITH THE SACRAMENTO RIVER,
[00:12:53] THE SACRAMENTO RIVER DELTA,
[00:12:55] AND EVENTUALLY FLOWS INTO SAN FRANCISCO BAY,
[00:12:58] UNDERNEATH THE BRIDGE, AND OUT TO THE PACIFIC OCEAN.
[00:13:01] narrator: THE RIVER DAVE IS STANDING NEXT TO
[00:13:04] IS NEAR THE HEADWATERS OF THE SAN JOAQUIN RIVER.
[00:13:10] IT IS 330 MILES LONG
[00:13:12] AND IS THE SECOND LARGEST WHOLLY CONTAINED RIVER
[00:13:15] WITHIN CALIFORNIA.
[00:13:19] AS A NATURAL RIVER,
[00:13:21] THE SAN JOAQUIN OFTEN FLOODED IN LATE WINTER AND SPRING.
[00:13:26] BUT SINCE THE MID-19TH CENTURY,
[00:13:29] THE WATERS OF THE SAN JOAQUIN HAVE BEEN CONTROLLED
[00:13:32] AND DIVERTED BY DAMS FOR HUMAN USE,
[00:13:37] DAMS THAT PRODUCE ELECTRICITY FOR THE BAY AREA,
[00:13:42] PROVIDE WATER FOR IRRIGATING
[00:13:44] SOME OF CALIFORNIA'S MOST PRODUCTIVE FARMLANDS,
[00:13:49] AND SUPPLY THE SOLE SOURCE OF DRINKING WATER
[00:13:51] FOR A NUMBER OF RURAL TOWNS IN CALIFORNIA'S CENTRAL VALLEY.
[00:13:58] EVENTUALLY,
[00:13:59] THE SAN JOAQUIN MEETS UP WITH THE OTHER GREAT RIVER
[00:14:02] OF THE CENTRAL VALLEY: THE SACRAMENTO RIVER--
[00:14:05] CALIFORNIA'S LONGEST RIVER.
[00:14:09] STARTING AT THE BASE OF MOUNT SHASTA
[00:14:12] IN THE CASCADE RANGE,
[00:14:13] THE SACRAMENTO FLOWS SOUTH
[00:14:15] FOR 447 MILES.
[00:14:20] IT TRAVELS THROUGH THE NORTHERN CENTRAL VALLEY
[00:14:22] BETWEEN THE COASTAL RANGES AND THE SIERRA MOUNTAINS.
[00:14:29] MAN-MADE CHANNELS MAKE THE RIVER NAVIGABLE FOR THE 180 MILES
[00:14:34] BETWEEN SAN FRANCISCO AND THE CAPITAL CITY OF SACRAMENTO.
[00:14:40] MOST IMPORTANTLY,
[00:14:42] THE SAN JOAQUIN-SACRAMENTO RIVER SYSTEM
[00:14:45] PROVIDES DRINKING WATER FOR NEARLY 2/3
[00:14:48] OF CALIFORNIA'S POPULATION.
[00:14:52] THE TWO RIVERS JOIN EAST OF SAN FRANCISCO
[00:14:55] AND FLOW INTO SAN FRANCISCO BAY--
[00:14:58] ONE OF THE GREAT ESTUARIES ON THE PLANET.
[00:15:03] THE BAY COVERS APPROXIMATELY 1,600 SQUARE MILES
[00:15:07] OF OPEN WATER,
[00:15:10] SLOUGHS,
[00:15:13] AND WETLANDS.

San Francisco Bay

[00:15:17] GEOLOGICALLY, THE BAY IS SIMILAR TO OTHER VALLEYS
[00:15:21] CONTAINED WITHIN THE COASTAL MOUNTAIN RANGES,
[00:15:25] SUCH AS NAPA VALLEY
[00:15:27] AND SONOMA VALLEY TO THE NORTH OF SAN FRANCISCO.
[00:15:32] SAN FRANCISCO BAY IS SITUATED BETWEEN THE SAN ANDREAS FAULT
[00:15:37] AND THE HAYWARD FAULT.
[00:15:40] WHEN THE LAST ICE AGE ENDED
[00:15:43] AND THE ICE OF THE VAST CONTINENTAL ICE SHEETS
[00:15:45] RETREATED AND MELTED,
[00:15:47] SEA LEVELS ROSE, AND THE BAY FILLED WITH WATER.
[00:15:53] SURROUNDING SAN FRANCISCO BAY IS CALIFORNIA'S
[00:15:56] SECOND DENSEST URBAN POPULATION OF OVER 8 MILLION PEOPLE,
[00:16:03] A POPULATION MADE UP OF THREE MAJOR CITIES:
[00:16:06] SAN FRANCISCO,
[00:16:09] OAKLAND,
[00:16:12] AND SAN JOSE,
[00:16:14] WITH MANY SMALLER COMMUNITIES IN BETWEEN.
[00:16:19] THE BAY ITSELF IS SPANNED BY FIVE BRIDGES,
[00:16:23] INCLUDING THE FAMOUS GOLDEN GATE BRIDGE
[00:16:26] AND THE OAKLAND BAY BRIDGE.
[00:16:31] SAN FRANCISCO IS KNOWN FOR ITS HILLY STREETS,
[00:16:36] FISHERMAN'S WHARF,
[00:16:40] CHINATOWN,
[00:16:43] AND IT IS THE FINANCIAL CENTER OF THE PACIFIC ASIAN MARKETS.
[00:16:50] ON THE SAN FRANCISCO PENINSULA,
[00:16:52] ONE CAN WALK ACROSS THE SAN ANDREAS FAULT
[00:16:55] STEPPING FROM THE NORTH AMERICAN TECTONIC PLATE
[00:16:57] TO THE PACIFIC OCEANIC PLATE.
[00:17:03] SAN JOSE, ON THE SOUTH END OF THE BAY, HAS BECOME,
[00:17:06] IN THE 21ST CENTURY,
[00:17:08] THE CENTER OF THE INFORMATION AGE'S HIGH-TECH INDUSTRY.
[00:17:13] LOCATED IN THE BAY IS THE INFAMOUS ALCATRAZ ISLAND,
[00:17:18] SOMETIMES KNOWN AS THE ROCK.
[00:17:21] THE ISLAND WAS A FEDERAL PRISON
[00:17:24] FROM 1934 TO 1963.
[00:17:29] IN SPITE OF ALL THIS INDUSTRY AND URBANIZATION,
[00:17:32] THE BAY ITSELF IS CALIFORNIA'S MOST IMPORTANT ECOSYSTEM.
[00:17:38] BY DEFINITION AN ESTUARY,
[00:17:41] THE BAY CHANGES ITS SALINITY AS THE TIDE COMES AND GOES.
[00:17:47] AS A RESULT,
[00:17:48] IT IS A MAJOR NURSERY FOR MANY FISH AND SHELLFISH,
[00:17:51] SUCH AS SHRIMP
[00:17:53] AND CRABS.
[00:17:57] THE BAY IS ALSO A KEY SPOT ALONG THE PACIFIC FLYWAY.
[00:18:02] MILLIONS OF WATERFOWL ANNUALLY USE THE BAY SHALLOWS
[00:18:05] AS A REFUGE.
[00:18:09] OTHER BIRDS FIND FOOD YEAR-ROUND
[00:18:13] IN ITS MANY SLOUGHS AND WETLANDS.

The Colorado River

[00:18:17] ANOTHER RIVER, THE COLORADO RIVER,
[00:18:20] ALTHOUGH ONLY BRIEFLY TOUCHING
[00:18:21] CALIFORNIA'S SOUTHEASTERN BORDER WITH ARIZONA,
[00:18:24] PLAYS A MAJOR ROLE
[00:18:26] IN THE STATE'S MONUMENTAL ECONOMIC SUCCESS.
[00:18:31] STARTING IN THE ROCKY MOUNTAINS,
[00:18:33] THE COLORADO RIVER'S 1,360-MILE-LONG ROUTE
[00:18:37] THROUGH THE SOUTHWESTERN UNITED STATES
[00:18:39] MAKES IT THE NATION'S FIFTH LONGEST RIVER.
[00:18:45] THE LOWER COLORADO RIVER
[00:18:47] TRAVELS THROUGH CALIFORNIA'S TWO GREAT DESERTS:
[00:18:50] THE MOJAVE AND THE SONORAN.
[00:18:54] THE COLORADO IS ALSO REMARKABLE
[00:18:56] IN ITS VALUE FOR HYDROELECTRIC POWER
[00:19:00] AND IRRIGATION.
[00:19:04] MORE THAN 20 DAMS, INCLUDING THE MASSIVE HOOVER DAM,
[00:19:09] HAVE BEEN BUILT ON THE COLORADO AND ITS TRIBUTARIES.
[00:19:16] AS A RESULT,
[00:19:17] VIRTUALLY NO WATER REACHES ITS FINAL DESTINATION
[00:19:20] IN THE GULF OF CALIFORNIA.
[00:19:24] SHORTLY AFTER THE COMPLETION OF THE HOOVER DAM IN 1936,
[00:19:29] CONSTRUCTION BEGAN DOWNSTREAM ON THE PARKER DAM.
[00:19:34] WATER HELD BY THE DAM
[00:19:36] IS TRANSPORTED SOME 250 MILES ACROSS CALIFORNIA TO SUPPLY
[00:19:41] A LARGE PORTION OF THE WATER NEEDS FOR LOS ANGELES
[00:19:44] AND MOST OF THE WATER SUPPLY FOR SAN DIEGO--
[00:19:49] WATER THAT ALSO IRRIGATES CALIFORNIA'S
[00:19:52] AGRICULTURALLY RICH IMPERIAL VALLEY.

Earthquakes

[00:19:56] CALIFORNIA HAS NUMEROUS SMALL RIVERS
[00:19:59] THAT DRAIN ITS COASTAL AND TRANSVERSE MOUNTAINS
[00:20:02] INTO THE PACIFIC OCEAN,
[00:20:04] BUT NONE ARE AS ECONOMICALLY SIGNIFICANT AS THE SAN JOAQUIN,
[00:20:09] SACRAMENTO,
[00:20:12] AND COLORADO RIVER SYSTEMS.
[00:20:18] CALIFORNIA IS A STATE OF MANY MAN-MADE RESERVOIRS
[00:20:22] BUT FEW NATURAL LAKES.
[00:20:25] INDEED, TWO OF ITS LARGER NATURAL LAKES
[00:20:29] HAVE A HIGH SALT CONTENT.
[00:20:31] THEY ARE MONO LAKE,
[00:20:33] WITH ITS UNUSUAL SHORELINE OF CALCIUM CARBONATE STRUCTURES,
[00:20:37] AND THE SALTON SEA.
[00:20:41] LARGE FRESHWATER LAKES INCLUDE LAKE TAHOE,
[00:20:44] ALONG THE NEVADA BORDER,
[00:20:46] AND TULE LAKE IN THE NORTHEAST CORNER OF THE STATE.
[00:20:52] HOWEVER, NUMEROUS SMALL MOUNTAIN LAKES HAVE BEEN CREATED
[00:20:56] AS A RESULT OF TECTONIC ACTIVITY,
[00:20:59] TECTONIC ACTIVITY WHICH TODAY IS STILL SHAPING
[00:21:02] THE STATE'S LANDFORMS
[00:21:04] AND AFFECTING ITS POPULATION CENTERS.
[00:21:19] IN ORDER TO UNDERSTAND
[00:21:20] WHY CALIFORNIA HAS SO MANY EARTHQUAKES,
[00:21:23] ONE MUST UNDERSTAND A LITTLE ABOUT PLATE TECTONICS.
[00:21:29] IN THE 20TH CENTURY,
[00:21:31] GEOLOGISTS DISCOVERED THAT THE EARTH'S CRUST
[00:21:34] WAS DIVIDED UP INTO SEPARATE PLATES
[00:21:36] THAT MOVE ABOUT OVER TIME--
[00:21:39] MOVE ABOUT AS SHOWN HERE.
[00:21:43] WHEN THEY DO THIS,
[00:21:45] THEY INTERACT WITH EACH OTHER,
[00:21:48] BUMP INTO EACH OTHER,
[00:21:51] MOVE ALONG IN RELATIONSHIP TO EACH OTHER,
[00:21:54] RIDE UP OVER THE OTHER,
[00:21:58] OR IF STUCK TOGETHER, THEY CAN PULL APART.
[00:22:04] CALIFORNIA IS RIGHT WHERE THREE PLATES
[00:22:06] ARE CURRENTLY INTERACTING:
[00:22:08] THE LARGE PACIFIC AND NORTH AMERICAN PLATES
[00:22:11] AND A SMALL ONE CALLED THE SAN JUAN DE FUCA PLATE.
[00:22:15] THIS PLATE IS WHAT REMAINS OF THE FARALLON PLATE
[00:22:18] AND IS DIVING UNDER THE NORTH AMERICAN PLATE.
[00:22:24] THIS SUBDUCTION IS CURRENTLY RESPONSIBLE
[00:22:27] FOR THE VOLCANIC ERUPTIONS IN THE CASCADE MOUNTAIN RANGE,
[00:22:34] THE STRETCHING OF THE BASIN AND RANGE PROVINCE
[00:22:36] IN EASTERN CALIFORNIA,
[00:22:40] AND THE FORMATION OF CALIFORNIA'S COASTAL MOUNTAINS.
[00:22:46] ALL THREE PROCESSES CAN CAUSE MOVEMENT IN THE CRUST,
[00:22:50] RELEASING ENERGY THAT IS FELT AS AN EARTHQUAKE.
[00:22:58] BUT THE TECTONIC FEATURE
[00:23:00] THAT CALIFORNIA IS BEST KNOWN FOR IS THE SAN ANDREAS FAULT,
[00:23:05] THE DIVIDING LINE BETWEEN THE PACIFIC PLATE
[00:23:07] AND THE NORTH AMERICAN PLATE,
[00:23:10] PLATES WHICH HAVE BEEN SLIDING PAST EACH OTHER
[00:23:13] FOR MILLIONS OF YEARS.
[00:23:17] INDEED, CALIFORNIA IS PARTIALLY A PART OF EACH PLATE,
[00:23:21] AS SEEN IN THIS GRAPHIC.
[00:23:24] HOWEVER, MOST OF CALIFORNIA SITS ON THE NORTH AMERICAN PLATE.
[00:23:31] AS THESE TWO PLATES PASS BY EACH OTHER,

[00:23:34] FRICTION CAUSES THE PLATES TO STICK.
[00:23:38] AS MORE AND MORE ENERGY BUILDS UP
[00:23:40] FROM THE FORCE OF PLATE MOVEMENT,
[00:23:43] A SUDDEN RELEASE ALLOWS THE PLATES TO MOVE SLIGHTLY
[00:23:45] IN RELATION TO EACH OTHER.
[00:23:49] THE RESULT IS FELT AS AN EARTHQUAKE.
[00:23:53] A GOOD EXAMPLE OF THIS PLATE MOTION IS THAT AT ONE TIME,
[00:23:58] THESE PINNACLES, 40 MILES SOUTH OF SAN FRANCISCO,
[00:24:01] WERE ONCE LOCATED NEAR PRESENT-DAY LOS ANGELES.
[00:24:07] INDEED, MILLIONS OF YEARS IN THE FUTURE,
[00:24:10] LOS ANGELES AND SAN FRANCISCO MAY FIND THEMSELVES
[00:24:14] SIDE-BY-SIDE.
[00:24:17] IN RECENT YEARS,
[00:24:19] GEOLOGISTS HAVE FOUND THAT EARTHQUAKES IN THE CASCADE RANGE
[00:24:22] OFTEN TRIGGER EARTHQUAKES ALONG THE SAN ANDREAS FAULT.
[00:24:28] RESIDENTS OF CALIFORNIA ARE AWARE OF SMALL EARTHQUAKES
[00:24:32] OCCURRING ON AN ALMOST DAILY BASIS.
[00:24:37] BUT THE FEAR IS THE NEXT BIG ONE,
[00:24:41] LIKE THE SAN FRANCISCO EARTHQUAKE OF 1906,
[00:24:44] WHICH KILLED MORE THAN 3,000 PEOPLE.
[00:24:48] INFORMATION AVAILABLE SUGGESTS THAT THE SAN ANDREAS FAULT
[00:24:52] IS PRIMED FOR ANOTHER BIG EARTHQUAKE,
[00:24:55] BUT EXACTLY WHEN THE TRIGGERING WILL HAPPEN,
[00:24:57] NO ONE KNOWS FOR SURE.
[00:25:01] IT COULD BE NOW
[00:25:04] OR 20 YEARS FROM NOW.
[00:25:08] IN ANY CASE,
[00:25:10] LIVING WITH EARTHQUAKES WILL FOREVER BE
[00:25:12] A PART OF CALIFORNIA LIFE.

Human Geography

[00:25:26] IN 1848, CALIFORNIA BECAME A U.S. TERRITORY.
[00:25:32] TWO YEARS LATER, IT JOINED THE UNION AS THE 31ST STATE.
[00:25:38] TODAY CALIFORNIA IS THE NATION'S THIRD LARGEST STATE
[00:25:42] AND ITS MOST POPULOUS.
[00:25:45] A DIVERSE GROUP OF OVER 36 MILLION PEOPLE,
[00:25:50] 54% OF THE STATE IS WHITE,
[00:25:54] 29% HISPANIC,
[00:25:57] 10% ASIAN;
[00:26:01] BLACKS MAKE UP 6%
[00:26:04] AND NATIVE AMERICANS LESS THAN 1%.
[00:26:09] CALIFORNIA HAS MANY NATURAL RESOURCES:
[00:26:12] WATER FOR IRRIGATION,
[00:26:15] FERTILE SOIL,
[00:26:18] TIMBER,
[00:26:20] OIL,
[00:26:23] MINERALS,
[00:26:25] NATURAL GAS,
[00:26:28] AND LARGE OCEAN HARBORS,
[00:26:34] ALL OF WHICH CREATE AN ECONOMY
[00:26:36] WORTH NEARLY $2 TRILLION A YEAR--
[00:26:40] THE EIGHTH LARGEST ECONOMY IN THE WORLD.
[00:26:45] ITS BIGGEST BUSINESS IS AGRICULTURE,
[00:26:48] AND CALIFORNIA IS THE NATION'S LEADER IN THE PRODUCTION
[00:26:51] OF FRUITS AND VEGETABLES
[00:26:53] AND DOMESTIC WINE,
[00:26:58] WHILE DAIRY PRODUCTS MAKE UP THE LARGEST SHARE
[00:27:01] OF CALIFORNIA'S FARM INCOME.
[00:27:05] CALIFORNIA'S OTHER INDUSTRIES INCLUDE MANUFACTURING--
[00:27:09] ESPECIALLY ELECTRONIC EQUIPMENT--
[00:27:13] BIOTECHNOLOGY,
[00:27:17] AEROSPACE AND DEFENSE,
[00:27:20] AND TOURISM, WHICH HAS BECOME A MAJOR ECONOMIC FACTOR.
[00:27:27] THE ENTERTAINMENT INDUSTRY,
[00:27:29] WHICH BEGAN AS A FEW HOLLYWOOD BACKLOTS
[00:27:32] AT THE BEGINNING OF THE 20TH CENTURY,
[00:27:34] NOW DOMINATES THE WORLD OF ENTERTAINMENT.
[00:27:38] IN THE 1970s,
[00:27:40] CALIFORNIA'S SILICON VALLEY SPEARHEADED THE ELECTRONIC AGE
[00:27:45] WITH THE DEVELOPMENT OF COMPUTERS
[00:27:47] AND LATER
[00:27:48] WAS THE LEADING INNOVATOR IN THE INTERNET ECONOMY.
[00:27:53] CALIFORNIA'S CAPITAL IS SACRAMENTO,
[00:27:56] A CITY OF 1/2 MILLION PEOPLE.
[00:28:00] THE STATE'S MAJOR POPULATION CONCENTRATIONS
[00:28:03] ARE IN THE THREE GREAT COASTAL URBAN CENTERS
[00:28:06] OF SAN FRANCISCO,
[00:28:08] LOS ANGELES,
[00:28:10] AND SAN DIEGO.
[00:28:14] CALIFORNIA'S DIVERSE
[00:28:16] AND EDUCATED POPULATION
[00:28:18] IS PARTICULARLY READY TO LEAD THE NATION
[00:28:20] INTO THE NEW GREEN ECONOMY.